



AGENDA
CITY OF GLENWOOD SPRINGS
REGULAR CITY COUNCIL MEETING
MARCH 21, 2019
101 W. 8TH STREET
6:00 PM

The agenda is subject to change, including the addition of items 24 hours in advance or the deletion of items at any time.

The order and times of agenda items listed are approximate and intended as a guideline for the City Council.

TIME	ITEM	PRE-MEETING	ACTION
9:00am	1	Review of Regular Session Agenda	Information/Discussion
	2	Future Agendas	Information/Discussion
	3	City Manager Update	Information
	4	Council Comments	Information
MORNING WORK SESSION(S)			
9:30am	A.	Spring Cleanup Options	Information/Discussion
10:30am	5	Executive Session to Conduct a Conference with the City Manager and City Attorney for the Purpose of Discussing the City’s Purchase, Acquisition, Lease, Transfer or Sale of Real Property; Determining Positions Relative to Matters That May be Subject to Negotiations, Developing Strategy for Negotiations, and Instructing Negotiators; and to Conduct a Conference with the City Attorney to Receive Legal Advice in Accordance with C.R.S. 24-6-402(4)(a), (b) and (e), related to Garfield Industrial Development and Haul Routes	Information/Discussion
AFTERNOON WORK SESSION(S)			
3:15pm	A.	Board and Commission Interviews for VALE, Historic Preservation and Housing Commission	Information/Discussion
4:00pm	B.	Vacation Rental Discussion	Information/Discussion
5:45pm	Meeting Set-up		
REGULAR SESSION			
6:00pm	6	Roll Call	Quorum
	7	Pledge of Allegiance	
	8	Agenda Changes	Information
	9	Conflict of Interest Disclosure	Information
	10	27th Street Bridge Update	Information
	11	Citizens Appearing Before Council (for items not on the Agenda-comments limited to 3 minutes)	Information Only
	12	Council Comments	Information/Discussion
	13	Consent Agenda	Discussion and/or Action
	A.	Receipt of Minutes from the February 21, 2019 and March 7, 2019 Regular Meetings	

- B. Ordinance No 10, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado Annexing an Enclave into the Municipal Limits (SECOND READING)
- C. Ordinance No 11, Series of 2019; An Ordinance of the City Council of the City of Glenwood Spring, Colorado Rezoning an Enclave Property Annexed into the Municipal Limits (SECOND READING)
- D. Resolution 2019- 18; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Authorizing and Supporting the Application for a Grant from the U.S. Department of Agriculture for the Creation of a Revolving Loan Fund to Assist Businesses Install Fire Suppression Systems
- E. WWTF Demolition Asbestos Change Order
- F. Intergovernmental Agreement for Public Restroom Installation and Maintenance

ACTIONS AND/OR PRESENTATIONS

- 14 Resolution 2019-19; A Resolution of the City Council of Glenwood Springs, Colorado, Opposing Expansion of the Transfer Trail Mine and Requesting the Bureau of Land Management Conduct and Environmental Impact Statement Analysis
 - A. Resolution 2019-19; A Resolution of the City Council of Glenwood Springs, Colorado, Opposing Expansion of the Transfer Trail Mine and Requesting the Bureau of Land Management Conduct and Environmental Impact Statement Analysis
- 15 Planning Item #08-19; Consideration of an Application to Extend the Deadline for Filing a Development Plan from June 20, 2019 to June 20, 2027 for the Iron Mountain Planned Unit Development
 - A. Planning Item #08-19 - Consideration of a request to extend the deadline for filing a site-specific development plan from June 20, 2019 to June 20, 2027 for the Iron Mountain Planned Unit Development Discussion and/or Action
- 16 **CONTINUED TO MAY 2, 2019** Planning Item #01-19 – Consideration of a Major Site/Architectural Plan Review for a Multi-Tenant Office/Retail Building, Lot 14 Glenwood Meadows No. 2, Wulfsohn Road
 - A. Planning Item #01-19 - Consideration of a Major Site/Architectural Plan Review for a Multi-Tenant Office/Retail Building, Lot 14 Glenwood Meadows No. 2, Wulfsohn Road Discussion and/or Action
- 17 Ordinance No 8, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Amending 100.010.030 (c) Weed and Grass Control (FIRST READING)
 - A. Ordinance No 8, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Amending 100.010.030 (c) Weed and Grass Control to Include the Noxious Weed Management Plan (FIRST READING) Discussion and/or Action
- 18 Ordinance No 13, Series of 2019; An Ordinance of the City of Glenwood Springs, Colorado, Adopting a New Section 090.040.120 regarding Hauling Routes to the Glenwood Springs Municipal Code and Setting Forth the Regulations and Permit Requirement for Commercial Hauling Operations in the City (FIRST READING)

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| <ul style="list-style-type: none"> A. Ordinance No 13, Series of 2019; An Ordinance of the City of Glenwood Springs, Colorado, Adopting a New Section 090.040.120 regarding Hauling Routes to the Glenwood Springs Municipal Code and Setting Forth the Regulations and Permit Requirement for Commercial Hauling Operations in the City (FIRST READING) | Discussion and/or Action |
| <p>19 Ordinance No 14, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Amending Municipal Code to allow Glenwood Springs City Council to Reschedule or Cancel a Regular City Council Meeting by Resolution (FIRST READING)</p> | |
| <ul style="list-style-type: none"> A. Ordinance No 14, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Amending Municipal Code to allow Glenwood Springs City Council to Reschedule or Cancel a Regular City Council Meeting by Resolution (FIRST READING) | Discussion and/or Action |
| <p>20 Ordinance No 15, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, amending Section 070.040.060 of the Municipal Code (FIRST READING)</p> | |
| <ul style="list-style-type: none"> A. Ordinance No 15, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, amending Section 070.040.060 of the Municipal Code (FIRST READING) | Discussion and/or Action |
| <p>21 Resolution 2019-17; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Repealing the Administrative Fee from the Residential Parking Policy</p> | |
| <ul style="list-style-type: none"> A. Resolution 2019-17; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Repealing the Administrative Fee from the Residential Parking Policy | Discussion and/or Action |
| <p>22 SGM Additional Services at Two Rivers</p> | |
| <ul style="list-style-type: none"> A. SGM Additional Services at Two Rivers | Discussion and/or Action |
| <p>23 Board and Commission Appointments for VALE Board, Historic Preservation Commission, and Housing Commission</p> | |
| <ul style="list-style-type: none"> A. Board and Commission Appointments for VALE Board, Historic Preservation Commission, and Housing Commission | Discussion and/or Action |
| <p>24 Report from City Administration</p> | Information |
| <ul style="list-style-type: none"> A. City Manager B. City Attorney C. Correspondence Incoming/Outgoing | |
| <p>25 Adjournment</p> | |



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Spring Cleanup Options

Action Requested: City staff is looking for direction from Council on the extent of changes to be made to the Spring Cleanup process that the Street, SWAT and Parks crews complete each year.

Department: Public Works

Presented By: Matthew Langhorst, Director Public Works

Background Info: Each spring city crews from Streets, SWAT and Parks combine efforts to complete what the city calls "Spring Cleanup". This city wide cleanup plan includes picking up residential trash/debris from city streets that is placed there by the adjoining property owner. The crews sort the piles of trash/debris into the appropriate trucks until they are full and then the trash/debris is brought to the landfill free of charge to the resident. This collection process usually takes 4-6 weeks to complete and approximately 12-14 crew members.

City Code Definition: Spring cleanup debris includes but is not limited to recyclables, tree limbs cut shorter than six (6) feet in length, refrigerated appliances with "Freon free" certificate attached; it does not include garbage, glass, grass clippings, dirt, sod, concrete, or hazardous items such as paint, antifreeze, gas, tires, waste motor oil, televisions, computers, copiers, batteries, air cylinders or gas tanks.

Spring cleanup is a service available to City residents only on the dates and in the geographic zones scheduled by the City Manager. Approved items, limited to five (5) cubic yards per residence, are collected by zone, and items must be placed in front of or adjacent to the residential property, away from regular trash service, fences, and buildings. Approved items may be placed no earlier than two (2) calendar days before the assigned zone start date, and no later than 7:00 a.m. of the zone start date. Community piles are prohibited unless prior written authorization is received from the City Manager. Any recyclable items must be placed separately. Hazardous materials and garbage will not be accepted.

The City is broken into 5 zones and those areas and pick up times are announced to the residents per the code requirements so that residents can be ready for cleanup in their zone. Attached is that zone map for 2019 and the Spring Cleanup Standard Operation Procedures for the spring cleanup process.

City Staff is looking at ways to make Spring Cleanup more efficient for the city Streets, SWAT and Parks crews so that they can begin their spring/summer work plans prior to the month of May each year. Staff has proposed several options to be reviewed that range from contracting out the truck services to completely revamping the Spring Cleanup collection process as a whole. See attached Proposed Spring Cleanup 2019 Options plan.

For some statistical background information in 1980 the city had a population of 4,633 people, in 2017 the population was 9,962 people, That is an increase of 115%, which reflects the current collection amount that we have to complete versus the start of the spring cleanup collection program that was going when Robin arrived here in 1984.

Issues: First issue to consider is with the extent of the cleanup process that city crews have to complete prior to starting their summertime work lists. The crews lose up to 6 weeks of work time that could be utilized to complete more maintenance work on city streets, parks, drainage, fencing, bike paths and

concrete repairs that the city desperately needs. With the onset of winter earlier this year than "normal" and with the severity of the winter months, we are seeing a longer list of summertime repairs needed than normal and the additional time would be helpful to get those crews closer to completing their summer work lists before winter hits again.

Second issue to consider is the viability of Spring Cleanup once the City becomes an MS4 permitted community. After the 2020 census most likely the City of Glenwood Springs will be over a population of 10,000 people, this will put us into the MS4 permitting processes which has stringent requirements for storm water. This will mean that all of that debris collected within the city streets may be adding to pollutants that go into our river system and we could be in violation of our permit. This will need to be reviewed in detail prior to the end of 2020.

Staff Recommendation: Discussion on options for Spring Cleanup in 2019 and beyond.

Spring Clean-Up

Scope of Services

Background:

The City of Glenwood Springs conducts an annual spring clean-up operation for the residents of Glenwood Springs. Spring clean-up allows the City residents to place brush and debris piles within the City streets, crews go neighborhood to neighborhood picking up these piles. Crews use a combination of front end-loaders, manual labor, and tandem dump trucks to load the brush and debris. All material is then taken to the South Canyon landfill. Spring Clean-up requires the entire Streets Department as well as the SWAT department and often members of the Parks department are called on to assist. This means that normal street and storm drain maintenance is put on hold for up to two months.

Scope of Work Required:

During spring clean-up workers use a combination of heavy equipment, tandem dump trucks, and physical labor. Workers must sort through debris piles separating the following items into separate piles;

Shred-able Material

- Mattress
- Furniture
- Wood
- Brush

Trash / Debris

- Common household trash
- Any non shred-able material
- Paper goods

Metal

- All solid metal
 - *Can be recycled*

Restricted items

- Paint
- Batteries
- TVs
- Refrigerators (without freon free sticker)
- Oil
- Gas
- Electronics

Any restricted items are to be left in front of the residence that is responsible for the debris pile.

Once debris piles are sorted workers are shall assist the equipment operators with loading the material into tandem dump trucks. Material shall then be haul to the south canyon landfill and must be deposited in the proper dump site. All landfill tickets must be collected, kept and turned into the Streets Department.

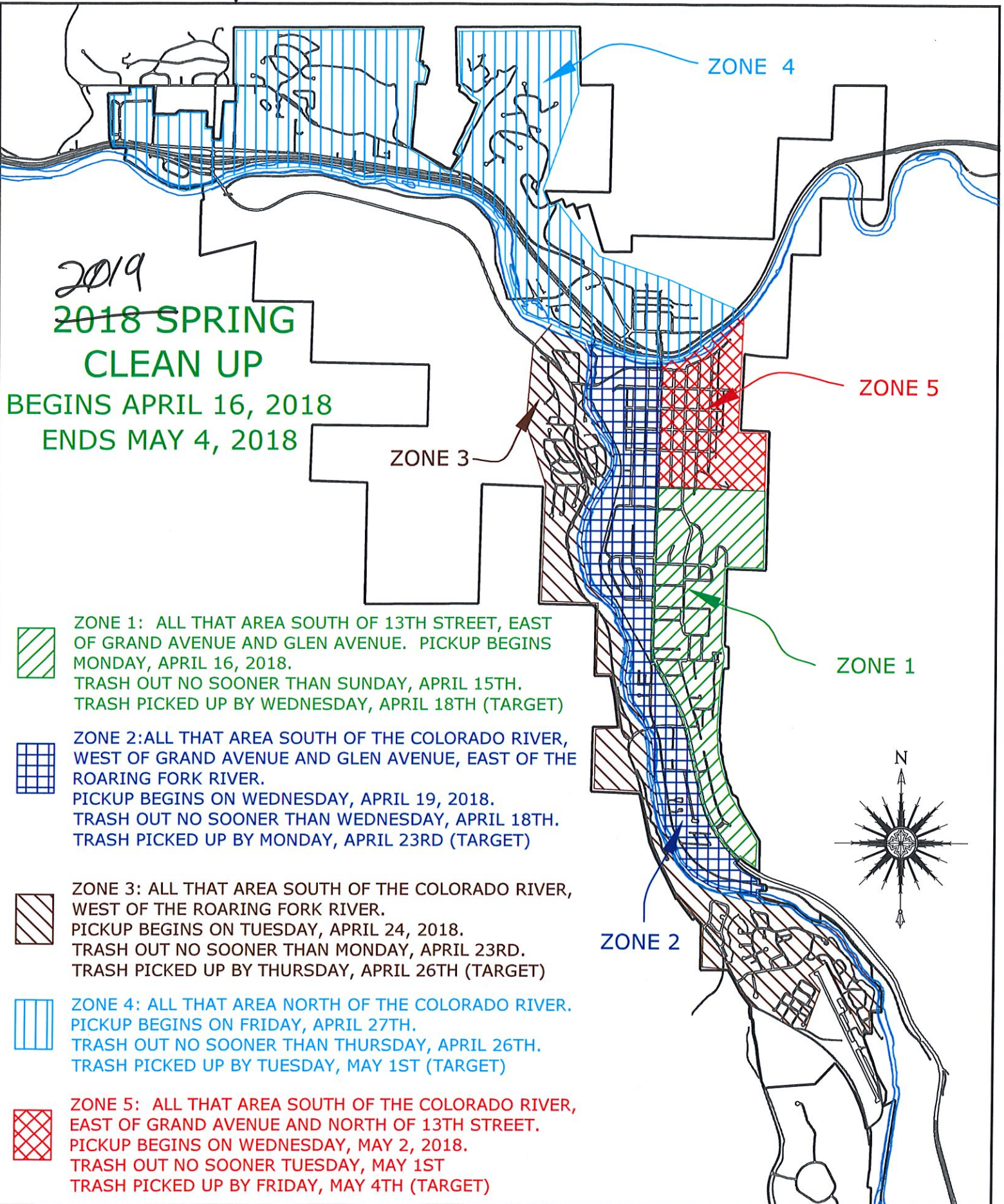
Required Equipment, Vehicles and, Certifications:

Wheeled front end loader w/ clam-shell bucket

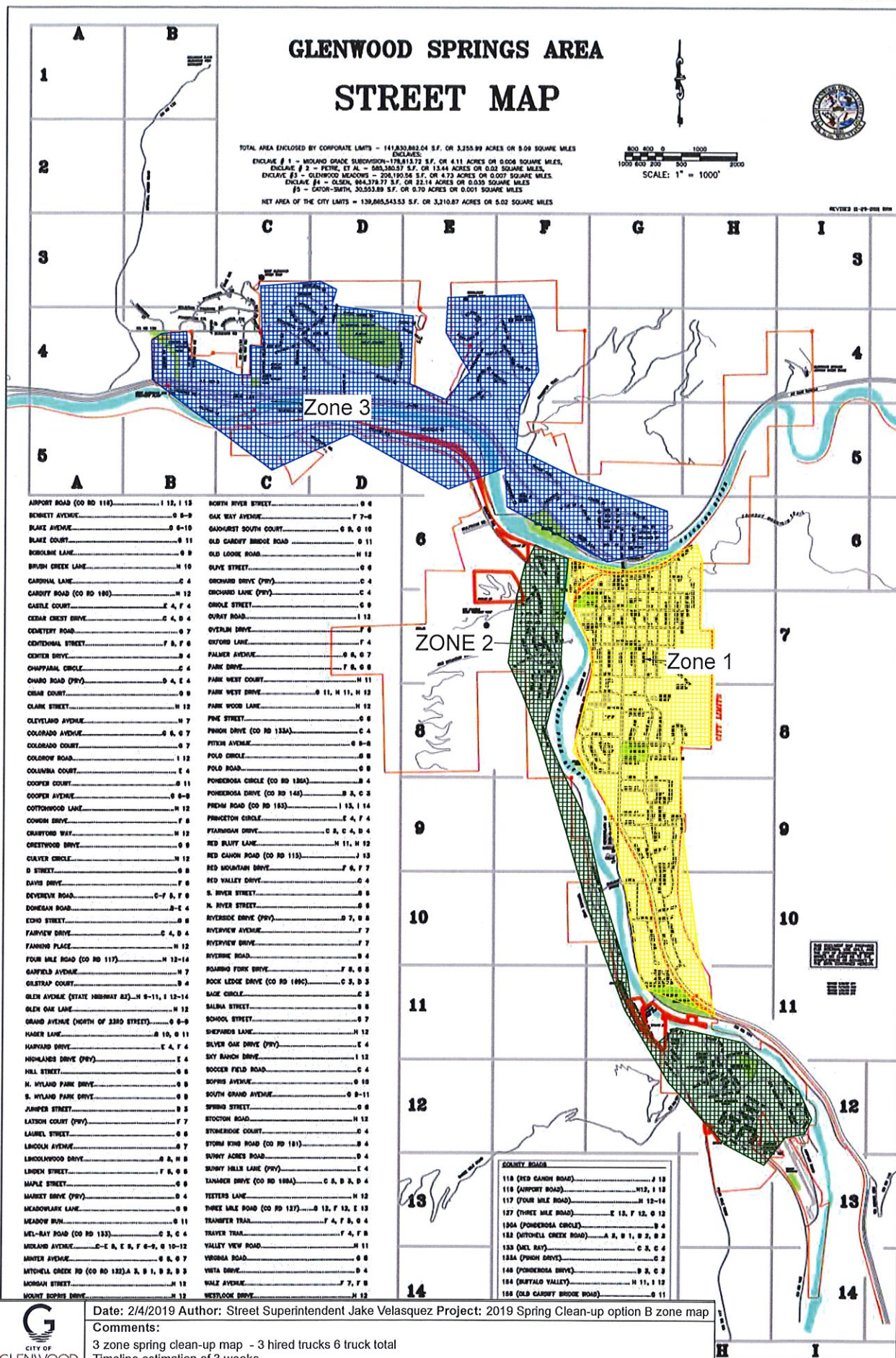
Minimum of 4 tandem dump trucks with load covering tarps (minimum of 12 yard capacity)

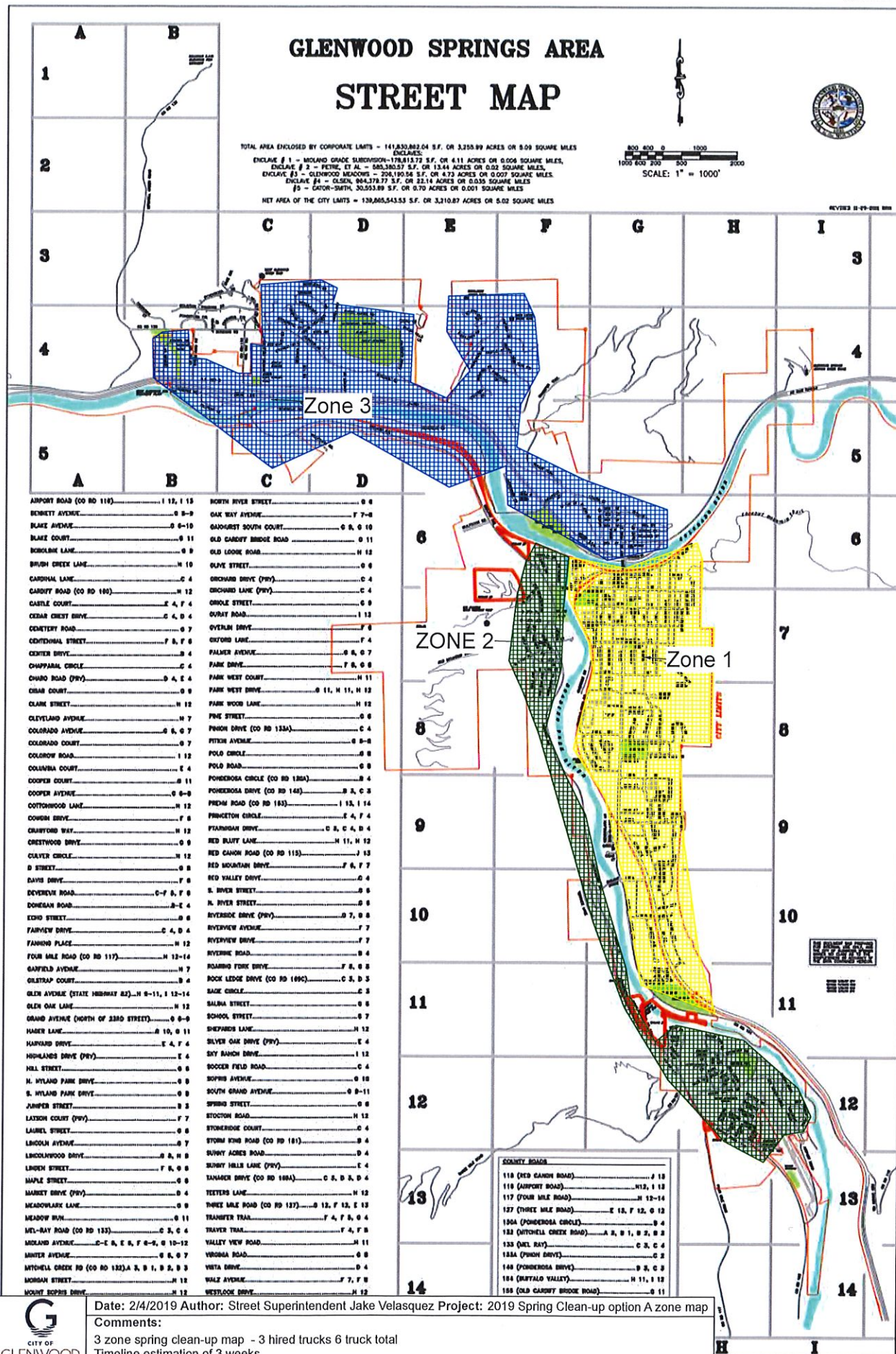
Certified flaggers for mobile traffic control operations

Example



Example





City of Glenwood Springs Spring Cleanup 2019 Options

Background:

The City of Glenwood Springs conducts an annual spring clean-up operation for the residents of Glenwood Springs. Spring clean-up allows the City residents to place brush and debris piles within the City streets, crews go neighborhood to neighborhood picking up these piles. Crews use a combination of front end-loaders, backhoes, tandem dump trucks and manual labor to load the brush and debris. All materials are then taken to the South Canyon landfill at the Cities expense. Spring Clean-up requires the entire Streets Department crew (9 members), the SWAT department crew (3 members) and often members of the Parks Department are called in to assist. This means that normal street and storm drain maintenance is put on hold for 4-6 weeks in the spring. The scope of services for spring clean-up include separating the piles of debris into the categories noted below:

Shred-able Material

- Mattress
- Furniture
- Wood
- Brush

Trash / Debris

- Common household trash
- Any non-shred able material
- Paper goods

Metal

- All solid metal
 - *Can be recycled*

Restricted items:

- Paint
- Batteries
- TVs
- Refrigerators (without freon free sticker)
- Oil
- Gas
- Electronics

For the work that was performed in 2018 the City utilized 1,408.5 manhours for debris collection, 316.5 hours of loader equipment time, 560.3 hours of trucking time, which

accounted for 250 trips to the landfill at a fuel consumption total of 1,693.2 gallons of diesel. With labor rates, equipment costs, fuel and landfill tipping fees the Streets Department calculated the total cost for the 2018 spring clean-up at \$102,591.10.

For the spring of 2019 the City plans on speeding up the process and freeing up City crews to perform their routine maintenance tasks by tagging onto one of our two trucking contracts and hiring up to 3 trucks and drivers to assist with hauling debris to the landfill. This will free up the 3-man crew that we need to start on large scale pothole repairs in town.

Mission Plan for 2019 Spring Clean-up:

Complete curb side pickup as the residents of Glenwood expect during the months of April and May. Options A-C describe how to complete this task in a “normal” routine are listed below.

Options for Updates to 2019 Spring Clean-up (A – C):

Option A is a standard looking spring cleanup effort with some outside resources utilized for efficiency and to free up City staff. Options B and C would change the standard cleanup effort by asking residents to drop off their metal and brush at a central collection site instead of placing those items on the curb. With a central collection point for metal and brush, the City crews that would be assigned to debris pick up would be able to move more efficiently through the different neighborhoods as they would not need to sort through piles. This central drop off located could be at the rodeo grounds and would require two City crew-members to staff it, this staffing could be sourced from the SWAT and Parks Departments. The rodeo ground crew would be responsible for enforcing the regulations for metal and brush collection as well as the chipping of brush as it comes in. Metal will be deposited directly into GreenZone metal collection cans and they will be contracted to haul off the metal.

Option A:

This option is built around 6 trucks and 2 loaders working in each zone, we would have to hire 3 trucks for this option freeing up 3 Street Department crew to work with the new pothole trailer and start fixing potholes and bad areas of roadway in town as soon as the trailer is available for use in March.

Option	Hourly Cost	Number of Trucks hired	Weekly Cost	Number of Weeks (estimate)	Total cost
A	90	3	\$10,800	5-6	\$54k to \$64k

In this option 3 clean-up zones would be assigned with each zone having a target completion of 1.5+ weeks, if crews finished a zone early they would be pulled off until the start of the next clean-up zone, with the hired trucks being cut until needed again. Crews would start at opposite ends of a zone and work toward each-other meeting in the middle. With 3 hired trucks crews would have a larger capacity for hauling material, reducing the down time for the

loaders. This option would also allow 3 City crew-members to continue with routine maintenance.

Estimated timeline: 5-6 weeks.

Option B:

This option is built around 6 trucks and 2 loaders working in each zone, we would have to hire 3 trucks for this option freeing up 3 Street Department crew to work with the new pothole trailer and start fixing potholes and bad areas of roadway in town as soon as the trailer is available for use in March. **Options B and C would change the standard cleanup effort by asking residents to drop off their metal and brush at a central collection site instead of placing those items on the curb.**

This option cuts the estimated timeline with the new central collection location for metal and brush.

Option	Hourly Cost	Number of Trucks Hired	Weekly Cost	Number of Weeks (estimate)	Total cost
B	90	3	\$10,800	3	\$32k to \$43k

In this option 3 clean-up zones would be assigned with each zone having a target completion of 1 to 1.25 weeks, if crews finished a zone early they would be pulled off until the start of the next clean-up zone, with the hired trucks being cut until needed again. Crews would start at opposite ends of a zone and work toward each-other meeting in the middle. With 3 hired trucks crews would have a larger capacity for hauling material, reducing the down time for the loaders. This option would also allow 3 City crew-members to continue with routine maintenance. Two crew members from either SWAT or Parks will be manning the central collection site. Either during or upon completion of neighborhood spring cleanup truck and loaders will be mobilized to the rodeo grounds to remove the collected piles of chipped brush.

Estimated timeline: 3 – 4 weeks

Option C:

This option is almost identical to option A with the exception of having one less hired truck. The loss of this truck would slow the process down by up to 1 week. **Options B and C would change the standard cleanup effort by asking residents to drop off their metal and brush at a central collection site instead of placing those items on the curb.**

Option	Hourly Cost	Number of Trucks hired	Weekly Cost	Number of Weeks (estimate)	Total cost
B	90	2	\$7,200	4 to 5	\$28k to \$36k

In this option, 3 clean-up zones would be assigned with each zone having a target completion of 5 to 7 days, if crews finished a zone early they would be pulled off until the start of the next clean-up zone with the hired trucks being cut until needed again. crews would start at opposite ends of a zone and work toward each-other meeting in the middle. With 2 hired trucks crews would have a larger capacity for hauling material, reducing the down time for the loaders however; the reduction from 3 to 2 hired trucks would slow crews down, cause loader downtime and would extend the clean-up effort by up to one week. This option would also allow 3 City crew-members to continue with routine maintenance.

Estimate timeline: 4 - 5 weeks

Options for Updates to 2019 Spring Clean-up (D - E):

Option D:

This option would change the look of spring clean-up and move it to two centralized collection locations in town and would require residents to bring their trash to these locations instead of a curb side pickup. The City would create an RFP to be bid out for collection and hauling services. The look of this plan would include setting up two sites with multiple 40-yard trash collection cans to separate items being brought to the site. Part of the RFP would be for the hauler to provide staffing for the site and temporary fencing for the site to control the intake of materials in off hours. These sites could be run for a long weekend, for a week or any time frame that Council and Staff feels is appropriate. This system would allow a local trash hauler to bring separated cans to the correct locations at the landfill presorted. This gives the hauler full control with what is going into the landfill versus being used for other processes at the landfill. In this option the City would collect brush at the rodeo grounds and the City would chip this material on its own. GreenZone would also be part of the collection process with metal collection provided in their 40-yard containers that would be removed by GreenZone as needed. This option could be set up as an Earth Day type of event with the opportunity to make it a community event that Parks could possibly help set up and make it a new tradition for the City. It could include music and have a festive atmosphere.

This option would save the City labor time for the 12 employees that we utilize for the collection of trash during spring cleanup and would let Streets Department and SWAT start on their spring, summer and fall work 4-6 weeks earlier. This means potholes filled, culverts jetted, streets swept, and overall repair and maintenance of the City infrastructure completed over a longer period of time.

Option E:

This option would change the look of spring clean-up and move it to a voucher system as the County and other surrounding communities do. The City would provide each residential unit in town, based on either electric or water billings, a Landfill voucher to bring up a full load of material for free. This option would save the City labor time for the 12 employees that we

utilize for the collection of trash during spring cleanup and would let Streets Department and SWAT start on their spring, summer and fall work 4-6 weeks earlier. This means potholes filled, culverts jetted, streets swept, and overall repair and maintenance of the City infrastructure completed over a longer period.

Costs:

The cost for hiring a hauling company ranges between \$28,000 to \$64,800 these costs could potentially be absorbed in part by the street's operations landfill expense line item. We would have to find a funding sources as well; some likely candidates could be the equipment rental fund from Street Tax, Downtown Maintenance Fund or an A&I or Capital Fund.

In 2018 the total landfill tipping fees paid by the City at the landfill for spring cleanup were \$27,068.05 with a total budgeted amount of \$50,000. The Streets Department bill approximately \$5,000 to this line items over the remainder of the year for scheduled work, so \$18,000 would be available to help fund the truck leasing fees. With option A this puts the budget at a negative \$36,000 to \$46,000. Option B would run a negative of \$14,000 to \$25,000 and Option C budget would be a negative \$10,00 to \$18,000. These negative funds are estimates and would need to be funded out of another City budget.



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Board and Commission Interviews for VALE, Historic Preservation and Housing Commission

Action Requested: Board and Commission Interviews for VALE, Historic Preservation and Housing Commission

Department: City Clerk

Presented By: Catherine Fletcher, City Clerk

Background Info: Some of the boards and commissions have members with expiring terms. Applications have been submitted.

1 open seat for VALE with 3 applicants

2 open seats for historic preservation boards and 2 applicants

2 open seats for the housing commission and 2 applicants

Issues:

Staff Recommendation:

**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name	Patti Cummings
Home Address	163 County Road 132, Glenwood Springs, CO 81601
Mailing Address	PO Box 73, Glenwood Springs, CO 81602

Section 2 - Contact Information

Home	Work	970-945-1133
Fax	Mobile	720-281-2145
Email	mountainocean@msn.com	

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

My interest in this position comes from long experience in the Dependency and Neglect system as both a Court Appointed Special Advocate and the Executive Director of CASA of the Ninth in Glenwood Springs. Currently I am an Independent Contractor for River Bridge Regional Center providing Forensic Interview services to child victims and/or witnesses of sexual and physical abuse.

2. Have you ever been the victim of a crime?

I had a car stolen in 1987 or 1988 while living in Wichita, Kansas. It was found nearby, stripped down.

I was hit by a drunk driver in 1998 or 1999 in Boulder, CO. I was not injured but the driver was. I was not required to testify due to a guilty plea by the driver.

3. Have you ever been convicted of a crime, and if so, what was the violation?

I was arrested and subsequently pled guilty to a misdemeanor DWAI on 12-31-1999.



City of Glenwood Springs
Office of the City Clerk
101 West 8th Street
Glenwood Springs, CO 81601
Fax: 970-945-5023
Email: catherine.mythen@cogs.us

VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

No

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

I currently serve as a state-appointed member of the Western Region Division of Youth Services Community Board.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes

Thank you for your interest and time commitment in serving your community

Please complete and submit this application online or
Mail to: City Clerk, 101 West 8th Street, Glenwood Springs, CO 81601;
Fax to: 970-945-5023;
Email: catherine.mythen@cogs.us



City of Glenwood Springs

Office of the City Clerk
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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:

(8) Victim's and Witnesses Assistance and Law Enforcement Board:

- a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.
- b. (R 20-05 §2)
- c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:

(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.

- (1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.
- (2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)
- (3) The Victim's and Witnesses Assistance and Law Enforcement Fund, hereinafter referred to as the "Fund," consist of all monies paid as a surcharge as provided in Subsection (2) above. All monies deposited in the Fund shall be deposited in an interest-bearing account, and all interest earned by monies in the Fund shall be credited to the Fund. The City Manager, by and through the Finance Director, shall be responsible for establishing a separate fund for purposes of accounting for the revenues and expenditures. At the conclusion of each fiscal year, all monies remaining in the Fund shall remain in the Fund for allocation as hereinafter set forth.
- (4) The Board shall disburse monies from the Fund in the following manner:
 - a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.
 - b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims= and witnesses= services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances



City of Glenwood Springs

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Glenwood Springs, CO 81601
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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

(6) The Board is authorized to accept and evaluate all applications for disbursement of funds, whether emanating from victims, witnesses or law enforcement agencies. Applications for disbursement shall be made upon forms prescribed by the Board, and made available by the Municipal Court and the Police Department. The Board shall establish its own criteria for evaluating applications for disbursement, and nothing herein contained shall obligate the Board to make disbursement of any funds available to it. Upon a finding by the Board that a disbursement shall be made from the Fund, the Board shall submit a written request for payment to the Finance Department, which shall then remit payment in accordance with the request.

(7) The Board is required to submit minutes of its meetings to the City Council at the next regular Council meeting following the Board's meeting.



City of Glenwood Springs

Office of the City Clerk

101 West 8th Street

Glenwood Springs, CO 81601

Fax: 970-945-5023

Email: Catherine.mythen@cogs.us

HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name

John Matthew Spidell

Home Address

322 Silver King Court, GWS 81601

Mailing Address

same

Section 2 - Contact Information

Home 970-930-6169

Work

Fax

Mobile

719-660-9984

Email jjglenwood@gmail.com

Section 3 – Occupation

Occupation Restaurant Owner - Jimmy John's 1331 Grand Ave, 81601

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

If see and feel the extreme need for first time job seekers and first time home owners to have option

2. What do you view as your role if selected as a member of the Housing Commission?

A great team player interested in getting results

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

I hire first time and seasoned workers at all levels. I've also owned and managed vrbo's but I'm r

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

Not specifically in housing, but I've served at a planning commissioner in Castle Rock, CO and have

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing is our life blood for diversity and balance. We need all kind of entry points and options for

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes.

7. What experience do you have working with people on a board, commission or committee?

City Planning Commission Castle Rock, CO 2008/9, Past President of the American Society of Lan

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes



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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

POWERS AND DUTIES OF THE HOUSING COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the River Commission:

(11) Glenwood Springs Housing Commission.

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Membership should reflect a broad representation of organizations and other entities which are related to housing, including but not limited to the financial community, the building and development community, the real estate industry, and organizations which support low-income residents of the community.

(k) Powers and duties of Housing Commission. The powers and duties of the Housing Commission shall be:

- (1) To investigate, study and report to the City Council any and all matters concerning housing issues which directly affect the City, including the preparation of a Comprehensive Housing Affordability Strategy (CHAS).
- (2) To assist City Council in defining the nature and scope of housing opportunities in the City.
- (3) To meet with the City Council on an annual basis to identify which housing issues require priority attention.
- (4) To investigate, study and report to the City Council on grants, donations and other forms of funding to assist in meeting the housing needs of the City.
- (5) To perform functions concerning oversight of housing issues or functions as delegated by the City Council, including monitoring the implementation of activities as described in the CHAS.
- (6) To appoint subcommittees as necessary to carry out the foregoing functions subject to the approval of the City Council.



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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name Joyce Jenkins
Home Address 340 13th St., #3; Glenwood Springs CO 81601
Mailing Address same

Section 2 - Contact Information

Home 720.431.2547 Work none
Fax none Mobile 720.431.2547
Email joycejenkins@msn.com

Section 3 - Occupation

Occupation retired attorney

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

As a lawyer since 1985, I am intimately familiar with and appreciative of confidentiality requirements.

2. Have you ever been the victim of a crime?

No.

3. Have you ever been convicted of a crime, and if so, what was the violation?

No.



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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

From 2004 to 2011, I was in-house counsel for the 911 database manager, Intrado, Inc. of Longmont. Many Intrado employees had been first responders or had served in law enforcement prior to joining the company. I worked and socialized with several of them, and one, who had been a state patrolperson, is a good friend. However, my contacts with that person and other Intrado employees related to business and personal interests as opposed to law enforcement issues. Those relationships would not affect decisions I would make as a VALE board member one way or another.

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

Yes. I assume this question seeks information about experience in collaborative decision-making. Note I have no prior governmental decision-making experience, either volunteer or elected. In my rather distant past (1970's), I served as president of the Mesa County League of Women Voters (LWV). In that capacity, I chaired board meetings and participated in committee meetings where collective decision-making took place. I also served on the state LWV board where I participated in discussion and resolution of matters that affected the membership statewide. Also while residing in Grand Junction at that time, I was active in a citizen downtown improvement group, the Grand Junction Renaissance Committee, which worked with homeowners to improve maintenance and upkeep of their properties. This also required numerous instances of joint decision-making. The practice of law is a heavily collaborative endeavor from what case to take on to trial to finalization of an appellate brief. Even a sole practitioner reaches out to other professionals when making decisions that affect her or his practice. Accordingly, most of my experience with decision-making groups comes from my legal career. My legal decision-making focused on hearing different points of view and reaching a consensus as to the best course of action based on the facts of the individual case, precedent and ethical considerations. After I quit practicing law, I joined the Peace Corps for two years where I ended up in Cambodia teaching English to rural high school students. Part of my mission was to help Cambodian English teachers improve their instruction. This challenge meant that much of my work concentrated on joint decision-making sessions with teachers, principals and administrators to improve curriculum and teaching methods using TEFL (Teaching English as a Foreign Language) principles. Also, I participated in a number of joint efforts with other Peace Corps volunteers which required group consultation and delegation of workload. Recently, I have taken on the responsibility of serving as a Precinct Captain for the Garfield County Democratic Party, something which demands group participation, planning and decision-making and follow-through.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes.

Thank you for your interest and time commitment in serving your community

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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD
(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:

(8) Victim's and Witnesses Assistance and Law Enforcement Board:

- a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.
- b. (R 20-05 §2)
- c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:

(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.

(1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.

(2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)

(3) The Victim's and Witnesses Assistance and Law Enforcement Fund, hereinafter referred to as the "Fund," consist of all monies paid as a surcharge as provided in Subsection (2) above. All monies deposited in the Fund shall be deposited in an interest-bearing account, and all interest earned by monies in the Fund shall be credited to the Fund. The City Manager, by and through the Finance Director, shall be responsible for establishing a separate fund for purposes of accounting for the revenues and expenditures. At the conclusion of each fiscal year, all monies remaining in the Fund shall remain in the Fund for allocation as hereinafter set forth.

(4) The Board shall disburse monies from the Fund in the following manner:

- a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.
- b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims= and witnesses= services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances



City of Glenwood Springs

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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

(6) The Board is authorized to accept and evaluate all applications for disbursement of funds, whether emanating from victims, witnesses or law enforcement agencies. Applications for disbursement shall be made upon forms prescribed by the Board, and made available by the Municipal Court and the Police Department. The Board shall establish its own criteria for evaluating applications for disbursement, and nothing herein contained shall obligate the Board to make disbursement of any funds available to it. Upon a finding by the Board that a disbursement shall be made from the Fund, the Board shall submit a written request for payment to the Finance Department, which shall then remit payment in accordance with the request.

(7) The Board is required to submit minutes of its meetings to the City Council at the next regular Council meeting following the Board's meeting.



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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD**

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Tara D. Rosinski

Home Address

46151 Hwy 6 + 24 Glenwood Springs CO 81601

Mailing Address

" " "

Section 2 - Contact Information

Home

Work

Fax

Mobile

970-618-3519

Email

tara.mmd@gmail.com

Section 3 - Occupation

Occupation

Server - The Brew Pub

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

Work with my Probation officer in helping people with their addictions.

2. Have you ever been the victim of a crime?

yes

3. Have you ever been convicted of a crime, and if so, what was the violation?

I am over a year sober. During my addiction I got 2 DUI's and a criminal mischief charge. Since sober, no crimes.

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VICTIM ASSISTANCE AND LAW ENFORCEMENT**(VALE) BOARD****APPLICATION**

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

NO

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

I attend all District meetings and I have attended the Female Offender Program meetings where decisions are made to help girls get sober.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes

Thank you for your interest and time commitment in serving your community

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VICTIM ASSISTANCE AND LAW ENFORCEMENT**(VALE) BOARD****APPLICATION**

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:(8) Victim's and Witnesses Assistance and Law Enforcement Board:

a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

b. (R 20-05 §2)

c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.

(1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.

(2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)

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(4) The Board shall disburse monies from the Fund in the following manner:

a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.

b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims' and witnesses' services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances

**City of Glenwood Springs**

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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Home Address

Mailing Address

Section 2 - Contact Information

Home

Work

Fax

Mobile

Email

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Historic Preservation Commission?

I grew up in Glenwood Springs and have always been interested in its history. When I returned to the City to pursue my legal career I was looking for a way to give back to the community. Serving on the Commission allows me to do that by preserving the City's history. I was appointed for my first term in 2016 and hope to be reappointed.

2. What do you view as your role if selected as a member of the Historic Preservation Commission?

Providing guidance and insight regarding processes, procedures, and application of standards to and use applications and other matters that come before the Commission.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (continued)

3. Do you have any professional experience in one of the following disciplines: architecture, landscape architecture, architectural history, history, archaeology, planning, geography, anthropology, building trades, law or real estate? (Note - professional experience in these fields is not a requirement for appointment to the Historic Preservation Commission.)

Yes, law, real estate, and land use

4. Please list degrees received, school/college/university attended and area of study.

Glenwood Springs High School graduate
CU Boulder - BA, environmental studies
University of Utah S.J. Quinney College of law - JD

5. The Historic Preservation Commission generally attends one meeting a month in the evening. Do you have any existing time commitments that will hamper your ability to serve?

Occasional evening meetings for work and other organizations I am involved with, none of which occur the first Monday of the month

6. What experience do you have working with people on a board, commission or committee?

My legal practice includes representing other municipalities and special districts. I also served on various boards throughout high school, college, and law school.

Thank you for your interest and time commitment in serving your community

Please complete this application and forward it to the City Clerk either by mail to: 101 West 8th Street, Glenwood Springs, CO 81601; fax to: 970-945-5023; email: catherine.mythen@cogs.us; or online:

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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE HISTORIC PRESERVATION COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the Historic Preservation Commission:

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Powers and Duties:

(I) Powers and Duties of Historic Preservation Commission. The powers and duties of the Historic Preservation Commission shall be:

- (1) To recommend to City Council methods for the protection and preservation of the City's historic and cultural heritage, including, but not limited to, the designation of historic landmarks and districts by appropriate regulations.
- (2) To recommend to City Council methods for enhancing property values and the stabilization of historic neighborhoods.
- (3) To recommend to City Council methods for increasing economic and financial benefits, including, but not limited to, City attractions.
- (4) To provide educational opportunities to increase public appreciation of the City's unique heritage.
- (5) To do any other tasks related to the historic preservation of resources in the community of Glenwood Springs.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Home Address

Mailing Address

Section 2 - Contact Information

Home

Work

Fax

Mobile

Email

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Historic Preservation Commission?

I have had the honor of serving as a member of the Historic Preservation Commission for multiple years at this point. I would enjoy continuing my work to help ensure the preservation of the historical treasures of Glenwood Springs. I believe that the history of our city is a vital component of both its unique culture and its appeal to visitors and tourists. I also believe that it is critical for our city to help balance the needs of development against the need to protect Glenwood Springs unique architectural treasures.

2. What do you view as your role if selected as a member of the Historic Preservation Commission?

To review and advise City Council on the impact of any development plans upon the unique architectural treasures of Glenwood Springs. To assist in the preservation and promotion of Glenwood Springs unique history. To help ensure and protect our historical legacy for future generations.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (continued)

3. Do you have any professional experience in one of the following disciplines: architecture, landscape architecture, architectural history, history, archaeology, planning, geography, anthropology, building trades, law or real estate? (Note - professional experience in these fields is not a requirement for appointment to the Historic Preservation Commission.)

No.

4. Please list degrees received, school/college/university attended and area of study.

Bachelor of the Arts, University of Michigan, History Major
Master of the Arts, Eastern Michigan University, History Major

5. The Historic Preservation Commission generally attends one meeting a month in the evening. Do you have any existing time commitments that will hamper your ability to serve?

No

6. What experience do you have working with people on a board, commission or committee?

I have now served multiple years with the Glenwood Springs Historic Preservation Commission.

Thank you for your interest and time commitment in serving your community

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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE HISTORIC PRESERVATION COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the Historic Preservation Commission:

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Powers and Duties:

(I) Powers and Duties of Historic Preservation Commission. The powers and duties of the Historic Preservation Commission shall be:

- (1) To recommend to City Council methods for the protection and preservation of the City's historic and cultural heritage, including, but not limited to, the designation of historic landmarks and districts by appropriate regulations.
- (2) To recommend to City Council methods for enhancing property values and the stabilization of historic neighborhoods.
- (3) To recommend to City Council methods for increasing economic and financial benefits, including, but not limited to, City attractions.
- (4) To provide educational opportunities to increase public appreciation of the City's unique heritage.
- (5) To do any other tasks related to the historic preservation of resources in the community of Glenwood Springs.



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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name

John Matthew Spidell

Home Address

322 Silver King Court, GWS 81601

Mailing Address

same

Section 2 - Contact Information

Home 970-930-6169

Work

Fax

Mobile

719-660-9984

Email jjglenwood@gmail.com

Section 3 – Occupation

Occupation Restaurant Owner - Jimmy John's 1331 Grand Ave, 81601

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

If see and feel the extreme need for first time job seekers and first time home owners to have option

2. What do you view as your role if selected as a member of the Housing Commission?

A great team player interested in getting results

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

I hire first time and seasoned workers at all levels. I've also owned and managed vrbo's but I'm r

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

Not specifically in housing, but I've served at a planning commissioner in Castle Rock, CO and have

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing is our life blood for diversity and balance. We need all kind of entry points and options for

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes.

7. What experience do you have working with people on a board, commission or committee?

City Planning Commission Castle Rock, CO 2008/9, Past President of the American Society of Land

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes



City of Glenwood Springs

Office of the City Clerk

101 West 8th Street

Glenwood Springs, CO 81601

Fax: 970-945-5023

Email: Catherine.mythen@cogs.us

HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

POWERS AND DUTIES OF THE HOUSING COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the River Commission:

(11) Glenwood Springs Housing Commission.

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Membership should reflect a broad representation of organizations and other entities which are related to housing, including but not limited to the financial community, the building and development community, the real estate industry, and organizations which support low-income residents of the community.

(k) Powers and duties of Housing Commission. The powers and duties of the Housing Commission shall be:

- (1) To investigate, study and report to the City Council any and all matters concerning housing issues which directly affect the City, including the preparation of a Comprehensive Housing Affordability Strategy (CHAS).
- (2) To assist City Council in defining the nature and scope of housing opportunities in the City.
- (3) To meet with the City Council on an annual basis to identify which housing issues require priority attention.
- (4) To investigate, study and report to the City Council on grants, donations and other forms of funding to assist in meeting the housing needs of the City.
- (5) To perform functions concerning oversight of housing issues or functions as delegated by the City Council, including monitoring the implementation of activities as described in the CHAS.
- (6) To appoint subcommittees as necessary to carry out the foregoing functions subject to the approval of the City Council.



City of Glenwood Springs

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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name Erin Bradshaw

Home Address 367 County Rd 130 Glenwood Springs CO 81601

Mailing Address Po Box 1911 Glenwood Springs CO 81602

Section 2 - Contact Information

Home _____ Work (970) 925-2075

Fax _____ Mobile _____

Email erin@advocatesafehouse.org

Section 3 – Occupation

Occupation Housing Advocate with the Advocate Safehouse Project

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

Please See Attached for Answers to these questions

2. What do you view as your role if selected as a member of the Housing Commission?

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.
5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?
6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?
7. What experience do you have working with people on a board, commission or committee?
8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

As a housing advocate and lifetime resident of Glenwood Springs, I would like to be a voice for those who are in need of a safe and affordable home.

2. What do you view as your role if selected as a member of the Housing Commission?

I would like to help find solutions for more affordable housing options.

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

This is all new to me; however, being in Glenwood for over 30 years I have seen a tremendous amount of change. I am excited to potentially join a commission that is looking for solutions to a big issue in the City of Glenwood.

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

No, I have not.

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing and the Housing Commission are a big part of the character and function of our town. Helping find solutions and guides that will help keep the wages and cost of living on and equal playing field.

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes

7. What experience do you have working with people on a board, commission or committee?

Very Little

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes



City Council Staff Report Attachment Discussion and Analysis

The following is a description of current regulation, summary of public opinion, and municipal examples related to each topic area.

1. Application Fee

Current regulations:

Currently the vacation rental application fee is set to a one-time payment of \$110. There is no renewal fee for the two year permit. Previously, up until April 2018, the fee of \$110 was charged biennially, first at time of application, and then every two years at time of renewal. On January 4, 2018, Council held a work session to discuss potential changes to the Code of Ordinances related to vacation rentals. During that discussion, Council directed staff to work toward allowing the fees for short-term rentals and accessory tourist rentals to be paid once, rather than charged every two years. Resolution 2018-29 – approved August 2, 2018, establishing a Development Review Fee, set the vacation rental application fee at \$110 with \$0 renewal fee.

Public Opinion:

The public opinion captured through the online survey and public meeting, expressed a strong desire to set the permit fee to a recurring basis. Sixty-one percent of survey respondents favored an annual fee over a one-time fee. Of those who favored an annual fee, sixty-three percent desired an annual fee over \$200.

At the public meeting, 56 participants had the opportunity to further look at the application fee question. Staff proposed six new options based on the feedback received from the survey. Those options included a choice between an annual fee or one-time fee, with additional options in each category for how much the fee should be. Seventy-eight percent of respondents indicated an annual fee of \$100-\$300 was preferable. For further insight into the reasoning and discussion behind this choice please see Exhibit F. *Public Meeting Summary*.

Other Municipalities:

Application fees charged by other Municipalities for vacation rentals varies widely. The chart on the next page, taken from Exhibit D. and using the concepts from a best practices article published by Lodging Revs¹, places Municipal approaches on a scale of regulation ranging from strict policy, to an intermediate middle option, to a lenient or encouraging policy. Those options on the scale are represented as Restrict, Balance, and Encourage. Municipal fee costs are placed from high (Restrict) to low (Encourage) below to illustrate the various approaches that exist.

¹ Best Practices in Regulation and Taxation of Short Term Rentals. <https://www.lodgingrevs.com/best-practices/>. Last visited 2/21/2019.

ISSUE	RESTRICT	BALANCE	ENCOURAGE
	\$250 Annually and up	\$75-200 Annually	Business License fee or less than \$50 annually
Fee	<u>Crested Butte</u> : \$750 Annually	<u>Blue River</u> : \$200 one time/ \$75 renewal	<u>Denver</u> : \$25 annually
	<u>Georgetown</u> : \$500/\$250 Renewal	<u>Breckenridge</u> : \$175 annual/Admin fee \$50	<u>Silverthorne/Frisco/Avon/Aspen</u> :
	<u>Durango</u> : \$750 Land Use Permit	<u>Boulder</u> : \$130/\$105 renewal	Business License only
		<u>Telluride</u> : \$165 +\$22/bedroom annual	
		<u>Estes Park</u> : \$200 +\$50/bedroom	
		<u>Lyons</u> : \$175/ \$50 Renewal	
		<u>Clear Creek County</u> : \$250 one time fee	<u>GLENWOOD SPRINGS</u> : One-time \$110, business
		<u>Vail</u> : \$150/annually	license

Planning and Zoning Recommendation

The commissioners gave careful thought to public opinion, and data regarding staff time, including possible building inspections, to arrive at a recommendation for an application fee. Consideration was given to the fact that a renewal application involves less staff time than the initial application review process, and therefore a reduced renewal fee is appropriate.

The Commission arrived at a unanimous recommendation of an initial application fee of \$300, followed by a reduced renewal fee of \$150 biennially following the current 2-year permit cycle.

2. Building Inspections and Occupancy Limits

Current regulations:

Building inspections for vacation rentals were previously required with all applications from 2012 through 2017. During that time after an applicant submitted their vacation rental application they would schedule a building inspection with the Building Department as indicated on the permit application which is attached for reference in Exhibit O. *Old Permit Application*. The Building Inspector would set up a time to meet at the property and inspect for a variety of life safety measures enumerated within Glenwood Springs Building Code and set occupancy limits which were based on the size and number of bedrooms per requirements of the International Property Maintenance Code.

In November 2017, City Council opted to forgo building inspections in favor of a notarized applicant affidavit that stated all municipal code requirements were met and indicated all safety responsibility was on the applicant. This action is attached in Exhibit J. *Resolution 17-54*. Since then vacation rentals have not required a building inspection however code still includes stipulation for occupancy based on the International Property Maintenance Code (IPMC). The IPMC is attached in Exhibit K. *International Property Maintenance Code*.

Public Opinion:

It was clear from questions regarding inspections and occupancy that respondents favor requiring building inspections (70%) to not (22%) as well as prefer that the building department set an occupancy limit for each vacation rental (73%) as opposed to no occupancy limit (19%).

At the public meeting 82% (41 of 50 participants) indicated that fire and safety inspections should be required (Question 4). Additionally, participants were asked separately about setting occupancy limits (Question 5). Seventy-six percent opted for occupancy limitations set by the building department and 24% that indicated it was not necessary. Of the respondents that indicated a preference for occupancy limits, the majority favored a maximum occupancy of 2 people per bedroom. The remainder chose the IPMC that allows for 2 people per bedroom plus additional per square footage standards.

Other Municipalities:

Some municipalities have chosen to enforce a maximum occupancy unless the applicant applies for a conditional or special use permit to be reviewed at a public hearing. Some of those examples are:

ISSUE	RESTRICT	BALANCE	ENCOURAGE
	Maximum People per unit	Square Foot Based	No Occupancy Limitation
Occupancy	<u>Estes Park</u> : Max 8, Special Use Review for Additional	<u>Summit County</u> : 1 person/300 square feet	<u>Frisco</u>
	<u>Lyons</u> : Max 8	<u>Eagle County</u> : 1 person/300 square feet	<u>Georgetown</u>
	<u>Durango</u> : 3 persons per parking spot OR 2/bedroom plus 2.	<u>Park City, UT</u> : 75 sq ft/bedroom + 50 sq. ft min/person	<u>Telluride</u>
	<u>Crested Butte</u> : 10, Additional with parking on site	<u>Breckenridge/Snowmass Village</u> : Per IPMC	
	<u>Clear Creek County</u> : Max 9 unless property is 2 acres+		
	<u>Boulder</u> : Up to 4 Family Members, + 2	<u>GLENWOOD SPRINGS</u> : Occupancy per IPMC	

Planning and Zoning Recommendation

After reviewing the recommendations from both the Building and Fire Departments, and acknowledging the strong public desire for life safety inspections, the Commission recommended a biennial building inspection to coincide with the 2-year vacation rental permit cycle.

City Council Resolution

Application fees and building inspections are both items that can be amended through a City Council resolution, as has been done in the past. The Municipal Code Section 070.030.030(e)7/9- vacation rentals, allows City Council to set the permit fee, amount and frequency, by resolution. In addition City Council can choose to revise the Vacation Rental Permit conditions to include a completed building inspection requirement rather than the applicant affidavit that is currently required. These policy actions are included in City Council Resolution No 2019-14.

3. Multifamily Single-Owner Building Limits

Current regulations:

Currently, vacation rentals are limited to 25%, or at least 1, in single owner multifamily buildings. This regulation has remained the same since the initiation of vacation rental permits in 2012 and is included as such in the use standards for vacation rentals in Code.

City Council reviewed this topic in March of 2018. A public hearing to review increasing the multifamily building limitation was held on March 12, 2018. There were numerous public comments both in support and opposition to the proposed changes. The item was tabled unanimously in order to conduct community outreach and further research on short term rentals. The Staff report and minutes from this meeting are attached as Exhibit L. *City Council 3-12-2018 Staff Report and Minutes*

Public Opinion:

The public indicated a strong preference for limits on single owner multifamily buildings. Survey and public meeting responses also indicated a preference for lowering the threshold of maximum units that are allowed to be vacation rentals.

The survey asked whether single-owner multifamily buildings and apartment buildings should have limits on how many units could be vacation rentals. The majority of respondents indicated that there should be a limit (61%). Almost a third of the respondents did not think a limit on these buildings was necessary (27%) and the remainder was unsure (11%).

When asked what the limit should possibly be, the respondents that had answered yes to the limitation indicated that they preferred 25% of the units as a maximum allowable percentage (41%) which is the current requirement. A large number of respondents wrote in their preferred answer instead of selecting from the given choices (40%). Analyzing those write in responses revealed that most of them indicated a lower threshold for the maximum allowable units in multifamily buildings than the provided answers. When the write in answers and the given answers were combined by category, 67% of respondents desire a limit of below the current threshold of 25%.

At the public meeting participants were again asked what the allowable limit should be on multifamily buildings under single ownership. This time, based on results from the survey, staff presented lower threshold options ranging from twenty-five percent or at least 1, down to ten percent or at least 1. Seventy-four percent preferred the lowest cap of 10% for single-owner multifamily buildings; 16% preferred the highest cap of 25%.

Other Municipalities:

Staff did not find evidence of this particular approach to limiting vacation rentals in other communities. Communities that chose to place limits on vacation rental numbers opted for a numerical cap, zoning limitations, or per block limitation.

Planning Commission Recommendation

Public opinion on this topic weighed heavily on the Planning Commissioners' recommendations, however careful thought was also given to current Glenwood Housing stock, and impact areas by housing type. When considering new and recent large developments that fall into this category of single owner rental apartments, Commissioners recommended a lower threshold.

Planning and Zoning Commission recommends reducing the current 25% limitation on single owner multifamily buildings to ten (10) %.

4. Numerical Limit on Vacation Rentals

Current regulations:

Currently the City of Glenwood Springs does not limit the number of vacation rentals that can operate within City limits other than the multifamily single owner building limitation and a prohibition on Accessory Dwelling Units being used for vacation rental purposes.

Public Opinion:

The survey asked whether respondents supported limiting the number of vacation rentals that can occur in the City. Fifty percent of the response believed there should be a limit, and 34% believed there should not be a limit. Sixteen percent were unsure. Of those respondents that believed there should be a limit the majority favored placing a numerical cap on the maximum allowed vacation rentals within the City (55%) followed closely by those that desire a numerical cap of vacation rentals per block (43%).

At the public meeting the response shifted slightly in opposition of applying a limit - 54% of respondents preferred no limit; to 45% that chose a limit. The preferred limit approach was a cap per block, and a citywide cap. The question of limiting vacation rentals garnered the biggest groups during the discussion portion of the public meeting. Staff found that many participants were unclear how a numerical restriction would, or could, be enforced and therefore were not in favor of such regulation.

In the public meeting summary attached as Exhibit F., the facilitator noted common discussion comments that were raised by participants across several management strategy discussions. Two of the common comments were the impact on available housing and affordable housing for locals, which pertain to discussions of numerical limits.

Glenwood Housing Stock Numbers:

According to the Colorado State Demographers office most updated numbers, Glenwood Springs has approximately 4,177 housing units as of 2017. Subtracting the amount of deed restricted units in Glenwood Springs (232) results in approximately 3,945 free market housing units. Since 2017 Glenwood Springs has added, or is in the process of completing, 239 free market units bringing the approximate total to 4,184 free market housing units.

The current number of permitted vacation rentals in Glenwood Springs, 134, represents approximately 3.2 percent of the total housing stock. Based on the free market housing stock number, limiting vacation rentals as a proportion of the total number of free market units results in the following:

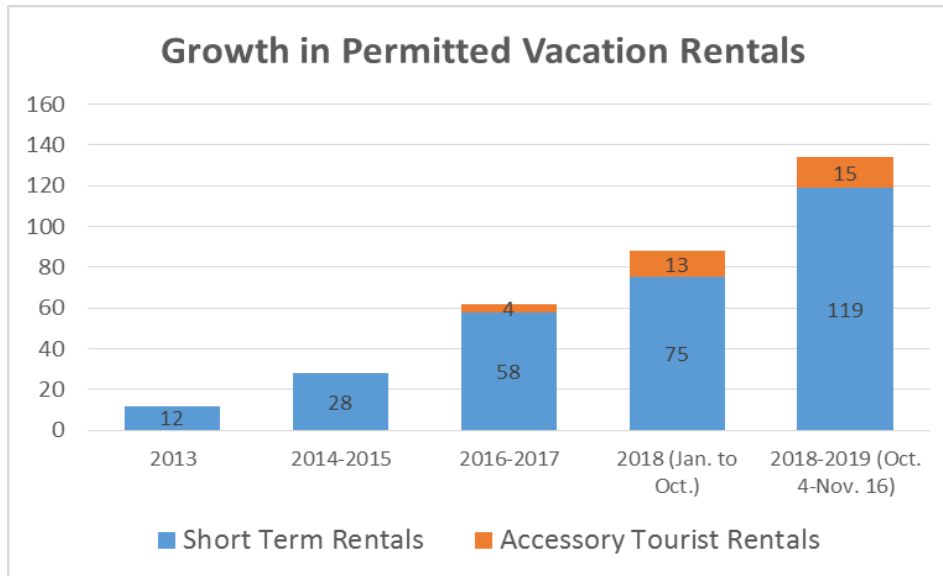
<u>Percent Limitation</u>	<u>Number of Allowed Vacation Rentals</u>
5%	209
10%	418
15%	628

Vacation Rental Growth in Glenwood Springs:

To illustrate the growth in vacation rentals from the start of permit issuance in 2013, staff presents the following charts. The 2018-19 Permit cycle is broken out into two segments to represent growth prior to and after the moratorium discussion began. The large increase of 48 rental permits between October 4 and November 16, 2019 is attributable to the uncertainty by the public if the program would continue, and is not representative of the standard growth pattern.

2 Year Permit Cycle	Short Term Rentals	% Increase previous year	Accessory Tourist Rentals	% Increase previous year
2013	12			
2014-2015	28	(16) 133%		
2016-2017	58	(30) 107%	4	
2018 (January to October)	75	(17) 30%	13	225%
2018-2019 (Oct. 4-Nov. 16)	119	(44) 59%	15	15%

Total Permitted Rentals 2019	134
-------------------------------------	------------



Impact on Rental/Housing Cost

In order to respond to numerous comments regarding the impact of a growing vacation rental industry on local housing costs, staff looked for reputable research on the topic. Very little quantifiable data exists on the subject, and even less for small town rural areas.

Staff did find a peer reviewed study from Economics and Business Professors at UCLA and USC.² They posit that a 10% increase in Airbnb listings leads to a 0.42% increase in rents and 0.76% increase in home prices. Two other studies cited within this research performed for Boston and Los Angeles markets found slightly lower values, but still found a correlation of rent and home price increase as the number of vacation rental listings increased.

Police Actions with Vacation Rentals

To illustrate current levels of police complaints and actions regarding vacation rentals the Police Department provided a list of responses to permitted vacation rental addresses on file. The list includes the address, the date the property became a vacation rental, the complaints, calls, and issues that the Police have been involved with since that time. The “call type” column indicates how the occurrence was initiated, whether through dispatch, alarm, or officer initiated. The Code Violations listed also have an explanation of the nature of the violation. This list is included as Exhibit M.

Chief of Police Terry Wilson analyzed the list and noted that the frequency of police involved occurrences per vacation rental property is higher than that of a standard residence and closer to the frequency of calls received for commercial lodging properties. At the Planning and Zoning Commission meeting, Chief Wilson clarified that while incidents involving vacation rentals are more numerous than standard residential dwellings, the calls tend toward low impact, easily resolved incidents. When asked about the possibility of a significant increase in vacation rental permits and impact to the Police Department, Chief Wilson replied that the Police Department would need to evaluate to see if additional resources would be necessary in such a situation.

² Barron, Kyle & Kung, Edward & Proserpio, Davide. (2018). The Sharing Economy and Housing Affordability: Evidence from Airbnb. SSRN Electronic Journal. 10.2139/ssrn.3006832.

Other Municipalities:

Several communities have decided to limit the number of vacation rentals that can operate within their boundaries. Those limitations vary in approach from a strict numerical limit, primary residence requirement, per block limitation, and frequency and duration limitations. Examples include but are not limited to:

ISSUE	RESTRICT	BALANCE	ENCOURAGE
Allowance & Limits	Not Allowed	Allowed but Limited	ALLOWED
	<u>Morrison, CO</u>	<u>Crested Butte:</u>	<u>Snowmass Village</u>
	<u>Moab, UT</u>	*Primary residence with 60 night limit (Unlimited #)	<u>Frisco</u>
	<u>Teton County, WY</u>	*Non-Primary Residence limited to 30% housing Stock	<u>Carbondale</u>
		<u>Denver/Boulder/Lyons:</u> Primary Residence	<u>Aspen</u>
		<u>Durango:</u> 1/block face + zone limits	<u>Silverthorne</u>
		<u>Telluride:</u> Zoning Limitations of frequency & duration	
		<u>Green Mountain Falls:</u> 10% of Housing Stock (60)	<u>GLENWOOD SPRINGS: No</u>
		<u>Georgetown:</u> 7% of each ward housing units	<u>limits by number or zoning</u>
		<u>Estes Park:</u> 588 permit limit	

- * Crested Butte 30% Housing Stock, 212 permits.
- * Durango Numerical Limit in low-density residential zones
- * Telluride Residential Zone District Limit 3 times per year, 29 nights annually
- * Estes park 588 permits is approximately 15% of housing stock

Durango and Telluride are examples where the limits were placed on Residential Zone districts. Crested Butte opted to allow an open ended number of permits to local residents wishing to rent out their homes temporarily while away from their homes, while placing a cap on those properties that would most likely be rented out consistently for short term uses where the property is not the owner's primary residence. Green Mountain Falls, Georgetown, and Estes Park all went with a set numerical cap for all permits within their boundaries.

Planning Commission Recommendations

The Planning Commission discussed the complexity of this topic at length. During the discussion noted that while they believe additional analysis would be helpful in this area, the Commission was more comfortable recommending a restriction than none at all. There was significant concern that implementing a percent cap without also implementing a distance buffer provision, would more negatively impact some neighborhoods, particularly the downtown core. The proposed numerical cap and distance buffer is recommended only for the Short Term Rental permit category and is not applicable to Accessory Tourist Rental permits.

Planning and Zoning recommends a text amendment to implement a numerical limit on short term rentals of ten (10) percent, OR one unit per block face (meaning one unit on each side of the street), whichever is less. For areas where the block face standard does not or cannot be applied, a 500 lineal feet distance buffer between vacation rentals shall be applied.

STAFF NOTE: Developing a per-block or 500 foot lineal foot distance provision poses challenges for compliance to staff. If it is the will of the Council to implement this regulation staff recommends either adopting only the ten percent numerical cap, or changing the amendment to a numerical limit of ten percent AND one unit per block face, and removing the "whichever is less" statement.

5. Penalties for Violations

Currently the process for penalties and violations is enumerated within the Development code and provides for fines up to \$1,000 per day, as well as authority to revoke or deny permits through a public hearing process. There is also language within the Vacation Rental Use Specific Standards that allows for the Director to revoke a vacation rental permit at any time if it is deemed that the standards of the code are not being followed. The authority to revoke a permit has not been exercised to date. Planning and Zoning Commission provided a recommendation clarifying the Director's authority to revoke a permit without holding a public hearing, as well as more specificity to the fee schedule for Vacation Rentals.

Public Opinion:

The online survey and public meeting did not include a specific question about penalties and violations. However, multiple concerns raised by the public in both forums regarding absentee owners and nuisances point to a frustration with violations occurring at vacation rentals. Violations occurring at vacation rentals in Glenwood Springs are illustrated in the attached Exhibit M. Police Complaints, mentioned previously. Write in comments submitted on the survey point to trash, snow removal, noise, and animal activity being a source of objection for neighbors. The municipal example section indicates how some communities have added additional specificity to when a permit is revoked.

Other Municipalities:

Several other Municipalities have decided to institute penalties for violations specific to vacation rentals. Some have opted for a strict policy of permit revocation after a set number of violations within a one year period, whereas others have instituted an escalating fine structure and suspension time period based on the number of violations.

In addition some jurisdictions have a dedicated hotline, or third party nuisance management system for the community to use to report vacation rental violations. Some communities have added additional requirements for response times and residency distances for registered representatives. In addition, in multiple cases, after a certain number of complaints and/or permit condition violations, a permit is revoked.

ISSUE	RESTRICT	BALANCE	ENCOURAGE
Violations	Revocation	Fine Structure	Basic Municipal Fine Structure
	Georgetown: Revocation after 3 violations in 1 year	Breckenridge: Fine Structure and Temporary License Revocation	Telluride
	Green Mountain Falls: 3 violations in 1 year	1st: Suspension 30 days, \$200 Fine in lieu	GLENWOOD SPRINGS: up to \$1,000 penalty, revocation of permit possible
	Crested Butte: Violation penalty is revocation with 2 year suspension.	2nd: Suspension 60 days, \$500 Fine in lieu	
	Vail: 3 violations in 12 months	3rd: Suspension 90 days, \$999 Fine in lieu	
Violation Response Time	Maximum Response Time	24 Hour Availability to Respond	No Response Time Requirement
	Vail: 60 minutes (30 Minutes at night), agent must reside in 60 miles	Durango: 24 hour Agent, If no response, penalty	Telluride
	Breckenridge: 60 Minutes		Green Mountain Falls
	Lyons: 60 Minutes (Responsible Agent must be within 60 miles)	Clear Creek County: 24 Hour Agent, Must reside within 1 hour from vacation rental property	
	Estes Park: (Code states "Immediate" response, no amount of time)	GLENWOOD SPRINGS	
Complaint System	Dedicated Vacation Rental Complaint Line		Standard Code Enforcement
	Breckenridge: Hotline		
	Boulder: Rental Housing Licensing Code Violation Line and Online submittal		GLENWOOD SPRINGS
	Breckenridge: STR HELPER, nuisance management system		
	Vail: Online Reporting Portal		

*At time of research, Breckenridge was moving to a system where after two or more failures to respond to complaints within sixty minutes, the Director sets a formal hearing for revocation.

Planning Commission Recommendation

The Commission reviewed the various sections of code that regulate violations of municipal code and specifically the Development Code Section 070, and Vacation Rental Use Specific Standards. Specific consideration was given to enacting violation proceedings that made it less difficult for the Director to revoke a permit when violations exist, and provide a more specified violation schedule specific to vacation rentals. This included two separate actions.

First, Planning and Zoning Commission recommends a text amendment implementing a violation schedule including a first offense of \$250, and a fine not less than \$100 and up to a \$1,000 per day for subsequent offenses.

Second, the Commission recommends a text amendment to Section 070.010.080(e) which enumerates general violations for all of the development code, to state “except as otherwise provided in this code” to allow for the above amendment to apply specifically to vacation rentals. This change clarifies that the Community Development Director may revoke a vacation rental permit without following the hearing process in Section 070.010.080(e)(2).

Consideration of Ordinance No 9, Series of 2019 Text Amendments

Ordinance 9-2019 incorporates the policy actions on vacation rentals that require a text amendment to the Municipal code. Included within the ordinance are text amendments to penalties for violations, instituting a numerical limit, and changing the threshold for multifamily building limitations. City Council can choose to approve all or some of the ordinance items, deny all or some of the items, or continue the hearing.

For amendments to the Municipal Code, City Council shall consider whether and to what extent the proposed text amendment meets the approval criteria set forth in Section 070.060.040(c)(3)d.3. The criteria are numerically listed below with staff analysis.

1. Is consistent with the Comprehensive Plan and other City policies;

The City of Glenwood Springs’s Comprehensive Plan includes several community goals that pertain to vacation rental policy. Those include:

- Maintain small town character while maintaining the livability of Glenwood Springs
- Preserve and increase the vibrancy and commercial success of the Downtown
- Provide housing opportunities for the entire community
- Maintain Glenwood’s role as a regional center
- Promote sustainable economic diversity
- Support social diversity

The proposed text amendments support the comprehensive plan goals through a balanced regulatory approach. The continuation of Vacation Rental program adds to the community’s economic diversity, downtown vibrancy, provision of housing opportunities, and Glenwood’s role as a regional center by providing a diversity of tourist accommodations, creating new business opportunities, and through ability for residents to supplement the high cost of living and household expenses. The proposed regulatory limitations in the text amendment support the goals of maintaining a small town character, provision of housing opportunities, and supporting social diversity through mitigating possible negative impacts of vacation rentals on the community.

2. It does not conflict with other provisions of this Code or other provisions in the Glenwood Springs Municipal Code;

The proposed text amendments do not conflict with other Code provisions. The violations and penalties text amendment clarifies existing code for specific vacation rental provisions.

3. It is necessary to address a demonstrated community need;

The public engagement process illustrated a strong public desire for alterations to the City's current vacation rental program. The community need demonstrated through that process is the basis for the proposed text amendments.

4. It is necessary to respond to substantial changes in conditions and/or policy; and;

The demonstrated growth in the number of vacation rental permits within Glenwood Springs constitutes a substantial change in the local sharing economy industry. The proposed text amendments are aimed at addressing that growth.

5. It is consistent with the general purpose and intent of this Code.

The general purpose of this Code is to protect the public health, safety, and welfare of the City and to implement the policies, goals, and strategies adopted by the City of Glenwood Springs. The proposed text amendments are consistent with the purpose and intent of this code.

Additional Topic Areas

Two areas with less clear public results included were Neighborhood Notification and Parking. Planning and Zoning Commission reviewed these topic areas and did not have a recommendation. The Commission did verbally encourage City Council to review Parking considerations.

Neighborhood Notification

This question asked whether neighbors should be notified for public comment when an applicant in their immediate area applied for a vacation rental permit. Fifty-two percent responded yes, the public should be notified, and 39% responded no. Staff found six Colorado Municipalities and one Colorado County that implement a public notification process for vacation rentals. They include, but are not limited to:

Neighbor	Adjacent Property Mailing	Duplex Only	No Notificaiton
Notification	Georgetown: 300 foot owners	Vail	Carbondale
	Crested Butte: 100 foot owners		Telluride
	Durango: 150 foot owners		Aspen
	Green Mountain Falls: 150 foot owners		Silverthorne
	Clear Creek County: 100 foot owners		
	Estes Park: 100 foot owners		GLENWOOD SPRINGS: No notification
			Boulder
			Blue River
			Denver
			Breckenridge
			Avon
			Lyons
			Snowmass

Parking

Many comments submitted from the survey and voiced in the public meeting included complaints regarding parking issues arising from vacation rentals. The Planning Department has also received several in person complaints regarding parking and vacation rentals. A few jurisdictions have decided to include parking requirements with a vacation rental permit application as seen below.

Parking	OFF STREET PARKING REQUIRED	Parking Plan Submittal	No Parking Requirement		
	<u>Estes Park</u> : 2 minimum off street, except Downtown	<u>Lyons</u>	<u>Estes Park</u>	<u>Georgetown</u>	<u>Breckenridge</u>
	<u>Durango</u> : 1 space per Bedroom onsite	<u>Green Mountain Falls</u>	<u>Frisco</u>	<u>Avon</u>	<u>Boulder</u>
	<u>Clear Creek County</u> : 1 space per Bedroom onsite	<u>Crested Butte</u> : Over 10 Occupancy requires onsite	GLENWOOD SPRINGS: No extra parking required		

REVIEW AUTHORITY

For actions involving amendments to the Municipal Code, City Council is the deciding authority. All Municipal Code amendments are completed by ordinance, which requires two hearings before City Council.

For amendments to the Municipal Code, City Council shall consider whether and to what extent the proposed text amendment:

1. Is consistent with the Comprehensive Plan and other City policies;
2. Does not conflict with other provisions of this Code or other provisions in the Glenwood Springs Municipal Code;
3. Is necessary to address a demonstrated community need;
4. Is necessary to respond to substantial changes in conditions and/or policy; and;
5. Is consistent with the general purpose and intent of this Code.

ACTION ALTERNATIVES

City Council may take one of the following actions:

1. Recommend approval of all or some of the amendments;
2. Recommend denial of some or all of the amendments; or,
3. Continue the hearing with a requirement that staff submit changes or provide additional information regarding some or all the amendments.

ACTION ITEMS

Action 1: Consideration of Resolution 2019-14

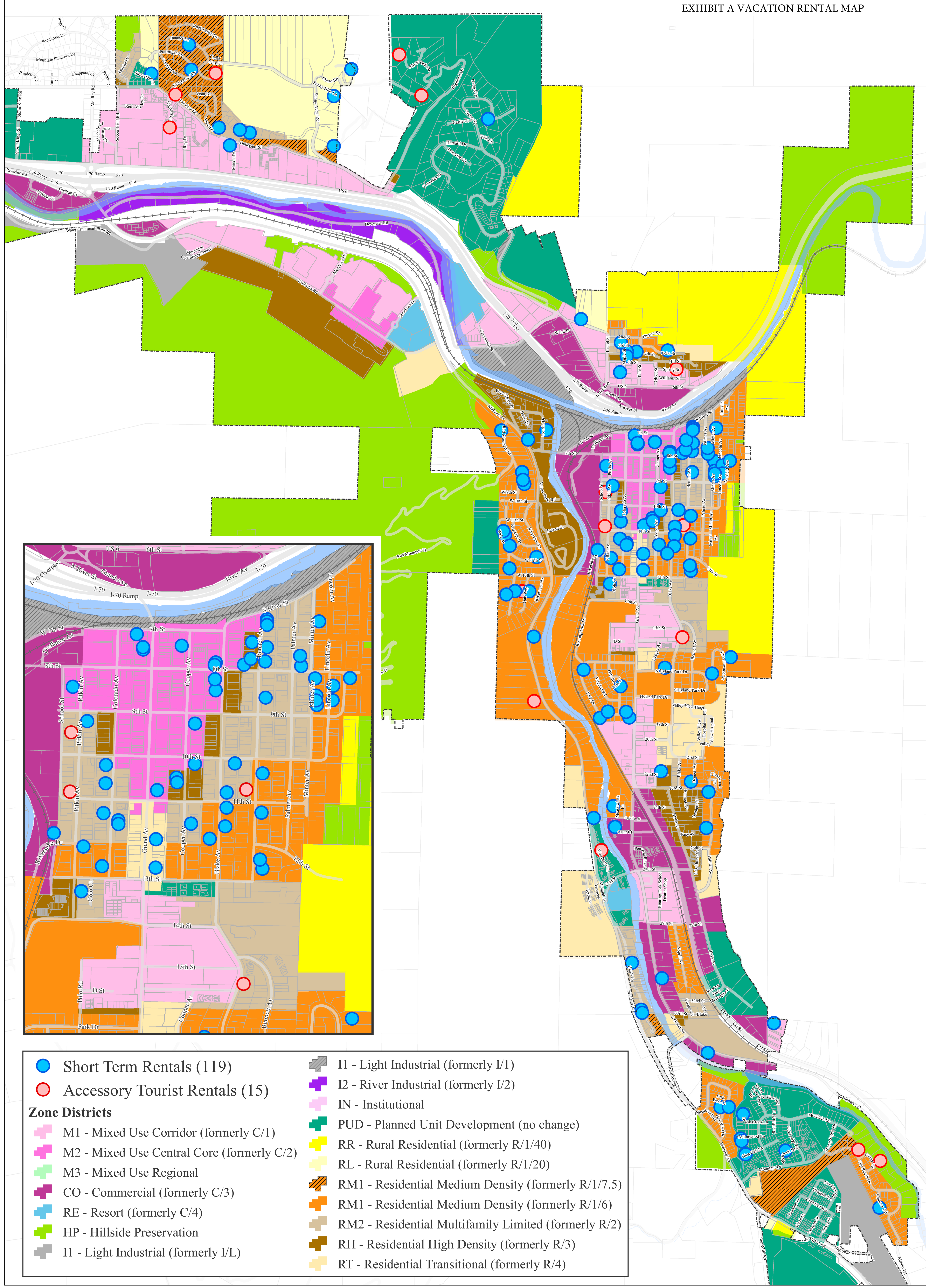
Consideration of City Council Resolution that includes amending the development fee schedule to reflect an initial permit application fee of \$300 and a \$150 renewal fee every other year coinciding with the two-year vacation rental permit, and the addition of a Vacation Rental Permit Condition requiring a building inspection at time of application and for renewal every other year.

Action 2: Consideration of Ordinance No 9, Series of 2019

Consideration of a various text amendment to Municipal Code Title 070.030.030(e)7 and 070.030.030(e)9 Use Specific Standards for Accessory Tourist Rentals and Short Term Rentals to include:

1. A reduction in the percentage of units that can be vacation rentals in a single-owner multifamily building from twenty-five (25) to ten (10)%;
2. A numerical cap on Short-Term Rental permits equal to (a) 10% of the City's total housing stock or (b) one short-term rental permit for every block face or for every 500 linear feet where regular block face measurement does not apply, whichever is less;
3. A violation fee schedule with the first violation of 070.030.030(e)(7)/(9) shall be subject to a fine of \$250 for the first offense and a fine of not less than \$100 and up to \$1,000 for each subsequent offense; and

4. An amendment to Title 070.010.080(e) to add the following language: except as provided elsewhere in this code, clarifying that the Community Development Director may revoke a vacation rental permit without following the hearing process in Section 070.010.080(e)(2).



- | | |
|--|--|
| ● Short Term Rentals (119) | ■ I1 - Light Industrial (formerly I/1) |
| ○ Accessory Tourist Rentals (15) | ■ I2 - River Industrial (formerly I/2) |
| Zone Districts | ■ IN - Institutional |
| ■ M1 - Mixed Use Corridor (formerly C/1) | ■ PUD - Planned Unit Development (no change) |
| ■ M2 - Mixed Use Central Core (formerly C/2) | ■ RR - Rural Residential (formerly R/1/40) |
| ■ M3 - Mixed Use Regional | ■ RL - Rural Residential (formerly R/1/20) |
| ■ CO - Commercial (formerly C/3) | ■ RM1 - Residential Medium Density (formerly R/1/7.5) |
| ■ RE - Resort (formerly C/4) | ■ RM1 - Residential Medium Density (formerly R/1/6) |
| ■ HP - Hillside Preservation | ■ RM2 - Residential Multifamily Limited (formerly R/2) |
| ■ I1 - Light Industrial (formerly I/L) | ■ RH - Residential High Density (formerly R/3) |
| | ■ RT - Residential Transitional (formerly R/4) |



Vacation Rental Locations

This map was produced by the Engineering Department.
Use of this map should be for general purposes only.
City of Glenwood Springs does not warrant the accuracy
of the data contained herein.

Phone – 970-384-6439 <http://www.cogs.us/> Author: JKoenig, Date: 01/15/19
N:\GIS\GIS_Projects\Community Development\Short Term Rentals\STR_ATR_Zoning_011519.pdf



0 1,300 2,600
Feet

PUBLIC ENGAGEMENT

Online Survey

City staff drafted a survey consisting of twenty-seven (27) questions about community perception of vacation rental and feelings towards specific regulations. The survey was active from November 27th, 2018 to February 15, 2019, a duration of two and a half months. The survey received 482 responses. The entire survey is attached as Exhibit B, and a summary is provided below.

The major takeaways from the Survey is that the public is seeking a balance between the positive and negative impacts of vacation rentals. It is clear that residents want vacation rentals to be an available option, however desire some oversight and regulation to mitigate impacts to residents and the community as a whole. The specifics of “how” and “when” to regulate were less clear than the agreement that regulation is a necessary part of the process.

Demographics

482 respondents completed the survey that was closed on February 15th, 2019. A brief summary of the survey demographics is listed below.

- | | |
|--|-----|
| • Residents of Glenwood Springs | 81% |
| • Lived in Glenwood Springs for 6+ years | 75% |
| • Work in Glenwood Springs, live elsewhere | 6% |
| • Full Time Employees | 71% |
| • Own their home | 86% |
| • Rent their home. | 11% |
| • Own/Operate Vacation Rental | 19% |

Allowance and Permits (Questions 8, 9, 10, 12)

The overwhelming majority of respondents believe that vacation rentals should be allowed in Glenwood Springs (68%) and that they should require permits to operate (81%). A small percentage of respondents thought that property owners should be allowed to have vacation rentals unregulated (26%). The survey further asked about allowing the two types of vacation rentals, Short Term Rental of the whole house and Accessory Tourist Rental of a single bedroom, and 66% of respondents indicated that both categories should be allowed.

Interestingly, when the responses were filtered to respondents that identified that they own or operate a vacation rental in Glenwood Springs the majority still believed that vacation rental permits should be required (78%) and believed that at least some regulation is necessary for property owners to have vacation rentals (64%).

Permit Fee (Question 11)

Survey results for what an appropriate permit fee is were divided. Forty-seven percent of respondents selected an Annual Fee of \$110 over the current one-time fee of \$110 which garnered 27% of the vote. After analyzing write-in comments it became clear that 61% of respondents favored an annual fee over a one-time fee. Of those who favored an annual fee 63% desired an annual fee over \$200.

Among vacation rental owners and operators, the majority favored the current fee structure of a one-time fee of \$110 (57%) with the next highest choice being an annual fee of \$110 (22%). When write in answers were tabulated, 31% of vacation rental owner/operators were in favor of an annual fee versus 61% for the one-time fee.

Limits on Vacation Rental Numbers (Questions 13, 14, 18)

Values on whether to limit the number of vacation rentals were fairly divided with 49% believing there should be a limit, and 35% believing there should not be a limit. 16% were unsure. Of those respondents that believed there should be a limit the majority favored placing a numerical cap on the maximum allowed vacation rentals within the City (55%) followed closely by those that desire a numerical cap of vacation rentals per block (43%).

In addition Question 18 asked about limiting vacation rentals by Zone district, which was not favored as an option. 49% responded no to zone limits, with 32% responding yes, and 20% unsure. Those that did think limiting vacation rentals to certain zones (32%) favored limiting vacation rentals to Commercial (46%) and Mixed Use Zones (48%).

Owner Occupancy (Questions 15, 16)

This was the most closely divided survey question with only a slight difference between those who believed there should be a minimum owner occupancy period to operate a vacation rental (45%), and those who did not (42%). When asked whether or not a Second Home Owner should be allowed to operate a vacation rental the answer was more favorably yes (63%) than no (26%).

Public Notification (Question 17)

This question asked whether neighbors should be notified for public comment when an applicant in their immediate area applied for a vacation rental permit. 52% responded yes, the public should be notified, and 39% responded no.

Multifamily Building Limits (Questions 20, 21)

Asked whether multifamily buildings and apartment buildings should have limits on how many units could be vacation rentals, the majority of respondents indicated that there should be a limit (61%). Almost a third of the respondents did not think a limit on these buildings was necessary (27%) and the remainder was unsure (11%).

When asked what the limit should possibly be, the respondents that had answered yes to the limitation indicated that they preferred $\frac{1}{4}$ of the units as a maximum allowable percentage (41%). Interestingly a large number of respondents wrote in their preferred answer instead of selecting from the given choices (39%). Analyzing those write in responses revealed that most of them indicated a lower threshold for the maximum allowable units in multifamily buildings than the provided answers. When the write in answers and the given answers were combined by category, 67% of respondents desire a limit of $\frac{1}{4}$ of the units or below.

Building Inspections and Occupancy (Questions 22, 23)

It was clear from questions regarding inspections and occupancy that respondents favor requiring building inspections (70%) to not (22%) as well as prefer that the building department set an occupancy limit for each vacation rental (73%) as opposed to no occupancy limit (19%).

Perceptions of Impact

The survey's final questions were aimed at assessing public perception of impact, both negative and positive, of vacation rentals. 53% of respondents believe that vacation rentals degrade a neighborhood in some way, compared to 21% who believe they improve a neighborhood. The remainder believed that vacation rentals had no impact on neighborhoods (26%).

Further along these lines the survey asked the public what benefits and drawbacks they associated with vacation rentals. On the positive benefit side of vacation rentals the top responses were allowing residents

to supplement income (76%) increased tourism (67%) positive economic impact (62%) and tax revenue (63%).

On the negative impact side of the question top responses were long term renter displacement (63%), absentee owners (59%), loss of housing stock (56%), and less parking (55%). Overcrowding and noise received 46% Deterioration of neighborhood character received 44%.

Public Meeting

The City held a public meeting to go over the initial survey results and expand further on a few topic areas. Over 55 people attended the public meeting on management of vacation rentals. The meeting gathered preferences and more detailed reasons for preferences in six areas (and the options):

1. Application fee
2. Limiting the number of vacation rentals
3. Limit for multifamily single-owner buildings
4. Requiring Fire and Safety Inspections
5. Limiting occupancy
6. Primary residency requirement

Polling Results

Areas with clearer results:

- 82% (41 of 50) - Fire and safety inspections should be required
- 74% (36 of 49) - For multifamily single-owner buildings only 10% should be allowed to be vacation rentals (16% preferred 25%, 6% preferred 20%)
- 57% (28 of 49)- No primary residency requirement (33% preferred a primary residency requirement)
- 54% (29 of 54) – No limit to the number of vacation rentals, not limited citywide or per block nor require a buffer between them. (26% preferred a per block cap, 19% preferred a Citywide cap)

The other two questions' highest response was 45%

- 45% (23 of 51) – Occupancy should be limited to 2 per bedroom (31% preferred a per bedroom plus some based on square feet of common space, and 26% preferred no occupancy limit)
- 45% (19 of 42) – Fee should be \$100-\$300 annually (33% preferred \$300+ annually, and 17% preferred the hybrid – larger application fee, smaller annual fee)

Common Discussion Comments

A few common concerns were raised by participants across several management strategy discussions:

- Impact on available housing for locals;
- Impact on availability of affordable housing for locals;
- Impact on City feel and sense of community; and
- Consistent regulations/treatment across long- and short-term rentals, bed & breakfasts and hotels (fairness across).

The question that garnered the biggest groups during discussion rounds was: Should vacation rentals be limited (citywide, per block, or buffer, or not at all)?

A complete summary of the public meeting and results is included in Exhibit E.

Summary of Public Engagement

Between the survey and the public meeting, a few topic areas became clear as far as how the public desires regulations to operate. Those are:

- Vacation Rentals should be allowed
- Vacation Rentals should require a permit
- The Permit fee should be an annual Fee as opposed to one time
- There should be Building Inspections of each rental for safety compliance
- Building Department should set occupancy limits
- The Multifamily threshold percentage should be reduced from 25% to 10%

Items that were fairly split by the public and necessitate further analysis are:

- Owner Occupancy Requirements
(Survey 44% Yes, 41% No, Public Meeting 43% Yes, 57% No)
- Numerical Limit on Vacation Rentals
(Survey 50% Yes, 34% No, Public Meeting 46% Yes, 54% No)
- Neighborhood Notification
(Survey 51% Yes to 39% No)

BACKGROUND AND RESEARCH

Glenwood Springs Vacation Rental Program

In addition to directing public engagement, staff conducted research on Glenwood Springs program specifics at the request of City Council. The areas included are:

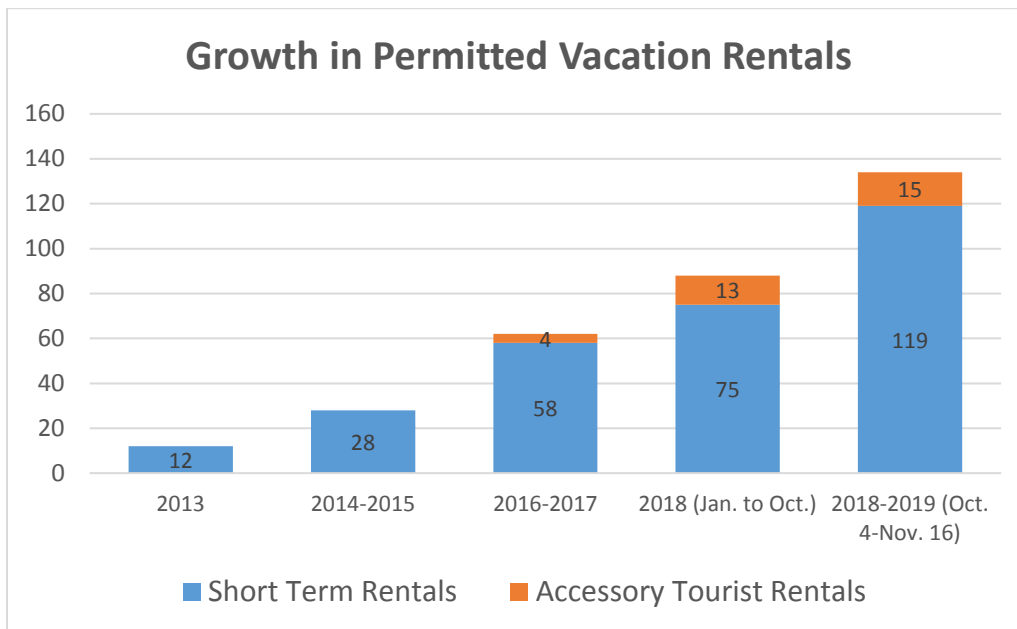
1. Growth of Vacation Rentals
2. Local versus Non Local Ownership of Vacation Rentals
3. Glenwood Housing Stock
4. Tax Collection
5. HOA Covenants Prohibiting Vacation Rentals
6. Police Complaints
7. Staff Time
8. Building Inspections and Occupancy Limits
9. PREVIOUS TEXT AMENDMENTS AND RESOLUTIONS

1. Growth of Vacation Rentals by year

The City of Glenwood Springs began requiring permits for vacation rentals in 2012 with Ordinance No. 10-12 which established a 2-year permitting process to coincide with business license renewals. Accessory Tourist Rentals, the renting of a single bedroom within a home, was added as a category in late 2015. The following chart shows the progression of the programs growth since its beginning until present. The 2018-19 Permit cycle is broken out into two segments to represent growth prior to and after the moratorium discussion began. The large increase of 48 rental permits between October 4 and November 16 is attributable to the uncertainty by the public if the program would continue, and is not representative of the standard growth pattern.

2 Year Permit Cycle	Short Term Rentals	% Increase previous year	Accessory Tourist Rentals	% Increase previous year
2013	12			
2014-2015	28	114%		
2016-2017	58	103%	4	
2018 (January to October)	75	30%	13	225%
2018-2019 (Oct. 4-Nov. 16)	119	59%	15	15%

Total Permitted Rentals 2019	134
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2. Local versus Non Local Ownership of Vacation Rentals

Staff performed an analysis of ownership demographics of the current 134 vacation rental permits and found the following:

	SHORT TERM RENTAL		ACCESSORY TOURIST RENTAL		TOTAL VACATION RENTALS	
Total Number	119	100%	15	100%	134	100%
Glenwood Springs Owners	88	74% of total	13	87% of total	101	75% of total
Colorado Owners	23	19% of total	1	6.5% of total	24	18% of total
Out of State Owners	8	7% of total	1	6.5% of total	9	8% of total

3. Glenwood Housing Stock

According to the Colorado State Demographers office most updated numbers, Glenwood Springs has approximately 4,177 housing units as of 2017. Subtracting the amount of deed restricted units in Glenwood Springs (232) results in approximately 3,945 free market housing units. Since 2017 Glenwood Springs has added, or is in the process of completing, 239 free market units bringing the approximate total to 4,184 free market housing units.

The current number of permitted vacation rentals in Glenwood Springs, 134, represents approximately 3.2 percent of the total housing stock. Based on the free market housing stock number, limiting vacation rentals as a proportion of the total number of free market units results in the following:

<u>Percent Limitation</u>	<u>Number of Allowed Vacation Rentals</u>
5%	209
10%	418
15%	628

4. Tax Collection

All vacation rentals operating within City boundaries are required to obtain a business license for purposes of tax collection. Vacation rentals are subject to local sales and lodging tax as well as state collected taxes. The table on the next page illustrates the taxes required, the tax percentage, and the amount collected from Glenwood Springs Vacation Rentals for the first 11 months in 2018.

Tax Category	Rate	Vacation Rental 2018 Collection (11 Months)
Glenwood Springs Sales Tax	3.7%	\$50,908
Glenwood Springs Accommodation Tax	2.5%	\$34,775
Rural Transit Authority	1.0%	
State of Colorado	2.9%	
Garfield County	1.0%	
Total	11.1%	\$85,683 (Average \$7,800/Month)

The City of Glenwood Springs Finance department reports that for the first eleven (11) months of 2018, vacation rentals remitted \$50,908 in sales taxes, and \$34,775 in accommodation taxes. This equates to roughly an average of \$7,800 in City taxes collected each month, or about \$93,000 a year.

5. HOA Covenants Prohibiting Vacation Rentals

Staff reviewed subdivision and Home Owners Association documents on file with the Community Development Department to ascertain how many areas within the city include language prohibiting vacation rentals within their recorded documents. Staff found eleven (11) subdivisions, PUD's, or HOA's that specifically restricted the operation of short term vacation rental activities. The language varied however common elements included a minimum lease or tenancy requirement of more than 30 days, 60 days or longer, and specific language stating that the owner shall not lease for transient for hotel purposes. Those areas include:

	Subdivision	Location
1	Meadowood Apartments	14th and Colorado
2	Oasis Creek Subdivision	Traver Trail
3	Cardiff Glen Subdivision	Airport Rd and Clark Street
4	Cottonwood Landing	27th and Midland
5	Parkwood Homes HOA	1000 Mount Sopris Drive
6	Colorado Plaza	201 14th St
7	Donnegan Development LLC	Orchard Lane and Donegan

8	Timber Creek Townhomes	Timber Creek Drive
9	Overlin Park Townhomes	White Horse Place
10	Penrose Townhomes	2550 S Grand Ave
11	Holiday House Condos	15th and Blake

***The list is not exhaustive. The City is not a party to, nor does it enforce these agreements.**

The City does not enforce private covenants nor does it require submittal of updates or changes. As such this list is by no means comprehensive or 100% accurate and is meant to illustrate that certain areas regulate vacation rentals outside of City regulations.

6. Police Complaints

The Police Department provided staff with a list of Police responses to Vacation Rental addresses on file. The list includes the address, the date the property became a vacation rental and the complaints, calls, and issues that the Police have been involved with since that time. The “call type” column indicates how the occurrence was initiated, whether through dispatch, alarm, or officer initiated. The Code Violations listed also have an explanation of the nature of the violation. This list is included as Exhibit L.

Chief of Police Terry Wilson analyzed the list and noted that the frequency of police involved occurrences per vacation rental properties is higher than that of a standard residence and closer to the frequency of calls received for business properties.

7. Staff Time

Staff receives vacation rental applications on a rolling basis. Review of the permit for compliance averages one hour per application, with an additional one hour on average for follow up on business license completion and permit issuance. In addition to this, staff conducts monthly compliance checks on website platforms such as VRBO and Airbnb to check for unpermitted vacation rentals. This amounts to approximately 4 hours a month for website review, with additional hours necessary when a violation is discovered. Violations can take up considerable staff time for documentation, certified mailings, follow ups and code enforcement citations for the worst cases. On average we discover 1-2 violations each month.

- Application processing 2 hours/application
- Website Compliance 4 hours/month
- Building Inspection 2 hours/application (when they were being performed)

8. Building Inspections and Occupancy Limits

Building inspections for vacation rentals were previously required with all applications from 2012 through 2017. During that time after an applicant submitted their vacation rental permit application, the applicant would schedule a building inspection with the Building Department. The Building Inspector would set up a time to meet at the property and inspect for a variety of life safety measures enumerated within Glenwood Springs Building Code.

In November 2017, City Council opted to forgo building inspections in favor of a notarized applicant affidavit that stated all municipal code requirements were met and indicated all safety responsibility was on the applicant. Since then, vacation rentals have not required a building inspection.

The Building and Fire Departments submitted memorandums for consideration in regards to building and fire safety concerns. The online survey and the public meeting both showed strong public inclinations for requiring building inspections to be performed. Likewise, both the Building and Fire Departments have indicated a preference for reinstating building inspection to check for life safety measures.

Currently the Code states that “Occupancy limitations of a short term rental shall be established by the International Property Maintenance Code (IPMC) and shall be indicated on the short term rental permit.” The IPMC sets out specific occupancy limitations based on square feet minimums for different areas of the dwelling. Those specifications are attached in Exhibit J. There was indication from the public that a different maximum occupancy may be preferred. Some municipalities have chosen to allow a maximum occupancy unless the applicant applies for a conditional or special use permit to be reviewed at a public hearing.

9. PREVIOUS TEXT AMENDMENTS AND RESOLUTIONS

Since the vacation rental program was passed in 2012, there have been several changes implemented. Those are, listed from oldest to newest:

Ordinance 2012-10 Short Term Rental Program Initiation

Resolution 2012-20 Establishing Short Term Rental Permit Fee

Original resolution setting the Short Term Permit fee to be established annually by resolution from City Council.

Resolution 2017-54 Amnesty Period for Violations and Affidavit Requirements

Established an Amnesty period for unpermitted vacation rentals to get licensed without penalty and established an applicant affidavit affirming building code compliance in place of a building inspection.

Ordinance 2017-25 Short Term Rentals in PUD’s

Amended the Municipal Code to state that Short Term Rentals are allowed in PUD’s unless expressly prohibited in covenants instead of requiring it to be expressly listed as an allowed use.

Ordinance 2018-11 Vacation Rental Fee Change and Violation Schedule

Ordinance 11 of 2018, attached as Exhibit M was passed by City Council on May 17th, 2018 and made changes to the then regulations for vacation rentals. During this same time period the City was in the process of amending the entire Development Code in Chapter 070. During that process a new violations and penalties section was included in 070 and the Penalties for Violations clause of Ordinance 11 was not carried through. The major items included in Ordinance 11 were the following additions to code in double underlined text:

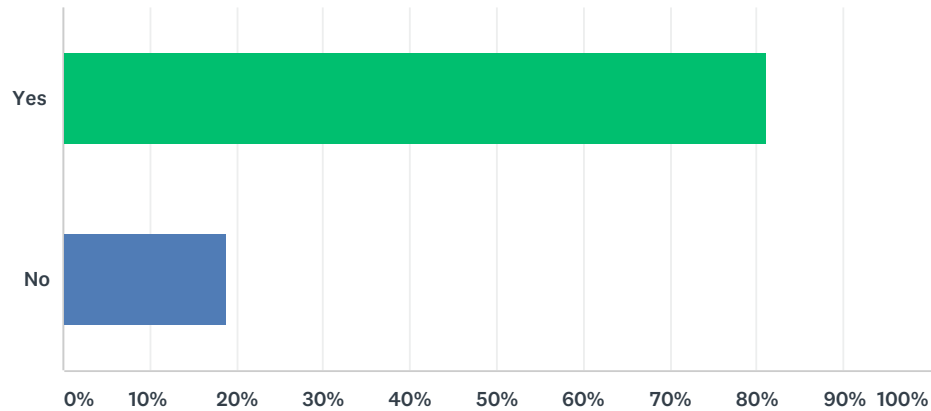
(i) Penalties for Violations. Any violation of this Section 070.040.120 shall be deemed a misdemeanor and upon conviction of same shall be punished by a fine of \$250 for the first offense and by a fine of not less than \$100 and up to \$1,000 for each day of a subsequent offense.

Resolution 2018-29 Establishing Development Review Fee Schedule

Set a new Vacation Rental permit fee to a one-time payment of \$110 with \$0 renewal fee.

Q1 Are you a resident of Glenwood Springs year round?

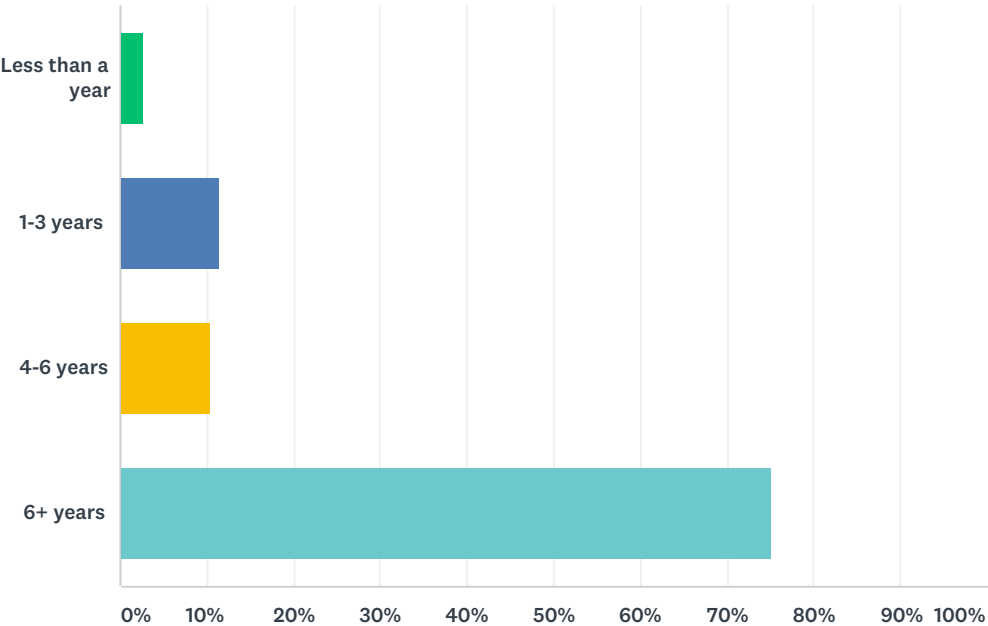
Answered: 480 Skipped: 2



ANSWER CHOICES		RESPONSES	
Yes		81.25%	390
No		18.75%	90
TOTAL			480

Q2 How long have you lived in Glenwood Springs?

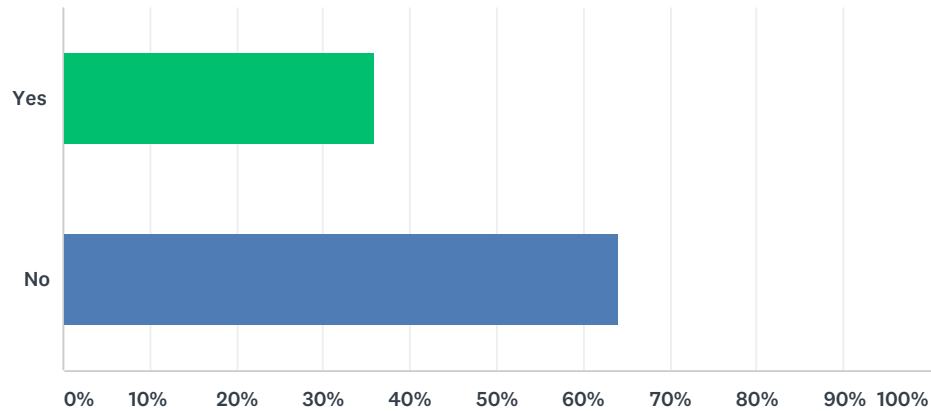
Answered: 391 Skipped: 91



ANSWER CHOICES		RESPONSES	
Less than a year		2.81%	11
1-3 years		11.51%	45
4-6 years		10.49%	41
6+ years		75.19%	294
TOTAL			391

Q3 Do you work in Glenwood Springs but live elsewhere?

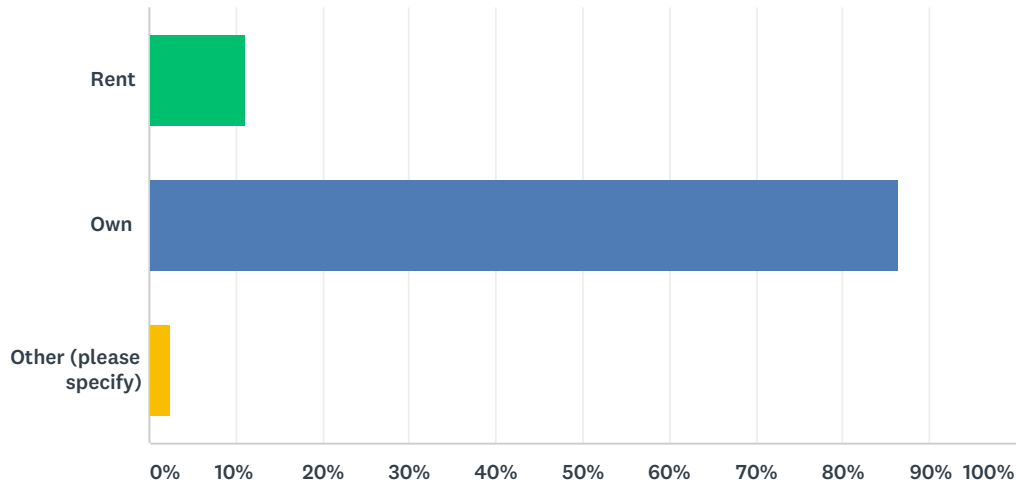
Answered: 89 Skipped: 393



ANSWER CHOICES		RESPONSES	
Yes		35.96%	32
No		64.04%	57
TOTAL			89

Q4 Which best describes your current living situation?

Answered: 473 Skipped: 9

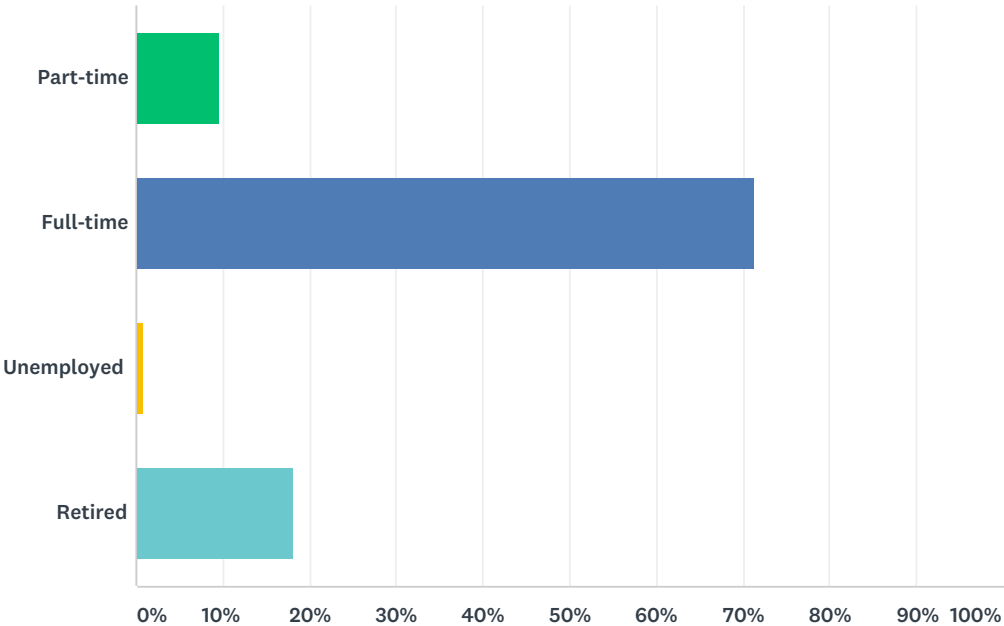


ANSWER CHOICES	RESPONSES	
Rent	10.99%	52
Own	86.47%	409
Other (please specify)	2.54%	12
TOTAL		473

#	OTHER (PLEASE SPECIFY)	DATE
1	Own rental duplex in Glenwood Springs. Live elsewhere.	1/9/2019 9:49 AM
2	previous resident visit often	12/21/2018 9:58 AM
3	Rent, building home	12/21/2018 9:28 AM
4	We own our home and rental property	12/21/2018 2:25 AM
5	Mobile home sorta rent sorta own	12/9/2018 4:40 PM
6	I own 3 houses in Garfield County. I live in one, one is long term rental for 6 years. the other was going term for 3 and now has been a VRBO for another 3. I have my own business currently and had a store downtown Glenwood for 5. Ive lived and paid taxes here for 25 years. As well I built a custom home in Silt in 2001.	12/6/2018 8:28 AM
7	Own in Glenwood Springs, Rent in Denver	12/4/2018 10:28 PM
8	Hotel	12/4/2018 5:58 PM
9	Manager On Site	12/4/2018 3:57 PM
10	I own 5 properties in Garfield County, 1 is a VRBO. 4 are long term rentals	12/4/2018 3:19 PM
11	Both	12/4/2018 6:26 AM
12	Own and live seasonally	11/30/2018 9:59 AM

Q5 Which best describes your employment status?

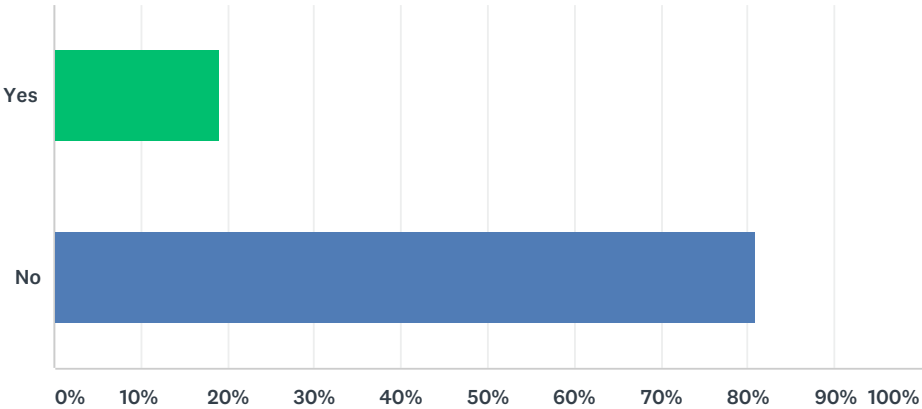
Answered: 473 Skipped: 9



ANSWER CHOICES		RESPONSES	
Part-time		9.73%	46
Full-time		71.25%	337
Unemployed		0.85%	4
Retired		18.18%	86
TOTAL			473

Q6 Do you own or operate one or more vacation rentals in Glenwood Springs?

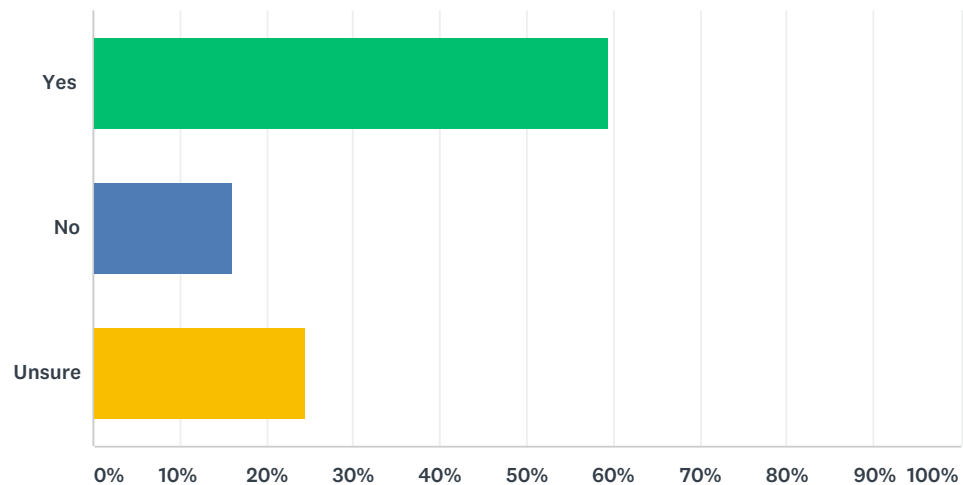
Answered: 474 Skipped: 8



ANSWER CHOICES		RESPONSES	
Yes		18.99%	90
No		81.01%	384
TOTAL			474

Q7 Do you live in a neighborhood with vacation rentals?

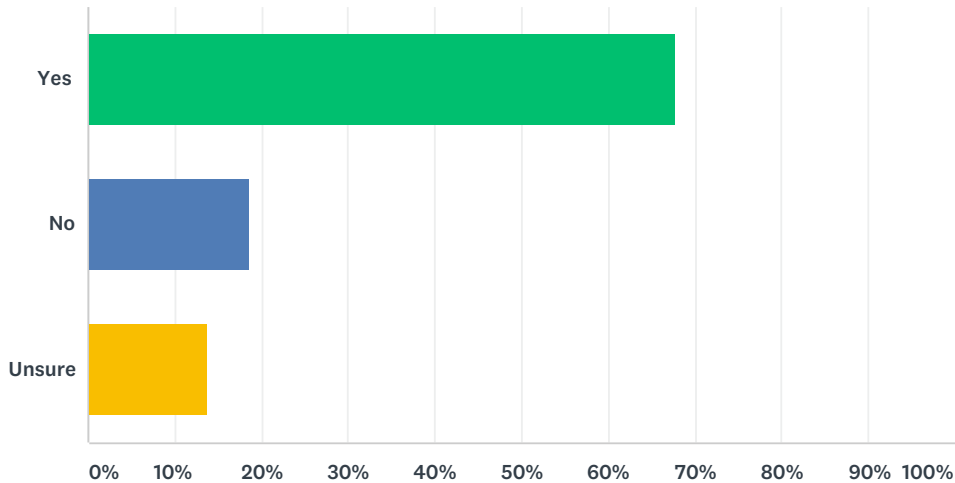
Answered: 473 Skipped: 9



ANSWER CHOICES		RESPONSES	
Yes		59.41%	281
No		16.07%	76
Unsure		24.52%	116
TOTAL			473

Q8 Do you think vacation rentals should be allowed in Glenwood Springs?

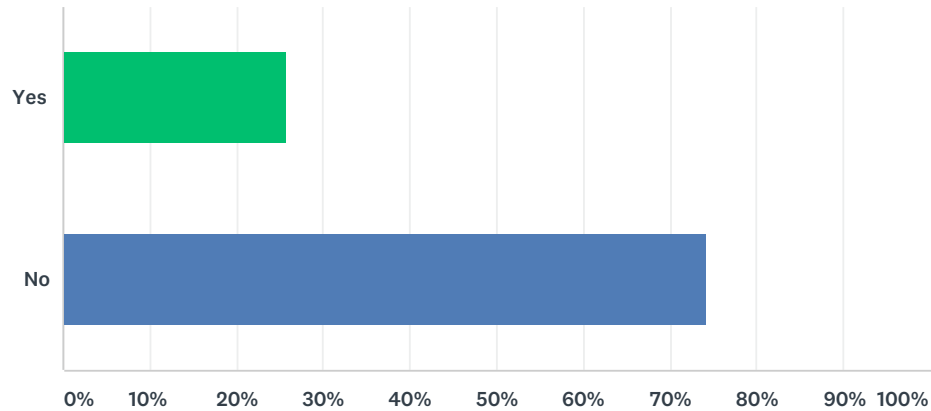
Answered: 474 Skipped: 8



ANSWER CHOICES		RESPONSES	
Yes		67.72%	321
No		18.57%	88
Unsure		13.71%	65
TOTAL			474

Q9 Do you believe that property owners should be able to have vacation rentals on their properties without any regulation?

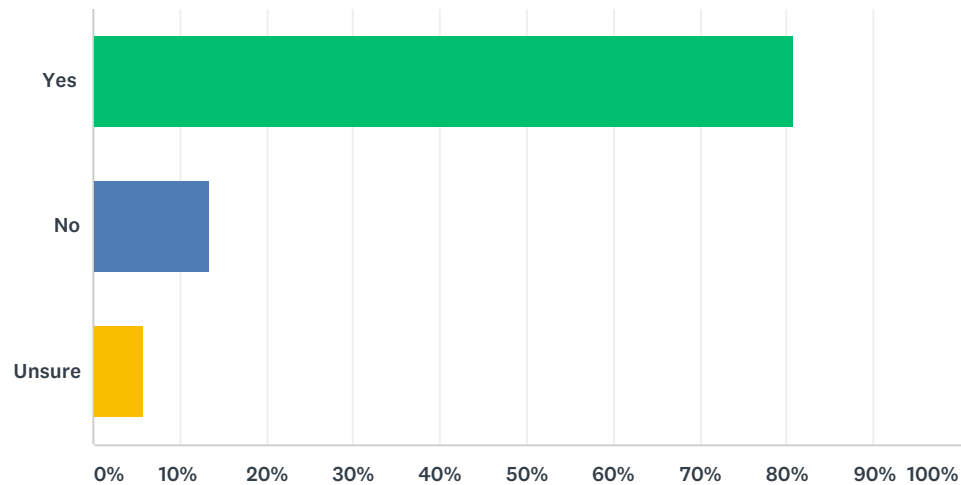
Answered: 473 Skipped: 9



ANSWER CHOICES	RESPONSES	
Yes	25.79%	122
No	74.21%	351
TOTAL		473

Q10 Do you think a permit should be required to operate a vacation rental?

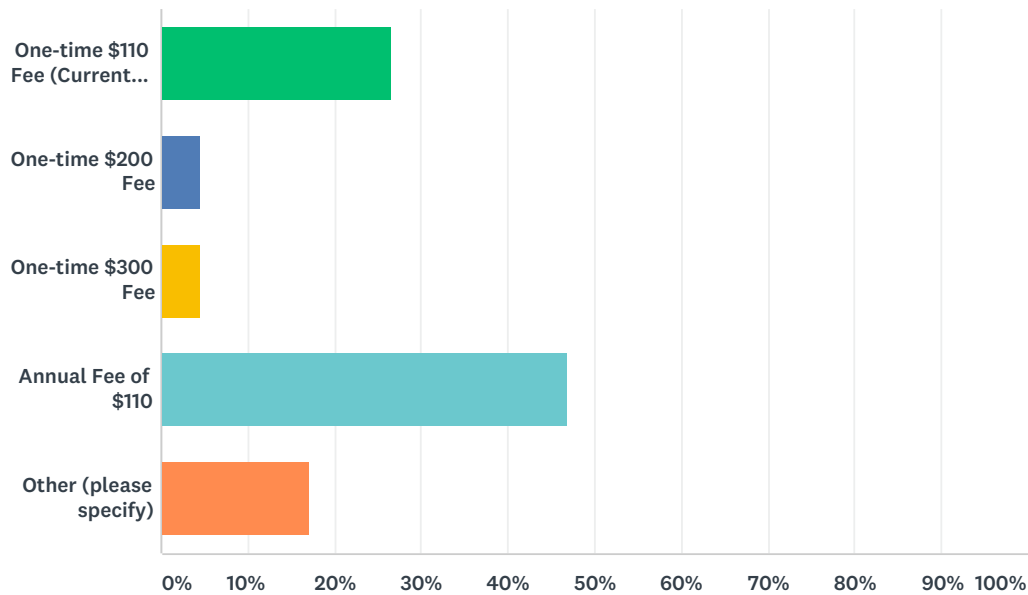
Answered: 474 Skipped: 8



ANSWER CHOICES		RESPONSES	
Yes		80.80%	383
No		13.29%	63
Unsure		5.91%	28
TOTAL			474

Q11 What do you think is an appropriate permit fee? (This is a permit fee to cover staff time and resources spent on managing vacation rentals)

Answered: 409 Skipped: 73



ANSWER CHOICES	RESPONSES	
One-time \$110 Fee (Current Cost)	26.65%	109
One-time \$200 Fee	4.65%	19
One-time \$300 Fee	4.65%	19
Annual Fee of \$110	46.94%	192
Other (please specify)	17.11%	70
TOTAL		409

#	OTHER (PLEASE SPECIFY)	DATE
1	I think a high fee should be set, occurring annually, with proceeds earmarked for affordable housing subsidies	1/10/2019 5:38 AM
2	Annual fee, possibly higher than the \$110 as that is likely only one night's rental.	1/9/2019 10:23 PM
3	annual \$100	1/9/2019 1:58 PM
4	Treat the same as lodging tax on a total bill any dedicated hospitality use must pay - property owners are competing with hotels.	1/9/2019 9:25 AM
5	properties used for short term rentals should pay property tax as a commercial property. If they rent like a hotel they should be taxed like a hotel.	1/1/2019 9:18 AM
6	If the owner lives full-time on the property, then \$110 is okay. If the owner does not live on the property they should have 10% higher property taxes.	12/31/2018 3:27 PM
7	I don't know the answer for this	12/30/2018 11:21 AM
8	should be determined by city employees who know the cost of payroll, etc. required to manage the permits	12/30/2018 10:14 AM
9	actual cost of staff time & resources	12/26/2018 1:33 PM

Vacation Rental Community Feedback Survey

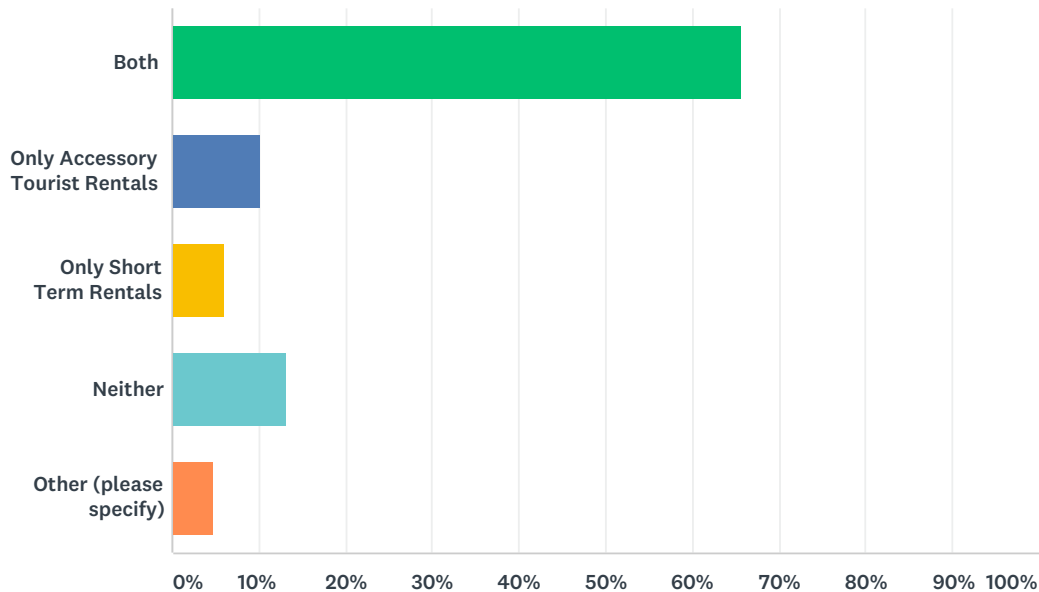
10	One time \$120 fee. Annual fee of \$50	12/23/2018 2:12 PM
11	Costs of staffs' time	12/23/2018 10:38 AM
12	This amount should be tied in with the actual COST. No one wants bigger government, but at the same time VRBOs should only be a small percentage of available rentals	12/23/2018 10:10 AM
13	\$1000 per year	12/22/2018 1:33 PM
14	Annual fee set by county after reviewing costs to manage	12/22/2018 11:46 AM
15	\$150 annually	12/22/2018 7:22 AM
16	Annual fee of \$20	12/21/2018 9:49 PM
17	Annual fee of 1,000	12/21/2018 7:29 PM
18	250/year	12/21/2018 8:38 AM
19	Annual fee of a few hundred dollars plus any tax money should be reported and go to the city	12/21/2018 7:18 AM
20	I think the fee should be a percentage of the revenue from the vacation rental	12/20/2018 9:29 PM
21	Annual \$300	12/19/2018 3:46 PM
22	1000000	12/18/2018 6:17 PM
23	I feel a fee that's associated with how many free market affordable living situations are occupied by the owner switching to VRBO, and the current rental cost climate. Basically, your short term leasing takes 3 bedrooms takes off of the affordable rental market, so a tax of xdollars (determined by current local long term rental rate).	12/18/2018 1:47 PM
24	1000 @ year	12/18/2018 1:24 PM
25	Annual \$300 fee	12/15/2018 12:21 PM
26	I don't know	12/14/2018 7:48 PM
27	Initial fee of \$100 + annual fee of \$40	12/13/2018 10:57 PM
28	Higher annual, there are way too many rentals downtown where we live.	12/12/2018 1:52 PM
29	Annual fee \$1200+	12/12/2018 12:05 PM
30	Annual \$1000	12/12/2018 9:58 AM
31	Higher monthly fee.	12/12/2018 9:56 AM
32	% of USE	12/10/2018 5:07 PM
33	Biennnial fee of \$110	12/8/2018 7:31 AM
34	Annual fee of more than \$110	12/6/2018 11:53 AM
35	\$1000 initial + \$600 per year	12/6/2018 11:39 AM
36	I'd be willing to pay a little more if it is necessary	12/6/2018 8:53 AM
37	Annual fee to be increased as well there should be taxes collected and paid to City like are done in States such as HI that we have VRBO with	12/5/2018 9:12 AM
38	depends on the use...is it a dedicated unit with year round availability versus subletting	12/4/2018 7:09 PM
39	\$25/per Rental	12/4/2018 5:59 PM
40	Do not allow.	12/4/2018 5:06 PM
41	same as business license	12/4/2018 4:01 PM
42	Annual Fee of \$1000 which will have a 4% increase yearly	12/4/2018 4:00 PM
43	I don't think they should be allowed.	12/4/2018 3:59 PM
44	50.00 annual	12/4/2018 3:19 PM
45	None, because you shouldn't have vacation rentals	12/3/2018 7:18 PM
46	What does it cost the city to administer the rental program. That plus 10% should be the fee	12/3/2018 6:32 PM

Vacation Rental Community Feedback Survey

47	annual variable amount depending upon previous year's income	12/3/2018 8:47 AM
48	\$200 per year	12/3/2018 8:46 AM
49	Any way that contributes to mitigating the impacts created	12/3/2018 6:08 AM
50	% of income, like a bed tax	12/2/2018 10:47 PM
51	need more info to decide	12/2/2018 1:19 PM
52	Percent of sales	12/2/2018 12:43 AM
53	I do not think the current system protects neighborhoods.	12/1/2018 6:51 AM
54	none	11/30/2018 11:06 PM
55	1k a year	11/30/2018 9:15 PM
56	Make it twice as much as the ADU permits. It should be cheaper and easier to permit a long-term ADU rental than to short-term.	11/30/2018 4:36 PM
57	Twice as much as an ADU fee	11/30/2018 4:34 PM
58	An annual fee of \$110 so long as the listing is active and live online.	11/30/2018 1:03 PM
59	One time permit fee around \$100 and an annual \$50 fee	11/30/2018 10:29 AM
60	Annual fee of \$500	11/30/2018 9:51 AM
61	Whatever is needed to cover cost of managing vacation rentals	11/30/2018 7:57 AM
62	Annual \$50	11/29/2018 7:44 PM
63	We already pay muni taxes on our rental. Why bleed us for more?	11/29/2018 5:41 PM
64	\$25	11/29/2018 5:29 PM
65	300 annually	11/29/2018 5:19 PM
66	Annual Fee of \$25	11/29/2018 4:24 PM
67	\$1000 annual fee	11/29/2018 12:04 PM
68	Annual Fee of \$400	11/29/2018 11:57 AM
69	0	11/29/2018 11:48 AM
70	annual \$500 at least	11/29/2018 11:29 AM

Q12 In Glenwood Springs, there are two types of vacation rentals: Short Term Rental is renting an entire dwelling. Accessory Tourist Rental is renting a single bedroom within a dwelling with onsite manager. Do you support allowing Short Term Rentals and Accessory Tourist Rentals?

Answered: 472 Skipped: 10



ANSWER CHOICES	RESPONSES	
Both	65.68%	310
Only Accessory Tourist Rentals	10.17%	48
Only Short Term Rentals	6.14%	29
Neither	13.14%	62
Other (please specify)	4.87%	23
TOTAL		472

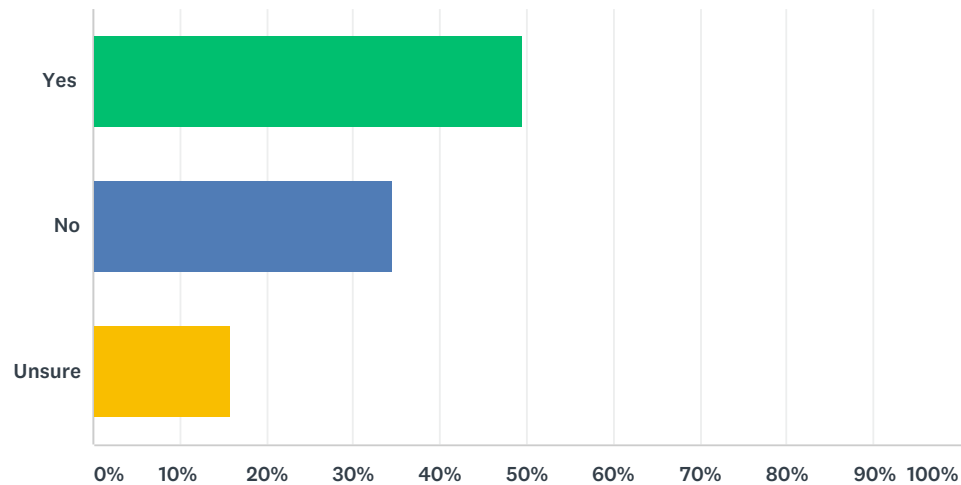
#	OTHER (PLEASE SPECIFY)	DATE
1	both, if properly regulated	1/18/2019 7:35 AM
2	If held to some level of risk that committed hospitality properties must. Proper owners are piggy-backing on others' marketing efforts - again sans any risk.	1/9/2019 9:29 AM
3	Short term rentals should be allowed only if there are enough rentals for local working citizens.	12/30/2018 1:52 PM
4	Owner of building must be a resident in Glenwood and also occupy the unit for a specific number of months	12/30/2018 11:23 AM
5	both ,if properly regulated	12/30/2018 10:15 AM
6	allow both, but only in areas with existing hotel/motels, not everywhere across the city	12/26/2018 1:35 PM
7	Both should pay business taxes like hotels	12/23/2018 10:40 AM
8	Both with STRONG conditions	12/21/2018 2:27 AM
9	Yes, but with limitations to keep the cost of living down for year-round residents.	12/18/2018 4:33 PM

Vacation Rental Community Feedback Survey

10	It seems if they are going to be allowed, there should be a cap on how many at any given time.	12/14/2018 9:45 PM
11	I believe there should be a limit to the amount of vacation rental permits	12/12/2018 11:15 AM
12	I believe that the tourist industry is a huge part of our economy. Rafting, skiing, hiking, biking, fishing , hunting, climbing. Will we also ban all of these activities? I worked 2 jobs between the ages of 18-23 to pay my rent whenI rented myself in downtown Glenwood. There were not a lot of houses then either. I had 2 roommates. We need to protect our tourism and the related activities, this is why people visit our beautiful town.	12/6/2018 8:57 AM
13	Both with regulations	12/5/2018 8:50 PM
14	Accessory Tourist Rental could be covered under landlord-tenant agreement separate rental	12/5/2018 9:13 AM
15	I am in support if there is restrictions in type of home and areas of Glenwood, for example a single home 3 bedroom should be for only long term	12/4/2018 10:24 PM
16	both but with some oversight	12/4/2018 2:29 PM
17	Unsure I need more information	12/3/2018 6:33 PM
18	Some regulated by duration ex. 6mo. or longer	12/3/2018 12:06 PM
19	Both, but with certain parameters in place. Too many long term rentals have turned into short term rentals, and this limits the local rental options for people who live here.	12/2/2018 1:21 PM
20	Depends on the area of town	12/1/2018 10:01 AM
21	Depends on the neighborhood	12/1/2018 8:39 AM
22	Not shure	11/29/2018 7:45 PM
23	Support short term rentals only for a limited amount of time - maybe 30 to 45 days per year, and only for owner-occupied homes.	11/29/2018 11:44 AM

Q13 Do you support limiting the number of vacation rentals that can occur in the City?

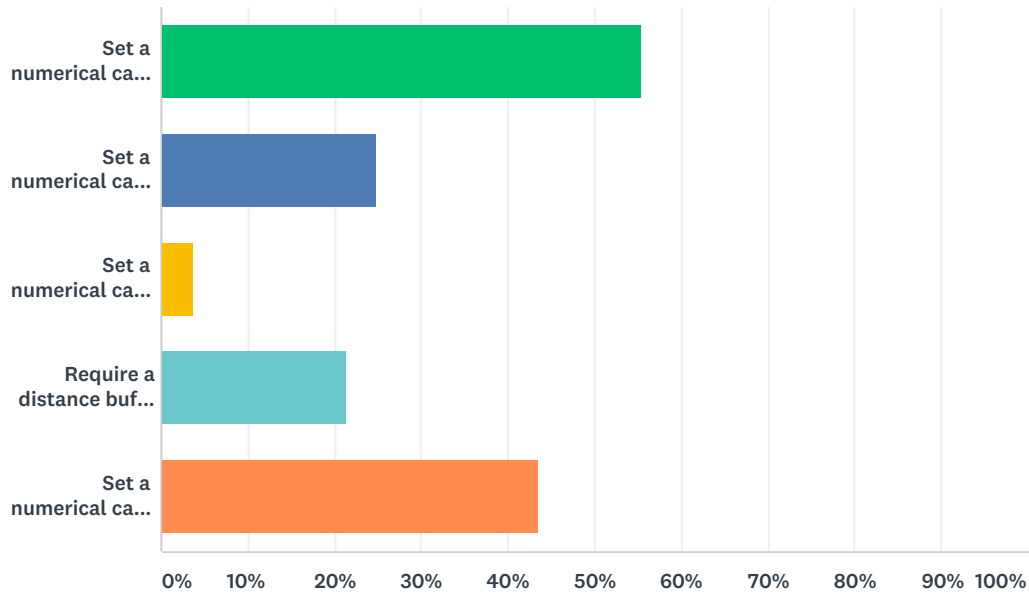
Answered: 470 Skipped: 12



ANSWER CHOICES		RESPONSES	
Yes		49.57%	233
No		34.47%	162
Unsure		15.96%	75
TOTAL			470

Q14 How do you think that vacation rentals should be limited? (Check all that apply)

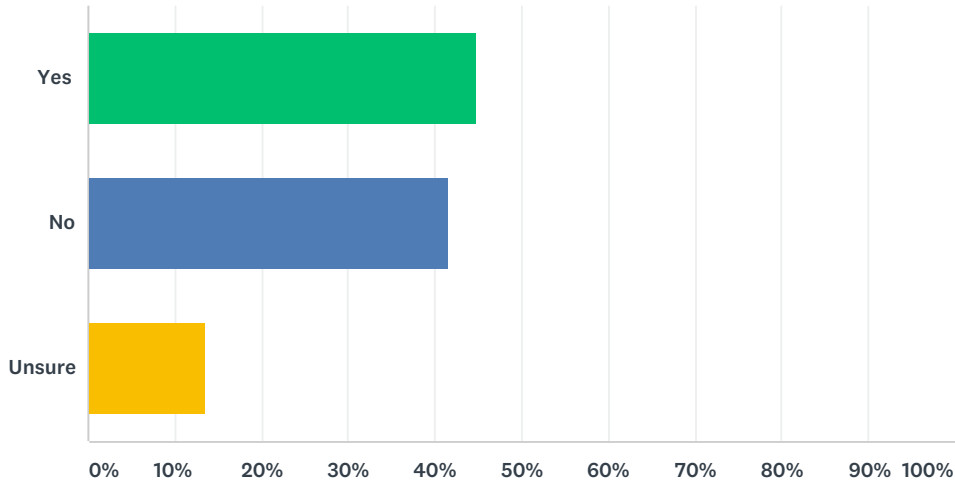
Answered: 262 Skipped: 220



ANSWER CHOICES	RESPONSES	
Set a numerical cap on ALL vacation rentals citywide.	55.34%	145
Set a numerical cap ONLY for Short term rentals (entire house rental) citywide.	24.81%	65
Set a numerical cap ONLY for Accessory Tourist rentals (single room rental) citywide.	3.82%	10
Require a distance buffer between vacation rentals, for example 300 feet.	21.37%	56
Set a numerical cap per block.	43.51%	114
Total Respondents: 262		

Q15 Do you support regulations that require an owner to occupy the residence for a minimum amount of time annually in order to operate a vacation rental?

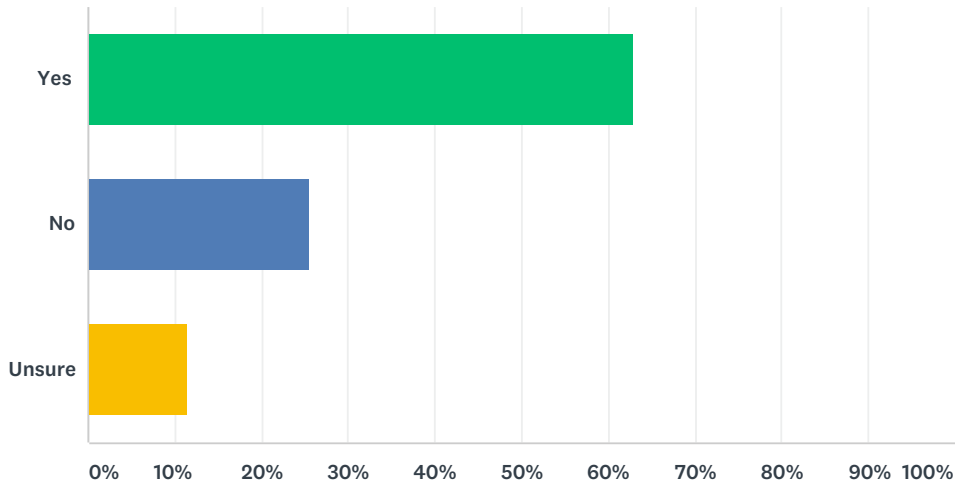
Answered: 464 Skipped: 18



ANSWER CHOICES	RESPONSES	
Yes	44.83%	208
No	41.59%	193
Unsure	13.58%	63
TOTAL		464

Q16 Should owners of a second home that is not their primary Residence be allowed to rent it out on a short term basis?

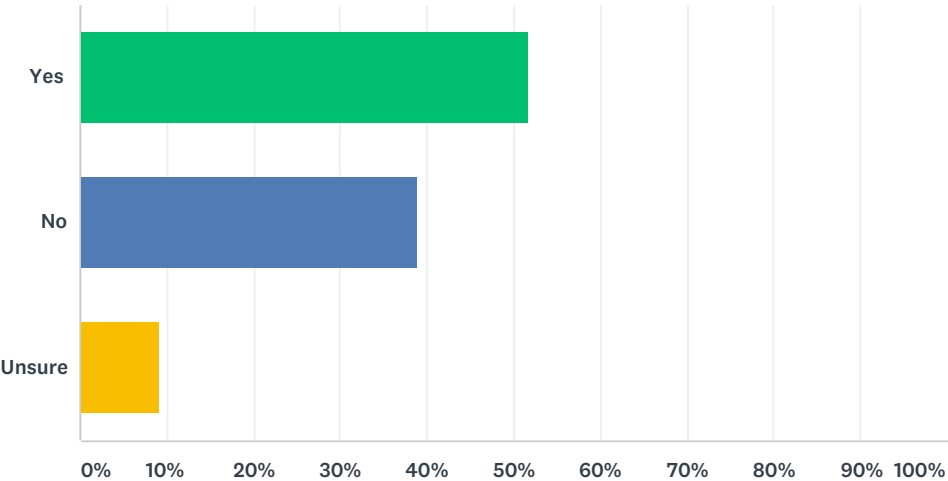
Answered: 466 Skipped: 16



ANSWER CHOICES		RESPONSES	
Yes		62.88%	293
No		25.54%	119
Unsure		11.59%	54
TOTAL			466

Q17 Do you think Neighbors should be notified for public comment when an applicant in their immediate area applies for a vacation rental permit?

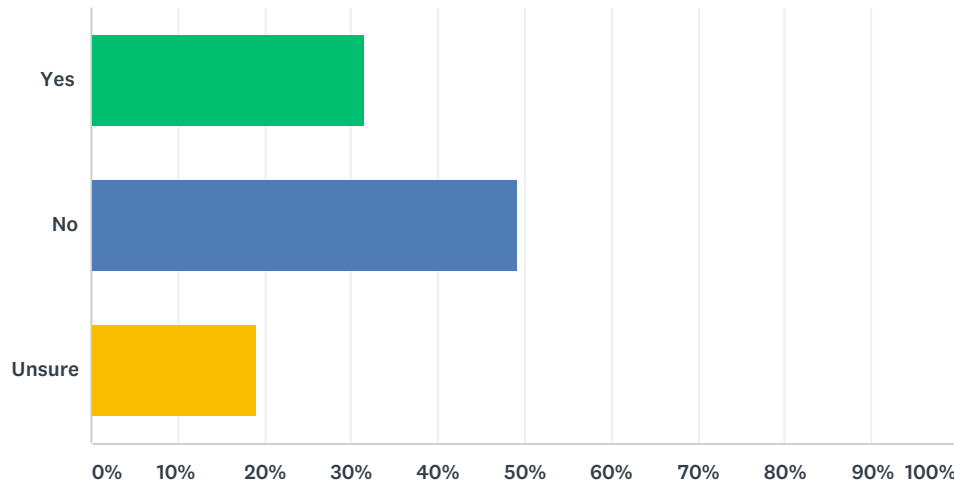
Answered: 464 Skipped: 18



ANSWER CHOICES	RESPONSES	
Yes	51.72%	240
No	39.01%	181
Unsure	9.27%	43
TOTAL		464

Q18 Do you believe that vacation rentals should be limited to certain zoning districts within the City? (Example, Residential versus Commercial zoning districts)

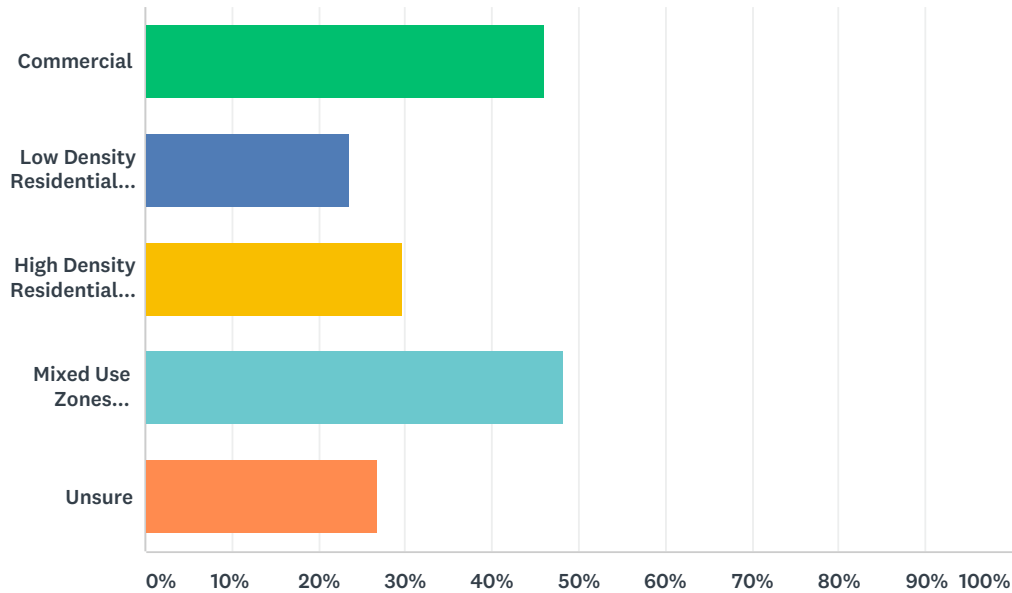
Answered: 465 Skipped: 17



ANSWER CHOICES	RESPONSES	
Yes	31.61%	147
No	49.25%	229
Unsure	19.14%	89
TOTAL		465

Q19 What zones should vacation rentals be allowed in? (select all that apply)

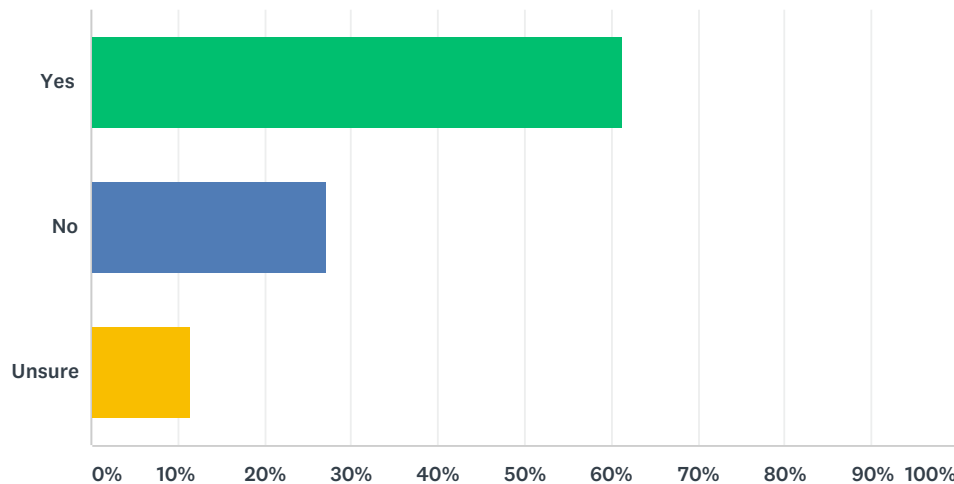
Answered: 232 Skipped: 250



ANSWER CHOICES	RESPONSES	
Commercial	46.12%	107
Low Density Residential (Single Family Neighborhoods)	23.71%	55
High Density Residential (Apartments and Multifamily)	29.74%	69
Mixed Use Zones (Residential and Commercial together)	48.28%	112
Unsure	26.72%	62
Total Respondents: 232		

Q20 Do you believe multifamily and apartment buildings should have limits on how many units can be short term rental permits? (For example, a 6 unit apartment complex can only have 3 units as vacation rentals)

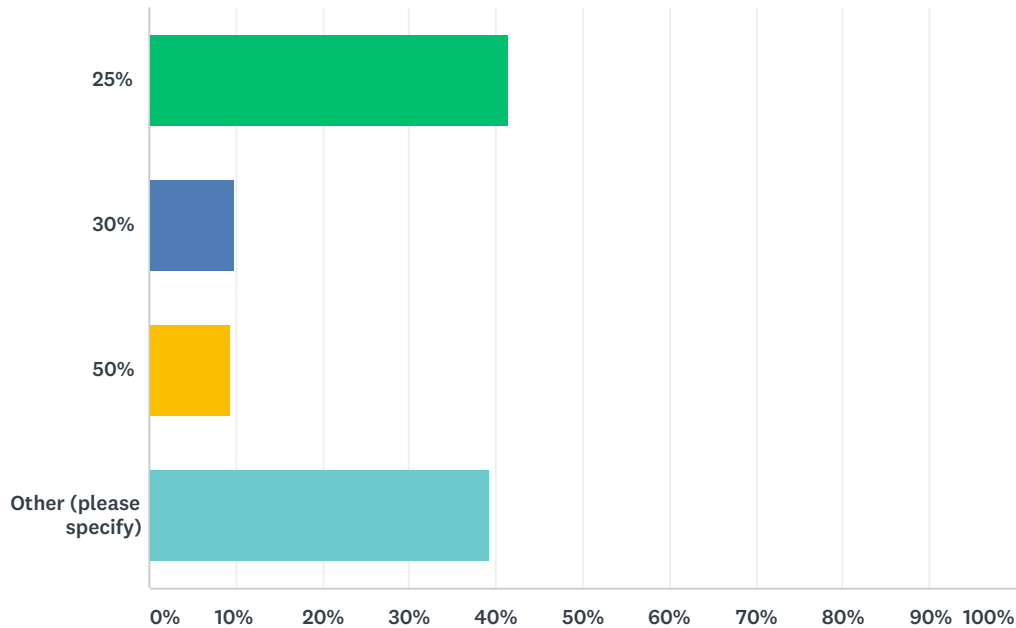
Answered: 463 Skipped: 19



ANSWER CHOICES	RESPONSES	
Yes	61.34%	284
No	27.21%	126
Unsure	11.45%	53
TOTAL		463

Q21 What should the percentage of allowable vacation rental units be?

Answered: 326 Skipped: 156



ANSWER CHOICES	RESPONSES
25%	41.41% 135
30%	9.82% 32
50%	9.51% 31
Other (please specify)	39.26% 128
TOTAL	326

#	OTHER (PLEASE SPECIFY)	DATE
1	10%	1/28/2019 7:40 AM
2	10%	1/18/2019 7:49 AM
3	10 percent	1/18/2019 7:38 AM
4	It should be a low %. This could be answered if there is a cap per block or in the nearby area.	1/17/2019 10:36 AM
5	0%	1/14/2019 2:30 PM
6	100	1/10/2019 11:03 AM
7	20%	1/10/2019 9:12 AM
8	0	1/10/2019 7:49 AM
9	Not sure	1/10/2019 5:44 AM
10	Limit short term rentals to less than 25% for sure...as that takes homes out of rental market for families and couples who need a place to LIVE!	1/9/2019 10:28 PM
11	10	1/9/2019 2:15 PM
12	5%	1/9/2019 10:33 AM
13	?	1/9/2019 9:52 AM

Vacation Rental Community Feedback Survey

14	Zero (0)%	1/9/2019 9:31 AM
15	10%	1/9/2019 8:22 AM
16	0%	1/9/2019 7:29 AM
17	0	1/6/2019 1:00 PM
18	less than 25%	12/30/2018 1:56 PM
19	Of what? All possible long term rentals?	12/30/2018 11:27 AM
20	should be based on the number of long term rental units available in the city-	12/30/2018 10:22 AM
21	NA	12/28/2018 11:02 PM
22	none	12/27/2018 10:52 AM
23	More like 10-20%.	12/23/2018 10:16 AM
24	1%	12/22/2018 1:36 PM
25	0%	12/22/2018 11:49 AM
26	10%	12/22/2018 7:24 AM
27	10	12/21/2018 5:46 PM
28	10%	12/21/2018 4:35 PM
29	5	12/21/2018 12:51 PM
30	0	12/21/2018 12:26 PM
31	10%	12/21/2018 11:48 AM
32	0	12/21/2018 10:37 AM
33	5%	12/21/2018 10:00 AM
34	?	12/21/2018 8:59 AM
35	5-10%	12/21/2018 8:56 AM
36	15	12/21/2018 7:34 AM
37	It is hard to set a percentage.	12/21/2018 7:01 AM
38	10%	12/21/2018 2:35 AM
39	0%	12/19/2018 3:35 PM
40	10	12/18/2018 11:06 PM
41	9%	12/18/2018 8:54 PM
42	0	12/18/2018 6:19 PM
43	0	12/18/2018 6:17 PM
44	Unsure. I'd like to see a study about housing cost impacts. It is too expensive to live here!	12/18/2018 4:35 PM
45	percentage is irrelevant	12/18/2018 3:21 PM
46	I need further education as to the current number of vrbo so I could make an accurate answer, as I feel are area is already flooded, especially in the diwntown area/neighbors.	12/18/2018 1:51 PM
47	10%	12/18/2018 1:27 PM
48	HOA determined	12/18/2018 8:35 AM
49	do not know	12/15/2018 12:22 PM
50	10	12/15/2018 8:32 AM
51	Lower than 25%	12/14/2018 9:47 PM
52	10%	12/12/2018 12:05 PM
53	10%	12/12/2018 11:17 AM

Vacation Rental Community Feedback Survey

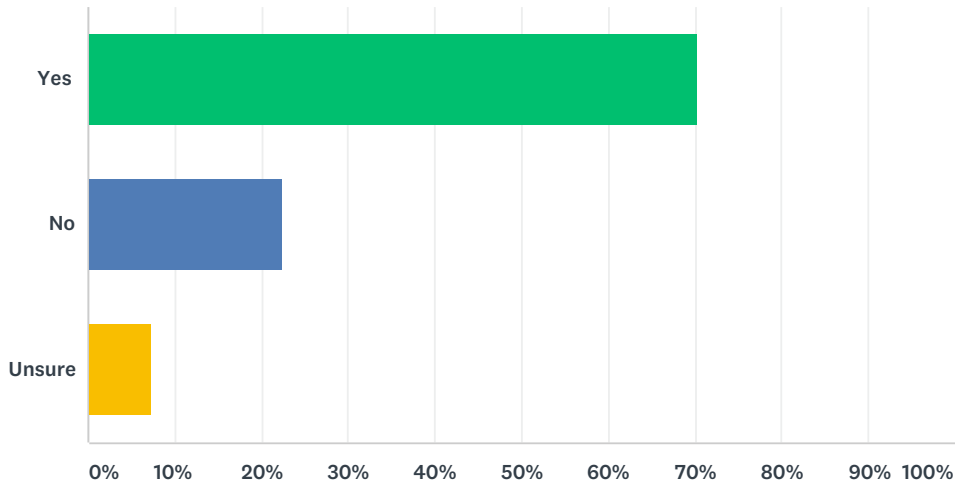
54	10-15%	12/12/2018 10:19 AM
55	Unsure	12/12/2018 10:08 AM
56	0	12/12/2018 10:00 AM
57	15	12/12/2018 9:46 AM
58	Let HOA decide.	12/11/2018 4:56 PM
59	Based on Location	12/10/2018 5:08 PM
60	10%	12/10/2018 8:46 AM
61	Unsure	12/9/2018 7:54 PM
62	10	12/6/2018 1:57 PM
63	0	12/6/2018 12:18 PM
64	10%	12/6/2018 11:41 AM
65	less than 10%	12/6/2018 8:37 AM
66	Depends on the location	12/5/2018 8:52 PM
67	15%	12/5/2018 1:04 PM
68	Zero, ideally	12/5/2018 10:56 AM
69	0%	12/5/2018 10:08 AM
70	25% or lower - should be owner occupied with all of the need for owner occupied housing in our valley	12/5/2018 9:17 AM
71	10%	12/5/2018 7:11 AM
72	Need more info	12/4/2018 7:40 PM
73	10%	12/4/2018 6:03 PM
74	Below 10%	12/4/2018 4:03 PM
75	unsure	12/4/2018 2:31 PM
76	0	12/4/2018 12:25 PM
77	10%	12/4/2018 12:39 AM
78	Not sure	12/3/2018 10:25 PM
79	0%	12/3/2018 7:21 PM
80	Let the market determine the number	12/3/2018 6:20 PM
81	0%	12/3/2018 12:10 PM
82	This deserves a little more complexity than a set percentage. A single-owner multi-family building should only be allowed one vacation rental unit, and then maybe one additional vacation rental unit in exchange for every deed-restricted affordable unit. Whatever regulations that arise from this should encourage affordable housing as much (if not more) than they discourage vacation rentals.	12/3/2018 11:40 AM
83	100%	12/3/2018 11:33 AM
84	5%	12/3/2018 10:31 AM
85	10%	12/3/2018 9:37 AM
86	15	12/3/2018 8:55 AM
87	10% or they are motels/hotels	12/3/2018 8:49 AM
88	none	12/3/2018 8:39 AM
89	Unsure	12/3/2018 7:55 AM
90	10%	12/3/2018 7:32 AM
91	10%	12/3/2018 7:25 AM

Vacation Rental Community Feedback Survey

92	No percentage limit needed- market will determine	12/3/2018 6:43 AM
93	10	12/3/2018 6:42 AM
94	Unsure	12/3/2018 6:12 AM
95	Shouldn't be allowed unless it's in commercial zone district	12/2/2018 10:50 PM
96	5	12/2/2018 10:08 PM
97	None in the "affordable" housing areas	12/2/2018 7:19 PM
98	unsure-need more into	12/2/2018 1:23 PM
99	10	12/1/2018 12:15 PM
100	10%	12/1/2018 9:44 AM
101	10% or lower. Why are they any different than a neighborhood?	12/1/2018 6:57 AM
102	10%	11/30/2018 10:00 PM
103	10	11/30/2018 6:47 PM
104	i don't understand this question - percentage of what?	11/30/2018 4:38 PM
105	10%	11/30/2018 1:48 PM
106	Unsure	11/30/2018 1:05 PM
107	10%	11/30/2018 10:55 AM
108	10	11/30/2018 10:34 AM
109	20	11/30/2018 10:06 AM
110	10%	11/30/2018 9:55 AM
111	40	11/30/2018 9:40 AM
112	15%	11/30/2018 8:15 AM
113	Let market dictate	11/30/2018 5:10 AM
114	0	11/29/2018 8:41 PM
115	15%	11/29/2018 8:28 PM
116	5%	11/29/2018 8:13 PM
117	.?	11/29/2018 7:54 PM
118	0%	11/29/2018 6:01 PM
119	for what, the high density?	11/29/2018 5:38 PM
120	Unsure - is this on percentage of apts question or general?	11/29/2018 3:21 PM
121	20	11/29/2018 3:01 PM
122	I don't know	11/29/2018 2:50 PM
123	20%	11/29/2018 2:44 PM
124	10%	11/29/2018 12:07 PM
125	1 in 6	11/29/2018 11:31 AM
126	10% or less	11/29/2018 11:28 AM
127	0	11/29/2018 11:21 AM
128	10	11/29/2018 11:20 AM

Q22 Do you believe an inspection of every vacation rental for compliance with building and fire codes should be required?

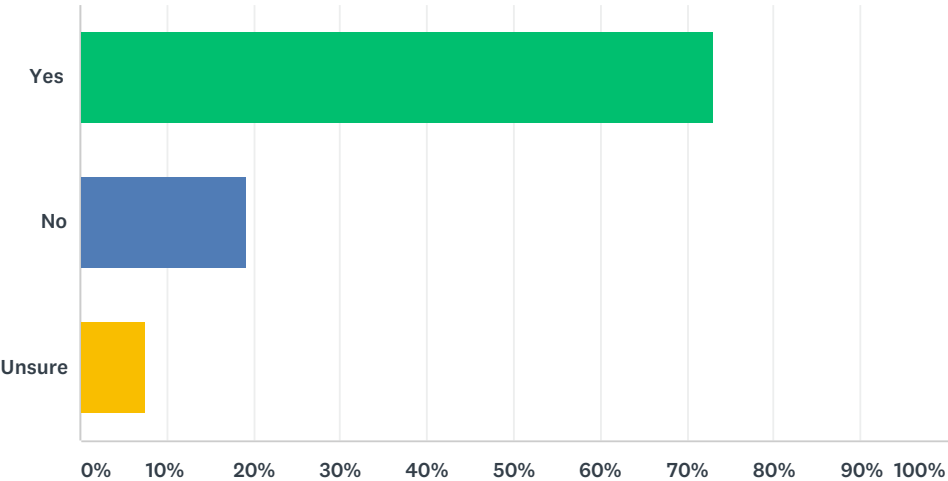
Answered: 460 Skipped: 22



ANSWER CHOICES	RESPONSES	
Yes	70.22%	323
No	22.39%	103
Unsure	7.39%	34
TOTAL		460

Q23 Do you believe the building department should set occupancy limits on the number of guests for vacation rentals?

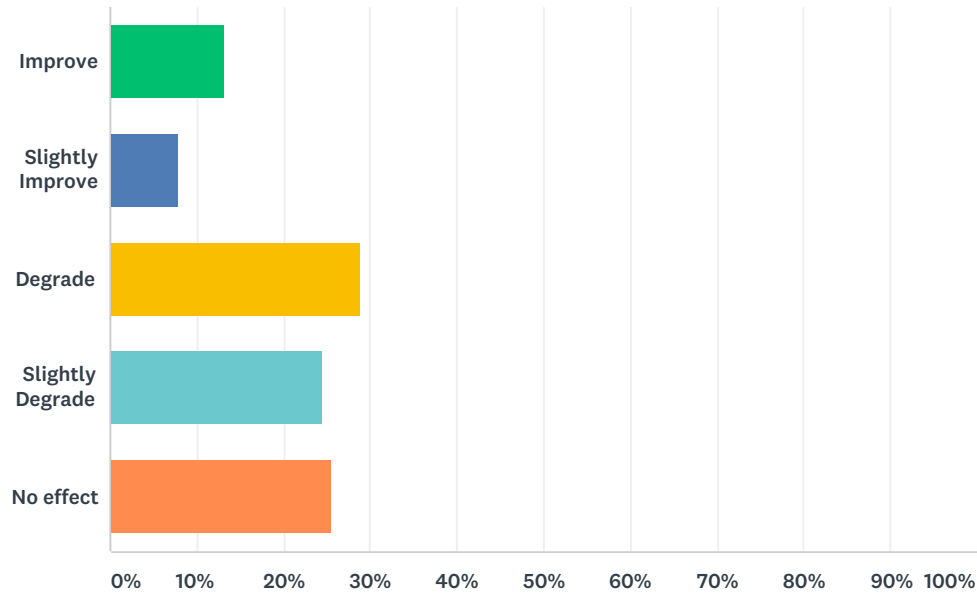
Answered: 461 Skipped: 21



ANSWER CHOICES		RESPONSES	
Yes		73.10%	337
No		19.31%	89
Unsure		7.59%	35
TOTAL			461

Q24 Do you think short term rentals improve the neighborhood? Degrade the neighborhood? Or have no effect?

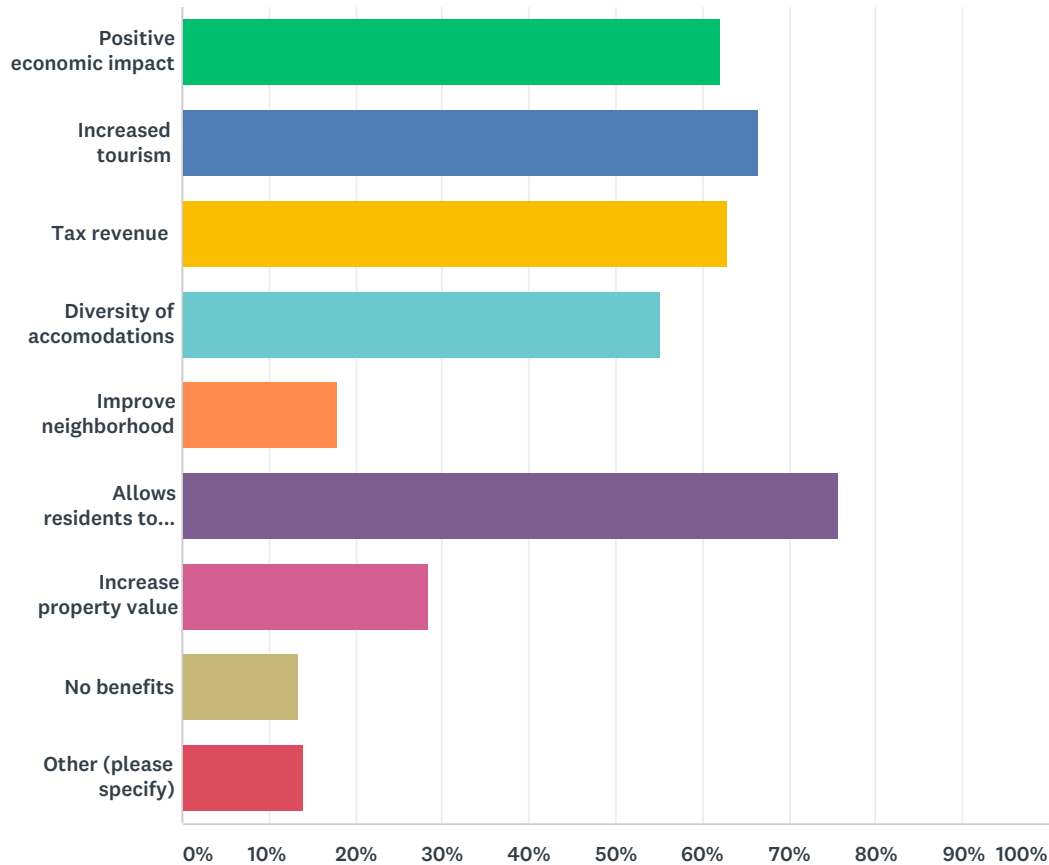
Answered: 457 Skipped: 25



ANSWER CHOICES		RESPONSES	
Improve		13.13%	60
Slightly Improve		7.88%	36
Degrade		28.88%	132
Slightly Degrade		24.51%	112
No effect		25.60%	117
TOTAL			457

Q25 Are there benefits to having vacation rentals in our community (Check all that apply)

Answered: 461 Skipped: 21



ANSWER CHOICES		RESPONSES	
Positive economic impact		62.04%	286
Increased tourism		66.59%	307
Tax revenue		62.91%	290
Diversity of accommodations		55.31%	255
Improve neighborhood		18.00%	83
Allows residents to supplement income		75.70%	349
Increase property value		28.42%	131
No benefits		13.45%	62
Other (please specify)		14.10%	65
Total Respondents: 461			

#	OTHER (PLEASE SPECIFY)	DATE
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Vacation Rental Community Feedback Survey

1	I have always thought that when someone purchases a home in Glenwood, they hold onto it forever. I see no problem with those that want to travel elsewhere and rent their home out during the time they are not living in it. I think people should be able to do that.	1/22/2019 12:08 PM
2	Vacation rentals appeal to families, families being their children, grandparents, etc. So many benefits.	1/17/2019 9:30 PM
3	Please differentiate more between accessory units and short term rentals. They both have very different positives and negatives.	1/17/2019 6:39 AM
4	VRBO should be a right by ownership. Its a way for owners to supplement their income. GWS is not getting less expensive to live. Many owners I know can scale down and still afford to stay in their homes renting a room or a floor.	1/11/2019 3:31 PM
5	allows people to come and see what living in our community is really like, house conveys this somewhat whereas a hotel room does not, also, allows someone with a family heirloom home to rent it for a couple of weeks and pay taxes, thereby maintaining the family tradition. if we are talking about history, family traditions and values, that's important	1/10/2019 11:25 AM
6	can generate funds for a specific city project; exposure to different demographic	1/9/2019 2:01 PM
7	This question is too conditional for a pat response.	1/9/2019 9:37 AM
8	Any decrease in the amount of housing available for citizens & workers is a negative.	1/6/2019 1:02 PM
9	Helps make accommodations for larger families much more affordable. Ex: 6 persons: hotel=\$5-600/ VRBO=\$2-300. Allows large families to stay in GWS and for longer periods of time with increased spending.	12/28/2018 11:36 PM
10	Vacation rentals increase community costs - extra police, parking issues, lowering of property values, degraded life styles and security for local residents. Brick and mortar buildings, licensed and inspected are the safest and most economical vacation rental program.	12/27/2018 10:59 AM
11	Homeowners experience less wear and tear on their properties than long term rentals, in many cases. Stimulates the economy through investor purchases. Allowing short term rentals is progressive and moving with niche lodging that is popular globally.	12/27/2018 10:05 AM
12	My neighborhood has had meth problems only 5 years ago, at both ends of the block. The VRBOs have cleaned that up. I really think that there should be fewer "illegal" VRBOs, though.	12/23/2018 10:27 AM
13	There is no worries with tourism in Glenwood Springs we have plenty of attractions and environment that people come here to enjoy. As a long time resident I worry about our neighborhoods losing neighbors and a revolving door of vacationers. We need to protect this above pocket books.	12/23/2018 8:44 AM
14	It decreases overall real estate values and is a selfish way to cover expenses. Live where you can afford and do not impact others in your attempt to meet your expenses.	12/22/2018 7:30 AM
15	Short-term rentals are simply another viable option for tourism in the area. The people that stay in my Airbnb are almost exclusively families with young children and we prefer it that way. They simply cannot afford the rates of staying downtown, which can be as high as \$200 per night on top of dining out for 3 meals a day and then also pay for 4-6 people to go to the Adventure Park or Hot Springs. If motels like Silver Spruce Inn, Hanging Lake Inn, Starlight Lodge, put any sort of money into their curb appeal and amenities, they'd be able to take these guests from hosts like us.	12/21/2018 2:25 PM
16	Most owners will upkeep their properties better if they have a chance to increase their income.	12/21/2018 9:55 AM
17	Look, would you want to live next door to a busy VRBO? If we want the Town of Glenwood to be a community, we have to favor the quality of life for the RESIDENTS. There should be STRONG oversight for the few units the town does let in. There should be a system to report infractions that are responded to quickly with a limit of say 3 legitimate complaints and the permit is pulled. Otherwise, town will be vacated and it will turn into a resort downtown with people who don't really care about town. Do we really want to continue to be the Disneyland of Colorado? That's the way we are heading, I fear.	12/21/2018 2:42 AM
18	Vacation rentals change the character of neighborhoods. Although the survey required me to respond to approaches that i don't agree with I really only support vacation rentals of accessory dwelling units (because they have a lesser impact on the character of the neighborhood). The ideal situation is to allow folks to airbnb a room in their house that they live in and have them long term rent their accessory unit.	12/19/2018 3:24 PM
19	Those are the ONLY benefits.	12/18/2018 8:56 PM

Vacation Rental Community Feedback Survey

20	I believe property owners should have rights to rent or occupy their own property as they see fit provided they aren't breaking any other existing laws.	12/18/2018 3:24 PM
21	All of these, sans two or 3 choices, are positive impacts. However the impact these things provide needs to be weighed against the impact the lack of housing is having on local workers and community in the rvf. Regulation undoubtedly needs to come into play.	12/18/2018 1:55 PM
22	All vacation rentals should be taxed as commercial.	12/18/2018 1:28 PM
23	Some vacation rentals can be a positive thing for a community. The properties have to be kept nicely or they are banned from the sites so that is positive; however too many rentals of this type can be devastating to a community creating less and less long-term housing for Glenwood employees and driving up rental prices for available long-term rentals. We need to come up with a fair mix or we will price ourselves out of a workforce	12/17/2018 6:29 PM
24	Do not know	12/15/2018 12:23 PM
25	allows more opportunity for visitors to experience the community than hotel complexes	12/12/2018 1:50 PM
26	Owners help improve the neighborhood. The home has to be attractive inside & outside to attract guest. No one wants to spend money to stay in a dump.	12/12/2018 1:31 PM
27	Connects guests to the community in a way that staying in a hotel doesn't. It gives tourists the flavor of our community and gives them more ownership and connection so they want to come back and take better care of our resources, tourist areas and town.	12/11/2018 8:28 PM
28	Volume of accommodations increases. GWS is short of hotel accommodations and many are not suitable for larger families and pet owners.	12/11/2018 5:00 PM
29	More interactions between locals and tourists, so outgoing people get local recommendations	12/6/2018 10:56 AM
30	It supports tourism. As I said before will we also ban hunting, fishing, motorcycle touring, hiking, mountain biking, kayaking, rafting, surfing the new wave at the water park, climbing, coming, birdwatching..... Tourism is huge in our town. Oh... lets close the hot springs pool, it brings too many people into our town. Most of the people who rent VRBOs are people who want a little more privacy than a hotel provides. They can feel as if they are at home when away from home. Cook in their own kitchen. Instances of loud partying and ruining a neighborhood is almost nonexistent.	12/6/2018 9:05 AM
31	Tax revenue is only increased if units are compliant with the coty	12/5/2018 8:53 PM
32	Property taxes should reflect commercial use. The city should be collecting a lodging tax. All taxes should include consideration for emergency services, education, transit and transportation, etc.	12/5/2018 1:09 PM
33	We have plenty of hotels for tourism visitors - some neighbors/owners have positive experiences but there has to be a limit in impact on number of guests especially with the issues our community already faces with high density neighborhoods that already experience massive parking issues with owners/tenants.	12/5/2018 9:19 AM
34	WE ARE A TOURISM COMMUNITY AND BY ALLOWING SHORT TERM RENTALS IT WILL IMPROVE ECONOMIC DEVELOPMENT. MANY PEOPLE INCLUDING MYSELF OWN SEVERAL PROPERTIES AND IF I CANNOT RENT THEM SHORT TERM AND USE THEM WHEN I ACCESS THE AREA, I WILL LEAVE IT VACANT WHICH IN TURN LIMITS AVAILABILITY OF LONG TERM RENTALS AS WELL. SHORT TERM RENTALS DO NOT IMPACT AFFORDABLE HOUSING OR LONG TERM RENTALS IN MY OPINION AND THESE NEED TO NOT BE IN THE SAME CONVERSATION.	12/5/2018 8:30 AM
35	The pros far outweigh the cons	12/4/2018 5:47 PM
36	Helps with jobs for local residents in tourist industry and basic supplies.	12/3/2018 12:41 PM
37	I lived in a townhome community that allowed VRBO. It was like living next to a hotel room. The community eventually limited the length of the rental to 6 mo. min. The safety of the neighborhood was compromised. Renters did not follow community or city rules, the entire character changed for the worse. I had rented my unit for a year. This was successful and did not impact the neighbors.	12/3/2018 12:19 PM
38	Governments should not restrict what a homeowner may do with their property. With the price of living in this valley, it is sometimes necessary to supplement income with a short-term rental. Telling a homeowner they are unable to do that is wrong.	12/3/2018 8:43 AM

Vacation Rental Community Feedback Survey

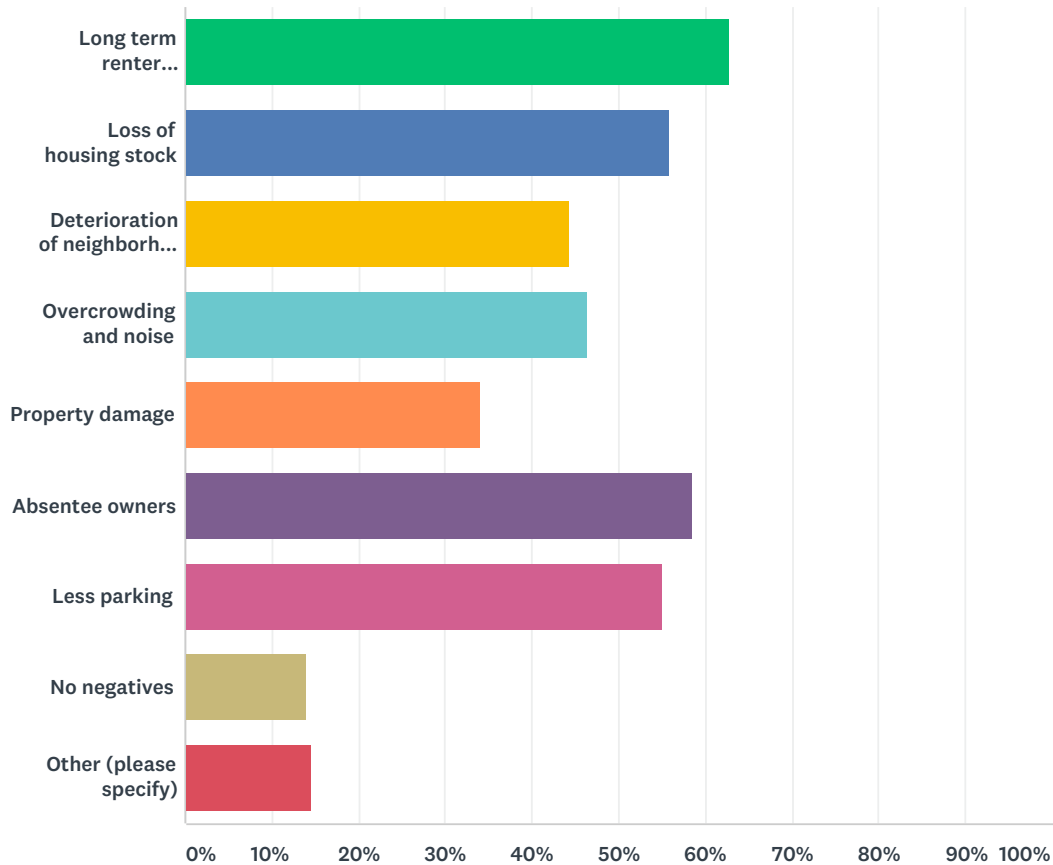
39	Vacation rentals are better for the neighborhood than having long term renters. Vacation rental properties are usually better maintained than long term rentals which are typically run down, not landscaped, etc. I live in downtown Glenwood and think that the best mix is residence that are the primary residence of the owners and vacation rentals.	12/3/2018 8:14 AM
40	Other than allowing residents to supplement their income, I see no real benefits to our community	12/3/2018 7:30 AM
41	Owners should be allowed to determine the terms of their lease. Short term rental or long term rental it is not the place of a city governments to determine terms of an owners lease. It benefits everyone when government does not over govern	12/3/2018 6:48 AM
42	We have plenty of hotels	12/2/2018 10:52 PM
43	Need more info and data	12/2/2018 8:03 AM
44	It brings more cars to already cramped parking in my neighborhood.	12/1/2018 8:46 AM
45	All of this is opinion. Will building more Hotels increase tourism, tax revenue ?	12/1/2018 7:03 AM
46	It has been my observation that people who are planning to enter the vacation rental market tend to upgrade their property, often dramatically, before putting it on the market.	11/30/2018 11:01 PM
47	From my experience, short term rentals are kept in beautiful condition, while long term rentals are often unkempt and in complete disrepair.	11/30/2018 2:54 PM
48	Short Term Vacation rental are a benefit to the community. The homeowner has to invents and maintain a competitive property to attract higher price points and clientele. Long term rental only contributes to the decay of property. Homeowners are unable to keep up with wear and tear on long term due to the lack of profit. Its difficult to evict problematic renters and recover damages. Concerdering the medium price of our local real estate- long term rental is not a viable options. Free market and respecting the rights of private property is important for the council to keep in mind. There is a reason we decided to not buy in to community with homeowners associations. Short term rental is good for the downtown community at large. The property owners are able to remodel and make improvements to the property otherwise not financially obtainable. I support regulations to ensure the homeowner is creating a safe environment and operating with in the current laws and codes.	11/30/2018 12:11 PM
49	I don't think there is a large income benefit to the city. We say we need employee housing yet we allow houses to become income investment property for out of town parties who do not want to have long term rentals but can make more in the short term market.	11/30/2018 10:44 AM
50	We have found vacation rental neighbors are happy to be here, take care of the property and the owners keep the property in excellent condition. Vs non vacation rental properties are loud, yards and property are not maintained and renters typically destroy the house.	11/30/2018 9:57 AM
51	Visitors gain an enhanced understanding of our community as a desirable place to live.	11/30/2018 9:44 AM
52	I'm a single person that was able to afford to purchase a home within this valley when the market crashed. Since then my wages have barely moved and I've had to take on extra jobs to be able to keep my home. The biggest benefit for me having a vacation rental is the ability to supplement my income without giving up my home. I can camp on weekends and provide an opportunity for someone to enjoy my home and what this valley has to offer without having to work 60+ hour weeks to make ends meet.	11/30/2018 9:40 AM
53	Gws is we're the common worker can somewhat afford to live. We don't want to become Aspen we're you pay an enormous amount of money to live in a closet. I am a home owner and take pride in my home and keeping it a single family home. I don't want inconsiderate vacationers being near my home. There's already apartment/condos behind mind me on Davis Dr. With junk piles in the yards, making my property value go down. Plus I have to look at it, it's discusting!	11/30/2018 8:33 AM
54	Allows people to afford a second home in an area they love when they otherwise might not be able to.	11/30/2018 8:02 AM
55	saving houses from foreclosure	11/29/2018 8:09 PM
56	Please respect the trusted shared economy, that is working world wide and join a global attitude of diversity, and accept broader views of traveling experiences. Focus on how to grow rather than fear change. Respect homeowner's use of their property, and continue to collect in city taxes. Learn from other cities, and this NIMBY attitude, is archaic, and unnecessary. Accept the change in how people want to travel and engage with the world. Thank you.	11/29/2018 6:50 PM

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57	From my experience operating an STR in Glenwood Springs, I found that many guests renting the home we offered for short-term rental were families that would likely not find it practical to vacation in Glenwood otherwise. The guests we hosted spent money at local businesses adding to the economy. Furthermore, not all guests we hosted were tourists. A number of guests hosted were either family members of those that live in the community who would not find it practical to make a visit without the availability of the extended STR rental, or staff members of companies that rented from 2-4 weeks for local project work. The STR fills a gap in practical accommodations offered by a hotel and long-term home/apartment rental.	11/29/2018 6:30 PM
58	Gws gets more national attention with tourism.	11/29/2018 5:59 PM
59	We make less money on our family home BUT the home stays in pristine shape. It is kept clean, perfect, no breakage, no damage so far in 2 years. We have had less luck with full time rentals.	11/29/2018 5:43 PM
60	As our society evolves I find majorly of young people I talk to do short term rentals several have said they never stay in traditional hotels	11/29/2018 5:39 PM
61	Property owners should not be restricted. Restriction will decrease property values in Glenwood Springs and limit options for tourists. As a homeowner and professional in Glenwood Springs I am strongly opposed to the city restricting vacation rentals.	11/29/2018 2:58 PM
62	I would have checked Increase Property Value, but I do not believe that it is a benefit. Glenwood Springs is already experiencing a shortage of affordable housing for middle- and lower-income households, so I believe that increasing property values is only a benefit for those who already own homes or who have a high income or substantial access to wealth.	11/29/2018 2:55 PM
63	For people that only live in a home part-time, it won't be vacant the remaining time.	11/29/2018 2:22 PM
64	Vacation rentals have an incentive to improve and maintain their property	11/29/2018 1:38 PM
65	Vacation rentals rely on reviews of guests. As such, the property is well maintained. Trash is picked up, lawns are maintained, exterior is repaired. These types of units are desired by guests. They want things a hotel cannot provide: kitchen, laundry, separate bedrooms, additional amenities. They are good for tourism. Glenwood 'sells out' on hotels in high season. Vacation rentals supplement, but should not be limited to a specific season. Economics should dictate in an open market.	11/29/2018 11:48 AM

Q26 Are there negatives to having vacation rentals? (Check all that apply)

Answered: 459 Skipped: 23



ANSWER CHOICES		RESPONSES	
Long term renter displacement		62.75%	288
Loss of housing stock		55.77%	256
Deterioration of neighborhood character		44.44%	204
Overcrowding and noise		46.41%	213
Property damage		34.20%	157
Absentee owners		58.61%	269
Less parking		55.12%	253
No negatives		13.94%	64
Other (please specify)		14.60%	67
Total Respondents: 459			

#	OTHER (PLEASE SPECIFY)	DATE
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Vacation Rental Community Feedback Survey

1	It's been proven that too many vacation rentals negatively effects the rentals for locals. The housing diminishes and it prices local workers out as owners chose to make a quick buck on vaca rentals vs renting to locals. It also can negatively effect a neighborhood with constant in and out of strangers, partying, and noise. We personally moved and bought a new house due to our old neighbors being a vacation rental. We didn't feel comfortable raising our child next to a house that has someone different in it every other day. People have walked in to the wrong home, left trash, partied and done inappropriate things (especially for family neighborhoods), etc. There needs to be a regulation on how many of these are allowed.	1/30/2019 10:17 AM
2	If you rent/own in a neighborhood with a vacation rental - you never know who is next store your neighbors always change ...	1/22/2019 12:08 PM
3	noise and parking limits for vacation rentals should comply with the area/block norms or HOA rules so as not to disturb the neighborhood	1/20/2019 7:20 PM
4	I think there are few to no negatives for accessory units. Personally, I would not want to have a year long live in tenant. However, I could use the extra money during ski season to rent out our extra bedroom/bathroom for weekend ski use. It's not an either or thing, many home owners (like myself) would only consider intermittent accessory rentals for extra income.	1/17/2019 6:39 AM
5	Increasing home costs when people are paying cash for homes to just be rented out and have no intention of living there	1/16/2019 5:18 AM
6	Would like to know more about other communities like ours.	1/12/2019 6:35 PM
7	I do not see enough negatives to warrant disallowing VRBO's Property damage would be no less than an owner renting long term and its the owner responsibility to maintain the property like any other property. It sure as heck is NOT local governments responsibility. There are counsel members who own homes with ADU's why should government have the right or obligation to manage my property.	1/11/2019 3:31 PM
8	this should not be a business venture. Speculative endeavors are not the intent of the vast majority of owners. To address 2nd home issues, consider the amount of time spent by the owner as a percentage of occupancy. Example; house is empty all winter, owner occupies for the summer and rents for some weeks before and/or after. This allows the owner to afford to keep the family home and maybe retire here and/or pass it along to following generations. History, heritage, family values, community, stability I am absolutely opposed to 100% vacation rental. A beautiful idea to help people maintain their home has been twisted to include avaricious ends and ruin it for everybody.	1/10/2019 11:25 AM
9	I live near several vacation rentals. I have also used them while vacationing in other areas and see the value and benefit. I also understand allowing home owners to have freedom to to what they would like with their property. Having said that I hate living next to several of these rentals. I was never informed this was happening, nor do I know the property owners in order to contact them if something is happening and have been disrupted by noise, parking impacts, destruction of property, etc. In other areas that I have visited, there have been strict codes that visitors are expected to adhere to, such as being inside by 9 or 10pm, no parking on the street (obviously works only in locations with parking spots and/or driveways/garages), etc. I believe something like this could help the impact on neighborhoods. Thank you for taking the time to ask for input and to carefully consider as many options as possible.	1/10/2019 8:35 AM
10	These negatives apply primarily to short term rentals.	1/9/2019 10:31 PM
11	can cause rental rates to rise	1/9/2019 2:01 PM
12	It commodifies the very notion of home and neighborhood.	1/9/2019 9:37 AM
13	I think it depends. If it's used by a resident to supplement income so they can afford to live here then I think it will be largely positive because the home owner has an incentive to insure that their renters are not having a negative effect on the home or their neighborhood. They can use ratings on Airbnb to ensure that they are only allowing renters who will be respectful. If it's used purely as an income source by someone who doesn't live in the community I think it's more likely to have a negative impact because the owner will care more about generating as much money as possible then ensuring that they have responsible and respectful tenants.	1/2/2019 5:17 PM
14	Currently the 4 short term vacation rentals near my house have not shoveled their walkways and it has been snowing today +5". One of the houses is on a corner. Very disrespectful of the people that are walking and living in the area of downtown.	12/31/2018 3:43 PM

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15	-High employee turnover due to lack of adequate, affordable housing. -Loss of talented individuals who might otherwise contribute to our community. -Long time residents losing homes in favor of vacation rentals. -Increased traffic and pollution from workers forced to drive from further and further away. -Children spending longer hours in daycare away from parents due to long commute times. -Potential for non-resident property owners with no stake in our town to create hardships for citizens who actually live here. -Shift in the nature of the town from a place to call home to a strictly tourist destination with a non-resident workforce. -Deterioration in quality of life for the majority of residents, for the profit of a few.	12/30/2018 10:48 AM
16	Council and their staff must gather verifiable and creditable information on all the above topics before making any decisions. Complaints or information received must not be considered based on impressions or conjecture. You are dealing with many families' livelihoods and use of their property.	12/28/2018 11:36 PM
17	Police calls. I will no longer be able to leave my door unlocked.	12/27/2018 10:59 AM
18	Neighboring residents not knowing the inhabitants of these rentals.	12/27/2018 10:05 AM
19	Guests don't always know what to do with their garbage. Lack of knowing who your neighbor is.	12/23/2018 10:46 AM
20	I live beside an absentee owner VRBO that is not registered with the city. Now that he owns 4 properties in GWS, I can see this getting out of hand. I think the city needs to clamp down on illegal units, and even more importantly, limit absentee owners (or all VRBO owners) to only one or two VRBOs. That way one wealthy person, or a few, can't turn the flavor of this town for their personal gain!	12/23/2018 10:27 AM
21	It degrades our single family neighborhoods such as the downtown core with our victorians turning into VRBO's. This is something we need to protect and put in regulations. I feel too many council members have their hands in this market, so certainly they do not want regulations. Government can be good in some areas when done effectively. In the age of texting and ordering online and doing so many things where you do not need to interact with a person, our neighborhoods need to be a priority promoting positive or possibly negative human interactions, but its with people that have an investment in the space, not just there for 4 days.	12/23/2018 8:44 AM
22	The owners/rental managers need to respect town curfews as it relates to NOISE. We are a working class neighborhood, people have to get up and go to work in the mornings, so NOISE from the vacationers is NOT appreciated. Owners/rental managers are often ABSENT and disrespectful of the neighborhood.	12/23/2018 8:15 AM
23	Some people are okay, but others leave trash for dogs, bear and raccoon to rummage through. I have to pick it up. There are many too many people with their many vehicles - a small two-bedroom in my neighborhood has had as many as 12 people at one time. The people who live here should be protected. For instance, only vehicles registered to the address should be allowed to park at that address and stiff fines should be against the property owners of the VRBOs for their renters' transgressions. The people who are making money hand over fist with this rental scheme will howl about this. "We're not responsible for what other people do". But they have to be. The neighbors are bearing the burden of their profitable business. Also, anytime a police officer is called to that address for noise, trash, etc., the property owner should receive a stiff fine. For the most part, these are absentee landlords, willing to have as many renters that they can pry in for their rentals. They don't feel the brunt of this. We do.	12/22/2018 1:46 PM
24	1) Stranger Danger and Criminal activity (the only person who may be vetted by VRBO or Airbnb is the person who made the reservation. None of the other adults staying in the vacation rental are vetted, so you don't know if they have criminal records-very unnerving, especially with large groups. 2) bed bugs 3) loose dogs (maybe not vaccinated), incessant barking when left outside in a strange place, using neighbors' yards as their bathrooms 4) strangers disregarding all boundaries, literally taking over your space and coming onto your property with their children and dogs 5) neighbors' driveways being partially or entirely blocked 6) unsupervised children playing in the street blocking traffic 7) trash thrown out on ground to be blown into our rivers and streams 8) decrease in property values (who would want to buy a house that is next to a hotel?) 9) fire safety (i.e., absentee owners allowing their guests to burn tiki torches and fire pits when the county is in stage 2 fire restrictions) 10) disrespect of the neighbors and neighborhoods (i.e., the attitude of "I'll be leaving in a couple of days, so what I do doesn't matter") 11) taking business away from our local hotels that pay a high accommodations tax to our city and county 12) people bringing their trailers and toys (rv's, snowmobiles, atv's), parking them where they shouldn't be parked and blocking access to neighbors' driveways 13) trash cans being left out on the street for days until the next group shows up 14) Complaints from neighbors directed to our local government employees, costing taxpayers more money, because there are no managers on site	12/22/2018 12:19 PM

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25	There appear to be codes but they are not applied. Rentals should be checked annually for safety. Occupancy is often too high stressing sewer and water systems. When rentals are sold, like the one I am in (at \$3000 per months) a FULL inspection should be required. This home has a sprinkler system for fire that was last inspected in 2011. New owner refuses to have it inspected. There is nothing in place to ensure any tenants safety or rights. The City Council has a haphazard way of approaching the rental market with an eye only on profit. It is only a matter of time before one of the over occupied and poorly maintained homes by the Boy Scout Trail burns and lives are lost.	12/22/2018 7:30 AM
26	I had a pair of skis stolen off of my porch. I immediately talked to four teenagers from California, that were in front of a nearby house, a few doors from Tony Hersey's house. (He has written to the GWS PI in opposition to vacation rentals.) The teens were drunk, and sick on the sidewalk. The police were sympathetic, but there is little that they can do.	12/21/2018 6:01 PM
27	I was a landlord and despite every available vetting process, we continually had run-ins with police, drugs, growing marijuana, having too many pets, having too many roommates, leaving dumpsters (this is a measure of trash *after* you remove it by the wheelbarrow from your home) of waste in common areas, dumping marijuana grow chemicals into the ground near the home killing trees and landscaping, flooding laundry rooms and kitchens and then not notifying anyone, you name it. Finally, the last straw was when my husband and I were physically threatened by a tenant who was arrested, and subsequently removed, from the property for domestic violence. Even then, we had no legal recourse in the courts for any damages or fines, only back rent. To those saying that you can do more to vet your tenants, see also: Christina Brusig. -- Issues like noise, trash, and parking are simply no different than long-term rentals with one glaring exception: if your Airbnb'ers next door are being loud or have 5 cars parked out front, you can bet they're leaving in a few days. Otherwise, you can get stuck with these types of neighbors in a 12-month lease. -- There already aren't enough places for people to live in the valley and to say that this is a new or emerging conversation because of short-term rentals is a farce. When the city starts really, truly making an effort at affordable housing and cracking down on slumlords who refuse to put a cent into their properties, I'll be more interested in stricter regulations for vacation rentals. -- Second homeowners and/or partial residents should not be able to have a short-term rental. These rentals require hands-on attention and intervention from owners.	12/21/2018 2:25 PM
28	Should pay commercial property tax rates if they are running a business	12/21/2018 1:57 PM
29	Vacation rentals are commercial enterprises that pay residential property taxes. They create added burdens on our infrastructure (police, ambulance and road wear). This adds more burden to the properties paying higher commercial tax rates in our unfair tax system. And does anyone verify that these properties pay income taxes on their profits?	12/21/2018 12:33 PM
30	There will be less impact if people hire the right management companies, or if the owners are held to a higher standard.	12/21/2018 9:55 AM
31	Not knowing who your neighbors are on a daily basis, not feeling as safe in your neighborhood, not having renters follow city ordinances, increase in property costs makes it more difficult for families trying to buy a house afford to buy causes more families to stay in the rental market with no long term rental inventory.	12/21/2018 9:01 AM
32	Honestly, these are the negatives. Do we want to create this scenario just so we can have more tax income? Sometimes less is more.	12/21/2018 2:42 AM
33	it goes beyond deterioration of neighborhood character, left unchecked short term rentals negatively impact community character and cohesiveness. Tourists don't go to meetings or support community events. It is a real shame that people that work in Glenwood can't live here because housing has become commercialized. Further, while it does provide more tourist options, it also competes with our hotels and lodging facilities.	12/19/2018 3:24 PM
34	Increases cost of living for year-round residents. Gentrifies areas and makes them unaffordable.	12/18/2018 4:36 PM
35	Should be no negatives, but would depend on character of owners and guest.	12/12/2018 1:31 PM
36	I have been a vacation rental owner for 24 years in Breckenridge and Glenwood. I feel it is reasonable to expect a town to collect an licensing fee and taxes should be paid. This allows for economic growth & increased tourism. Regulations requiring on site management are not necessary. Owners need to be sensitive to neighborhood concerns and be good stewards of their property.	12/12/2018 11:58 AM
37	Increase in long term rental rates due to supply and demand	12/12/2018 10:10 AM
38	Many of the hotels by the river have become run down. Probably less incentive to keep them nice.	12/11/2018 8:28 PM

Vacation Rental Community Feedback Survey

39	As long as there is a limit on how many short term rental permits are issued within city limits and there is a balance between long term and short term rentals, there are no negative impacts	12/8/2018 7:38 AM
40	Our community members are being kicked out of housing so vacation rentals can be used instead.	12/7/2018 5:46 AM
41	Losing housing for real locals is having a HUGE impact on housing availability and hence, cost	12/6/2018 10:56 AM
42	Possible damage---- this is also true with long term rental, I have experienced this twice myself with long term and I have had less damage with my VRBO. As I said before, I rented myself 25 years ago and there were not many rentals at that time either. I don't believe the VRBO market is causing a shortage in housing, these house are owned by local people.	12/6/2018 9:05 AM
43	THIS IS ALWAYS A POSSIBILITY.	12/5/2018 8:30 AM
44	loss of neighbors invested in the community	12/5/2018 7:36 AM
45	unpredictable who rents...sometimes too many vehicles in the neighborhood and parking is problematic	12/4/2018 7:17 PM
46	Property value went down. Rental prices went up. Neighborhood character changed, not neighbors that cared about the community.	12/3/2018 12:19 PM
47	100% of the vacation rental discussion should be focused on it's impact on available housing stock and affordability. The other factors are based too much in hearsay, and consist of the same nimby-ist arguments that can also be used to argue against density and affordable housing. Keeping this conversation based on affordability will keep it positive/constructive, and create other inroads for enhancing affordability moving forward as well.	12/3/2018 11:45 AM
48	I think if there are complaints such as noise, odor, etc. the owners should address them and if the problem persists, the owner's license is put on probation and could lose their permit. Overall I think VRBOs are an incentive to keep properties and neighborhoods nice. No one wants to vacation in a dump.	12/3/2018 8:38 AM
49	All of the above	12/3/2018 6:12 AM
50	It changes the feel of a neighborhood. We have two on our block at the moment. We know and interact with the owners of the rental next door and they are kind, polite, and available if we have questions or concerns but they are not here when the rental market is going non-stop all summer. It's a different family here every 2-3 days... we also don't want to be on the phone to complain because we know it's their business, but it can be annoying with parking, noisy renters during the work week while the visitors are on vacation, etc. It does change a neighborhood.	12/1/2018 12:18 PM
51	We know that we have a need of long term rental in GWS. This is making the problem MUCH worse. Furthermore, it was not my intention to purchase a house in a Hotel District.	12/1/2018 7:03 AM
52	I would like to see non-owner occupied vacation rentals capped, and owner occupied (6 months or more) without a cap. Owner occupied rentals come with many of the benefits without degrading the community that our neighborhoods offer.	11/30/2018 3:15 PM
53	Seriously? Those are the "negatives" the town can come up with for options? Maybe counsel and town employees need to visit some of our local vacation rentals that are clearly being misjudged. If you could see before and after photos of many of these properties- the improvements and care are incredible. Nothing like a deteriorating long term rental that violates many safety codes and leaves a eye sore on the downtown community. Parking may be your only argument..... but how many actually use more then a property owner or long term rental family would?	11/30/2018 12:11 PM
54	Potentially some of these negatives could apply depending on the location of the rental.	11/30/2018 10:17 AM
55	I have seen the regular rental home next door which has 2 bedrooms overwhelm our neighborhood with multiple vehicles, and more people living there than what 2 bedrooms normally support. Crystal Property does not inspect their homes nor hold renters to terms until neighbors complain. We have had None of this with the vacation rental.	11/30/2018 9:57 AM
56	The negatives are specific to each individual location/neighborhood. They might apply in one location and not another.	11/30/2018 9:44 AM
57	STR should be classified as commercial (income property) for property taxes.	11/29/2018 7:25 PM

Vacation Rental Community Feedback Survey

58	I have operated a short-term rental in Denver for 5 years and Glenwood Springs for 3 years. Although loss of housing stock and long-term renter displacement will occur, a supply and demand balance on short-term and long-term rental operations limit the number of short-term rentals that can operate on a practical basis. When competition between short-term rentals result in lower income to short-term renters, it becomes more practical for to rent long-term. As such, the market becomes self-regulating. The number of STR's that can operate on a practical basis is a very small percent of the total residential market. I closely followed Denver's Short-Term Rental policy development activities including attendance of public meetings STR Committee meetings and City Council meetings. From arguments presented, and analysis conducted, it seemed clear that the benefits short-term rentals provide the community outweigh the detriments.	11/29/2018 6:30 PM
59	No negatives yet for us. No complaints from neighbors..they all know. We are in a dual zone but predominately residential. We have it managed by relatives, don't rent during X game week and our house adds to the neighborhood, not deteriorates it.	11/29/2018 5:43 PM
60	More dogs that are not on leash or picked up after.	11/29/2018 5:43 PM
61	Many of the above can occur, owners can choose to limit number of guests. Many long term tenants do damage	11/29/2018 5:39 PM
62	The market WILL self regulate with unsafe, unpleasant, or unkept rentals. With feedback and social media, plus self regulating supply and demand, the properties that are NOT desirable will quickly be weeded out. Also, if there is too much supply, and not enough demand, short term rentals will likely be converted back to long term, but the overall condition of the property will ultimately be much better because the owners had to maintain it more frequently (or the reviews from guests will destroy their reputation). No one wants to come to Glenwood to just party and trash the place... our guests have been fantastic! It is too expensive in this town to have a cheap, run down rental.... it will NOT last!! Our long term tenants always have way more cars than short term rental tenants. Many of our guests come from Denver and take the train, or they will just have one vehicle.... most long term tenants have at least 2 or 3 vehicles!!	11/29/2018 5:34 PM
63	The negative currently is lack of affordable housing in general and the high cost of living - this isn't being impacted by VRBO options, etc...	11/29/2018 3:25 PM
64	If the City is concerned about long term rentals they should find ways to work on this problem. Limiting property owners short term rental options will not be effective in accomplishing this.	11/29/2018 2:58 PM
65	Increasing property values (which may benefit the wealthiest in the community, but harms everyone else)	11/29/2018 2:55 PM
66	Reduction of long-term residents who participate in civic affairs, potential increase in crime associated with tourists staying in residential neighborhoods in an era of expanding legalized drugs, not knowing who your neighbors are decreases sense of security for families with children, loss of community cohesion stemming from resentment of those who are profiting from their properties at the expense of others,...	11/29/2018 11:37 AM
67	No negatives that don't also occur when owners, long term renters are not respectful neighbors.	11/29/2018 11:23 AM

EXHIBIT D. Leniency Scale of Municipal Regulations.

****Information pulled from multiple sources and is not comprehensive in each category.**

ISSUE	RESTRICT	BALANCE	ENCOURAGE
Allowance & Limits	Not Allowed	Allowed but Limited	ALLOWED
	<u>Morrison, CO</u> <u>Moab, UT</u> (except at previously established) <u>Teton County, WY</u>	<u>Crested Butte</u> : 2 Categories, one primary residence with 60 night limit, and one limited to 30% housing stock <u>Boulder/Denver/Lyons</u> : Primary Residence <u>Durango</u> : 1/block face + zone limits <u>Telluride</u> : Zoning Limitations of frequency & duration <u>Green Mountain Falls</u> : 10% of Housing Stock (60) <u>Georgetown</u> : 7% of each ward housing units <u>Estes Park</u> : 588 permit limit	<u>Snowmass Village</u> <u>Frisco</u> <u>Carbondale</u> <u>Aspen</u> <u>Silverthorne</u> GLENWOOD SPRINGS: No limits by number or zoning
Fee	\$250 Annually and up	\$75-200 Annually	Buisness License fee or less than \$50 annually
	<u>Crested Butte</u> : \$750 Annually <u>Georgetown</u> : \$500/\$250 Renewal <u>Durango</u> : \$750 Land Use Permit	<u>Blue River</u> : \$200 one time/ \$75 renewal <u>Breckenridge</u> : \$175 annual/Admin fee \$50 <u>Boulder</u> : \$130/\$105 renewal <u>Telluride</u> : \$165 +\$22/bedroom annual <u>Estes Park</u> : \$200 +\$50/bedroom <u>Lyons</u> : \$175/ \$50 Renewal <u>Clear Creek County</u> : \$250 one time fee	<u>Denver</u> : \$25 annually <u>Silverthorne/ Frisco/Avon/Aspen</u> : Business License only GLENWOOD SPRINGS: One-time \$110, business license
Additional Tax	Excise Tax Funds Affordable Housing		
	<u>Crested Butte</u> : Additional %5 tax <u>Telluride</u> : Additional %5 tax		
Building Inspection	Building Inspection every year with occupancy limits	Initial Building Inspection, affidavit upon renewal	No Building Inspection
	<u>Georgetown</u> : Annual Inspection <u>Crested Butte</u> : Inspection required to obtain permit and renewal.	<u>Estes Park</u> : Initial inspection <u>Breckenridge</u> : Inspection upon complaint, affidavit <u>Durango</u> : Inspection with Land Use Application <u>Clear Creek County</u> : Initial inspection	<u>Vail</u> : Self certify requirements <u>Lyons</u> : Affidavit self certifying safety standards <u>Boulder</u> : Life Safety Compliance verification form (Both of these Cities require Primary Res) GLENWOOD SPRINGS: No building inspection
Residency Requirement	Primary Residency Required	Some Residency Requirements	No Residency Requirement
	<u>Boulder</u> <u>Lyons</u> : 9 month Residency required <u>Telluride</u>	<u>Crested Butte</u> : No limit to Primary Residence Permits, Limit to Non Primary Residence Permits	<u>Carbondale</u> <u>Frisco</u> <u>Aspen</u> <u>Snowmass</u> GLENWOOD SPRINGS: No residency requirement
Violations	Revocation	Fine Structure	Basic Municipal Fine Structure
	<u>Georgetown</u> : Revocation after 3 violations in 1 year <u>Green Mountain Falls</u> : 3 violations in 1 year <u>Crested Butte</u> : Violation penalty is revocation with 2 year suspension. <u>Vail</u> : 3 violations in 1 year, revoked for two years	<u>Breckenridge</u> : Fine Structure and Temporary License Revocation 1st: Suspension 30 days, \$200 Fine in lieu 2nd: Suspension 60 days, \$500 Fine in lieu 3rd: Suspension 90 days, \$999 Fine in lieu 4th+: Suspension 1 year, no fine in lieu	<u>Telluride</u> GLENWOOD SPRINGS: up to \$1,000 penalty, revocation of permit possible
Violation Response Time	Maximum Response Time	24 Hour Availability to Respond	No Response Time Requirement
	<u>Vail</u> : 30 Minutes, Agent must reside in 60 miles <u>Breckenridge</u> : 60 Minutes <u>Lyons</u> : 60 Minutes (Responsible Agent must be within 60 miles)	<u>Durango</u> : 24 hour Agent, If no response, penalty <u>Clear Creek County</u> : 24 Hour Agent, Must reside within 1 hour from vacation rental property	GLENWOOD SPRINGS

	<u>Estes Park:</u> (Code states "Immediate" response, no amount of time)		
Complaint System	Dedicated Vacation Rental Complaint Line		Standard Code Enforcement
	<u>Breckenridge:</u> STR HELPER, nuisance management system		GLENWOOD SPRINGS
	<u>Boulder:</u> Rental Housing Licensing Code Violation Line and Online submittal		
	<u>Vail:</u> Online Reporting Portal		
Parking	OFF STREET PARKING REQUIRED	Parking Plan Submittal	No Parking Requirement
	<u>Estes Park:</u> 2 minimum off street, except Downtown	<u>Lyons</u>	<u>Estes Park</u> <u>Georgetown</u> <u>Breckenridge</u>
	<u>Durango:</u> 1 per Bedroom onsite	<u>Green Mountain Falls</u>	<u>Frisco</u> <u>Avon</u> <u>Boulder</u>
	<u>Green Mountain Falls:</u> Onsite Parking Plan required	<u>Crested Butte:</u> Over 10 Occupancy requires onsite parking	GLENWOOD SPRINGS: No extra parking required
Neighbor Notification	<u>Clear Creek County:</u> 1 space per Bedroom		
	Adjacent Property Mailing	Duplex Only	No Notificaiton
	<u>Georgetown:</u> 300 Foot Owners	<u>Vail</u>	<u>Carbondale</u> <u>Boulder</u> <u>Denver</u>
	<u>Crested Butte:</u> 100 foot owners		<u>Telluride</u> <u>Blue River</u> <u>Breckenridge</u>
Accessory Dwelling Units	<u>Durango:</u> 150 Foot Owners		<u>Aspen</u> <u>Avon</u> <u>Lyons</u>
	<u>Green Mountain Falls:</u> 150 foot owners		<u>Silverthorne</u> <u>Snowmass</u>
	<u>Estes Park:</u> 100 Foot Owners		GLENWOOD SPRINGS: No notification
	ADU Vacation Rentals Prohibited	One Vacation Rental per Property (Either ADU or Main)	No Regulation
	<u>Estes Park:</u> Lots with ADU's cant have Vacation Rental	<u>Boulder:</u> Either ADU or Main Dwelling can be rental, not both	<u>Carbondale</u> <u>Blue River</u> <u>Silverthorne</u>
	<u>Lyons:</u> ADU VR not allowed, Owner occupancy of ADU while		<u>Breckenridge</u> <u>Avon</u>
	Glenwood Springs: No Vacation Rental in ADU		<u>Lyons</u> <u>Snowmass</u>

Exhibit E Municipal Vacation Rental Matrix

Short-Term Rental Property Ordinance Matrix

Credits: Colorado Association of Ski Towns, City of Fort Collins
Additional Information added by City of Glenwood Springs Staff

City	Primary Residence	Non-Primary Residence	Tax Required	Tax Collected: By municipality or listing agency	Vacation Rental Permit Required	Neighbor Notification	Concentration Limit	Parking Requirement	Zoning Limitations	Fees	Occupancy Requirement	Building Inspection	Other
GLENWOOD SPRINGS	Yes	Yes	Yes	Municipality	yes, non-transferrable	No	No	None	No	One time \$110	none	none	ADU vacation rentals prohibited
Avon	Yes	Yes	Yes	Municipality	Only business license	no	no	None	Yes, Only in Overlay Zone Areas Not in PUD's unless specified	Business License fee only	none	none	
Blue River	yes	yes	yes		yes, non-transferrable	no	not yet		no	\$200 first time; \$75 annually	none		In process of changing much of this.
Boulder	yes	no	yes		yes, non-transferrable	no	no		yes, determine occupancy limits	\$130 first time; \$105 for 4 year license	determined by zone		
Breckenridge	yes	yes	yes	Municipality	yes, non-transferrable	no	no		none- unless deed restricted workforce housing, then prohibited	\$75 - \$175 annually , based on bedrooms One time Admin fee \$25-150	none	Authority to inspect units granted in license language.	Single-Family Home - Special Conditions of License/BOLT License -Location Card posting requirement
Crested Butte	Yes	Yes but restricted with total Cap.	yes		yes, non-transferrable	yes, 100 foot property owners	yes, 30% cap of free market housing units for unlimited category. No limit for Primary Residence.	Over 10 Occupancy requires on site parking	yes, only allowed in certain zones	\$750 annually for Unlimited (two years paid in advance initially) \$200 Annually for Primary Residence	Only for Primary Resident License.	Yes	Max Occupancy of any property 10. Occupancy may be adjusted following physical inspection of the vacation rental property.
Denver	yes	no	yes		yes, non-transferrable	no	no		no	\$25 annually			
Durango	yes	yes	no, no mention		yes, non-transferrable	yes, 300 foot radius	yes, by zone including total number and by block face	1 off street space required	yes, only allowed in certain zones	\$750 first time	Site visit and inspection, property posted, parking requirements	Yes, Required	
Estes Park	no	yes	yes		yes for in town with fee, operating permit for county with no fee	no	588 Permit limit in Residential Zone Districts		no	\$200 base fee plus \$50 per bedroom	2 per bedroom, plus 2 up to 8 total		The Town and County have a task force to examine the 8 limitation on larger homes and other regulations such as neighbor notification and limitation on number of vacation homes within the valley, etc.
Estes Park - outside Town, inside Estes Valley	Same as Town	Same	Same		no; however, an operating permit is required per the land use code (Estes Valley Development Code)	Yes (100 foot)	Same		yes, in all residential zones, A-1 Accommodations/Low Intensity and CD - Downtown Commercial	none	Same		
Frisco	yes		yes		yes	no	none		none	\$75 business license	none		None, we are working on a new ordinance to address notification, occupancy, and several other issues.
Georgetown	yes	yes	sales/lodging		yes, non-transferrable	yes, owners within 300 feet	7% per town ward		no	\$500 first time; \$250 renewal	no		Local owner representative
Green Mountain Falls	Yes	yes	yes	Municipality	yes, non-transferrable	Yes, owners within 150 foot radius	Maximum 60 permits for town, roughly 10% of housing stock.	On site parking plan required for occupancy indicated.				Yes	
Lyons	yes, min 9 months	no	yes	Municipality	yes- non transferrable	no	no	Parking Plan submitted with application	yes, only allowed in certain zones	Annual payment	2/bedroom, Max 8 unless CUP 9 Months minimum primary resident	Yes	Rentals in ADU not allowed Owner occupancy of ADU during Primary rental not allowed Must respond w/in 60min code complaint
Morrison	PROHIBITED. The Board of trustees found that the rental or residential properties for periods of time less than 30 days would have an unacceptable adverse impact upon adjacent properties, public services and public health, safety and welfare because the nature of short-term residential occupation differs in kind and nature from residential occupation of greater than 30 days. Ordinance No. 421 July 2015												
Silverthorne	yes	yes	yes, business license		yes, business license	no	no		no	Business License fee is \$75	none		We only require a business license. We have somebody that tracks websites for rentals without a business license.
Snowmass Village	Yes	Yes	Yes	Third Party Contractor	yes, non-transferrable	No	No		No	No	Yes, under the building code		Not permitted in employee housing units, without prior approval.
Telluride	yes	yes	yes		yes	no	no		yes, restrictions in residential zone	\$165 base fee plus \$22 per bedroom	none		Restrictions in Residential Zone : no more than 3 rentals per year, w aggregate not to exceed 29 days; implemented in 2011; will revisit in 2017
Vail	Yes	Yes	Yes	Municipality	yes, non-transferrable	Yes, Duplex Only	No		No	\$150 annually	Per code, one person per 300 square feet	No	Responsible agent must respond to violations in 60min, 30 min after 11pm
Counties													
Clear Creek County	Yes	Yes	Yes	Municipality	Yes, TRANSFERABLE	100 foot owner notice		1 space per bedroom required		250 one time	Max 9 People Occupancy unless 2 acres or more	Yes, Initial Required	

Eagle County	Short-term rentals not allowed in price-capped deed-restricted units	No county wide restriction	If assessors's office is aware a unit is a rental, it is taxed as such		No	No county wide restriction	No county wide restriction		No county wide restriction	none	Eagle County Land use codes state no more than one person per every 300 square feet; this limit is not enforced		No county wide restriction
Summit County	yes	yes	Subject to the STATE sales tax and mass transit tax. License obtained from the State.		A sales tax license is required through the State of Colorado.	no	no		Not permitted in Deed Restricted Units	no	Per code, one person per 300 square feet		Not at this time
Out-of-state municipalities													
MOAB, UT	PROHIBITED UNLESS GRANDFATHERED IN												
Park City, UT	yes	yes	COMDEV does not have any enforcement.		yes, non-transferrable	yes, in cases of duplexes or if shared common areas/hallways exist between or within a building	Yes, 75 sq. ft per bedroom, at least 50sq ft of floor space per occupant (if more than 1)		yes, only allowed in certain zones or with CUP's in certain zones	\$149.00 Admin Fee, \$28.74 per bedroom fee, \$17.00 Yearly renewal	Yes, 75 sq. ft per bedroom, at least 50sq ft of floor space per occupant (if more than 1)		Site visit and safety inspection
Ketchum, ID	yes	yes	yes		yes, business license	no	no		yes (CC, T & STO zones only)	no	Max 30 days/guest		no
Teton County, WY	No	No	PROHIBITED. No residential										

Glenwood Springs
Vacation Rentals Public Meeting
January 16, 2018

Meeting Objective: To gather detailed public input on what specific requirements are desired and how it maintains/improves community's quality of life; provide Council with further detailed information about residents' perspective regarding management of vacation rentals in Glenwood Springs.

Over 55 people attended the public meeting on management of vacation rentals. The meeting gathered preferences and more detailed reasons for those preferences in six areas (and the options):

1. Application fee – annual (<\$100, \$100-\$300, \$300+), one-time(<\$100, \$100-\$300, \$300+), or a hybrid (larger one-time, smaller annual).
2. Limit the number of vacation rentals –per block, city wide, have a buffer between them, or no limit.
3. Limit for multifamily single-owner buildings – 25%, 20%, 15%, or 10%.
4. Require Fire and Safety Inspections – yes, or no.
5. Limit occupancy – 2 people per bedroom, per room plus number per square feet of common space, or no limit.
6. Primary residency requirement – primary resident, part-time, no residency requirement.

I. Process

Participants listen to a presentation on the survey responses to these six management areas. Then the public provided their preference for all six areas using a sticker to select their preference on each topic (per question; see Appendix A for poll results). After the six areas were polled, participants move into small group discussions to provide more detailed information about each strategy/question; providing reasons for their preferences to a small-group facilitator (see Appendix B for small group facilitator notes). After 15 minutes, participants moved to a new question, a new small group discussion. In all, participants joined four small group discussions (15 minutes each).

II. Executive Summary

Polling Results

Areas with clearer results:

- 82% (41 of 50) - Fire and safety inspections should be required
- 74% (36 of 49) - For multifamily single-owner buildings only 10% should be allowed to be vacation rentals (16% preferred 25%, 6% preferred 20%)

- 57% (28 of 49)- No primary residency requirement (33% preferred a primary residency requirement)
- 54% (29 of 54) – No limit to the number of vacation rentals, not limited citywide or per block nor require a buffer between them. (26% preferred a per block cap, 19% preferred a Citywide cap)

The other two questions' highest response was 45%

- 45% (23 of 51) – Occupancy should be limited to 2 per bedroom (31% preferred a per bedroom plus some based on square feet of common space, and 26% preferred no occupancy limit)
- 45% (19 of 42) – Fee should be \$100-\$300 annually (33% preferred \$300+ annually, and 17% preferred the hybrid – larger application fee, smaller annual fee)

Common Discussion Comments

A few common concerns were raised by participants across several management strategy discussions:

- Impact on available housing for locals;
- Impact on availability of affordable housing for locals;
- Impact on City feel and sense of community; and
- Consistent regulations/treatment across long- and short-term rentals, bed & breakfasts and hotels (fairness across).

The question that garnered the biggest groups during discussion rounds was: Should vacation rentals be limited (citywide, per block, or buffer, or not at all)?

III. Discussion – Why are certain management methods preferred

Participants, in four 15-minute rounds, provided additional details on why the preferred one strategy over another. Below is a summary of the comments made during small group discussions on each question; these do not reflect consensus or majority comments or perspectives (see Appendix A for all polling results and Appendix B for all small group facilitator flip-chart notes).

1. ***What should the Vacation Rental Application Fee be?*** (Options: 1. Annual fee of \$100 or less; 2. Annually \$100-\$300; 3. Annually \$300 or more; 4. One-time payment of \$110 or less; 5. One-time \$120 - \$300; 6. One-time \$300 or more; or 7. Hybrid-higher one-time fee with a smaller annual fee)

Poll: 45% preferred an annual \$100-\$300 fee; 33% preferred annual fee of more than \$300; 17% like the hybrid option (higher application fee, smaller annual fee).

Discussions:

Comments in support of a Higher Fee:

- Amount should cover the costs for the City to:
 - provide better program oversight;
 - provide better education to owners/operators; and
 - provide enforcement of rules and accuracy of reporting.
- A higher amount ensures people are more committed to their investment, and know how to run a professional business.
- A higher fee covers the privilege to earn money in a residential neighborhood.
- One person said the annual fee is better because: The expense to City happens every year; and STRs owners should have to signoff each year on any new rules or procedures.
- Short-term rentals (STRs) are for commercial purposes and should be considered a business (fee will be covered quickly by rentals).

Suggestions:

- It is for a commercial purpose the owner should be required to pay commercial property tax on top of any fees.
- Set a lower fee for smaller space (e.g., lower for renting a room versus a whole house).

Comments in support of a Lower fee:

- Why should STRs pay an application fee if a hotel can just get a business / sales tax license for less money.
- Taxpayers pay enough taxes (e.g., both sales tax and an accommodations tax); adding a fee is just getting greedy.

2. ***How should Vacation Rentals be limited?*** (Options: 1. numerical cap - ex. max. 200 allowed in the city; 2. Numerical cap per block - ex. max 2 per block; 3. Buffer distance between each vacation rental - ex. min 200 feet btwn; or 4. No limit)

Poll Results: 54% preferred no limit; 26% preferred a cap per block, and 19% like a citywide cap.

Discussion:

Support for “No Cap” because...

- STRs provide options for visitors –
 - provide amenities not in hotels (washer/dryer, kitchen);
 - provides a “local” experience; and
 - provides a potentially more affordable option than a hotel.

- Cap is not needed because –
 - the market is self-limiting;
 - STRs makes up only a small amount of overall city housing;
 - other regulations could limit the amount (occupancy, inspections); and
 - this won't achieve the intent to control for bad visitors (cannot control quality of long-term neighbors, how could one control visitors?).
- STRs are good for the community –
 - often STRs are in better shape (pretty to be competitive);
 - STRs provide a way for residents to afford to live in Glenwood; and
 - their visitors contribute to the local economy (restaurants, shops, attractions).
- Cap would be unfair - Setting caps lock out owners from the option of having an STR.
- Concern - Limiting the number could drive up the average nightly rate for staying in an STR.

A limit/cap is needed because too many STRs will...

- Decrease available housing for locals; secondarily, impacting local businesses ability to attract employees.
- Raise the cost of housing for locals.
- Decrease the community feel and create dead neighborhoods (no one knows their neighbors).
- *Concern (by block)* - There is a challenge of limiting STRs by block, how is the size of a block determined?
- *Concern (citywide)* - Setting a city-wide limit does not disperse STRs.

Suggestions/Consider

- If a limit is set, how would currently permitted STRs be included/managed?
- If a limit is set, there needs to be some due process to review STR permits.
- Consider how to address permit holders that do not actively rent out units; a cap should be for those owners that will actually operate a STR.
- Downtown neighborhoods have the most impact from STRs.

Other Vacation Rental Management Comments

- If no parking is available, don't issue STR permits.
- Don't make owners responsible for the conduct of their guests; you don't make owners responsible for the conduct of their long-term renters.
- Regulation of STR and long-term rentals should be the same.

- 3. *How should Vacation Rentals be limited in Multifamily buildings with a single owner?*** (Options: 1. 25% of the unit total, or at least 1; 2. 20% of the unit total, or at least 1; 3. 15% of the unit total, or at least 1; or 4. 10% of the unit total, or at least 1

Poll Results: 74% preferred the lowest 10% cap for single-owner multifamily buildings; 16% preferred the highest 25% cap.

Discussion:

(note: participants may have confused the idea of “single-owner” multifamily buildings with multiple owner buildings.)

Concerns Considered

- If more units are STR there will be a decrease in available housing for locals.
- Any limit will be tough to enforce.
- If more units are STR there will be a loss of affordable housing for locals.
- Parking issues - apartment buildings becoming hotels.
- Limits investment.
- Financing issues – could an owner get financing if cap was too small, or a cap at all?
- Already too many regulations (City, VRBO, AirBnB).

Comments

- A limit is not needed, the market will determine the amount.
- STRs benefit tourism and the City with sales tax, occupancy tax and use of local businesses.

Suggestions

- Perhaps 1 per X number of units, instead of percentage.
- City should seek out advice on the issue.

4. *Should Fire and Safety Inspections be conducted for Vacation Rentals?* (Options: 1. Yes, require Fire and Safety Inspection for vacation rentals; or 2. No, not needed leave as is now.

Poll Results: 82% preferred fire and safety inspections be required; 18% said they weren't needed.

Discussion:

Comments for requiring Fire and Safety Inspections

- STRs are commercial use, like hotels, and should be treated as commercial properties.
- Inspections are needed for fire safety, it is important.
- Inspections offer the people staying at that property a layer of protection; and renters assume the unit/house has been inspected by the city.
- Upgrading the STR house/unit is the cost of doing business.
- Inspections will regulate the total number of listings, not everyone will want to make improvements.
- Accessory Dwelling Units are required to have inspections, so vacation rentals should be required as well.

Suggestions

- Inspection should be conducted every other year.
- Send a questionnaire every year asking the owner if they have made any improvements.
- Inspections should be posted in the rental to show it is was completed and they passed, and should also include the number of occupants allowed.

Comments for no Fire and Safety Inspection requirement

- Online ratings will self-regulate safety, if a house is not safe website ratings will reflect it.
- Inspecting every short-term rental will take too much staff time.
- Long-term rentals don't require an inspection, why do short-term rentals?
- This will increase the cost of the permits.

5. ***Should the building department set occupancy limits?*** (Options: 1. Yes, no more than 2 people per bedroom; 2. Yes, people per bedroom with additional in common areas based on square footage. (based on International Property Maintenance Code); or 3. No, not needed. Owners of rentals set occupancy limit on online listings.)

Poll Results: 45% preferred a 2-per bedroom occupancy limit; 31% preferred a per bedroom plus some based on square footage of common areas; and 24% preferred no limit, not needed.

Discussion:

Comments for setting an Occupancy Limit

- Manages possible noise, trash and parking problems.
- Occupancy limits should be the same for hotels, short-term and long-term rentals.
- Need to manage for overcrowding.
- Glenwood is overcrowded, and there is a lack of housing.
- Safety is an issue when piling people in.

Concern

- How will it be enforced?

Suggestions/Consider

- Number of bathrooms is a factor for occupancy.
- What about large bedrooms, maybe base it on square feet.
- Parking should be a part of the STR permit process as it relates to occupancy.
- Must have local contact for permits, someone to contact if there is a violation.
- Residential parking permits would eliminate short term renters from parking on street.

- Enforce occupancy with renewal process, if break a rule the owner cannot renew their permit.
- Initiate a complaint system with penalties for reported problems.

Comments in opposition of setting an Occupancy Limit

- Self-regulating is fine.
- Occupancy is the home owner's responsibility.
- Owner shouldn't be responsible for renter's behavior.
- STRs are more affordable for groups, than hotels.

6. Do you support a Primary Resident requirement? (Options: 1. Yes, as primary resident (would require proof that it is owner's primary residence); 2. Yes, as part-time with minimum residency; or 3. No, not needed)

Poll Results: 57% preferred no residency requirement; 33% preferred a primary residency requirement.

Discussion:

Comments in support of Primary Residence requirement

(note: although the poll showed majority did not want this, most of the comments during discussions were about concerns that would lead to the requirement)

- Loss of housing in the city due to out-of-town owners buying up the houses.
- Outside owners/interests take money out of the community.
- City character changes with non-owner occupied STRs, particularly if owned by investment corporations; we are losing our small-town feel.
- Need local engagement with rental owners.
- Local owners connect with and contribute to the community.
- Unobserved short-term renters cause more damage to neighborhoods.
- Rules are harder to enforce with absentee owners, and absentee owners are not abiding by the rules; how does the City contact out-of-town owners with violations?
- Ensures homes aren't turned into party hotels.
- Helps address the declining availability of employee housing.
- Helps address the declining amount of affordable housing
- Improves control of issues and oversight of the property.
- Local owners contribute to the tax base and the community

Suggestions/Consider

- Consider seasonal employment needs when considering length of occupancy time.
- Regulations are unbalanced with how Bed & Breakfasts are required to have parking/on site manager etc., should be the same for vacation rentals.
- Consider a local ownership requirement instead of Primary Residency, perhaps the owner's primary residence must be in the 81601-zip code?

- Consider requiring use of a local management company instead of Primary Residency requirement.

Comments opposed to a Primary Residency Requirement, support no requirement.

- If property damage is the key concern, short-term renters are not as bad as long-term renters, and the average age of a short-term renter is 50 years old (more likely to not do major damage) which is older than long-term renters.
- Will be challenging to enforce.
- Would limit investment in the community.
- Many STR properties are too expensive for long-term renters, leaving property owners with little choice.
- Bars people from entering the rental ownership market.

APPENDIX A: Polling Results from the Meeting

Question/Answers	Results #	Results %
1. What should the Vacation Rental Application Fee be?	42	
Annual Fee - \$100 or less	1	2.4%
Annual Fee - \$100-\$300	19	45.2%
Annual Fee - \$300 or more	14	33.3%
One-Time - \$110 or less	4	9.5%
One-Time - \$120-\$300	4	9.5%
One-Time - \$300 or more	0	0%
Hybrid – Higher application fee, smaller annual fee	7	16.7%
2. How should Vacation Rentals be limited?	54	
City Wide numerical cap (ex. Max. 200 allowed in the city)	10	18.5%
Per block numerical cap per block (ex. Max 2 per block)	14	25.9%
Buffer distance between each (ex. Min 200 feet btwn)	1	1.9%
No limit	29	53.7%
3. How should Vacation Rentals be limited in Multifamily buildings with a single owner? (survey responses indicate a desire for limit)	49	
25% of the unit total, or at least 1 <i>Example: 1 vacation rental for buildings up to 7 units, 2 vacation rentals for buildings with 8-11 units, 3 vacation rental permits for buildings with 12-15 units and so on.</i>	8	16.3%
20% of the unit total, or at least 1 <i>Example: 1 vacation rental for buildings up to 9 units, 2 vacation rentals for buildings with 10- 14 units, 3 vacation rental permits for buildings with 15-19 units and so on.</i>	3	6.1%
15% of the unit total, or at least 1 <i>Example: 1 vacation rental for buildings up to 13units, 2 vacation rentals for buildings with 14-19 units, 3 vacation rental permits for buildings with 19-26 units and so on.</i>	2	4.1%
10% of the unit total, or at least 1 <i>Example: 1 vacation rental for buildings up to 19 units, 2 vacation rentals for buildings with 20-29 units, 3 vacation rental permits for buildings with 30-39 units and so on.</i>	36	73.5%
4. Should Fire and Safety Inspections be conducted for Vacation Rentals?	50	
Yes, require them. Reinstituting building inspections does mean that property owners may have to complete some renovation work prior to receiving a permit.	41	82%
No, not needed Owners sign an affidavit stating that fire and building safety measures are met and accept all liability.	9	18%

Question/Answers	Results #	Results %
5. Should the building department set occupancy limits? This was previously identified by the Building department and listed on the permit for maximum persons.	51	
Yes, no more than 2 people per bedroom	23	45.1%
Yes, people per bedroom with additional in common areas based on square footage. (Based on International Property Maintenance Code)	16	31.4%
No, not needed. Owners of rentals set occupancy limit on online listings.	12	23.5%
6. Do you support a Primary Resident requirement? Some communities, such as Denver, Lyons, Boulder and Crested Butte require vacation rental property be the owners Primary Residence.	49	
Yes, as primary resident (would require proof that it is the owner's primary residence)	16	32.7%
Yes, as part-time with minimum residency	5	10.2%
No, not needed	28	57.1%

APPENDIX B: Small Group Facilitator Flip-Chart Notes

Small Group Facilitator Flip Chart Notes
<i>What should the Vacation Rental Application Fee be? (Options: 1. Annual fee of \$100 or less; 2. Annually \$100-\$300; 3. Annually \$300 or more; 4. One-time payment of \$110 or less; 5. One-time \$120 - \$300; 6. One-time \$300 or more; or 7. Hybrid-higher one-time fee with a smaller annual fee)</i>
<u>Comments for a Higher Fee:</u> • Charge a higher fee to provide more/better oversight of the program • Make it high enough to cover the cost of educating operators about their options • Should be more than \$300, this is a commercial purpose and that investment is recoverable in a couple of stays • Higher fee will make people more committed to their investment • It is for a commercial purpose the owner should be required to pay commercial property tax on top of any fees • High enough to cover the cost of administration to the City; taxpayers should not have to subsidize someone's private business • Higher fee (\$1000 annually): a. As a barrier of entry to reduce the number of "fly-by-night" owners who don't know how or won't run a professional business; and b. For the privilege of earning money in a residential neighborhood

- High enough to fund the city to enforce rules and reporting; ensure people accurately report number of rentals (e.g., not being able to say they rented it three times in a month when they actually rented it 20 times)
- Support for Annual fee: a. the expense to City happens every year; b. STRs owners should have to signoff each year on any new rules or procedures.

Comments for a Lower fee:

- Why should STRs pay an application fee if a hotel can just get a business / sales tax license for less money
- We pay both a sales tax and an accommodations tax; the City makes a ton of money on us, adding a fee is just getting greedy

Suggestion:

- Set a lower fee for smaller space (e.g., lower for renting a room versus a whole house)

How should Vacation Rentals be limited? (Options: 1. numerical cap - ex. max. 200 allowed in the city; 2. Numerical cap per block - ex. max 2 per block; 3. Buffer distance between each vacation rental - ex. min 200 feet btwn; or 4. No limit)

Comments for “No Cap”

Good to have NO Cap because:

- Provides homeowners with supplemental income (mentioned 4 times).
- Provides amenities not found in standard hotels (kitchens, washer/dryer, etc.)(mentioned 4 times).
- Not needed - The number of Short-Term-Rentals (STR) is self-limiting; the cap will be market driven. (mentioned 3 times)
- Cannot control quality of long-term neighbors, why control STRs?(mentioned 3 times)
- STRs provide affordable housing options for tourists
- Provides “local” experience for tourists.
- Properties are maintained to a higher degree than other properties (because of competition from other STRs and client comments)
- STRs are a small percentage of the overall housing
- STR guests contribute to the local economy – restaurants, shops, attractions

Suggestions/Consider

- Manage STRs through other regulations such as occupancy limits and inspections.

Concerns

- Setting caps lock out owners from the option of having an STR

Comments for a Cap

Good to implement a cap because:

- Limiting number of STRs may help with housing for locals.(mentioned 4 times)
- STRs are affecting the ability of local businesses to attract employees. (mentioned 3 times)
- STRs are raising the cost of housing in the city. (mentioned 3 times)
- Set a limit to protect neighborhoods
- There is a declining sense of community (mentioned 3 times)
- STRs create dead neighborhoods where neighbors do not know neighbors.
- There is an overwhelming number of STRs already in the city.
- STRs are driving down the economy.

Suggestions/Consider

- Consider how to address permit holders that do not actively rent out units. Open cap to those owners that will actually operate a STR.
- Local management needed to limit parties in STRs
- Like the Crested Butte method of capping STRs
- Greatest impact of STRs if felt in downtown neighborhoods
- There needs to be some due process to review STR permits

Concerns

- Limiting the number could drive up the average nightly rate for staying in an STR
- *Re: by-block option* - There is a challenge of limiting STRs by block – how is the size of a block determined?
- *Re: citywide option* - Setting a city-wide limit does not disperse STRs
- If you set a limit, how do you deal with the STRs already permitted?

Comments on Vacation Rentals Unrelated to Question

- If no parking is available don't issue STR permits
- Don't make owners responsible for the conduct of their guests; you don't do this for long-term rentals.
- Regulation of STR and LTR should be the same.

How should Vacation Rentals be limited in Multifamily buildings with a single owner? (Options: 1. 25% of the unit total, or at least 1; 2. 20% of the unit total, or at least 1; 3. 15% of the unit total, or at least 1; or 4. 10% of the unit total, or at least 1

Concerns

- Limits availability of housing for locals
- Tough to enforce
- Loss of affordable housing
- Parking issues with apartment buildings becoming hotels.
- Limits investment.
- Financing issues.
- There are too many regulations (City, VRBO, AirBnB)

Comments

- Market will determine (2)
- This is not an affordable housing issue; low wages are the issue, not short-term rentals
- Short term rentals benefits tourism, sales tax, occupancy tax and business.

Suggestions

- HOA should govern building limits. (2)
- Perhaps 1 per X number of units, instead of percentage.
- City should seek out advice on the issue.

Should Fire and Safety Inspections be conducted for Vacation Rentals? (Options: 1. Yes, require Fire and Safety Inspection for vacation rentals; or 2. No, not needed leave as is now.

Yes, Good to require

- We have older housing stock in Glenwood and therefore lots homes will not be up to today's standards, not fair to ask everyone upgrade
- Should have the exact same standard for inspections as hotels
- Inspections are needed for fire safety, it is important
- Inspections offer the people staying at that property a layer of protection
- People renting assume units are approved by the city, that it should be safe.
- Upgrading your house is the cost of doing business
- Inspections will regulate the total number of listings
- This is a commercial use and it should be treated like one.
- If a Certificate of Occupancy has already been issued it should be up to code and it should need an inspection
- Accessory Dwelling Units are required to have inspections, so vacation rentals should be required as well
- Since the time and code change, so should one's house and it should be brought up to code
- This will regulate the total number of rentals because not everyone will want to make the improvements

Suggestions

- Inspection should be conducted every other year
- Send a questionnaire every year asking the owner if they have made any improvements
- Inspections should be posted in the rental to show it is done and passed, including the number of occupants allowed

No, not needed

- Online ratings will self-regulate, if a house is not safe ratings will reflect that
- Inspecting every short-term rental will take too much staff time
- Long term renters don't require an inspection why do short term renters
- Why do long term rentals have no inspections, but short-term rentals do

- Renters will self-regulate on various websites if the property is not safe.... But, the bad owners ruin it for the good owners when it comes to inspection
- If inspections are required it will increase the cost of the permits

Should the building department set occupancy limits? (Options: 1. Yes, no more than 2 people per bedroom; 2. Yes, people per bedroom with additional in common areas based on square footage. (based on International Property Maintenance Code); or 3. No, not needed. Owners of rentals set occupancy limit on online listings.)

Comments for setting an Occupancy Limit

- Manages possible noise, trash and parking problems
- Easy to advertise the 2 per bedroom limit
- Occupancy should be equitable for both long term and short-term rentals, (i.e. hotel occupancy is set).
- Long term, short term and hotels should be equal in regulation.
- Need to manage for overcrowding, hard to do, but need to do it
- Glenwood is overcrowded
- With City Regulation, gives owner teeth to enforce/persuade limits.
- Same regulations as hotels.
- Helps with parking and noise impacts
- Safety is an issue when piling people in.
- A lack of housing in GWS overall.

Concerns

- What about large bedrooms, maybe base it on square feet.
- What happens when someone violates the limits? Hard to regulate.
- How will it be enforced? (2)

Suggestions/Consider

- Number of bathrooms is a factor for occupancy as well.
- Need building inspections.
- Enforce a parking limitation too
- Parking should be a part of the STR permit process as it relates to occupancy.
- Needs enforcement
- Must have local contact for permits, someone to contact if there is a violation.
- Could use parking regulations as way to enforce occupancy regulations.
- Residential parking permits would eliminate short term renters from parking on street.
- Enforce occupancy with renewal process, if break rule cannot renew permit.
- Should be a complaint system with penalties for reported problems.

Comments in opposition of setting an Occupancy Limit

- Self-regulating is fine
- Occupancy is the home owner's responsibility
- Owner shouldn't be responsible for renter behavior.

- Self-limiting through the advertising of what a home can accommodate.
- STRs are more affordable for groups, than hotels.

***Do you support a Primary Resident requirement?** (Options: 1. Yes, as primary resident (would require proof that it is owner's primary residence); 2. Yes, as part-time with minimum residency; or 3. No, not needed)*

Comments for a Primary Residence Regulation

- Loss of housing in the city due to out-of-town people buying up the houses.
- Don't want out of town owners.
- Outside interest takes money out of the community.
- No community connection with non-owner occupy.
- Need local engagement with rental owners.
- Local owners connect with and contribute to the community.
- No way to contact out-of-town owners.
- Vacation rentals creating a workforce housing shortage.
- Short-term renters cause more damage to neighborhood.
- Depends on how long the occupancy for a Primary Residence is (is 9 months too long?).
- Rules are harder to enforce with absentee owners, and they are not abiding by the rules.
- When corporations buy up investment properties the character will change.
- Losing the small town feel with increase in non-resident STRs; they will shape the future of GWS.
- Ensures homes aren't turned into party hotels.
- Reducing amount of employee housing availability.
- This could be a crisis in 10 years if nothing is done now to limit.
- Too many vacation rentals push up long term rental prices. (2)
- Owners need to be invested in the community.
- City needs to regulate.
- Improves control of issues and oversight.
- Local owners contribute to the Tax base and the community
- Need to keep the financial benefits of STRs in the City, not to outside investment companies.
- Short term rentals are causing the breakdown of rentals.

Suggestions/Consider

- Consider our seasonal employment when considering length of occupancy time.
- Regulations are unbalanced with how Bed and Breakfasts are required to have parking/on site manager etc., should be the same for Vacation Rentals.
- Want Local Ownership instead of Primary Residency, perhaps owner must be in 81601 zip code?
- Local Management Companies could be required instead of Primary Residency

Comments opposed to a Primary Residency Requirement, support no requirement.

- IRS has a 14-day occupancy limit for deduction purposes making an occupancy requirement less and less desirable for people who want to run a rental.
- Long term renters cause more damage to property
- Average age of STR is in 50's which is nicer than long term renter demographic.
- Enforcement and regulation of this seems challenging. (2)
- Would limit investment in the community.
- Many STR properties are too expensive for long term renters, leaving property owners with little choice.
- Houses are too expensive to break even with mortgages with long term renters.
- Bars people from entering the market.
- Too many loopholes in effectively regulating Primary Residence or part time residency.

Comment/Note Cards Submitted

- Whatever is decided by Council, hopefully there will be a follow up 1-2 years down the road to see if new policy is working and supported by the community.
- It is important to consider the financial contribution of short-term rentals to the City.

APPENDIX C: Agenda

**Glenwood Springs
Vacation Rentals Public Meeting
Community Center - 100 Wulfsohn Rd, Glenwood Springs
January 16, 2018; 6:00-8:00pm**

Meeting Objective: To gather detailed public input on what specific requirements are desired and how it maintains/improves community's quality of life; provide Council with further detailed information about residents' perspective regarding management of vacation rentals in Glenwood Springs.

6:00 Welcome, Agenda Preview, Meeting purpose

6:05 Presentation: The benefits and challenges of vacation rentals for Glenwood; and public survey results regarding possible regulations.

6:35 Gather Public Input: Sticky-Dot polling – To help direct small group discussions, participants will select a preference for each question (one sticky-dot per question).
Process: Participants will select and put a sticky-dot on their preferred answer.

6:45 Gather Public Input: Discussion – To gather more detailed input from as many people as possible, participants will rotate in small groups per question.
Process: World-Café – participants will rotate in small groups through four questions (15 minutes each) to provide more detail about a question and whether a certain requirement is important or not, and how it will help or hurt. Each question will have a staff facilitator to gather the input and ask probing questions. Participants are asked to spread out evenly among all questions to ensure more input/discussion is given to all questions.

1. What should the Vacation Rental Application Fee be?
 - a. Annual Fee
 1. \$100 or less, annually
 2. \$100-\$300, annually
 3. \$300 or more, annually
 - b. One-time payment
 1. \$110 or less, one-time
 2. \$120 - \$300, one-time
 3. \$300 or more, one-time
 - c. Application Fee (bigger one time) with annual fee (smaller renewal)
2. How should Vacation Rentals be limited? (Survey responses indicate desire for a numerical limit)
 - a. Numerical cap (ex. Max. 200 allowed in the city)
 - b. Numerical cap per block (ex. Max 2 per block)
 - c. Buffer distance between each vacation rental (ex. Min 200 feet btwn)
 - d. No limit
3. How should Vacation Rentals be limited in Multifamily buildings with a single owner? (survey responses indicate a desire for limit)
 - a. 25% of the unit total, or at least
Example: 1 vacation rental for buildings **up to 7 units**, 2 vacation rentals for buildings with **8-11 units**, 3 vacation rental permits for buildings with **12-15 units** and so on.
 - b. 20% of the unit total, or at least 1
Example: 1 vacation rental for buildings **up to 9 units**, 2 vacation rentals for buildings with **10- 14 units**, 3 vacation rental permits for buildings with **15-19 units** and so on.
 - c. 15% of the unit total, or at least 1
Example: 1 vacation rental for buildings **up to 13units**, 2 vacation rentals for buildings with **14-19 units**, 3 vacation rental permits for buildings with **19-26 units** and so on.
 - d. 10% of the unit total, or at least 1
Example: 1 vacation rental for buildings **up to 19 units**, 2 vacation rentals for buildings with **20-29 units**, 3 vacation rental permits for buildings with **30-39 units** and so on.
4. Should Fire and Safety Inspections be conducted for Vacation Rentals?
 - a. Yes, require Fire and Safety Inspection for vacation rentals. Reinstating building inspections does mean that property owners may have to complete some renovation work prior to receiving a permit.
 - b. No, not needed leave as is now. Owners sign an affidavit stating the fire and building safety measures are met and accept all liability.
5. Should the building department set occupancy limits? This was previously identified by the Building department and listed on the permit for maximum persons.
 - a. Yes, no more than 2 people per bedroom.
 - b. Yes, people per bedroom with additional in common areas based on square footage. (based on International Property Maintenance Code)
 - c. No, not needed. Owners of rentals set occupancy limit on online listings.
6. Do you support a Primary Resident requirement? Some communities, such as Denver, Lyons, Boulder and Crested Butte require vacation rental property be the owners Primary Residence.
 - a. Yes, as primary resident (would require proof that it is owner's primary residence)
 - b. Yes, as part-time with minimum residency
 - c. No, not needed.

7:50 Next Steps

8:00 Adjourn



Memorandum

To: Planning and Zoning Commission & City Council
From: Housing Commission
Date: February 13, 2019
Re: VACATION RENTALS

The Housing Commission reviewed current Vacation Rental program regulations, public opinion through an online survey and public meeting, as well as research on different municipal approaches provided by staff. After careful analysis of these issues and consideration of Comprehensive Plan goals and Housing Commission goals, the following recommendations are submitted for City Council consideration.

The Housing Commission's goal is to create a diversity of housing size and type, including homeownership and rental, in order to house Glenwood's workforce, Students, Retirees, and other populations as identified, including homeless population.

The City of Glenwood Springs's Comprehensive Plan includes several community goals that pertain to the topic and execution of vacation rental policy. Those are;

- Maintain small town character while maintaining the livability of Glenwood Springs
- Preserve and increase the vibrancy and commercial success of the Downtown
- Provide housing opportunities for the entire community
- Maintain Glenwood's role as a regional center
- Promote sustainable economic diversity
- Support social diversity

In order to uphold the Housing Commission Goal, as well as those outlined in the Comprehensive Plan, the Housing Commission seeks to recommend equitable solutions that protect public interests such as housing affordability, while retaining the economic benefits to the community and residents that vacation rentals can afford. Those recommendations are as follows.

Application Fee

The Housing Commission recommends a reoccurring fee, either annual or biennial depending on permit renewal timeline, for the operation of a Vacation Rental. The application fee would be required at time of initial application and at each subsequent renewal. The amount of the fee should be closely tied to staff time spent administering the program.

Building Inspections

Housing Commission recommends returning to the previous policy of requiring a building inspection to be completed prior to the issuance of a vacation rental permit, for compliance with life safety and building code measures. The frequency and interval of such inspections should be determined with consideration to staff time and capacity.

Multifamily Single Owner Building Limitations

The Housing Commission recommends the current policy of a 25% limit on the number of units in a single owner multifamily building that can operate as vacation rentals.

Numerical Limit on total Vacation Rentals

The Housing Commission recommends City Council review this topic and consider a limit on the number of vacation rentals. The growth capability of the vacation rental industry poses concerns for the availability of long term housing stock in Glenwood Springs. The Housing Commission recommends that City Council define what level of vacation rentals, based on a percentage of the housing stock, is appropriate for upholding the Community housing goals of Glenwood Springs.

Violations and Penalty Schedule

The Housing Commission recommends adopting a violation and suspension schedule similar to Georgetown and Green Mountain Falls Colorado that limits the number of violations that can occur before a vacation rental permit is revoked. This approach incentivizes compliance and poses clear terms for revoking a vacation rental permit. Currently the Director is given authority to revoke a permit with unclear parameters for when it should occur.

Excerpt from Green Mountain Falls Municipal Code:

All permitted short term rentals are subject to inspection under this Chapter. Licenses may be revoked or not renewed by the [Director] if license conditions and requirements are not met or if more than three (3) violations of license conditions or the requirements of this Chapter are found within one license year.

EXHIBIT H. Building Department Recommendation



Memorandum

To: City Council
From: Rick Fout, Building Official
GWS Building Department
Date: February 7, 2019
Re: VACATION RENTAL BUILDING INSPECTIONS

In response to public inclination for building inspections of Vacation Rentals as indicated in the online survey and public meeting, the Building Department submits these comments for consideration.

1. Requiring Inspections-

The Building Department supports renewing building inspections for vacation rental properties to check for, in general, existing serious life safety issues.

2. Inspection Frequency and type-

We recommend said properties should be inspected by the Building and Fire Department at time of application, and upon any renewal of permit (two years). Major inspection concerns from the Bldg. Dept. perspective include:

- (a) Appropriate egress openings (window or door), from all bedrooms.
- (b) Smoke alarms and CO alarms in all required locations (battery type OK).
- (c) Availability of a fire extinguisher and posted map to it plus all egress pts.
- (d) Safe condition of appliances, furnaces, hot water heaters, any flues, etc.
- (e) Present and appropriate interior and exterior stairway handrails and balcony guards.
- (f) Properly placed house numbers on front of building in plain sight of emergency responders, and any other serious life safety issues that exist.

3. Cost of Inspection-

Rather than going back to the random amount of \$94 we would like to raise the inspection fee to \$100. That would cover the staff's time in most cases, one hour in the field and one hour back at the office, at our standard charge of \$50 per hour.

4. Occupancy-

For a typical vacation rental (detached back-yard building or separate-entry portion of main residence) the type of occupancy is **Residential, Group R-3** under the general description as a "Boarding House (transient) with 10 or fewer occupants." The final total allowed being set by the inspector and the owner, and following the ICC's International Property Maintenance Code, specifically Section 404 (copies available).

EXHIBIT H. FIRE DEPARTMENT RECOMMENDATION



Memorandum

To: City Council
From: Greg Bak, Fire Protection Analyst
Glenwood Springs Fire Department
Date: February 7, 2019
Re: VACATION RENTAL BUILDING INSPECTIONS

In response to public inclination for building inspections of Vacation Rentals as indicated in the online survey and public meeting, the Fire Department submits these comments for consideration.

1. Requiring Inspections

The Fire Department strongly supports the idea of building inspections for vacation rental properties.

2. Inspection Frequency and type

We recommend said properties should be inspected by the Building and Fire Department at time of application, and upon any renewal of permit. Major inspection concerns from the fire perspective include:

- (a) Egress from the unit (as designed and maintained);
- (b) Access to the unit by fire and EMS crews;
- (c) Smoke/C-O detection and notification;
- (d) Availability of a fire extinguisher;
- (e) Safe use of heat-producing appliances;
- (f) Ensuring that the property OWNER understands that adherence to outdoor burning (recreational and cooking) regulations is the OWNER's responsibility. These regulations are readily available from the Fire Department.

3. Cost of Inspection:

Fire Inspections are performed free of charge. Since these properties are in actuality used for commercial purposes, if there is to be a plan review process I recommend the normal charge for such review.

4. Occupancy:

For a typical vacation rental (detached back-yard building or separate-entry portion of main residence) the type of occupancy is **Residential, Group R-3** under the general description as a "Boarding House (transient) with 10 or fewer occupants."

RESOLUTION 2017-54**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, PROVIDING AN AMNESTY PERIOD TO ALLOW THE LICENSING AND PERMITTING OF SHORT-TERM AND ACCESSORY TOURIST RENTALS.**

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) requires all owners of short-term and accessory tourist rentals in the City to be obtain business and sales tax licenses and a permit for the operation of their lodgings; and

WHEREAS, renting any property as a short-term or accessory tourist rental without first obtaining local business and sales tax licenses and a permit, and remitting all applicable local sales tax to the City is a violation of the Glenwood Springs Municipal Code and punishable by fines of up to \$1,000.00 each day; and

WHEREAS, the City’s staff performs regular review of publicly available information to locate unpermitted short-term and accessory tourist rentals in City, and in doing so, identifies short-term and accessory tourist rentals that have not been permitted or remitted applicable sales taxes; and

WHEREAS, the City Council for the City of Glenwood Springs finds and declares that it is in the public good and interest to provide an amnesty period for any un-permitted short-term and accessory tourist rentals to be licensed and permitted with the City in order to ensure the future, orderly collection of applicable sales taxes.

NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, THAT:

Section 1. Recitals. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. Applicability. This Resolution shall apply to any short-term or accessory tourist rental unit within the City of Glenwood Springs that does not have a required sales tax license and/or permit as of the effective date of this Resolution.

Section 3. Amnesty Period. Any unlicensed and/or unpermitted short-term or accessory tourist rental within the City may apply for and receive the required licenses and rental permits without penalty if applied for by December 8, 2017.

Section 4. Affidavit. In receiving required licenses applicants shall be required to sign an affidavit regarding the minimum standards and inclusions required by the City and assuming responsibility for the safety of the rental for occupancy, as set forth on the attached **Exhibits A and B**, incorporated herein by this reference.

INTRODUCED, READ, AND PASSED THIS 2ND DAY OF NOVEMBER 2017.

CITY OF GLENWOOD SPRINGS, COLORADO



ATTEST:



Michael Gamba, Mayor

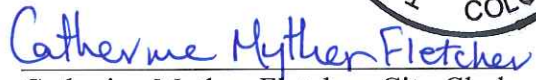

Catherine Mythen Fletcher, City Clerk

Exhibit A



SHORT TERM RENTAL PERMIT
APPLICATION

Short term rental means the rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, boarding or rooming house, accessory tourist rental, or hotel. This definition does not include offering the use of one's property where no fee is charged or collected.

GENERAL INFORMATION

OWNER:

Name: _____ Business/Tax License # _____

Mailing Address: _____

Phone No.: (home/office) _____ (mobile) _____

E-Mail Address: _____

RENTAL PROPERTY INFORMATION:

Physical Address: _____

Complex Name.: _____

Number of Bedrooms: _____ Number of Dedicated Parking Spaces: _____

RESPONSIBLE PARTY: ☐ Owner ☐ Designated Responsible Party (below)

Name: _____ Company: _____

Mailing Address: _____

Phone No.: (home/office) _____ (mobile) _____

E-Mail Address: _____

Exhibit A

AFFIDAVIT

By signing this Affidavit I represent that all information contained in this application is true and correct to the best of my knowledge and acknowledge and agree to abide by the requirements and restrictions of the Glenwood Springs Municipal Code as pertains to short-term rentals and affirm the following:

1. I have obtained a City of Glenwood Springs business and sales tax license as required under Title 050 of the Glenwood Springs Municipal Code and will promptly remit all applicable taxes in conformance with state and local law. If an individual or business entity acts as the Responsible Party, only one business license shall be required.

2. The rental of the property herein described is permissible under all applicable local zoning and land use regulations under the Glenwood Springs Municipal Code and any covenants and restrictions imposed by any owners' association with authority over the property.

3. I agree that the City of Glenwood Springs does not inspect accessory tourist rentals for conformance with applicable building codes prior to occupancy, that I am responsible for maintaining the property for health and safety, and to indemnify, defend, and hold harmless the City of Glenwood Springs, including its officers, agents, and employees, from any action resulting from damage, loss, injury, including death, of any occupant of the rental property herein described.

4. I have read and understand the requirements, restrictions, and standards of Section 070.040.120 of the Glenwood Springs Municipal Code and shall strictly comply therewith.

Note: A Short-term Rental Permit will only be issued after the application has been reviewed and approved in accordance with the Glenwood Springs Municipal Code. Specific terms and conditions may be included in the permit. All permits will be issued to the owner(s) of the property. A change in ownership requires the new property owner to apply for a new permit. Short-term rental permits expire at the end of odd numbered years. Property owners will be sent a new application form prior to expiration of their permit.

Owner(s) Signature: _____ Date: _____
_____ Date: _____

ADMINISTRATIVE USE ONLY:

Application received by: _____ Date: _____

Application fee collected ☐ Amount: _____

Exhibit B



ACCESSORY TOURIST RENTAL PERMIT APPLICATION

Accessory Tourist Rental means the rental for monetary compensation of not more than one (1) bedroom for transient lodging to guests in those residential units which contain a minimum of two (2) bedrooms; is owner occupied or is occupied by a resident manager; and which comply with the provisions of Section 070.040.130 of the Glenwood Springs Municipal Code. This definition does not include a bed and breakfast or short-term rental.

GENERAL INFORMATION

OWNER:

Name: _____ Business/Tax License # _____

Mailing Address: _____

Phone No.: (home/office) _____ (mobile) _____

E-Mail Address: _____

RENTAL PROPERTY INFORMATION:

Physical Address: _____

Complex Name.: _____

Number of Bedrooms: _____ Number of Dedicated Parking Spaces: _____

(A minimum of two (2) bedrooms is required, one (1) for the resident manager or property owner to reside in and one (1) for guests.)

Provide a brief description of the bedroom that is to be used for the Accessory Tourist Rental. (For example, "upstairs back bedroom with two queen beds," or similar description.)

RESIDENT MANAGER: ☐ Owner ☐ Designated Resident Manager (below)

Exhibit B

(Either the property owner or a designated resident manager is required to live in the residential dwelling unit that will be used as an accessory tourist rental)

Name: _____

Phone No.: (home/office) _____ (mobile) _____

E-Mail Address: _____

AFFIDAVIT

By signing this Affidavit I represent that all information contained in this application is true and correct to the best of my knowledge and acknowledge and agree to abide by the requirements and restrictions of the Glenwood Springs Municipal Code as pertains to accessory tourist rentals and affirm the following:

1. I have obtained a City of Glenwood Springs business and sales tax license as required under Title 050 of the Glenwood Springs Municipal Code and will promptly remit all applicable taxes in conformance with state and local law. If an individual or business entity acts as the Responsible Party, only one business license shall be required.

2. The rental of the property herein described is permissible under all applicable local zoning and land use regulations under the Glenwood Springs Municipal Code and any covenants and restrictions imposed by any owners' association with authority over the property.

3. I agree that the City of Glenwood Springs does not inspect accessory tourist rentals for conformance with applicable building codes prior to occupancy, that I am responsible for maintaining the property for health and safety, and to indemnify, defend, and hold harmless the City of Glenwood Springs, including its officers, agents, and employees, from any action resulting from damage, loss, injury, including death, of any occupant of the rental property herein described.

4. I have read and understand the requirements, restrictions, and standards of Section 070.040.130 of the Glenwood Springs Municipal Code and shall strictly comply therewith.

Note: An Accessory Tourist Rental Permit will only be issued after the application has been reviewed and approved in accordance with the Glenwood Springs Municipal Code. Specific terms and conditions may be included in the permit. All permits will be issued to the owner(s) of the property. A change in ownership requires an application for a new permit. Accessory Tourist Rental permits expire at the end of odd numbered years. Property owners will be sent a new application form prior to expiration of their permit.

Owner(s) Signature: _____ Date: _____

_____ Date: _____

ADMINISTRATIVE USE ONLY:

Application received by: _____

_____ Date: _____

Application fee collected ☐

Amount: _____

404.1 Privacy. Dwelling units, hotel units, housekeeping units, rooming units and dormitory units shall be arranged to provide privacy and be separate from other adjoining spaces.

404.2 Minimum room widths. A habitable room, other than a kitchen, shall not be less than 7 feet (2134 mm) in any plan dimension. Kitchens shall have a clear passageway of not less than 3 feet (914 mm) between counterfronts and appliances or counterfronts and walls.

404.3 Minimum ceiling heights. Habitable spaces, hallways, corridors, laundry areas, bathrooms, toilet rooms and habitable basement areas shall have a clear ceiling height of not less than 7 feet (2134 mm).

Exceptions:

1. In one- and two-family dwellings, beams or girders spaced not less than 4 feet (1219 mm) on center and projecting not more than 6 inches (152 mm) below the required ceiling height.
2. Basement rooms in one- and two-family dwellings occupied exclusively for laundry, study or recreation purposes, having a ceiling height of not less than 6 feet 8 inches (2033 mm) with not less than 6 feet 4 inches (1932 mm) of clear height under beams, girders, ducts and similar obstructions.
3. Rooms occupied exclusively for sleeping, study or similar purposes and having a sloped ceiling over all or part of the room, with a clear ceiling height of at least 7 feet (2134 mm) over not less than one-third of the required minimum floor area. In calculating the floor area of such rooms, only those portions of the floor area with a clear ceiling height of 5 feet (1524 mm) or more shall be included.

404.4 Bedroom requirements. Every bedroom shall comply with the requirements of Sections 404.4.1 through 404.4.5.

404.4.1 Area for sleeping purposes. Every bedroom occupied by one person shall contain at least 70 square feet (6.5 m²) of floor area, and every bedroom occupied by more than one person shall contain at least 50 square feet (4.6 m²) of floor area for each occupant thereof.

404.4.2 Access from bedrooms. Bedrooms shall not constitute the only means of access to other bedrooms or habitable spaces and shall not serve as the only means of egress from other habitable spaces.

Exception: Units that contain fewer than two bedrooms.

404.4.3 Water closet accessibility. Every bedroom shall have access to at least one water closet and one lavatory without passing through another bedroom. Every bedroom in a dwelling unit shall have access to at least one water closet and lavatory located in the same story as the bedroom or an adjacent story.

404.4.4 Prohibited occupancy. Kitchens and nonhabitable spaces shall not be used for sleeping purposes.

404.4.5 Other requirements. Bedrooms shall comply with the applicable provisions of this code including, but not limited to, the light, ventilation, room area, ceiling height and room width requirements of this chapter; the plumbing facilities and water-heating facilities requirements of Chapter 5; the heating facilities and electrical receptacle requirements of Chapter 6; and the smoke detector and emergency escape requirements of Chapter 7.

404.5 Overcrowding. Dwelling units shall not be occupied by more occupants than permitted by the minimum area requirements of Table 404.5.

TABLE 404.5
MINIMUM AREA REQUIREMENTS

SPACE	MINIMUM AREA IN SQUARE FEET		
	1-2 occupants	3-5 occupants	6 or more occupants
Living room ^{a,b}	No requirements	120	150
Dining room ^{a,b}	No requirements	80	100
Bedrooms	Shall comply with Section 404.4		

For SI: 1 square foot = 0.093 m².

a. See Section 404.5.2 for combined living room/dining room spaces.

b. See Section 404.5.1 for limitations on determining the minimum occupancy area for sleeping purposes.

404.5.1 Sleeping area. The minimum occupancy area required by Table 404.5 shall not be included as a sleeping area in determining the minimum occupancy area for sleeping purposes. All sleeping areas shall comply with Section 404.4.

404.5.2 Combined spaces. Combined living room and dining room spaces shall comply with the requirements of Table 404.5 if the total area is equal to that required for separate rooms and if the space is located so as to function as a combination living room/dining room.

404.6 Efficiency unit. Nothing in this section shall prohibit an efficiency living unit from meeting the following requirements:

1. A unit occupied by not more than two occupants shall have a clear floor area of not less than 220 square feet (20.4 m²). A unit occupied by three occupants shall have a clear floor area of not less than 320 square feet (29.7 m²). These required areas shall be exclusive of the areas required by Items 2 and 3.
2. The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided.
3. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.
4. The maximum number of occupants shall be three.

404.7 Food preparation. All spaces to be occupied for food preparation purposes shall contain suitable space and equipment to store, prepare and serve foods in a sanitary manner. There shall be adequate facilities and services for the sanitary disposal of food wastes and refuse, including facilities for temporary storage.

EXHIBIT L. City Council 3/1/2018 Report and Minutes



City Council STAFF REPORT City of Glenwood Springs March 01, 2018

Agenda Item:	Discussion of changes to 070.040.120 and 070.040.130 regarding vacation rentals
Action Requested:	City Council requested that the public be invited to provide comments about proposed changes to the regulations and requirements for vacation rentals
Presented By:	Jenn Ooton, Economic and Community Development Director Gretchen Ricehill, Economic and Community Development Assistant Director Hannah Klausman, Planner II
Background Info:	On January 4, Council held a work session to discuss potential changes to the Code of Ordinances related to vacation rentals in the following categories: • Whether to allow accessory dwelling units to be used as short-term/accessory tourist rentals. • Percentage of multi-family buildings under single ownership allowed to be rented as a short-term/accessory tourist rental • Permit expiration Subsequent to the work session in January, Council indicated a desire to take public comment on potential changes to regulations around short-term rentals. This staff report is provided as background for that public comment. (It addresses the first two bulleted items, but does not revisit the permit expiration.) The Municipal Code currently does not allow accessory dwelling units (ADUs) to be rented as short-term or accessory tourist rentals. Short-term rentals are defined as rentals for an entire dwelling unit for a period of less than 30 days. Accessory tourist rentals are those vacation rentals in which a single room is rented. City Council at the Jan. 4, 2018, work session indicated interest in allowing either a primary house on a property or the ADU on the property to be rented as a vacation rental, but not both. The draft ordinance attached with this staff report represents potential changes to 070.040.120 Short Term Rentals and 070.040.130 Accessory Tourist Rentals that were discussed at the work session, and is attached here only for discussion purposes. The ordinance as drafted would allow either the primary dwelling or an ADU to be rented as a vacation rental. In the case of accessory tourist rentals, the ordinance proposes to clarify language allowing for the bedroom rental when the residential dwelling unit is occupied by a long-term tenant. Currently, the

code technically allows for an accessory tourist rental only when the dwelling unit is occupied by the property owner or by a resident manager.

When first created in the late 1990s, City Council recognized the need to provide long-term attainable housing throughout the entire community. In exchange for creating small affordable housing units, a property owner is given the opportunity to build a small unit on their property where, in many zone districts, one would otherwise not be allowed. ADUs are currently charged 0.25 EQR in water and sewer system improvement fees, in part to incentivize the construction of these smaller units. In January, City Council did not give direction regarding changing this rate if ADU's are removed from the attainable housing inventory and converted to vacation rental use.

At the January work session, City Council indicated an interest in changing the percentage of short-term rentals and accessory tourist rentals allowed to be rented within multi-family residential projects in single ownership downtown. City Council also discussed a scaled option based on the number of residential units. Currently, the Development Code states that no more than 25 percent (but at least one unit) of multi-family residential buildings under single ownership can be rented as short-term/accessory tourist rentals.

The draft ordinance proposes changes within the C/2 Commercial Core that would allow the first four units of a multi-family residential project to be rented as vacation rentals and an additional 50 percent of units in multi-family buildings with 5-8 units to be rented as vacation rentals, in addition to the initial four. It would allow an additional 25% of the units in excess of eight to be rented as vacation rentals for residential properties that have 9 or more units. (See Exhibit A attached). All other zone districts would remain limited to the existing 25 percent stipulation for allowable short term rental units unless changed by Council.

For clarity, staff has included the definitions for these categories, as well as other similar land uses, below.

Short Term Rental: (allowed in all zones)

The rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, boarding or rooming house, or hotel.

Accessory Tourist Rental: (allowed in all zones)

The rental for monetary compensation for any period of less than thirty (30) consecutive day, of not more than one (1) bedroom in those residential dwelling units which contain a minimum of two (2) bedrooms; are owner-occupied or occupied by a resident manager.

	Hotel: (prohibited in residential zones) A building or group of buildings where transient lodging is offered in bedrooms, sleeping rooms, and dwelling units. The building or buildings may include accessory facilities such as parking, restaurants, meeting rooms, on-site check in lobbies, recreation areas or similar facilities commonly associated with lodging. The term "hotel/motel" does not include bed and breakfast, short term rental or an accessory tourist rental. Bed & Breakfast: (SUP in Residential Zones) <u>A detached single-family dwelling, which is owner-occupied or occupied by a resident manager, where individual bedrooms are offered as single accommodations to guests for transient lodging and which facility includes incidental eating and drinking service from a single kitchen serving only residents and guests and is not operated in the manner of a commercial restaurant, or as a facility for commercial activities such as for-profit private parties or receptions, retail sales or similar activities.</u>
Issues:	None.
Action Alternatives:	Provide direction on one or more of the topics above.
Staff Recommendation:	None. Discussion Only.

Exhibit A: Multifamily Unit Examples

4 Unit Building (All 4 STR/ATR)

1	2
3	4

6 Unit Building (5 STR/ATR)

1	2
3	4
50% beyond 4	Long Term

8 Unit Building (6 ATR/STR)

1	2
3	4
50% beyond 4	50% beyond 4
Long Term	Long Term

9 Unit Building (8 ATR/STR)

1	2	3
4	5	6
7	8	Long Term

10 Unit Building (8 STR/ATR)

1	2	3
4	5	6
7	8	Long Term
Long Term		

12 Unit Building (9 STR/ATR)

1	2	3
4	5	6
7	8	25% beyond 4
Long Term	Long Term	Long Term

KEY

Short Term
Additional Short Term
Long Term

ORDINANCE NO. ____

Series of 2018

**AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS,
COLORADO, AMENDING THE GLENWOOD SPRINGS MUNICIPAL
CODE REGARDING THE REGULATION AND PERMITTING OF
SHORT-TERM AND ACCESSORY TOURIST RENTALS IN THE CITY.**

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) is a home-rule municipality organized pursuant to Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, Sections 070.040.120 and 070.040.130 of the Glenwood Springs Municipal Code set forth the City’s regulations and permitting requirements for the operation of short-term and accessory tourist rentals within the City, as those terms are currently defined; and

WHEREAS, the City’s current system of regulation prohibits the permitting of a single property as both a short-term and accessory tourist rental and, furthermore, restricts the overall percentage of multi-family dwellings that may be permitted as for such uses; and

WHEREAS, the Glenwood Springs City Council desires to expand the number and classifications of dwelling units that can be permitted as short-term and accessory tourist rentals and, by doing so, to allow for greater opportunities for property owners to use their properties and visitors to the City to enjoy the City and its amenities; and

WHEREAS, the Glenwood Springs City Council finds and declares that the amendments to the Glenwood Springs Municipal Code regarding short-term and accessory tourist rentals set forth herein are proper in light of the reasonable needs and desires of the City and in the promotion of the public health, safety, and welfare of the City’s residents and visitors.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD
SPRINGS, COLORADO, ORDAINS THAT:**

Section 1. The forgoing recitals are incorporated herein as if set forth in full.

Section 2. Section 070.040.120 of the Glenwood Springs Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

070.040.120 - Short Term Rentals.

- (a) *Intent.* The City of Glenwood Springs recognizes that there are benefits to allowing owners of residential units within the City to rent their dwelling units for periods of time less than thirty (30) days. Short term rental of dwelling units bring additional visitors to the City, can allow owners to recoup housing costs, and provides revenues for the City through the additional tax collections. The provision of short term rentals offers additional diversification to the resort and travelling professional accommodations market. However,

due to the potential for adverse impacts, short term rentals must be regulated by the City to protect the health, safety, and welfare of owners, neighbors, and visitors.

- (b) *Applicability.* The requirements of this section shall apply to any residential dwelling unit within the City of Glenwood Springs. This section does not apply to any residential use within a planned unit development unless specifically listed as a use allowed by the planned unit development. Nor does this section apply to any dwelling unit permitted as an accessory dwelling unit.

- (c) *Definition.* As used in this section, the following term shall have this meaning ascribed to it:

Short term rental means the rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, boarding or rooming house, or hotel. This definition does not include offering the use of one's property where no fee is charged or collected.

- (d) *Requirements, Restrictions, and Standards.* The following requirements, restrictions, and standards shall apply to short term rentals:

- (1) The City of Glenwood Springs is not a party to and does not enforce any private covenants. Private covenants may restrict the ability for owners to engage in short term rentals.
- (2) There shall be a designated responsible party, located within the local region, available for immediately responding to any issues arising from the short term rental. The designated responsible party may be the owner of the property.
- (3) The owner or responsible party shall collect and pay all applicable local, state, and federal taxes including sales and lodging taxes.
- (4) The owner or responsible party is responsible for ensuring the short term rental meets all applicable local, state, and federal regulations. For example, C.R.S. § 38-45-101 et seq. requiring carbon monoxide alarms in residential property. ~~The property owner, responsible party, or other persons shall not reside in the short term vacation rental unit during periods of short term rental; however, the property owner or permanent tenants not part of the short term rental party may occupy the accessory dwelling unit on the property as their residence.~~
- (5) The owner or responsible party is responsible for obtaining all required licenses in accordance with Title 050 of the Glenwood Springs Municipal Code.
- (6) Occupancy limitations of a short term rental shall be established by the International Property Maintenance Code (IPMC) and shall be indicated on the short term rental permit.
- (7) On properties with an accessory dwelling unit, only either the primary dwelling or the accessory dwelling unit on the property, but not both, shall be eligible for a short term rental permit.
- (8) All vehicles shall be parked in designated parking areas, such as driveways and garages, or on-street parking, where permitted. No parking shall occur on lawns or sidewalks.

- (9) The owner shall be responsible for ensuring that the short term rental complies with Section 100.010.060 of the Glenwood Springs Municipal Code entitled Garbage, refuse, and trash collection. Owners and responsible parties shall make arrangements for proper garbage, refuse, and trash collection.
- (10) The following information must be posted in a prominent and visible location in the short term rental:
- City of Glenwood Springs license(s) and short term rental permit;
 - Contact information for owner and/or responsible party, including a phone number for 24 hour response to emergencies;
 - Description of location of fire extinguishers and emergency egress; and
 - Any other information deemed necessary by the Community Development Director or Building Official to ensure the public's health and safety.
- (11) Multi-family buildings on a single lot and under single ownership shall have the following district regulations:
- C/2 Commercial Core:
 - The first four (4) units may be permitted as short term rentals;
 - In multi-family buildings having five (5) to eight (8) units, no more than fifty percent (50%) of the units in excess of four (4) may be permitted as short term rentals;
 - In multi-family buildings having more than eight (8) units, no more than twenty-five (25%) of the units in excess of eight (8) may be permitted as short term rentals.
 - In all other zone districts, no more than twenty-five percent, but at least one (1) unit may be permitted as short term rentals.
- ~~In a multi-family building under single ownership, no more than twenty-five (25) percent but at least one (1) unit may be permitted as a short term rental.~~
- (12) All advertising of a short term rental, including advertising on website vacation booking sites, shall display the City of Glenwood Springs short term rental permit number and business license number.
- ~~(13) A property owner may not be issued both a short term rental permit and an accessory tourist rental permit on the same property at the same time; however, should an owner wish to change the use of a permitted short term rental, he or she may do so by filing an application for an accessory tourist rental in accordance with Section 070.040.130 – accessory tourist rentals. Upon issuance of a new accessory tourist rental permit, the existing short term rental permit is automatically revoked.~~
- (e) *Application requirements.* The owner shall submit the application on the form provided by the Community Development Director and shall pay the application fee set by City Council resolution. The Community Development Director may require submittal of such additional

information as is deemed necessary to demonstrate compliance with the requirements of the Glenwood Springs Municipal Code including, but not limited to, building code and inspection requirements.

- (f) *Short Term Rental Permit.* All short term rentals shall require a permit from the Community Development Director. This permit shall only be issued after the short term rental application has been approved in accordance with the Glenwood Springs Municipal Code and shall specify any terms and conditions of the permit. All permits shall be issued to the owner of the property. A change in ownership shall necessitate the issuance of a new permit. ~~Permits shall be issued for a period of two (2) years and shall expire at the end of odd numbered years. Permit fees shall be set by resolution of City Council.~~
- (g) *Revocation of Permit.* A short term rental permit may be revoked at any time by the Community Development Director should it be determined that the use is not being operated in compliance with this section or any other section of the Glenwood Springs Municipal Code.
- (h) *Appeals.* Appeals of administrative decisions may be made in accordance with Section 070.010.050 of the Glenwood Springs Municipal Code.

Section 3. Section 070.040.130 of the Glenwood Springs Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

070.040.130 - Accessory Tourist Rentals.

- (a) *Intent.* This section provides standards for the establishment of accessory tourist rentals, which are intended to provide an option for property owners of residential dwelling units to rent a single bedroom in their home for compensation to guests for stays of less than thirty (30) days.

The City's Comprehensive Plan recognizes and encourages policies to retain the City's tourism industry while maintaining the City's small town character through the preservation of its residential neighborhoods. The allowance and regulation of low impact tourist accommodations provides an additional lodging option for travelers who wish to vacation in a residential setting, and a source of supplemental income to homeowners, while still ensuring the protection of the public health, safety and welfare.

- (b) *Applicability.* The accessory tourist rental is accessory to the primary use of a residential dwelling unit as a residence for families/households. An accessory tourist rental use shall only be allowed upon issuance of an accessory tourist rental permit and shall not be allowed within a planned unit development unless specifically listed as an allowed use in the planned unit development. An accessory tourist rental permit shall not be allowed in any accessory dwelling unit.
- (c) *Definitions.* As used in this section, the following terms shall have the meanings ascribed below:

Accessory tourist rental means the rental for monetary compensation of ~~not more than one~~ (1) or bedrooms for transient lodging to guests in those residential dwelling units which contain

a minimum of two (2) bedrooms; are owner-occupied, occupied by a long-term tenant, or occupied by a resident manager; and which comply with the provisions of this section.

Bedroom means an enclosed space within a dwelling unit that is designed or could be used for sleeping purposes and which may also contain closets and have access to a bathroom, but which has a permanent door permitting complete closure and separation from all kitchen, living room, and hallway areas.

Resident means a person or family who lives and sleeps in a place with intention to establish his domicile or permanent residence.

Resident manager means a resident who is authorized by the owner of a property to oversee the day-to-day function and operations of the owner's property.

Transient lodging means the occupancy of a bedroom, sleeping unit, or a dwelling unit for compensation to any person(s), partnership, association, corporation, estate, representative, or any other combination of individuals by whatever name known, for any period of less than thirty (30) consecutive days under any concession, permit, right of access, license to use or other agreement, or otherwise.

(d) *Requirements, Restrictions, and Standards.* The following requirements, restrictions, and standards shall apply to accessory tourist rentals:

- (1) The City of Glenwood Springs is not a party to and does not enforce any private covenants. Private covenants may restrict property owners from engaging in the rental of their home or a portion of their home for periods of less than thirty (30) days.
- (2) The owner of the property or a resident manager must reside within one (1) of the bedrooms within the dwelling unit which is to be used as the accessory tourist rental and shall be present on the premises for the duration of the rental.
- (3) The owner shall collect and pay all applicable local, state, and federal taxes including sales and lodging taxes.
- (4) The owner is responsible for ensuring the accessory tourist rental meets all applicable local, state, and federal regulations. For example, C.R.S. § 38-45-101 et seq. requiring carbon monoxide alarms in a residential property.
- (5) The owner is responsible for obtaining all required licenses in accordance with Title 050 of the Glenwood Springs Municipal Code.
- (6) Use and Occupancy Restrictions. The accessory tourist home is further restricted in use as follows:
 - a. Parties renting ~~the designated bedroom for transient~~ an accessory tourist rental shall have access to a private or shared full bathroom.
 - ~~b. Guest stays may only occur within the dwelling unit that the owner or resident manager occupies.~~
 - ~~c. The use is limited to one (1) designated bedroom with a maximum occupancy for two (2) people.~~
 - ~~d.~~ The bedroom used for guest stays shall not include a kitchen or partial kitchen.

- ec. Occupancy of the accessory tourist rental shall not exceed the occupancy allowed for single-family use as defined in the Glenwood Springs Municipal Code, i.e. one (1) or more persons living together on the premises of a dwelling unit, but it shall not include more than five (5) persons unrelated by blood or marriage. Occupancy limits shall be established by International Property Maintenance Code (IPMC) and shall be listed on the accessory tourist rental permit.
- f. Residential units eligible for an accessory tourist rental permit shall not be issued or hold permits for another land use that would further impact traffic at the site of the accessory tourist rental, including special use permits for another land use per the applicable zone designation of the property, or a license or permit issued through another regulatory agency; except that properties issued a special use permit for a single-family dwelling in the Hillside Preservation Overlay zone district or minor home occupation permit shall be eligible for an accessory tourist rental permit.
- (7) On properties with an accessory dwelling unit, only either the primary dwelling or the accessory dwelling unit on the property, but not both, shall be eligible for an accessory tourist rental permit and the owner, long-term tenant, or resident manager must reside in the dwelling unit used as the accessory tourist rental.
- (8) All vehicles associated with the single-family residence and accessory tourist rental use shall be parked in designated parking areas, such as driveways and garages, or on-street parking, where permitted. No parking shall occur on lawns or sidewalks.
- (9) The owner shall be responsible for ensuring that the accessory tourist rental complies with Section 100.010.060 of the Glenwood Springs Municipal Code entitled Garbage, refuse, and trash collection. Owners and resident managers shall make arrangements for proper garbage, refuse, and trash collection.
- (10) The following information must be posted in a prominent and visible location in the designated bedroom permitted as an accessory tourist rental:
- City of Glenwood Springs' license(s) and accessory tourist rental permit;
 - Contact information for owner and/or resident manager, including phone number for twenty-four (24) hour response to emergencies;
 - Description of location of fire extinguishers and emergency egress; and
 - Any other information deemed necessary by the Community Development Director or Building Official to ensure the public's health and safety.
- (11) Multi-family buildings on a single lot shall have the following district regulations:
- C/2 Commercial Core:
 - The first four (4) units may be permitted as accessory tourist rentals;
 - In multi-family buildings having five (5) to eight (8) units, no more than fifty percent (50%) of the units in excess of four (4) may be permitted as accessory tourist rentals;

(iii) In multi-family buildings having more than eight (8) units, no more than twenty-five (25%) of the units in excess of eight (8) may be permitted as accessory tourist rentals.

b. In all other zone districts, no more than twenty-five percent, but at least one (1) unit may be permitted as accessory tourist rentals provided the owner, long-term tenant, or resident manager occupies the accessory tourist rental.

~~In a multi-family building under single ownership, no more than twenty-five (25) percent but at least one (1) unit may be permitted as an accessory tourist rental provided the owner or resident manager occupies the accessory tourist rental.~~

(12) All advertising of an accessory tourist rental, including advertising on website vacation booking sites, shall display the City of Glenwood Springs accessory tourist rental permit number and business license number.

~~(13) A property owner may not be issued both an accessory tourist rental permit and a short term rental permit on the same property at the same time; however, should an owner wish to change the use of a permitted accessory tourist rental, he or she may do so by filing an application for a short term rental permit in accordance with Section 070.040.120 Short Term Rentals. Upon issuance of a new short term rental permit, the pre-existing accessory tourist rental is automatically revoked.~~

(e) *Application requirements.* The owner shall submit the application on the form provided by the Community Development Director and shall pay the application fee set by City Council resolution. The Community Development Director may require submittal of such additional information as is deemed necessary to demonstrate compliance with the requirements of the Glenwood Springs Municipal Code, including, but not limited to, building code and inspection requirements.

(f) *Accessory Tourist Rental Permit.* All accessory tourist rental uses shall require a permit from the Community Development Director. This permit shall only be issued after the residential dwelling unit and bedroom designated for transient lodging has been approved in accordance with the Glenwood Springs Municipal Code. The accessory tourist rental permit shall specify any terms and conditions of the permit. All permits shall be issued to the owner of the property. A change in ownership shall necessitate the issuance of a new permit. ~~Permits shall be issued for a period of two (2) years and shall expire at the end of odd numbered years.~~ Permit fees shall be set by resolution of City Council.

(g) *Revocation of Permit.* An accessory tourist home permit may be revoked at any time by the Community Development Director should it be determined that the use is not being operated in compliance with this section or any other section of the Glenwood Springs Municipal Code.

(h) *Appeals.* Appeals of administrative decisions may be made in accordance with Section 070.010.050 of the Glenwood Springs Municipal Code.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED PUBLISHED
BY TITLE ONLY THIS 1ST DAY OF MARCH 2018.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

INTRODUCED, READ ON SECOND READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE
OF SECOND PUBLICATION THIS 15TH DAY OF MARCH 2018.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk



MINUTES
CITY OF GLENWOOD SPRINGS
REGULAR CITY COUNCIL MEETING
MARCH 1, 2018
101 W. 8TH STREET
6:00 P.M.

9 Roll Call

Mayor Mike Gamba called the meeting to order at 6:00 p.m. Present at roll call: Shelley Kaup, Rick Voorhees, Steve Davis, Jonathan Godes, Jim Ingraham and Todd Leahy.

Also present were Debra Figueroa, City Manager; Karl Hanlon and Jon Hoisted, City Attorneys; Jennifer Ooton, Assistant City Manager; Jill Peterson, Deputy City Clerk; Gary Tillotson, Fire Chief; Terri Partch, City Engineer; Gretchen Ricehill, Assistant Economic and Community Development Director; Steve Boyd, Finance Director; Brian Smith, Director of Parks and Recreation.

10 Pledge of Allegiance

Mayor Gamba led in the Pledge of Allegiance.

11 Citizens Appearing Before Council. (For items NOT on Agenda - comments limited to 3 minutes)

Rachel Windh spoke about the need for Arts and Culture programs in the city.

Chris Stuben noted that he felt that some trees were in violation of the municipal code and took care of them.

Diane Steuben requested that members of the Council drive between the Sunlight Bridge and Sopris Elementary School to observe the condition of the road before taking action on conducting an engineering study for the rebuild of South Midland.

12 Agenda Changes

Item 14 the city council appointment was removed as it was considered on February 28.

Item 16a was removed and will be considered at a future meeting.

13 Council Comments

Mayor Gamba noted he was not opposed to a full reconstruction of Midland Avenue and clarified the South Bridge project was not a \$100 million-dollar project, it was a \$45 million-dollar project which would require additional partners for the project.

14 City Council Appointment

The item was removed from the agenda as an appointment to the Councilor At-Large seat occurred at a special meeting on February 28, 2018.

15 Swearing in of Newly Elected Council Members

Jill Peterson issued the oath of office to new City Council member, Jim Ingram. The council members welcomed Mr. Ingraham to serve as councilor to fill the At-large seat until April 2019.

15a Election of Mayor Pro-Tem

Councilor Davis nominated Councilor Leahy as the next Mayor Pro Tem as he had previously served in this capacity prior to Kathryn Trauger. Jim Ingraham seconded the nomination.

Councilor Godes nominated Councilor Kaup as he saw this as a great leadership role for Shelley.

Councilors Kaup and Leahy accepted the nomination.

Jill Peterson read the results:

Kaup: Godes, Voorhees, Kaup

Leahy: Davis, Gamba, Ingraham, Leahy

Councilor Leahy was elected as Mayor Pro Tem.

16 Consent Agenda:

- A. Receipt of Minutes of the February 15, 2018 Regular Meeting
- B. Community Garden Renewal Agreements
- C. Award of Bid – BD 2018-007, 2018 Police Package Full Size SUV
- D. Award of Bid – BD 2018-010, 2018 #2500 HD ¾ ton 4x4 Pickup with a Snow Plow
- E. Award of Bid – BD 2018-011, #3500 HD Extended Cab Pickup
- F. Award of Bid – BD 2018-012, Extended Cab, Mid-Size or Compact 4X4 Pickup
- G. Ordinance No 5, Series of 2018; An Ordinance of the City of Glenwood Springs, Colorado, Repealing Section 050.050.020 of the Glenwood Springs Municipal Code Regarding Bicycle Licenses (SECOND READING)
- H. Ordinance No 6, Series of 2018; An Ordinance of the City of Glenwood Springs, Colorado, Amending 020.020. of the Glenwood Springs Municipal Code Regarding Number of Commissioners and Powers and Duties of the River Commission (SECOND READING)
- I. Agreement with Northslope Capital Advisors
- J. Extension of Fee Waivers in 2018 for Outdoor Seating on Public Sidewalks & Public Plaza Areas
- K. Resolution 2018-10; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Authorizing the Mayor or Mayor Pro-tem to Execute Closing Documents Related to the Sale of Property at 413 9th Street, Glenwood Springs, Colorado

Mayor Pro-Tem Leahy moved, seconded by Councilor Voorhees, to approve the consent agenda excluding item 16a which had been removed.

The Motion passed unanimously.

17 Land Access and Lease Option Agreement South Canyon

Karl Hanlon presented a draft lease option for the exploration and potential development of some facilities in South Canyon. The agreement is a lease option which would allow Canyon Hot Springs to access the property for exploration and assessment initially with a termination date of July 31, 2018. If

the Leasee wished to pursue an application. The application term would commence on August 1, 2018 and terminate on July 31, 2019

Brian Smith, gave a brief history on the amenities in South Canyon and the need to manage the area better to provide a benefit to the public. This lease allows Canyon Hot Springs the ability to test the area to see if future development is a viable option.

Steve Beckley, stated that the next year would be spent exploring and testing soils and wells. If the exploration indicates there is a viable option, an application would be submitted to both the City and the County for the appropriate approvals which would include a public comment period.

Mayor Gamba opened the item for public comment.

Gerald Olt spoke against the project. He was concerned about the wildlife and the historical significance of the area.

Tye Richardson expressed concern about the fire danger in the proposed camp grounds and the wildlife.

Craig Amichaux had concerns regarding the coal seam and high fire danger.

Ken Ransom noted there were lots of Hot Springs operators in the State and asked if an asset this large should be put out to bid. He was concerned with the potential developer paying the City 5% of the gross revenue generated on the leased area.

Bruce Stuben was concerned with the wildlife and the shifting ground.

Mayor Gamba closed public comment.

After further discussion, the Council directed the City Attorney to make revisions to the lease to allow for City termination of the lease and contingencies on the gross percentage of revenues generated.

Councilor Kaup moved, seconded by Councilor Davis, to continue the Land Access and Lease Option Agreement in South Canyon with direction to the City Attorney to make the discussed revisions.

The Motion passed unanimously.

18 Discussion of Amendments to Sections 070.040.120 and 070.040.130 Regarding Vacation Rentals

Jenn Ooton gave a brief history on vacation rentals. Based on prior Council direction, an Ordinance was drafted to allow the option for either the primary dwelling or an accessory dwelling unit (ADU) to be rented as a vacation rental, but not both. Council had also directed to allow an increase in the number of units within a multi-family building that could be used for a vacation rental.

Mayor Gamba opened the item for public comment:

Kevin Brady stated he was opposed to the changes as it might drastically change the number of vacation rentals which had an impact on housing.

Clark Anderson stated he was both a resident and owned a multi-family building with vacation rentals in the downtown. He felt housing affordability was a market issue and that the lack of rentals affected affordability. He stated there is a need for real people to be able to live in the downtown.

Damon Arreyondo commented that he was concerned with allowing ADU's to be used for vacation rentals as the units are lost to long term renters. He stated workers spend their dollars in the City. Taxes for vacation rentals should be the same as hotels.

Ken Murphy said he has seen the numbers from the VRBOS and there is growth but it affects staffing, employees, parking and housing and he would like to talk more about the impacts and managing proponents.

Joel Belmont liked the idea and wants to encourage the use of an ADU.

Ingrid Wussow noted pros and cons for both ADU's and long-term rentals and there would need to be a good sense of balance.

Michael Dunn noted that this ordinance would reduce the housing supply and employees are needed to service the visitors.

Jennifer Vanian commented on the vacation rental business.

Brad Hancock noted the original intent of ADU was for affordable housing. Does not feel that the City should be restraining what people do with their property. He was concerned about the parking.

Marco Dehm, here as a citizen. He supports the ADU change. Think you should be able to rent ADU. Cannot support the Multifamily change

Mayor Gamba closed public comments.

Councilor Kaup moved, seconded by Councilor Ingraham, to table this item and to allow staff to conduct community outreach and further research on short term rentals.

The Motion passed unanimously.

19 Report from City Administration

- A. City Manager:
 - Opportunity Zones
 -

The Opportunity Zones program was enacted as part of the 2017 tax reform package to address uneven economic recovery and lack of growth. This provides a tax incentive for investors to reinvest unrealized capital gains into low-income urban and rural communities.

- B. City Attorney:

No comments were noted by the City Attorney.

20 Executive Session to Conduct a Conference with the City Manager and City Attorney for the Purpose of Discussing the City's Purchase, Acquisition, Lease, Transfer or Sale of Real Property; Determining Positions Relative to Matters That May be Subject to Negotiations, Developing Strategy for Negotiations, and Instructing Negotiators; and to Conduct a Conference with the City Attorney to Receive Legal Advice in Accordance with C.R.S. 24-6-402(4)(a), (b) and (e), related to Former Library Building, CDOT IGA, and West Glenwood Mall

Mayor Gamba requested a motion to move into executive session at 9:18 p.m.

Councilor Godes moved, seconded by Councilor Kaup, to go into executive session for the Purpose of Discussing the City's Purchase, Acquisition, Lease, Transfer or Sale of Real Property; Determining Positions Relative to Matters That May be Subject to Negotiations, Developing Strategy for Negotiations, and Instructing Negotiators; and to Conduct a Conference with the City Attorney to Receive Legal Advice in Accordance with C.R.S. 24-6-402(4)(a), (b) and (e) related to the Former Library Building, CDOT IGA, and West Glenwood Mall

The executive session was adjourned at 10:10 p.m.

21 Contract for Sale of Former Library Building – 413 9th Street

Councilor Godes moved, seconded by Councilor Kaup to modify the terms of the contract to pay 50% of additional repair costs not to exceed \$15,000.

Ayes: Gamba, Kaup, Godes, Davis, Ingraham, Leahy

Nays: Voorhees

22 Adjournment

The meeting was adjourned at 10:13 p.m.

EXHIBIT M. Police Complaints

Date Issued	Address	Date	Incident type	Incident/Case #	Call Type	Disposition	Comments
9/10/2018	1104 Blake Avenue	10/10/2018	Abandoned Vehicle	18-18749	Dispatched	Red Tag	
1/6/2015	210 7th Street	8/19/2018	Suspicious Event	18-15359	Officer Initiated	Warning	
		7/26/2018	Parking Prob/Comp	18-13936	Dispatched	UTL	
6/24/2013	815 Blake Avenue	7/25/2018	Code Violation	18-13865	Officer Initiated	Warning	Bushes
		7/20/2017	Parking Prob/Comp	17-15968	Dispatched	Warning	
		7/6/2017	Parking Prob/Comp	17-14772	Dispatched	n/a	
		3/15/2017	Code Violation	17-5650	Officer Initiated	Warning	illegal Dumping
		2/10/2016	Parking Prob/Comp	16-2894	Dispatched	Ticket	
		8/13/2015	Parking Prob/Comp	15-14055	Dispatched	Ticket	
		11/4/2014	Parking Prob/Comp	14-18216	Dispatched	Ticket	
		7/12/2013	Parking Prob/Comp	13-10932	Dispatched	Ticket	
5/31/2018	814 Minter Avenue	7/14/2018	Abandoned Vehicle	18-13239	Dispatched	n/a	
4/12/2018	815 Pitkin Avenue	7/17/2018	Assist Citizen	18-13394	Dispatched		Tree Branches on Powerline
		6/12/2018	Harassment	18-10992	Dispatched	Warning	
		4/29/2018	Code Violation	18-8060	Officer Initiated	Warning	trash
3/14/2013	315 Sunny Hills Lane	9/19/2018	Civil	18-17501	Officer Initiated	n/a	
		9/19/2018	Civil	18-17495	Officer Initiated	UTL	
		1/10/2017	Alarm	17-852	Burglary Alarm	False Alarm	
		9/17/2016	Alarm	16-18114	Dispatched	n/a	
		3/29/2016	Animal	16-5822	Dispatched	n/a	
		7/29/2015	Code Violation	15-12895	Officer Initiated	Summons	Trash
		7/28/2015	Trespass	15-12861	911 Dispatch	unfounded	
		3/13/2014	Alarm	14-3683	Dispatched	False Alarm	
		1/1/2014	Alarm	14-46	Dispatched	False Alarm	
		12/12/2013	Alarm	13-18820	Dispatched	False Alarm	
		12/11/2013	Alarm	13-18745	Dispatched	False Alarm	
		12/11/2013	Alarm	13-18739	Dispatched	False Alarm	
		12/8/2013	Alarm	13-18593	Dispatched	False Alarm	
		9/9/2013	Alarm	13-14238	Dispatched	False Alarm	
2/20/2018	1202 Pitkin Avenue	3/21/2018	Suspicious Event	18-5392	911 Dispatch	UTL	
2/12/2018	837 Stoneridge CT	10/18/2018	Code Violation	18-19313	Dispatched	call serviced	nieghbor AirBB parking issues
		6/11/2018	Civil	18-10891	Dispatched	call serviced	

11/22/2017	906 Cooper Avenue	5/31/2018	Code Violation	18-10152	Dispatched	call serviced	Oil Spill
12/13/2013	802 Garfield Avenue	4/29/2018	Code Violation	18-8070	Officer Initiated	Ticket	trash can
		8/7/2016	Noise Complaint X2	16-14801	Dispatched	Warning	
		7/8/2016	Civil	16-12534	Officer Initiated	n/a	civil standby
		10/7/2015	Theft/Larceny	15-18010	Dispatched	Report/Case	Theft of items while guest stayed there
		6/3/2015	Animal	15-9042	Dispatched	n/a	dog call
		2/6/2015	Parking Prob/Comp	15-2135	Officer Initiated	Warning	
		5/1/2014	Bear Call	14-6123	Officer Initiated	Warning	Bear trash
12/4/2017	712 Bennett Avenue	4/12/2018	Parking Prob/Comp	18-6928	Officer Initiated	Red Tag	
12/7/2017	740 Palmer Ave Unit A	4/11/2018	Bear Call	18-6806	Officer Initiated	Ticket	Bear trash
12/4/2017	413 22nd St	8/5/2018	Welfare Check	18-14557	Dispatched	call serviced	
10/10/2017	1132 Walz Ave	3/17/2018	Assist EMS	18-5071	911 Dispatched	call serviced	
		10/19/2017	Assist EMS	17-25180	911 Dispatched	call serviced	
		10/18/2017	Animal	17-25082	911 Dispatched	call serviced	Bear at large
1/31/2014	115 1/2 3rd Street	7/16/2017	Citizen Assist	17-15610	Dispatched	call serviced	
		5/18/2016	Code Violation	16-8681	Officer Initiated	call serviced	unknown
		3/17/2016	Suspicious Event	16-5189	Dispatched	call serviced	
		5/20/2015	Animal	15-8087	Officer Initiated	Warning	
		3/4/2015	Sex Offender Reg.	15-3695	Officer Initiated	call serviced	
		9/15/2014	Bear Call	14-15067	Dispatched	call serviced	Bear at large
10/29/2013	1112 Walz Avenue	8/30/2017	Bear Call	17-20345	Officer Initiated	PA issued	
		7/25/2017	Citizen Assist	17-16379	Officer Initiated	call serviced	
		9/4/2014	Bear Call	14-14402	Officer Initiated	call serviced	
4/21/2014	550 Greenway Drive	7/29/2016	Assist	16-14148	Dispatched	call serviced	
		7/28/2016	Missing Person	16-13970	Dispatched	call serviced	
12/5/2015	1023 Bennett Avenue	8/19/2017	Suspicious Event	17-18920	Dispatched	Warning	
10/10/2012	1318 Pitkin Avenue	12/28/2017	Abandoned Vehicle	17-29759	Officer Initiated	Red Tag	
		12/15/2017	Parking Prob/Comp	17-29048	Officer Initiated	Red Tag	
		12/13/2017	Parking Prob/Comp	17-28938	Officer Initiated	Red Tag	
5/6/2013	1028 Bennett Avenue	12/29/2017	Abandoned Vehicle	17-29790	Officer Initiated	Red Tag	
		5/8/2016	Abandoned Vehicle	16-8133	Dispatched	Red Tag	
		5/7/2016	Parking Prob/Comp	16-8094	Dispatched	call serviced	
		1/18/2016	Abandoned Vehicle	16-1187	Officer Initiated	Red Tag	

1530

9/15/2015 1017 Cooper Avenue	10/5/2018 Assist Citizen	18-18457	Dispatched	call serviced	
	8/16/2018 Harassment	18-15202	Dispatched	call serviced	
	5/9/2018 Harassment	18-8703	Dispatched	call serviced	
	12/30/2016 Code Violation	16-26050	Officer Initiated	Warning	unknown
	10/3/2016 Trespass	16-19338	911 dispatched	Report/Case	
	6/6/2016 Civil	16-9979	911 dispatched	call serviced	
	4/7/2016 Civil	16-6253	911 dispatched	call serviced	
	1/21/2016 Assist Citizen	16-1421	Officer Initiated	call serviced	
4/22/2013 1219 Colordo Avenue	8/22/2017 Assist Fire	17-19333	911 dispatched	call serviced	
	2/4/2017 Animal	17-2845	Dispatched	call serviced	
	5/22/2016 Suspicious Event	16-8988	911 dispatched	call serviced	
	2/8/2014 Follow up	14-1952	Dispatched	call serviced	snow removal
	6/4/2013 Follow up	13-8396	Officer Initiated	call serviced	
	6/3/2013 Code Violation	13-8341	Officer Initiated	call serviced	trash warning
6/8/2015 415 8th Street	6/4/2018 Code Violation	18-10373	Officer Initiated	call serviced	political sign
	1/17/2018 Parking Prob/Comp	18-1018	Officer Initiated	call serviced	
	10/16/2017 Code Violation	17-24860	Dispatched	PA issued	Bear trash
12/10/2015 415 1/2 8th Street	6/21/2016 Code Violation	16-11125	Officer Initiated	Warning	Tree
12/17/2015 210 7th Street ?????? Ur	8/19/2018 Suspicious Event	18-15359	Officer Initiated	Warning	
	7/26/2018 Parking Prob/Comp	18-13936	Dispatched	UTL	
	5/18/2018 Assist Citizen	18-9349	Dispatched	call serviced	
	12/23/2017 Parking Prob/Comp	17-29508	Dispatched	parking ticket	
	12/8/2017 Alarm	17-28661	Dispatched	n/a	
	2/22/2017 Alarm	17-4131	Dispatched	call serviced	
11/12/2014 805 Blake Ave #3	3/1/2016 Noise Complaint	16-4250	Dispatched	Warning	
11/14/2012 1005 Colorado Ave	3/20/2017 Alarm	17-6149	Dispatched	False Alarm	
	9/10/2016 Assist Fire	16-17572	Dispatched	call serviced	
	1/17/2016 Assist Fire	16-1132	Dispatched	call serviced	
	12/19/2015 Alarm	15-22418	Dispatched	call serviced	
	11/11/2015 Alarm	15-20224	Dispatched	call serviced	
	10/21/2015 Alarm	15-18988	Dispatched	False Alarm	
	10/15/2015 Alarm	15-18625	Dispatched	call serviced	
	9/8/2015 Burglary	15-15908	Dispatched	Report/Case	
	7/16/2015 Code Violation	15-11926	Officer Initiated	Report/Case	trash

	9/12/2013	Code Violation	13-14373	Officer Initiated	Warning	bear trash	
	5/25/2013	Assist Fire	13-7863	Dispatched	call serviced		
	1/14/2013	Parking Prob/Comp	13-696	Dispatched	Red Tag		
8/19/2015	728 Bennett Ave	2/9/2018	Code Violation	18-2664	Officer Initiated	Warning	unknown
	11/7/2017	Civil	17-26698	Officer Initiated	n/a		
	11/7/2017	Civil	17-26683	Dispatched	call serviced		
	4/1/2017	Animal	17-6979	Dispatched	Summons	vicious animal	
	11/8/2016	Code Violation	16-22276	Officer Initiated	Warning	removal of property	
	10/13/2016	Code Violation	16-20252	Officer Initiated	Warning	political sign	
	9/5/2016	Suspicious Event	16-17081	Dispatched	call serviced		
	11/21/2015	Animal	15-20739	Dispatched	call serviced		
? 08/31/2015	717 1/2 Grand Avenue	7/22/2018	Alarm	18-13649	Dispatched	call serviced	
	5/25/2018	Theft/Larceny	18-9818	911 dispatched	Report/Case		
	4/14/2017	Alarm	17-8033	Dispatched	call serviced		
	11/26/2016	Citizen Assist	16-23710	Dispatched	call serviced		
	7/26/2016	Parking Prob/Comp	16-13855	Dispatched	parking ticket		
	6/22/2016	Alarm	16-11242	Dispatched	call serviced		
	3/4/2016	Parking Prob/Comp	16-4382	Dispatched	call serviced		
	11/25/2015	Alarm	15-20955	Dispatched	call serviced		
	9/3/2015	Suspicious Event	15-15577	Dispatched	call serviced		
	7/30/2015	Transient	15-12997	Dispatched	call serviced		
	6/10/2015	Transient	15-9436	Dispatched	call serviced		
	6/9/2015	Transient	15-9396	Dispatched	call serviced		
	4/19/2015	Alarm	15-6389	Dispatched	call serviced		
	2/21/2015	Assist Citizen	15-3063	Dispatched	call serviced		
	7/27/2014	Alarm	14-12997	dispatched	call serviced		
1/27/2016	910 Red Mountain Dr	9/14/2018	Code Violation	18-17153	Officer Initiated	Warning	garage sale signs
1/3/2014	509 Maple Street	2/10/2018	Parking Prob/Comp	18-2750	Officer Initiated	Red Tag	
	9/5/2017	Parking Prob/Comp	17-21016	Dispatched	call serviced		
	7/31/2017	Code Violation	17-16897	Dispatched	warning	illigal camping	
	10/21/2016	Suspicious Event	16-20875	Dispatched	Warning	illigal camping	
	7/29/2014	Animal	14-11964	Dispatched	Warning		
	7/18/2014	Trespass	14-11063	Dispatched	UTL	illigal camping	
2/23/2016	515 Maple Street	8/31/2018	Follow up	18-16210	Officer Initiated	call serviced	

	8/31/2018 Warrant	18-16207	911 Dispatched	Arrest	
	8/20/2018 Transient	18-15444	Dispatched	UTL	illigal camping
	10/7/2017 Parking Prob/Comp	17-24233	Officer Initiated	Red Tag	
	7/24/2017 Code Violation	17-16324	Dispatched	UTL	illigal camping
	9/6/2016 Assist Citizen	16-17269	Dispatched	call serviced	illigal camping
3/18/2016 509 W 12th St	10/3/2017 Code Violation	17-23869	Officer Initiated	call serviced	need to pull permit
	10/21/2016 Follow up	16-90925	Officer Initiated	call serviced	
	10/21/2016 Animal	16-20918	Officer Initiated	call serviced	
4/18/2016 1700 Midland Ave	7/10/2018 Sex Offense	18-12988	911 Dispatched	UTL	men urinating
	12/2/2017 Animal	17-28349	Dispatched	call serviced	barking dogs
	10/13/2017 Motorist Assist	17-24732	Dispatched	call serviced	
	9/21/2016 Trespass	16-18441	Dispatched	Report/Case	cold theft
	9/21/2016 Trespass	16-18439	Dispatched	call serviced	someone used home
	7/1/2016 Assist Citizen	16-11957	Officer Initiated	call serviced	
	6/16/2016 Assist	16-10699	Officer Initiated	call serviced	
	6/3/2016 Suspicious Event	16-9771	Officer Initiated	call serviced	
4/15/2016 714 23rd Street	4/18/2017 Parking Prob/Comp	17-8291	Dispatched	Warning	
	3/31/2017 Parking Prob/Comp	17-6906	Dispatched	Red Tag	
4/14/2016 650 Greenway Dr	6/20/2016 Code Violation	16-11080	Officer Initiated	PA issued	animal trash
6/15/2016 516 W 12th St	2/9/2018 Parking Prob/Comp	18-2635	Officer Initiated	parking ticket	
	10/3/2017 Parking Prob/Comp	17-23871	Officer Initiated	Red Tag	
	8/26/2016 Building Check	16-16260	Officer Initiated	call serviced	
	8/25/2016 Trespass	16-16218	Dispatched	Report/Case	
7/25/2016 1027 Cooper Ave	8/14/2018 Vehicle Lockout	18-15118	Dispatched	call serviced	
	7/6/2017 Abandoned Vehicle	17-17802	Officer Initiated	Warning	
	5/21/2017 Suspicious Event	17-10942	Dispatched	unfounded	
6/24/2016 1002 Cooper Ave	6/4/2018 Code Violation	18-10398	Officer Initiated	call serviced	political sign
	10/4/2017 Code Violation	17-23944	Officer Initiated	Warning	
	7/2/2017 Parking Prob/Comp	17-14388	Officer Initiated	Red Tag	
	10/31/2016 Code Violation	16-21716	Officer Initiated	call serviced	
7/27/2016 1030 Blake Ave	10/7/2018 Bear Call	18-18553	911 dispatched	n/a	
	2/27/2018 Theft/Larceny	18-3885	Dispatched	Report/Case	
	8/1/2016 Assist Citizen	16-14381	Dispatched	call serviced	

10/4/2016 1116 Walz Avenue	3/26/2018 Suspicious Event	18-5672	Dispatched	call serviced	
	1/20/2018 Parking Prob/Comp	18-1285	Officer Initiated	Red Tag	
11/11/2016 3114 S Grand Ave	8/13/2017 Disturbance	17-18165	Dispatched	call serviced	
12/19/2016 1109 Colorado Ave	5/20/2017 Code Violation	17-10806	Officer Initiated	Ticket	trash
3/6/2017 2205 Bennett Avenue	8/8/2018 Fraud	18-14711	Officer Initiated	Report/Case	
	8/2/2018 Fraud	18-14388	Dispatched	Report/Case	
3/31/2017 725 Bennett Ave	8/19/2017 Code Violation	17-18966	Officer Initiated	PA issued	trash
4/5/2017 1127 Blake Avenue	5/13/2017 Theft/Larceny	17-10274	Dispatched	Report/Case	
	4/30/2017 Disturbance	17-9212	911 dispatched	call serviced	
	6/21/2018 Assist Citizen	18-11649	Dispatched	call serviced	
	8/27/2017 Assist Citizen	17-19945	Officer Initiated	call serviced	
	8/27/2017 DUI	17-19941	Officer Initiated	Summons	
	8/26/2017 Disturbance	17-19940	Dispatched	Arrest	
	7/10/2017 Assist Fire	17-15179	Dispatched	call serviced	
4/5/2017 1116 Cooper Ave	4/26/2017 Code Violation	17-9131	Officer Initiated	call serviced	dresser in roadway
	4/5/2018 Parking Prob/Comp	18-6452	Officer Initiated	call serviced	
	12/24/2017 Assist Fire	17-29554	911 Dispatch	call serviced	
5/10/2017 746 (1/2) ? Palmer Ave	9/4/2017 Bear Call	17-20841	Officer Initiated	PA issued	bear trash
	10/13/2018 Code Violation	18-18969	Dispatched	call serviced	branches on street
	7/27/2018 Animal	18-14018	Dispatched	Warning	
	4/2/2018 Drug Investigation	18-6203	Dispatched	Report/Case	
5/19/2017 715 (1/2) ? Cooper Ave	1/31/2018 Animal	18-2049	Dispatched	UTL	
7/17/2014 710 Bennett Ave #B	8/23/2017 Bear Call	17-19574	Dispatched	call serviced	bear trash
	11/8/2016 Code Violation	16-22278	Officer Initiated	Warning	items of property on city right of way
	9/11/2016 Suspicious Event	16-17665	Dispatched	Summons	
	4/17/2016 Animal	16-6814	Dispatched	Warning	
	4/11/2016 Follow up	16-6451	Officer Initiated	call serviced	
	4/2/2016 Follow up	16-5995	Officer Initiated	utl	
	3/22/2016 Animal	16-5454	Dispatched	Report/Case	
	3/15/2016 Animal	16-5047	Dispatched	Warning	
	1/26/2016 Animal	16-1757	Officer Initiated	Warning	
	1/15/2016 Assist Citizen	16-1063	Officer Initiated	call serviced	

	1/10/2016 Follow up	16-692	Dispatched	call serviced	
	1/9/2016 Follow up	16-627	Dispatched	call serviced	
	10/17/2014 Assist EMS	14-17125	Dispatched	call serviced	
7/18/2017 2550 STHY 82	9/21/2018 Building Check	18-17588	Officer Initiated	call serviced	
	7/29/2018 Welfare Check	18-14156	Officer Initiated	call serviced	
	3/3/2018 Transient	18-4146	Dispatched	call serviced	camping
	1/18/2018 Assist Fire	18-1166	Dispatched	False Alarm	
	9/8/2017 Alarm	17-21408	Dispatched	False Alarm	
	9/4/2017 Alarm	17-20829	Dispatched	False Alarm	
	9/3/2017 Alarm	17-20736	Dispatched	False Alarm	
	8/27/2017 Suspicious Event	17-19996	Dispatched	call serviced	
	8/29/2017 ATL	17-19931	Dispatched	call serviced	
7/28/2017 1524 Blake Ave	5/5/2018 Code Violation	18-8446	Officer Initiated	Warning	couch on property
9/5/2014 3305 Hager Lane	2/11/2018 Assist Fire	18-2835	Dispatched	call serviced	
	9/7/2017 Assist Fire	17-21200	Dispatched	call serviced	
9/6/2017 111 Market Drive	9/29/2018 Animal	18-18053	Dispatched	n/a	
	6/5/2018 Animal	18-10440	Dispatched	call serviced	
	10/31/2017 Theft/Larceny	17-26107	Officer Initiated	Report/Case	
5/21/2015 1016 Minter Ave	8/8/2018 Code Violation	18-14757	Dispatched	UTL	fire ban
	4/30/2018 Civil	18-8094	Dispatched	call serviced	
	8/26/2017 Citizen Assist	17-19926	Dispatched	n/a	
	1/26/2017 Code Violation	17-2064	Officer Initiated	Summons	snow dumping
	6/13/2015 Code Violation	15-9612	Dispatched	call serviced	easment
3/26/2015 509 8th St	12/14/2017 Parking Prob/Comp	17-28997	Officer Initiated	Red Tag	
	12/1/2017 Parking Prob/Comp	17-28230	Officer Initiated	Red Tag	
	7/10/2017 Alarm	17-15143	Dispatched	call serviced	
	3/20/2017 Assist	17-6187	Dispatched	UTL	
	8/19/2015 Code Violation	15-14499	Dispatched	Warning	trash
	6/24/2015 Suspicious Event	15-10434	Dispatched	UTL	
	4/29/2015	911 15-6933	Dispatched	call serviced	
5/30/2013 3310 Hager Ln	8/13/2017 Assist EMS	17-18142	Dispatched	call serviced	
	5/27/2017 Assist EMS	17-11480	Dispatched	call serviced	
	9/1/2015 Burglary	15-15428	Dispatched	call serviced	burglary attempt

		6/7/2014 Assist Fire	14-8317	Dispatched	call serviced	
		8/9/2013 Parking Prob/Comp	13-12562	Officer Initiated	Warning	Vacation renter parking issue
5/30/2013	716 Lincoln Ave	8/17/2017 Assist Fire	17-18756	Dispatched	n/a	
		6/16/2016 Bear Call	16-10692	Dispatched	UTL	
5/22/2013	1620 Lincolnwood Dr	10/4/2018 911	18-18413	Dispatched	Warning	
		9/21/2018 Assist Other Agency	18-17594	Dispatched	Report/Case	
		2/8/2016 Animal	16-2701	Officer Initiated	Warning	
		12/21/2014 Animal	14-20630	Dispatched	call serviced	
		7/23/2014 Domestic	14-11541	Dispatched	call serviced	
11/9/2012	1605 Bennett Ave	10/9/2018 Follow up	18-18680	Dispatched	call serviced	
		10/9/2018 Bear Call	18-18664	Dispatched	call serviced	
		10/9/2018 911	18-18665	Dispatched	call serviced	
		8/30/2018 Assist	18-16141	Dispatched	call serviced	
		12/15/2014 Abandoned Vehicle	14-20319	Dispatched	Warning	
		7/25/2014 Abandoned Vehicle	14-11658	Dispatched	Red Tag	
2016-2018	1801 Midland Ave	none in 2016-2018				
2016-2018	1031 Pitkin Ave	12/2/2016 Animal Call	2016-24067	Dispatched	call serviced	
		6/1/2017 Code Violation	2017-11859	Officer Initiated	Call serviced	House used as VRBO w/o permit
		7/3/2017 Code Violation	2017-14460	Officer Initiated	Call serviced	overgrown bushes
		7/21/2017 Disturbance	2017-16107	Dispatched	Call serviced	irate guest
		6/16/2018 Burglary	2018-11053	Dispatched	report taken	
5/31/2017	1313 Oak Way Ave.	10/27/2016 Code Violation	2016-21370	Officer Initiated	warning	furniture on city right of way
		4/18/2018 Code Violation	2018-7292	Officer Initiated	Call serviced	unknown
2016-2018	1524 Blake Ave	5/5/2018 Code Violation	2018-8446	Officer Initiated	warning	couch
2016-2018	1810 Ouray Rd	None in 2016-2018				
2016-2018	605 Highlands Dr	None in 2016-2018				
2016-2018	85 Ptarmigan Ln	None in 2016-2018				
2016-2018	915 Pitkin Ave	7/5/2017 Theft/Larceny	2017-14672	Dispatched	call serviced	
		8/15/2017 Attempt to Locate	2017-18313	Dispatched	Call Serviced	
		8/27/2017 REDDI Report	2017-20010	Dispatched	Arrest	DUI

		10/6/2017 Animal Call	2017-24133	Dispatched	UTL
2016-2018	1023 Bennett Ave	8/19/2017 Suspicious Event	2017-18920	Dispatched	Warning
2016-2018	709 Silver Oak Drive	None in 2016/2018			
	95 Fairview Drive	None in 2016/2018			
2016-2018	503 Spring Street #3	None in 2016-2018			
2016-2018	3960 Sky Ranch Dr	7/3/2017 Parking Complaint	2017-14452	Officer Initiated	warning

39 Code Violation Calls

9 were Dispatced
 30 Officer Initiated

ORDINANCE NO. 11

Series of 2018

**AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS,
COLORADO, AMENDING SECTION 070.040.120 AND 070.040.130
REGARDING THE REGULATION OF SHORT-TERM AND
ACCESSORY TOURIST RENTALS IN THE CITY.**

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) is a home-rule municipality organized under Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, Sections 070.040.120 and 070.040.130 of the Glenwood Springs Municipal Code set forth the City’s regulations and permitting requirements for the operation of short-term and accessory tourist rentals within the City, as those terms are currently defined; and

WHEREAS, Sections 070.040.120 and 070.040.130 of the Glenwood Springs Municipal Code provide that any applications for short-term and accessory tourist rentals shall be accompanied by a fee set by resolution of the Glenwood Springs City Council;

WHEREAS, the City Council desires to specify a permit application fee for short-term and accessory tourist rentals and add penalty provisions addressing violations of Sections 070.040.120 and 070.040.130 to deter such violations; and

WHEREAS, the Glenwood Springs City Council finds and declares that the amendments to the Glenwood Springs Municipal Code regarding short-term and accessory tourist rentals set forth herein are proper in light of the reasonable needs and desires of the City and in the promotion of the public health, safety, and welfare of the City’s residents and visitors.

NOW, THEREFORE, IT IS ORDAINED BY THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, THAT:

Section 1. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. Section 070.040.120 of the Glenwood Springs Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

070.040.120 – Short Term Rentals

(e) *Application Requirements.* The owner shall submit the application on the form provided by the Community Development Director and shall pay the application fee set by City Council resolution, on a one-time basis, regardless of the number of permit renewals. The Community Development Director may require submittal of such additional information as is deemed necessary to demonstrate compliance with the requirements of the Glenwood Springs Municipal Code, including, but not limited to, building code and inspection requirements.

(i) Penalties for Violations. Any violation of this Section 070.040.120 shall be deemed a misdemeanor and upon conviction of same shall be punished by a fine of \$250 for the first offense and by a fine of not less than \$100 and up to \$1,000 for each day of a subsequent offense.

Section 3. Section 070.040.130 of the Glenwood Springs Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

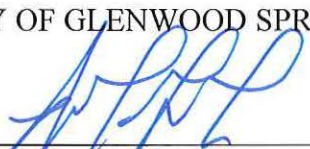
070.040.130 – Accessory Tourist Rentals

(e) Application Requirements. The owner shall submit the application on the form provided by the Community Development Director and shall pay the application fee set by City Council resolution, on a one-time basis, regardless of the number of permit renewals. The Community Development Director may require submittal of such additional information as is deemed necessary to demonstrate compliance with the requirements of the Glenwood Springs Municipal Code, including, but not limited to, building code and inspection requirements.

(i) Penalties for Violations. Any violation of this Section 070.040.130 shall be deemed a misdemeanor and upon conviction of same shall be punished by a fine of \$250 for the first offense and by a fine of not less than \$100 and up to \$1,000 for each day of a subsequent offense.

INTRODUCED, READ ON FIRST READING, PASSED, AND ORDERED PUBLISHED BY
TITLE ONLY THIS 17TH DAY OF MAY 2018.

CITY OF GLENWOOD SPRINGS, COLORADO



Michael Gamba, Mayor

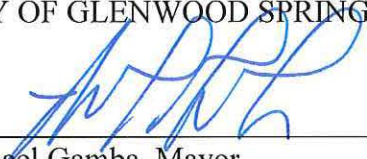
ATTEST:



Catherine Mythen Fletcher, City Clerk

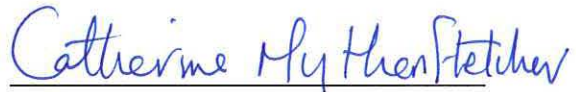
INTRODUCED, READ ON SECOND READING, AND ORDERED PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND PUBLICATION THIS 7TH DAY OF JUNE 2018.

CITY OF GLENWOOD SPRINGS, COLORADO



Michael Gamba, Mayor

ATTEST:



Catherine Mythen Fletcher, City Clerk



EXHIBIT O. Old Vacation Rental Application

Short-Term Rental Permit & Application City of Glenwood Springs, CO

General Information

If you want to rent your entire home for a period of less than 30 days, you are required to first obtain a Short-term Rental Permit from the City of Glenwood Springs Community Development Department.

Application & Review Process

1. Review the regulations which are located after the Frequently Asked Questions. If you determine that you are eligible to apply, complete the attached Short-term Rental Permit application and submit along with the applicable fee to the Community Development Department, 101 W. 8th Street, Glenwood Springs, CO 81601. Call the Community Development Department at 970 384-6411 for the current application fee.
2. In addition to the Short-term Rental Permit application, you must also obtain a Business and Sales Tax License through the city's Finance Department. You can apply for your business and sales tax license on line at <https://glenwoodsprings.munirevs.com>
3. Upon approval of the Short-term Rental Permit, Planning staff will advise the Finance Department that they may release your business and sales tax licenses. Questions pertaining to business or sales tax licenses may be made at 1/888-751-1911 or 970-384-6455.
4. Shortly after you submit your Short-term Rental application, a staff member from the Community Development Department will contact you regarding your application. If your application is complete, Community Development staff will have you schedule an inspection of your home. All inspections are handled through the city's Building Department. If you have questions regarding the inspection, contact the Building Department's administrative assistant at 970 384-6411.
5. After your inspection has been completed, the inspector will do one of two things, either approve your residence for use as a short-term rental, or require that you make modifications to ensure the public's health, safety and welfare. In some cases, the required modifications may require that you submit a Building Permit.
6. After you have completed successfully all of the work associated with your inspection or building permit, Community Development Department staff will issue your Short-term Rental Permit.

If you have additional questions regarding the Short-term Rental application process, please review the following Frequently Asked Questions, or call 970 384-6411.

Frequently Asked Questions:

1. **What is a short-term rental?** *A short-term rental is the rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, accessory tourist rental, boarding or rooming house, or hotel. This definition does not include offering the use of one's property where no fee is charged or collected.*
2. **Are City of Glenwood Springs' permits or licenses required as a pre-requisite to having a short-term rental in Glenwood Springs?** *Yes. It will be necessary to obtain a Short-term Rental Permit and a Business/Sales Tax License before commencing to rent a property as a short-term rental. In addition, a Building Permit may be required if it is determined that physical changes need to be made to the residence in order to comply with applicable building codes.*
3. **If I swap my house for another home elsewhere and no money is exchanged, do I need a short-term rental permit?** *The offering of the use of one's home where **no fee is charged** or collected is exempt from any City permitting.*
4. **Is any residential dwelling unit in the City eligible to become a short-term rental or are there certain areas where it is prohibited?** *The use of homes for short-term rental purposes is regulated via the zoning regulations of the Glenwood Springs Municipal Code in Article 070.040 Zoning. Short-term rentals are allowed in all residential and commercial zones. However, short-term rentals are not allowed in Planned Unit Developments (PUDs) unless specifically listed as an allowed use. Additionally, short-term rentals are not allowed in any dwelling unit that has been permitted as an Accessory Dwelling Unit.*
5. **Who may apply for a Short-term Rental Permit?** *All permits shall be issued to the owner of the property.*
6. **What are the requirements for a Short-term Rental Permit?** *The requirements are listed in the Glenwood Springs Municipal Code at Article 070.040.120 Short-term Rentals.*
7. **Do I need a business license to operate a short-term rental?** *A business license is required for short-term rentals. Additionally, short-term rentals are subject to sales and accommodations taxes. Owners are required to charge and collect sales and accommodation taxes. You may apply for a business and sales tax license at the same time you apply for a Short-term Rental permit. (See attached information sheet as to how to apply for a business and sales tax license on line.)*
8. **Will I need to have my home inspected?** *All homes will require an inspection to determine compliance with applicable zoning and building codes prior to the issuance of a Short-term Rental permit.*
9. **Do I need a building permit for a short-term rental?** *A Building Permit may be required if significant work is needed to bring the residence into compliance with the applicable codes. The need for a building permit will be determined at the conclusion of the inspection by the Building Department.*

**Short-Term Rental
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City of Glenwood Springs, CO**

10. **What building codes will short-term rentals be subject to?** *The applicable building code for your property depends on the underlying use of your property. One or more of the following codes will apply: International Property Maintenance Code (IPMC), International Residence Code (IRC), or International Building Code (IBC).*
11. **What is a “designated responsible party?”** *A designated responsible party is a person located in the local area who will be available to immediately respond to any issues arising from the short-term rental of the property, whether it be from the rental party, public safety personnel, utility personnel or any other municipal party.*

For additional questions regarding short-term rentals, please contact the Community Development Department at 970 384-6411.

**Short-Term Rental
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Glenwood Springs Municipal Code section 070.040.120- Short Term Rentals.

(a) Intent. The City of Glenwood Springs recognizes that there are benefits to allowing owners of residential units within the City to rent their dwelling units for periods of time less than thirty (30) days. Short term rental of dwelling units bring additional visitors to the City, can allow owners to recoup housing costs, and provides revenues for the City through the additional tax collections. The provision of short term rentals offers additional diversification to the resort and travelling professional accommodations market. However, due to the potential for adverse impacts, short term rentals must be regulated by the City to protect the health, safety, and welfare of owners, neighbors, and visitors.

(b) Applicability. The requirements of this Section shall apply to any residential dwelling unit within the City of Glenwood Springs. This Section does not apply to any residential use within a Planned Unit Development unless specifically listed as a use allowed by the Planned Unit Development. Nor does this Section apply to any dwelling unit permitted as an Accessory Dwelling Unit.

(c) Definition. As used in this Section, the following term shall have this meaning ascribed to it:

Short term rental means the rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, boarding or rooming house, or hotel. This definition does not include offering the use of one's property where no fee is charged or collected.

(d) Requirements, Restrictions, and Standards. The following requirements, restrictions, and standards shall apply to short term rentals:

(1) The City of Glenwood Springs is not a party to and does not enforce any private covenants. Private covenants may restrict the ability for owners to engage in short term rentals.

(2) There shall be a designated responsible party, located within the local region, available for immediately responding to any issues arising from the short term rental. The designated responsible party may be the owner of the property.

(3) The owner or responsible party shall collect and pay all applicable local, state, and federal taxes including sales and lodging taxes.

(4) The owner or responsible party is responsible for ensuring the short term rental meets all applicable local, state, and federal regulations. For example, §38-45-101 C.R.S. et seq. requiring carbon monoxide alarms in residential property. The property owner, responsible party, or other persons shall not reside in the short-term vacation rental unit during periods of short-term rental; however, the property owner or permanent tenants not part of the short-term rental party may occupy the accessory dwelling unit on the property as their residence.

(5) The owner or responsible party is responsible for obtaining all required licenses in accordance with Title 050 of the Glenwood Springs Municipal Code.

(6) Occupancy limitations of a short term rental shall be established by the International Property Maintenance Code (IPMC) and shall be indicated on the short term rental permit.

(7) On properties with an accessory dwelling unit, only the primary dwelling on the property shall be eligible for a short term rental permit.

**Short-Term Rental
Permit & Application
City of Glenwood Springs, CO**

(8) All vehicles shall be parked in designated parking areas, such as driveways and garages, or on-street parking, where permitted. No parking shall occur on lawns or sidewalks.

(9) The owner shall be responsible for ensuring that the short term rental complies with Section 100.010.060 of the Glenwood Springs Municipal Code entitled Garbage, refuse, and trash collection. Owners and responsible parties shall make arrangements for proper garbage, refuse, and trash collection.

(10) The following information must be posted in a prominent and visible location in the short-term rental:

- A. City of Glenwood Springs license(s) and short term rental permit;
- B. Contact information for owner and/or responsible party, including a phone number for 24 hour response to emergencies;
- C. Description of location of fire extinguishers and emergency egress; and
- D. Any other information deemed necessary by the Community Development Director or Building Official to ensure the public's health and safety.

(11) In a multi-family building under single ownership, no more than twenty-five (25%) but at least one (1) unit may be permitted as a short term rental.

(12) All advertising of a short-term rental, including advertising on website vacation booking sites, shall display the City of Glenwood Springs short-term rental permit number and business license number.

(13) A property owner may not be issued both a short-term rental permit and an accessory tourist rental permit on the same property at the same time; however, should an owner wish to change the use of a permitted short-term rental, he or she may do so by filing an application for an accessory tourist rental in accordance with Section 070.040.130 accessory tourist rentals. Upon issuance of a new accessory tourist rental permit, the existing short-term rental permit is automatically revoked.

(e) Application requirements. The owner shall submit the application on the form provided by the Community Development Director and shall pay the application fee set by City Council resolution. The Community Development Director may require submittal of such additional information as is deemed necessary to demonstrate compliance with the requirements of the Glenwood Springs Municipal Code including, but not limited to, building code and inspection requirements.

(f) Short Term Rental Permit. All short term rentals shall require a permit from the Community Development Director. This permit shall only be issued after the short term rental application has been approved in accordance with the Glenwood Springs Municipal Code and shall specify any terms and conditions of the permit. All permits shall be issued to the owner of the property. A change in ownership shall necessitate the issuance of a new permit. Permits shall be issued for a period of two (2) years and shall expire at the end of odd numbered years.

(g) Revocation of Permit. A short term rental permit may be revoked at any time by the Community Development Director should it be determined that the use is not being operated in compliance with this Section or any other section of the Glenwood Springs Municipal Code.

(h) Appeals. Appeals of administrative decisions may be made in accordance with Section 070.010.050 of the Glenwood Springs Municipal Code.

**Short-Term Rental
Permit & Application
City of Glenwood Springs, CO**

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**Short-Term Rental
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SHORT-TERM RENTAL APPLICATION

Short term rental means the rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days, not including a bed and breakfast, residency unit, boarding or rooming house, accessory tourist rental, or hotel. This definition does not include offering the use of one's property where no fee is charged or collected.

GENERAL INFORMATION

OWNER:

Owner(s) of Residence: _____

Owner(s) Mail Address: _____

Owner(s) Home and Cell Phone Nos.: _____

Owner(s) E-Mail Address: _____

PROPERTY INFORMATION:

Address of Property to be used as a Short-Term Rental: _____

Complex Name and Unit No. _____

Number of Bedrooms: _____

Number of Parking Spaces on Site: _____

If the unit is in a multi-family complex, are there off-street parking spaces allocated to this unit?

_____ Yes _____ No

If yes, how many spaces? _____

LOCAL CONTACT INFORMATION:

(You may designate yourself as the local contact or another responsible party that resides within the Glenwood Springs area).

Responsible Party Name: _____

Responsible Party Mail Address: _____

Responsible Party Home and Cell Phone Nos.: _____

Responsible Party E-Mail Address: _____

REQUIREMENTS, RESTRICTIONS AND STANDARDS:

1. The City of Glenwood Springs is not a party to and does not enforce any private covenants. Property owners should review covenants that apply to the property they wish to use as a short-term rental since covenants may restrict an owner from engaging in the use of their property as a short-term rental.
2. There must be a designated responsible party located within the local region who is available to immediately respond to any issues arising from the short-term rental. The designated responsible party may be the owner of the property.
3. The owner or responsible party shall collect and pay all applicable state and local taxes including sales and lodging taxes.
4. The owner or responsible party is responsible for ensuring that the short-term rental meets all applicable local, state, and federal regulations. For example §38-45-101 C.R.S. et seq. requiring carbon monoxide alarms in residential properties.
5. The owner or responsible party is responsible for obtaining all required licenses and permits in accordance with Title 050 of the Glenwood Springs Municipal Code. The business license and sales tax license number must be displayed in all advertising, including advertising on vacation rental websites.
6. Occupancy limitations of a short-term rental shall be established by the 2009 International Property Maintenance Code (IPMC) and shall be indicated on the short-term rental permit.
7. On properties with an accessory dwelling unit, only the primary dwelling on the property shall be eligible for a short-term rental permit.
8. All vehicles shall be parked in designated parking areas, such as driveways and garages, or on the street where on-street parking is allowed. No parking of vehicles shall occur on lawns or sidewalks.
9. The owner or responsible party shall ensure that the short-term rental complies with Section 100.010.060 of the Glenwood Springs Municipal Code entitled garbage, refuse and trash collection. Owners and responsible parties shall make arrangements with rental parties for the proper collection and disposal of trash and refuse.
10. In a multi-family building where all units are under the same ownership, no more than 25% of the total number of units, but at least one (1) unit may be permitted as a short-term rental.
11. The following information must be posted in a prominent and visible location in the short-term rental:
 - a. City of Glenwood Springs licenses and Short-term Rental Permit.
 - b. Contact information for owner and/or designated responsible party including a phone number for 24 hour response to emergencies.
 - c. Diagram depicting the location of fire extinguishers and emergency egress.

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- d. Any other information deemed necessary by the Community Development Director or Building Official to ensure the public's health and safety.
- e. The maximum number of occupants as determined by the Building Official.

Note: A Short-term Rental Permit will only be issued after the application has been reviewed and approved in accordance with the Glenwood Springs Municipal Code. Specific terms and conditions may be included in the permit. All permits will be issued to the owner(s) of the property. A change in ownership requires the new property owner to apply for a new permit. Short-term rental permits expire at the end of odd numbered years. Property owners will be sent a new application form prior to expiration of their permit.

Owner's Signature/Certification:

By my signature below, I represent that all information contained in this application is true and correct to the best of my knowledge. I further certify that I have read the City of Glenwood Springs Short-term Rental regulations per Section 070.040.120 of the Glenwood Springs Municipal Code:

Owner(s) Signature: _____ Date: _____

_____ Date: _____

ADMINISTRATIVE USE ONLY:

Application received by: _____ Date: _____

Application fee collected: ☐ Amount: \$ _____

EXHIBIT P. Best Practices Articles

- 1.Lodging Revs
- 2.Colorado Municipal League
- 3.Host Compliance
- 4.Sustainable Economies Law Center



Best Practices in Regulation and Taxation of Short Term Rentals

LODGINGRevs White Paper Series

Best Practices in Regulation and Taxation of Short Term Rentals

The growth of online short term rental listing platforms (Airbnb, VRBO, FlipKey), has simplified the rental process, resulting in significant growth of short term rental properties in almost every community.

This growth is causing many communities to revisit and revise their municipal code ordinances regarding the regulation and taxation of these rental properties.

Our experience in working with municipalities since 2011 has given us a perspective on best practices to achieve the objectives the municipalities establish regarding short term rentals.

The ordinances, fees and taxes, and compliance procedures work together as a tailored package to achieve those objectives. We have found that setting three goals for this package achieves the best long term results for the municipality:

- Make compliance requirements clear and reasonably easy to achieve
- Make it evident to property owners that non-compliance is expensive and futile
- Establish systems and procedures that ensure the cost of monitoring compliance goes down over time

The rest of this paper outlines our experience in achieving these goals.

Taxation

Let's tackle the "easier" subject first – taxation.

We have found that municipalities have generally had the best experience when establishing a "level playing field" - lodging is lodging - and should be subject to equal or neutral tax rates. Local visitors should pick the accommodations that best suit their needs, not the one that avoids lodging taxes.

Some platform providers, especially Airbnb, like to point out that renting out part of your home helps pay the mortgage. True, but it's still a business transaction. Unless you rent for less than 14 days a year, the rental income must be reported on your income tax filing. If municipalities want to support renting out a part of your home (sometimes referred to as "homestays") best practice says that's better accomplished through lower fees or easier regulations than through lower lodging tax rates.

Most municipalities include a penalty (additional percentage) for past due taxes from a late filing property (probably “pulled” into compliance).

We believe the **Best Practice** is to make this penalty consistent with late sales tax penalties and to consider waiving it for voluntary compliers during the initial effort/program to bring short term rental properties into compliance.

We have seen a small percentage of municipalities make the listing platforms responsible for filing and paying lodging taxes. We believe that responsibility should be a requirement of the property owner or property management company to ensure complete and transparent compliance.

There is also a major campaign underway by Airbnb to enter into “voluntary” compliance and tax payment agreements with jurisdictions. This can have some benefits and significant drawbacks due to the restrictions on transparency that Airbnb imposes. See our White Paper on the subject for a deeper discussion.

We have found that implementing on-line automated tax filing and payment systems seems to encourage quicker tax compliance, is popular with rental hosts, and helps municipalities control or cap costs associated with compliance.

Regulation

There is not one set of best practices for establishing regulations and ensuring compliance, though certain specific best practices apply to all municipalities.

Best practices must reflect the municipality’s tailored policy concerning short term rentals – what is their impact on the community, and how can that impact be best “managed”.

There is no question that the availability of on-line rental platforms, and their marketing efforts, have made it easier and more profitable for property owners to rent part or all of their property, whether they live there full-time, part-time (second homes) or never (investment property). This has led to a very rapid increase in short term rentals in almost every community across the country. The impact varies.

For many municipalities, local visitors or tourists, are a primary driver of the economy. The municipality wants to ensure that there are an adequate number of rooms, at different price levels, locations, and characteristics to meet the diverse needs of the visitors. Municipalities tend to want to see more short term rentals, especially entire units (homes or condos) made available to house visitors. **Encouraging** is the category name we give this set of regulations appropriate for these municipalities.

For some municipalities the shifting of homes into the short term rental market has removed them from the longer term rental market. This has a significant impact on availability and price of rentals for the workforce and students (if the municipality is home to a college or university). Additional, the increased attractiveness of utilizing homes as investment properties removes them from the market, typically

resulting in higher home prices, making it more difficult for residents to afford to buy a home. Additionally, in some communities, the attractiveness and characteristics of specific neighborhoods can lead to larger numbers of short term rentals, and accompanying problems with noise, parking and traffic. When these impacts become significant, municipalities tend to want to limit or tightly control the number (and often the location) of short term rentals. We name the appropriate set of regulations for this category **Restrictive**.

For other communities, the tug between the positive and negative impacts of increased number of short term rentals comes down more in the “middle”. While they would like to see more visitors, spending money at local businesses and adding sales tax revenue, they want to protect the livability of their neighborhoods, help foster affordability of workforce and student housing, and provide a level playing field for commercial hotels, motels and B&Bs. The name of the category of the appropriate set regulations for this set of communities, we’ve named **Balanced**.

Each of these categories – **Restrictive, Balanced, and Encouraging** – will address the specific aspects of regulations and compliance procedures, but will tend to select varying levels. The first step for each community is to develop and articulate the policy stance regarding short term rentals.

There will be certain best practices that are universal – they apply to all municipalities, regardless of the policy stance category.

For instance, in working with one of our first communities in 2011, we determined that requiring the license or permit number be displayed in all advertisements (print and online) would simplify (and lower the cost of) verifying compliance. This has become an industry standard, used around the world, including Paris, Airbnb’s largest market.

More recently, we have been encouraging municipalities to have the property hosts use the words Trusted, e.g. Telluride Trusted, before the relevant number, rather than Sales Tax Permit or License number, in the listings. This has a more positive slant for the host, and ensures that only properties within the jurisdiction can use the term and be “certified” as being in the community.

Another best practice is to automate the licensing process. This makes it easier for the property host and controls costs for the municipality. Most municipalities make the online applications and renewals free (include the cost in the license fee) and establish a “surcharge” fee for paper applications. With these practices, our experience is a 97% usage of the automated online option. Property hosts appreciate the ease of filing and paying taxes which the municipality has provided.

Specific Regulation Framework

In this section we detail the individual decisions that each jurisdiction must consider in crafting the ordinance and associated regulations. We list options and ranges that can be selected based on the public policy stance. We also highlight Best Practices that we believe all communities should adopt

1. Define what constitutes a short term rental.

Assuming that commercial hotels, motels and B&Bs are licensed, the focus is on individual units that are rented for a relatively short period of time to different individuals.

- Most municipalities choose **30 days** as the duration cut-off.
- **Restrictive** sometimes choose **60 days**.

Most municipalities do not include properties that are corporate housing – renting to new or visiting employees of a local company.

Must also decide whether to differentiate between rental of entire units (homestays), a separate room within a unit (homeshare) or a bed (roomshare). Encouraging often establish more lenient rules and lower fees for the latter two.

2. Decide what (if any) restrictions will be placed on the general category of short term rentals.

- **Restrictive** often set total allowed, totals by neighborhood and occasionally even totals by city block.

3. Decide what (if any) restrictions will be placed on individual short term rentals.

- **Restrictive** can set limits including:
 - Total number of days rented per year, season or month
 - Total number of “bookings” per year in certain neighborhoods
 - Minimum nights stay for each booking
 - Maximum occupancy
 - Square footage per occupant
 - Maximum units in a multi-unit building or complex
 - Available parking spaces per unit – usually tied to rooms or beds rented
 - Requirement that host must be living in, and be present in, the rental unit, in general or in specific neighborhoods or districts
 - Prohibition on serving alcohol (or even food) to guests
 - Requirement that “duplex neighbor” approve
 - Loss of license or permit due to stipulated number of complaints by neighbors
 - Requirement that if covered by an HOA, the HOA must allow short term rentals
- **Balanced** and **Encouraging** will have fewer individual restrictions.
 - HOA concurrence is typical
 - Loss of license due to neighbor complaints is often included

4. Establish licensing (or permitting) requirements (in addition to general requirements listed above), durations and fees. Ordinances should state that licenses are required prior to advertising the unit for rent.

Requirements could include:

- initial and annual safety inspections by the building department with special focus on safety exits
- smoke and CO monitors, fire extinguishers

- trash and recycling storage areas
- accessibility
- insurance coverage
- availability of a local “owner’s representative”
- specific information to be posted within rental unit including permit and contact info
- requirement to submit a yearly affidavit to rental history (frequency, duration and nightly rate)

These requirements are sometimes lessened for home shares and room shares.

Best Practice: require that every property provide the name and contact information of a local owner’s representative (or designated responsible party, which could be the owner) who can physically be at the property within a set period of time (from immediately to 2 hours), with current information listed on the pertinent license file.

Best Practice: application process includes an affidavit signed by owner (or property management company) acknowledging safety, noise, parking, trash and insurance regulations.

License duration (before required renewal) is typically one year, though some municipalities use 2 years and a few as many as 5 years. New licenses should be required with a change of ownership of the dwelling unit.

License (and renewal fees) should be set to a level that at least covers the jurisdiction’s costs and can be much higher for **Restrictive communities**. For example, in Crested Butte, they charge \$1,500 for the first year’s license. Many jurisdictions have varying fee levels depending upon occupancy limits (bedrooms or beds) in the rental unit). Home shares and room shares could be a lower level if desired, but often easier to have one standard set of fees.

Most jurisdictions choose to impose a penalty (fine) with interest for licenses that were not acquired prior to (or within a certain period of) the initial advertising or first rental transaction.

Best Practice: develop an “information campaign” highlighting that the jurisdiction is undertaking a thorough process to identify and monitor short term rentals. Include coverage in local newspapers and on the municipality’s website. Include a description of compliance requirements (Factsheet), including necessary steps, and point to an FAQ. Provide a grace period with waiver of penalties for voluntary compliance.

Implementing an automated on-line licensing system, with clear, easy to follow instructions, makes compliance an easier task and controls costs. Such a system should try to tie in all departments involved in the licensing process. Adding short term rentals to the licensing base could result in a very large increase in staff workload if not automated.

The Knowledge Now series features practical research on timely topics from the Colorado Municipal League.

SHORT-TERM RENTALS: MUNICIPAL BEST PRACTICES IN COLORADO

Short-term rentals (STRs) are residential properties that are rented to a visitor for fewer than 30 days. As the popularity of short-term rental properties continues to grow, the issues they create for municipal governments are growing as well. Municipal officials find themselves dealing with citizens' concerns about residential neighborhood integrity, unfair business competition, housing safety, and availability of affordable housing. Cities and towns are also seeking to collect sales and lodging taxes generated by this new business activity. Municipalities in Colorado and across the nation are handling STR issues in many ways. Austin, Texas, limits STRs to no more than three percent of non-primary residences in any census tract. San Francisco requires an adequate amount of insurance coverage. Portland, Oregon's ordinance states that STR operators must occupy the residence for at least nine months of the year. Santa Monica has created an enforcement department dedicated to policing STRs. A 2015 National League of Cities (NLC) study showed 13 percent of municipalities have adopted ordinances specifically regulating short-term rental properties, five percent have banned the practice, 24 percent are handling STRs through existing business regulations, and 58 percent have not addressed the issue.

Internet platforms have fueled the rapid expansion of STRs from a



service focused on renting spare rooms in private homes to the creation of local businesses which own houses that are used exclusively for short-term rentals. Rental data and analytics firm Airdna estimates that more than 22,000 homes and apartments in Colorado are listed with Airbnb — a leader in the online listing business. The top five municipalities with listings are Denver, Breckenridge, Steamboat Springs, Boulder, and Vail. More than 16,000 Colorado listings are posted on rival VRBO. Thousands more are listed on the many other Internet listing services.

There is no one-size-fits-all answer for municipalities in regulating short-term rentals. Do you limit STRs to a primary residence? Do you cap their numbers in residential zones? Do you enter into an agreement with the Internet listing company to collect and remit taxes?

How do you effectively enforce regulations? The NLC study concludes with sound advice: "As city officials prepare to modify regulations or develop new ordinances or legislation to fit the sharing economy they must balance issues of innovation, economic development, tourism, equity, access, and safety. At the same time, they must be mindful of the processes they put in place to understand these new businesses, engage the right stakeholders, share ideas for new regulations, capture and analyze new data, and develop implementation strategies."

Cities and towns across Colorado have enacted ordinances that regulate short-term rentals in ways that meet their community's needs. This *Knowledge Now* profiles four different approaches.

SHORT-TERM RENTALS IN BOULDER

By Thomas Carr, Boulder city attorney



On Sept. 29, 2015, Boulder City Council passed ordinance 8050 legalizing and regulating short-term rentals. The ordinance was effective Jan. 4, 2016, contingent on the voters passing a ballot measure extending the city's accommodations tax to short-term rentals. The voters approved a 7.5 percent tax on short-term rentals and the ordinance went into effect.

Boulder's ordinance is based on code provisions regulating properties rented for more than 30 days, which has been in place since the 1990s. The short-term rental code requires a license for all short-term rentals. The rental property must be the owner's principal residence. The address must appear on the owner's voter registration, auto registration or as the address at which the owner's children are registered for school. The owner must be a natural person and the owner's name must appear on the deed for the property.

On Dec. 6, the city council will be considering an amendment to allow short-term rental of properties held in a living trust. The property must



have smoke and carbon monoxide detectors, but the life safety inspections required for long-term rentals are waived for all short-term rentals except those in accessory units. All advertisements must include the short-term rental license number. A property can only have one short-term rental license. If there is an accessory unit on the property, either the main

residence or the accessory unit may have a license, but not both.

Occupancy is limited to either three or four unrelated persons depending on the zoning. A group of related persons is counted as one person. Short-term rentals are not permitted in affordable housing units. Accessory units may only be rented as short-term rentals for 120 days in any calendar year.

BRECKENRIDGE: A PIONEER IN SHORT-TERM RENTALS

By Leslie Fischer, Breckenridge accounting services manager

Short-term rentals (STR) are nothing new to the Town of Breckenridge. The Town has historically embraced and thrived with the widespread practice of STRs since boarding houses in the 1850s and their revival in popularity with the opening of the ski area in 1961.

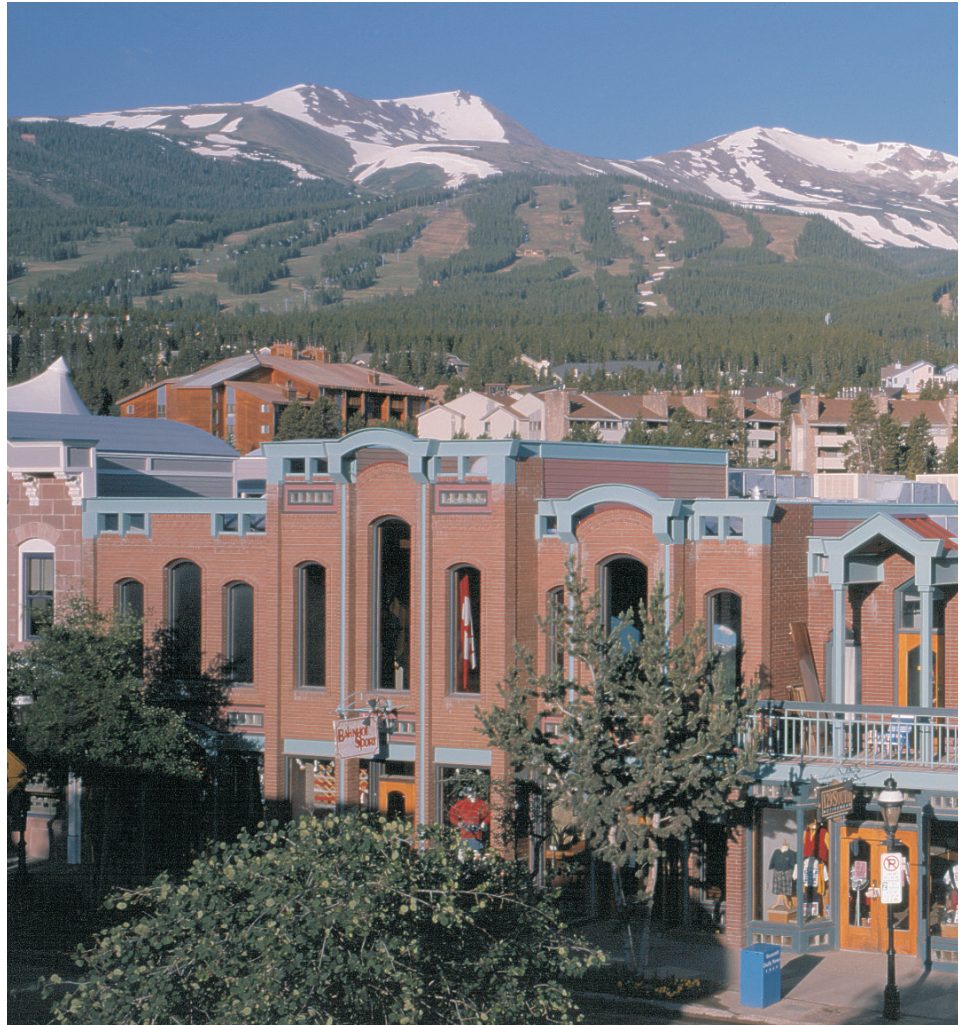
Breckenridge currently has a population close to 4,700 — yet sustains 3,345 accommodation unit licenses, six hotels, and three bed and breakfasts. Clearly STRs are vital to the economy of the Town. Combining sales, accommodations, and marijuana taxes — lodging services provide 40 percent of Town revenue. At the same time, the Town wants to ensure that long-term housing is available for the local workforce.

To that end, the Town has proposed a 2017 budget of more than \$19 million for the Affordable Housing Fund. The Town is also pursuing incentives for property owners to rent long-term. The “Housing Works” program, organized by a local nonprofit, is designed to match local families earning moderate household incomes with property owners who are either tired of dealing with the STR market or want to offer their home for long-term rental for the first time.

STR regulation in Breckenridge began in 1984 when the tax structure of collecting the town sales tax (currently 2.5 percent) and the Town accommodations tax (currently 3.4 percent) was applied to STRs. Together with state, county, and affordable housing sales taxes, the total tax on short term rentals is 11.675 percent.

The Breckenridge Municipal Code includes the following:

- Tax is collected on the purchase price of lodging, as well as any mandatory service charges required of the renter.
- Tax must be remitted directly to the Town and not be passed on



to another party such as a property manager.

- Tax charges must be listed separately on the bill presented to the consumer.
- Breckenridge recognizes that STRs are engaged in business. As a result, all property owners of STRs are required to pay an annual occupational license tax (aka Accommodation Unit License). The tax ranges from \$75 to \$175 annually, depending upon the number of bedrooms in the property. By requiring licensing (regardless of tax remittance), the Town is able to match online listings with the licensed owners.
- Breckenridge does not impose zoning restrictions on STRs, with the exception of prohibiting short

term rental of deed restricted workforce housing.

- Outside of the norm for residential properties, no additional restrictions are placed on STRs simply due to STR activity at the property (such as building inspections or additional safety regulations).
- STRs may be either a primary or non-primary residence and there is no occupancy limit imposed.

Even through these times of change, short-term rentals continue to play an important role in welcoming visitors to Breckenridge.

“ ... You better start swimming or you'll sink like a stone. For the times they are a-changing.”

— Bob Dylan

DENVER'S APPROACH TO SHORT-TERM RENTALS

By Luke Palmisano, aide to Denver Councilwoman Mary Beth Susman



Denver's approach to short-term rentals sought to craft 21st century solutions to 21st century concerns. We wanted solutions to protect the safety of guests and hosts while balancing the needs of neighbors, hosts, guests, hoteliers, and the city.

All short-term rentals (STRs) were illegal in solely residential zones prior to Denver's regulations. Actually the term "short-term rental" did not appear in our zoning code, but rental of residential units required at least a 30-day term.

The key components of Denver's regulations include a licensing requirement, an assessment of lodger's taxes (10.75 percent), measures to protect the safety of guests and hosts, and conditions that seek to ensure compliance. Denver requires hosts to obtain a short-term rental license through the Department of Excise and Licenses (EXL). The fee for the STR license is \$25 renewed annually. The tax license is \$50 renewed biennially.

STRs are an accessory use wherever residential uses are allowed; therefore the host does not need a zoning permit. The unit must be the primary residence of the host (whether owned or rented), certified by driver's license, voter registration, and other means. An



inspection is not required to obtain a license. Hosts do not need to be present while renting their dwelling.

Hosts must have a carbon monoxide detector, smoke detector, and fire extinguisher. They must also provide guests with an information packet that includes noise ordinance regulations, trash pick-up dates and rules, local contacts, and other information.

An important goal was to create a simple enough process that would induce the greatest compliance rate because licensing gives us the best route to enforcement. To further that end, Denver is the first municipality in the nation to offer a short-term rental

licenses completely online. Applicants affirm their primary residence status, presence of equipment and materials all online, under penalty of perjury.

To aid in enforcement, Denver's STR ordinance requires the licensed host to post the license number on all advertising. This provides EXL the ability to spot check STR listings on all venues/platforms for compliance. If a listing does not include a license number EXL pursues compliance.

All permitting of STRs can be prohibited by landlords and homeowners associations. Apartment complexes with "guest suites" are exempt from needing licenses.

DURANGO ADDRESSES SHORT-TERM RENTAL ISSUES

By Mary Beth Miles, Durango assistant to the city manager/sustainability coordinator

Checking in for a night's stay no longer requires going up to the welcome counter to produce your ID and credit card. With the arrival of Airbnb, VRBO, and HomeAway, lodging options have changed forever.

That is why the City of Durango recognized the need to address the impacts of short-term rentals in 2014. The policy adopted by the City Council focused on preserving residential and neighborhood character; ensuring collection of sales and lodging taxes; and requiring compliance with basic health and life safety regulations.

Durango's policy balances short-term lodging needs with the need to maintain and provide adequate housing options for full-time residents. The challenge is exacerbated by a 1.2 percent rental vacancy rate in an already strained housing market. As a tourist destination, Durango's economy benefits from visitors who contribute to the local economy. Property owners recognize the income potential of the short-term rental market. Thus, Durango developed an innovative policy solution that simultaneously balanced rental market pressures, the sharing of residential real estate, and income potential for local property owners.

The short-term rental regulations seek to maintain neighborhood character, vitality, and vibrancy by ensuring that land uses are compatible. Durango only allows short-term rentals in limited zones, employs a street segment cap



that restricts short-term rentals to only one per block face, and requires all short-term rentals to obtain a limited use permit. In addition to fulfilling the land use process requirements, short-term rentals are also required to obtain business and lodger's tax licenses. The City's regulations are intended to prohibit market saturation. Of the approximately 8,000 housing units in Durango, in the two zones where short-term rentals are permitted, there a total of 60 permits available for short-term rentals.

Additional changes to the policy are being contemplated by city council to address short-term rental agreements for a single room in a residential unit.

Under the existing regulations, this type of arrangement, common under the Airbnb model, is not permitted. A pilot program, restricted to certain areas of the city, is being developed with a separate permitting process to address these rental units.

There is no one-size-fits-all regulatory framework for municipalities in Colorado seeking to regulate short-term rentals. Durango has developed — and continues to refine — a policy governing this emerging economy that is context-sensitive and reflective of our community character.

RESOURCES

CML continues to develop STR information through the CML Sharing Economy Task Force, chaired by Denver Councilmember Mary Beth Susman. A matrix of STR ordinances as well as sample ordinances, licensing forms, and other information is available on the CML website at www.cml.org, under Issues > Sharing Economy > Ordinances.

An informative study of vacation home rentals conducted by the Colorado Association of Ski Towns may be viewed online at the CAST website (coskitowns.com/links-of-interest).



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Colorado Municipal League
1144 Sherman Street
Denver, CO 80203-2207

HOSTCOMPLIANCE WHITE PAPER

Introduction: The meteoric rise of “home-sharing” and short-term rentals

Sharing our homes has been commonplace for as long as there have been spare rooms and comfortable couches. Whether through word of mouth, ads in newspapers or flyers on community bulletin boards, renters and homeowners alike have always managed to rent out or share rooms in their living spaces. Traditionally these transactions were decidedly analog, local and limited in nature, but with advance of the internet and websites such as Airbnb.com and HomeAway.com it has suddenly become possible for people to advertise and rent out their homes and spare bedrooms to complete strangers from far-away with a few mouse-clicks or taps on a smartphone screen. As a result, the number of homes listed for short-term rent has grown to about 4 million, a 10 fold increase over the last 5 years. With this rapid growth, many communities across the country are for the first time experiencing the many positive and negative consequences of an increased volume of “strangers” in residential communities. While some of these consequences are arguably positive (increased business for local merchants catering to the tourists etc.) there are also many potential issues and negative side-effects that local government leaders may want to try to mitigate by adopting sensible and enforceable regulation.

How to effectively regulate home-sharing and short-term rentals has therefore suddenly become one of the hottest topics among local government leaders across the country. In fact, at the recent National League of Cities conference in Nashville, TN, there were more presentations and work sessions dedicated to this topic than to any other topic. Yet, despite more than 32,000 news articles written on the topic in recent years, surprisingly little has been written on how to implement simple, sensible and enforceable local policies that appropriately balances the rights of homeowners with the interests of neighbors and other community members who may only experience the negative side-effects associated with people renting out their homes on a short-term basis. This guide seeks to address this knowledge gap and offer practical advice and concrete examples of short-term rental regulation that actually works.

Why regulate home-sharing and short-term rentals in the first place?

There are many good reasons why local government leaders are focused on finding ways to manage the rapid growth of home-sharing and short-term rental properties in their communities. To name a few:

1. Increased tourist traffic from short-term renters has the potential to slowly transform peaceful residential communities into “communities of transients” where people are less interested in investing in one another’s lives, be it in the form of informal friend groups or church, school and other community based organizations.
2. Short-term renters may not always know (or follow) local rules, resulting in public safety risks, noise issues, trash and parking problems for nearby residents.
3. So-called “party houses” i.e. homes that are continuously rented to larger groups of people with the intent to party can severely impact neighbors and drive down nearby home values.
4. Conversion of residential units into short-term rentals can result in less availability of affordable housing options and higher rents for long-term renters in the community.
5. Local service jobs can be jeopardized as unfair competition from unregulated and untaxed short-term rentals reduces demand for local bed & breakfasts, hotels and motels.
6. Towns often lose out on tax revenue (most often referred to as Transient Occupancy Tax / Hotel Tax / Bed Tax or Transaction Privilege Tax) as most short-term landlords fail to remit those taxes even if it is required by law.
7. Lack of proper regulation or limited enforcement of existing ordinances may cause tension or hostility between short-term landlords and their neighbors
8. The existence of “pseudo hotels” in residential neighborhoods (often in violation of local zoning ordinances etc.) may lead to disillusionment with local government officials who may be perceived as ineffective in protecting the interests of local tax-paying citizens.

In short, while it may be very lucrative for private citizens to become part-time innkeepers, most of the negative externalities are borne by the neighbors and surrounding community who may not be getting much in return. The big questions is therefore not whether it makes sense to regulate short-term rentals and home-sharing, but how to do it to preserve as many of the benefits as possible without turning neighbors and other local community members into “innocent bystanders”. In the next sections we will explore how to actually do this in practice.

Effective home-sharing and short-term rentals regulation starts with explicit policy objectives and a clear understanding of what regulatory requirements can be enforced

As with most regulation enacted on the local level, there is no “one size fits all” regulatory approach that will work for all communities. Instead local regulation

should be adapted to fit the local circumstances and policy objectives while explicitly factoring in that any regulation is only worth the paper it is written on if it can be enforced in a practical and cost-effective manner.

START WITH EXPLICIT POLICY OBJECTIVES!

As famously stated in Alice in Wonderland: “If you don't know where you are going, any road will get you there.” The same can be said about short-term rental regulation, and unfortunately many town and city councils end up regulating the practice without first thinking through the community’s larger strategic objectives and exactly which of the potential negative side effects associated with short-term rentals that the regulation should try to address. As an example, the Town of Tiburon in California recently passed a total ban of short-term rentals and home-sharing without thinking through the severely negative impact of such regulation on its stated strategic policy objective of revitalizing its downtown. Likewise the City of Mill Valley, California recently adopted an ordinance requiring short-term landlords to register with the city, while failing to put in place an effective mechanism to shut-down “party-houses” although there had been several complaints about such properties in the past. Such oversight was clearly unintentional but highlights the fact that the topic of regulating short-term rentals and home-sharing is extremely complicated and it is easy to miss the forest for the trees when it comes time to actually writing the local code. To avoid this pitfall, local government leaders should therefore first agree on a specific list of goals that the new short-term rental regulation should accomplish before discussing any of the technical details of how to write and implement the new regulation. Any draft regulation should be evaluated against these specific goals and only code requirements that are specifically designed to address any of those concrete goals should be included in the final ordinance. Below are a few concrete examples of what such lists of concrete policy objective could look like for various types of communities:

EXAMPLE A: LIST OF SHORT-TERM RENTAL POLICY OBJECTIVES FOR AN AFFLUENT RESIDENTIAL COMMUNITY IN ATTRACTIVE LOCATION

- Ensure that traditional residential neighborhoods are not turned into tourist areas to the detriment of long-time residents
- Ensure any regulation of short-term rentals and home-sharing does not negatively affect property values (and property tax revenue)
- Ensure that homes are not turned into pseudo hotels or “party houses”
- Minimize public safety risks and the noise, trash and parking problems often associated with short-term rentals and home-sharing without creating additional work for the local police department

- Give permanent residents the option to occasionally utilize their properties to generate extra income from short-term rentals and home-sharing as long as all of the above mentioned policy objectives are met

EXAMPLE B: LIST OF SHORT-TERM RENTAL POLICY OBJECTIVES FOR AN URBAN COMMUNITY WITH A SHORTAGE OF AFFORDABLE HOUSING

- Maximize the availability of affordable housing options by ensuring that no long-term rental properties are converted into short-term rentals
- Ensure that short-term rentals and home-sharers are taxed in the same way as traditional lodging providers to ensure a level playing field and maintain local service jobs
- Ensure that the city does not lose out on hotel / bed / transient occupancy tax revenue that could be invested in much needed services for permanent residents
- Minimize public safety risks and the noise, trash and parking problems often associated with short-term rentals and home-sharing without creating additional work for the local police department
- Give permanent residents the option to occasionally utilize their properties to generate extra income from short-term rentals and home-sharing as long as all of the above mentioned policy objectives are met

EXAMPLE C: LIST OF SHORT-TERM RENTAL POLICY OBJECTIVES FOR A WORKING-CLASS SUBURBAN COMMUNITY WITH AMPLE HOUSING AVAILABILITY AND A STRUGGLING DOWNTOWN

- Give property owners the option to utilize their properties as short-term rentals and for home-sharing to help them make ends meet
- Encourage additional tourism to drive more business to downtown stores and restaurants
- Minimize public safety risks and the noise, trash and parking problems often associated with short-term rentals and home-sharing without creating additional work for the local police department
- Ensure that the city does not lose out on tax revenue that could be invested in much needed services for permanent residents

EXAMPLE D: LIST OF SHORT-TERM RENTAL POLICY OBJECTIVES FOR BEACH TOWN WITH A LARGE STOCK OF TRADITIONAL VACATION RENTALS

- Ensure any regulation of hoe-sharing and short-term rentals does not negatively affect the value of second homes (and thereby property tax revenue)

- Encourage increased visitation to local stores and restaurants to increase the overall availability of services and maximize sales tax collection
- Minimize public safety risks and the noise, trash and parking problems often associated with short-term rentals and home-sharing without creating additional work for the local police department

Once clear and concrete policy objectives have been formulated the next step is to understand what information can be used for code enforcement purposes, so that the adopted short-term rental regulation can be enforced in a cost-effective manner.

ONLY ADOPT POLICY REQUIREMENTS THAT CAN AND WILL BE ENFORCED!

While it may seem obvious that only enforceable legislation should be adopted, it is mind-boggling how often this simple principle is ignored. To give a few examples, the two California towns previously mentioned not only failed to adopt regulation consistent with their overall strategic policy objectives, but also ended up adopting completely unenforceable rules. In the case of Tiburon, the town council instituted a complete ban of all short-term rentals and home-sharing within its jurisdiction, but not only failed to allocate any budget to enforce it, but also failed put in place fines large enough to deter any violation of the ban. As a result, the number of properties listed for rent has remained virtually unchanged before and after the ban.

In the case of Mill Valley, the town's registration requirement turned out to be completely unenforceable as the town's personnel had neither the technical expertise, time nor budget to track down short-term landlords that failed to register. As a result, the town has had to rely exclusively on self-reporting, and unsurprisingly the compliance rate has been less than 5%.

As for local governments that require short-term rental property owners to pay tax to the local jurisdiction without allocating budget to enforcing such rules, they have found themselves in similar situations, with compliance rates in the 5% range.

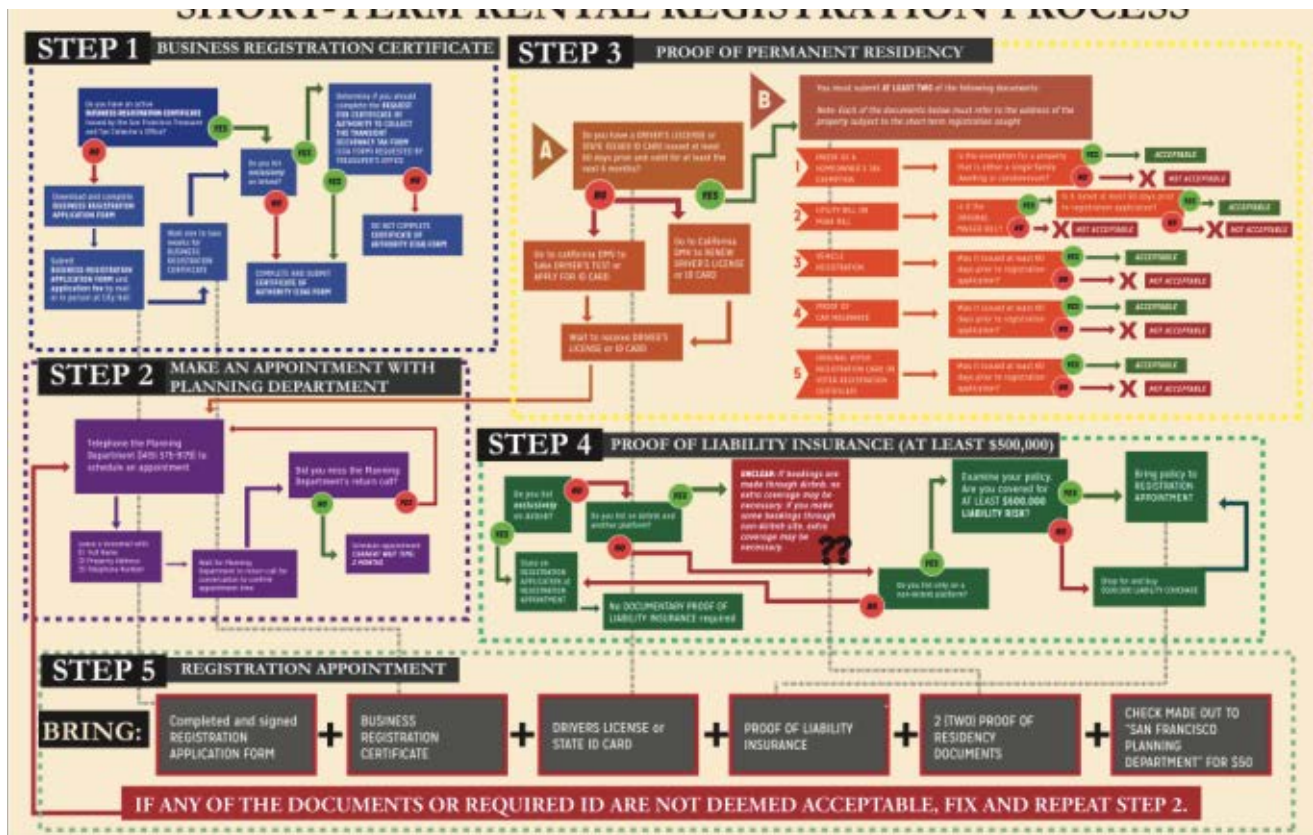
KEEP IT SIMPLE!

Another common mistake is for cities to adopt complicated rules that are hard for citizens to understand and follow and that require large investments in enforcement. As an example, despite setting up a dedicated department to enforce its short-term rental regulation, the City of San Francisco has only achieve a 10-15% compliance rate as its regulation is so complicated and its registration process so agonizing that most people give up before even trying to follow the rules. Below is

flow-chart that illustrates San Francisco’s cumbersome short-term rental registration process.

Sharing our homes has been commonplace for as long as there have been spare rooms and comfortable couches. Whether through word of mouth, ads in newspapers or flyers on community bulletin boards, renters and homeowners alike have always managed to rent out or share rooms in their living spaces. Traditionally these transactions were decidedly analog, local and limited in nature, but with advance of the internet and websites such as Airbnb.com and HomeAway.com it has suddenly become possible for people to advertise and rent out their homes and spare bedrooms to complete strangers from far-away with a few mouse-clicks or taps on a smartphone screen. As a result, the number of homes listed for short-term rent has grown to about 4 million, a 10 fold increase over the last 5 years. With this rapid growth, many communities across the country are for the first time experiencing the many positive and negative consequences of an increased volume of “strangers” in residential communities. While some of these consequences are arguably positive (increased business for local merchants catering to the tourists etc.) there are also many potential issues and negative side-effects that local government leaders may want to try to mitigate by adopting sensible and enforceable regulation.

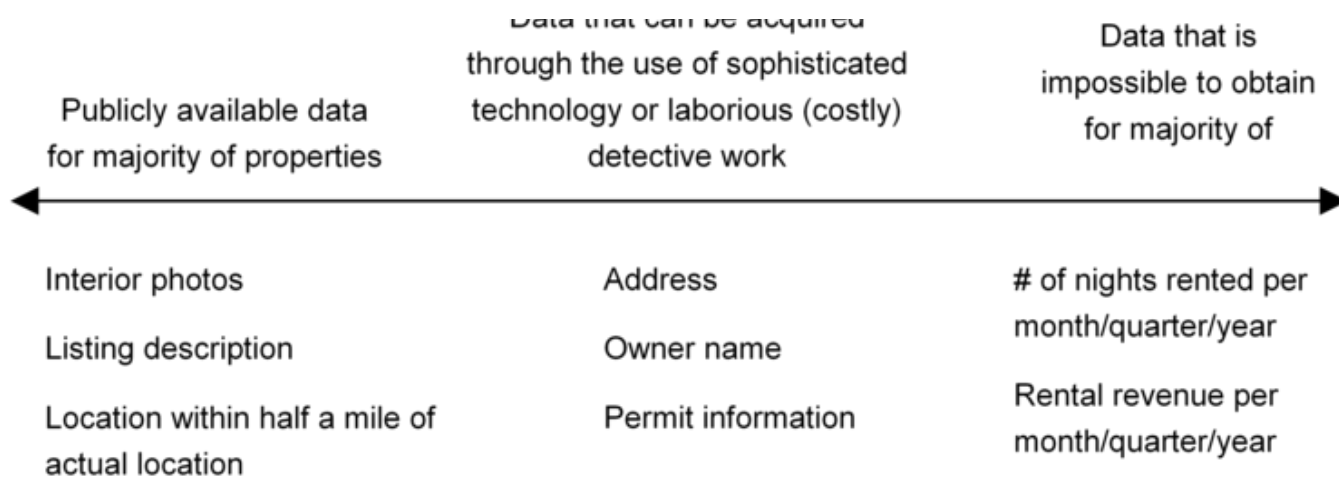
How to effectively regulate home-sharing and short-term rentals has therefore suddenly become one of the hottest topics among local government leaders across the country. In fact, at the recent National League of Cities conference in Nashville, TN, there were more presentations and work sessions dedicated to this topic than to any other topic. Yet, despite more than 32,000 news articles written on the topic in recent years , surprisingly little has been written on how to implement simple, sensible and enforceable local policies that appropriately balances the rights of homeowners with the interests of neighbors and other community members who may only experience the negative side-effects associated with people renting out their homes on a short-term basis. This guide seeks to address this knowledge gap and offer practical advice and concrete examples of short-term rental regulation that actually works.



While hindsight is 20/20, it is worth noting that the registration requirements were probably well-intended and made logical sense to the council members and staff that adopted them. The problem was therefore not ill-will but a lack of understanding of the practical details as to how the various short-term rental websites actual work. As an example San Francisco's short-term rental regulation require that property owner's display their permit number on any advertising (including online listings) whereas Airbnb's website has built-in functionality that specifically prevents short-term landlords from doing so and automatically deletes all "permit sounding" information from the listings in most locations. Likewise, San Francisco's legislation bans anyone for renting their homes for more than 90 days per calendar year, while none of the home-sharing websites give code enforcement officers the ability to collect the data necessary to enforce that rule. To make matters worse, the listing websites have refused to share any property specific data with the local authorities and have even gone as far as suing the cities that have been asking for such detailed data. Local government officials should therefore not assume that the listing websites will be collaborative when it comes to sharing data that will make it possible for local code enforcement officers to monitor compliance with complicated short-term rental regulation on the property level. Instead, local government leaders should seek to carefully understand the data limitations before adopting regulation that cannot be practically enforced. To get a quick overview of what information that can be relied

on for short-term rental compliance monitoring and enforcement purposes, please see the diagram below that shows which:

1. data is publicly available on the various home-sharing websites
2. information that can be uncovered through the deployment of sophisticated “big data” technology and trained experts (or time-consuming and therefore costly detective work conducted by a town’s own staff)
3. property specific details that are practically impossible to obtain despite significant investment of time and money



So where does that leave local government leaders who want to put in place enforceable short-term rental regulation? In the next section we will explore, describe, and assess the viable regulatory tools available for local government leaders to effectively address the key issues related to taxation, regulation, social equity and economic development.

Viable regulatory approaches to managing short-term rentals and home-sharing

As mentioned earlier, the first step to creating effective short-term rental regulation is to document and get agreement on a set of clear and concrete policy objectives. Once this has been accomplished putting together the actual regulatory requirements can be simplified by referring to the “cheat sheet” below, which lists the regulatory levers that can be pulled to accomplish those goals in a practical and cost-effective manner while factoring in the data limitations highlighted in the previous section.

SHORT-TERM RENTAL POLICY OBJECTIVES AND THE ASSOCIATED VIABLE
REGULATORY APPROACHES

Policy Objective	Viable Regulatory Approach(es)	Unviable Regulatory Approach(es)
Give law abiding and respectful citizens the option to utilize their homes as short-term rentals	Adopt a formal annual permitting requirement and a process for revoking permits from “trouble properties”. As an example a local government can adopt a “3 strikes rule” whereby a permit is automatically revoked for a number of years in the event the local government receives 3 (substantiated) complaints about a property within a certain time frame (i.e. a 24 month period). Alternatively, a local government can adopt a rule” by which a permit is automatically revoked in the event the town receives conclusive evidence (police report, video evidence etc.) that a city ordinance has been violated.	Failing to clearly specify what rules law abiding and respectful short-term landlords and their renters must comply with. Adopting regulation that does not clearly define the criteria and process for revoking a short-term rental permit.
Ensure that speculators do not buy up homes to turn them into pseudo hotels while still giving permanent residents the option to utilize their homes to generate	Adopt a formal permit requirement and make it a condition that the permit holder verifies residency on an annual basis by submitting the same documentation as is required to verify residency for public school attendance purposes	Adopting a permitting process that does not formally require short-term rental permit holders to verify that they are permanent residents of the permitted property

extra income from short-term rentals and home-sharing		
Ensure that homes are only occasionally used as short-term rentals (and not continuously rented out to new people on a short term basis)	It is unfortunately not practically possible to enforce any formal limits on the number of times or number of days that a particular property is rented on an annual/quarterly/monthly basis, but adopting a permanent residency requirement for short-term rental permit holders (see above) can ensure that there is a practical upper limit to how often most properties are any property is rented out each year (most people can only take a few weeks of vacation each year and they are therefore practically restricted to rent out their homes for those few weeks). There is unfortunately no easy way to deal with the tiny minority of homes where the “permanent resident” owners have the ability to take extended vacations and rent out their home continuously. That said, if the above mentioned “permanent residency requirement” is combined with rules to mitigate noise, parking and trash related issues, the potential problems associated with these few homes should be	A formal limit on the number of times or number of days each property can be rented on an annual/quarterly/monthly basis is not enforceable as occupancy data is simply not available without doing a formal audit of each and every property.

	manageable. Adopting a ““permanent residency requirement” also comes with the additional side benefit that most people don’t want to rent out their primary residence to people who may trash it or be a nuisance to the neighbors. The “permanent residency requirement” can therefore also help minimize noise, parking and trash related issues.	
Ensure homes are not turned into “party houses”	Adopt a formal permit requirement and put in place a specific limit on the number of people that are allowed to stay on the property at any given time. The “people limit” can be the same for all permitted properties (i.e. a max of 10 people) or be correlated with the number of bedrooms. In addition, the regulation should formally specify that any advertisement of the property (offline or online) and all rental contracts must contain language that specifies the allowed “people limit” to make it clear to (potential) renters that the home cannot be used for large gatherings. While not bullet-proof, adopting these requirements will deter most abuse. In addition it is possible to	Adopting any regulation that does not clearly define what types of uses are disallowed will be ineffective and likely result in misinterpretation and/or abuse.

	proactively enforce this rule as all listing websites require (or allow) hosts to indicate their property's maximum occupancy on the listings.	
Minimize potential parking problems for the neighbors of short-term rental properties	Adopt a formal permit requirement and put in place a specific limit on the number of motor vehicles that short-term renters are allowed to park on/near the property. The "motor vehicle limit" can be the same for all permitted properties (i.e. a max of 2) or be dependent on the number of permanent parking spots available on the property. In addition, the regulation should formally specify that any advertisement of the property (offline or online) and any rental contract must contain language that specifies the allowed "motor vehicle limit" to make it clear to (potential) renters that bringing more cars is disallowed. As with the "people limit" rule mentioned above, adopting these parking disclosure requirements will deter most abuse. In addition it is easy to proactively enforce this rule as most listing websites require or allow their hosts to describe their property's parking situation on the listing.	Adopting any regulation that does not clearly define a specific limit on the number of motor vehicles that short-term renters are allowed to park on/near the property.

Minimize public safety risks and possible noise and trash problems without creating additional work for the local police department and code enforcement personnel

- Require that all short-term rental contracts include a copy of the local sound/trash/parking ordinances and/or a “Good Neighbor Brochure” that summarizes the local sound/trash/parking ordinances and what is expected of the renter. ul>
- Require that short-term rental permit holders list a "local contact" that can be reached 24/7 and immediately take corrective action in the event any non-emergency issues are reported (i.e. deal with suspected noise, trash or parking problems) ul>
- Establish a 24/7 hotline to allow neighbors and other citizens to easily report non-emergency issues without involving local law/code enforcement officers. Once notified of a potential ordinance violation, the hotline personnel will contact the affected property's "local contact", and only involve the local law and/or code enforcement personnel in the event that the 'local contact' is unsuccessful in remedying the situation within a reasonable

Adopting any regulation and enforcement processes that do not explicitly specify how non-emergency problems should be reported and addressed.

	amount of time (i.e. 20-30 minutes).	
Ensure that no long-term rental properties are converted to short-term rentals to the detriment of long-term renters in the community	Adopt a permanent residency requirement for short-term rental permit holders (see above) to prevent absentee landlords from converting long-term rental properties into short-term rentals.	Adopting a permitting process that does not formally require short-term rental permit holders to verify that they are permanent residents of the permitted property will be ineffective in preventing absentee landlords from converting their long-term rental properties into short-term rentals.
Ensure that residential neighborhoods are not inadvertently turned into tourist areas to the detriment of permanent residents	Implement one or both of the following regulatory approaches: • Adopt a formal permit requirement and set specific quotas on the number of short-term rental permits allowed in any given neighborhood, and/or • Adopt the “permanent residency requirement” for short-term rental permit holders (mentioned above) to ensure that there is a practical upper limit to how often any property is rented out each year	Adopting a complete ban on short-term rentals, unless such a ban is heavily enforced.

Ensure the physical safety of short-term renters	Adopt a physical safety inspection requirement as part of the permit approval process. The inspection can be conducted by the municipality's own staff or the local fire/police force and can cover various amounts of potential safety hazards. As a minimum such inspection should ensure that all rentals provide a minimum level of protection to the renters who are sleeping in unfamiliar surroundings and therefore may be disadvantaged if forced to evacuate the structure in the event of an emergency.	Adopting a self-certification process that does not involve an objective 3rd party.
Ensure any regulation of short-term rentals and home-sharing does not negatively affect property values or create other unexpected negative long-term side-effects	Adopt regulation that automatically expires after a certain amount of time (i.e. 2-5 years) to ensure that the rules and processes that are adopted now are evaluated as the market and technology evolves over time.	Adopt regulation that does not contain a catalyst for evaluating its effectiveness and side-effects down the line.

In addition to the above targeted regulatory measures, local governments should adopt requirements for short-term rental permit holders to maintain books and records for a minimum of 3 years so that it is possible to obtain the information necessary to conduct inspections or audits as required. Finally, it is imperative that local governments adopt fine structures that adequately incentivizes short-term landlords to comply with the adopted regulation. Ideally the fines should be proportionate to the economic gains that potential violators can realize from breaking the rules, and fines should be ratcheted up for repeat violators. Below is an example of a fine schedule that will work for most jurisdictions:

	1st violation	2nd violation	3rd violation	4th violation
Fine for advertising a property for short-term rent (online or offline) without first having obtained a permit or for violating any other requirements of the local government's short-term rental regulation including failure to comply with the local listing requirements	\$250 per day	500 per day	\$750 per day	Upon the fourth or subsequent violation in any twenty-four month period, the local government may suspend or revoke any permit. The suspension or revocation can be appealed.
Notes: - Any person found to be in violation of this regulation in a civil case brought by a law enforcement agency shall be ordered to reimburse the local government and other participating law enforcement agencies their full investigative costs, pay all back-owed taxes, and remit all illegally obtained short-term rental revenue proceeds to the local government - Any unpaid fine will be subject to interest from the date on which the fine became due and payable to the local government until the date of payment. - The remedies provided for in this fine schedule are in addition to, and not in lieu of, all other legal remedies, criminal or civil, which may be pursued by the local government to address any violation or other public nuisance.				

Best Practices for Enforcing Home-Sharing and Short-term Rental Regulation

To implement any type of effective short-term rental regulation, be it a total ban, a permitting requirement, and/or a tax, local governments must expect to invest some level of staff time and/or other resources in compliance monitoring and enforcement. That said, most local governments are neither technically equipped nor large enough to build the true expertise and sophisticated software needed to do this cost-effectively. There are several reason why this is the case:

1. Rental property listings are spread across dozens (or hundreds) of different home sharing websites, with new sites popping up all the time (Airbnb and HomeAway are only a small portion of the total market)
2. Manually monitoring 100s or 1,000s of short-term rental properties within a specific jurisdiction is practically impossible without sophisticated databases as property listings are constantly added, changed or removed
3. Address data is hidden from property listings making it time-consuming or impossible to identify the exact properties and owners based just on the information available on the home-sharing websites
4. The listing websites most often disallow property owners from including permit data on their listings, making it impossible to quickly identify unpermitted properties
5. There is no manual way to find out how often individual properties are rented and for how much, and it is therefore very difficult to precisely calculate the amount of taxes owed by an individual property owner

Luckily, it is possible to cost-effectively outsource most this work to new innovative companies such as Host Compliance that specialize in this area and have developed sophisticated big data technology and deep domain expertise to bring down the compliance monitoring and code enforcement costs to a minimum. In many situations, these companies can even take on all the work associated with managing the enforcement of the short-term rental regulation in return for a percentage of the incremental permitting fees, tax revenue and fine revenue that they help their local government partners collect. Adopting short-term rental regulation and outsourcing the administration and enforcement can therefore be net-revenue positive for the local government, while adding no or little additional work to the plates of internal staff. What's more, getting started generally requires no up-front investment, long-term commitment or complicated IT integration.

That said, while it is good to know that adopting and enforcing short-term regulation can be net revenue positive if done in partnership with an expert firm, it is important to note that the economic benefits are only a small part of the equation and that local government leaders should also factor in the many non-economic benefits associated with managing and monitoring the rapidly growing short-term rental industry in their local communities. These non-economic benefits are often much more important to the local citizens than the incremental tax revenue, so even if the incremental revenue numbers may not seem material in the context of a local government's overall budget, the problems that unregulated and/or unmonitored short-term rentals and home-sharing can cause for the neighbors and other "innocent bystanders" can be quite material and should therefore not be ignored. Or as Jessica C. Neufeld from Austin,

TX who suddenly found herself and her family living next to a “party house” reminds us: *“We did not buy our house to be living next to a hotel. Would you buy a home if you knew a hotel like this was operating next door, if you wanted to set your life up and raise a family?”* [1].

Conclusion

It is the responsibility of local government leaders to ensure that as few people as possible find themselves in the same unfortunate situation as Jessica and her family. In this white-paper we have outlined how to make it happen - in a revenue positive way. To find out more about how we can help your community implement simple, sensible and enforceable short-term rental regulation, feel free to visit us on www.hostcompliance.com or call us for a free consultation on (415) 715-9280. We would also be more than happy to provide you with a complimentary analysis of the short-term rental landscape in your local government’s jurisdiction and put together an estimate of the revenue potential associated with adopting (or more actively enforcing) short-term rental regulation in your community.

[1] New York Times article: “New Worry for Home Buyers: A Party House Next Door”, October 10, 2015



**Sustainable
Economies
Law Center**

REGULATING SHORT-TERM RENTALS: A Guidebook for Equitable Policy

March 2016

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Sustainable Economies Law Center (SELC) is a nonprofit that charts the legal territory of the new economy, educates people about the possibilities and limits of creative economic structures, and advocates for laws that clear the way for community resilience.

**(this publication does not necessarily represent their positions)*



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EXECUTIVE SUMMARY

Sooner or later, nearly every city will need to address the rapid spread of short-term rentals. Though the activity itself is not new, in recent years, companies including Airbnb, VRBO, Flipkey, and Homeaway have facilitated and mainstreamed short-term rentals to a point where local governments are taking note, and taking action.

Sustainable Economies Law Center (SELC) offers the following recommendations to assist policymakers with the process of drafting a local short-term rental ordinance. SELC's goal is for local governments to craft short-term rental policies that generate inclusive opportunities for local wealth-creation, while balancing the needs of all members of the community. Ideally, the result will be an equitable policy that protects public interests, including housing affordability, health and safety, neighborhood quality, and municipal revenues, while retaining reasonable latitude for city residents to host and earn money from short-term guests.

A short-term rental (STR) refers to a room or housing unit that is rented to a person or group for a short period of time, typically under 30 nights. The legality of STRs is being questioned in cities across the country because most local planning codes define STRs as a commercial activity akin to bed and breakfasts or inns, and typically prohibit them in residential areas without proper permitting and licensing.

In addition to legal questions, STRs raise important questions about local priorities and the larger role STRs play in cities and neighborhoods. The staunchest proponents of STRs argue that hosting short-term guests enables residents to offset the cost of housing, make efficient use of otherwise unused space, and benefit directly from tourism dollars and cultural exchange. Others are less convinced of the benefits of STRs, arguing that the short-term rental of residential units negatively impacts local housing stock, neighborhood quality, public tax revenues, and conventional hotels.

In cities with high housing demand, the most contentious issue tends to be the impact of STRs on housing availability and affordability. Though STRs may help some hosts occasionally rent a portion of their primary residence, thus offsetting mortgages and rent with the added income, a significant number of hosts are using STR platforms to rent multiple homes or entire apartment complexes to transient occupants instead of housing local residents. In many cases, STRs create a monetary incentive to shift the use of housing from long-term residential use to transient use, and without appropriate regulation, STRs will continue to reduce the amount of housing available to long-term residents – thereby increasing the cost of owning or renting in any impacted area.

In light of the complexity of STR issues, SELC sees a need for municipalities to respond with nuanced and comprehensive public policy. We offer this set of issue analyses and policy recommendations to assist policymakers, advocates, and residents in shaping such regulations. We emphasize that there is no one-size-fits-all STR regulation. In fact, of the existing local STR regulations, no two are exactly alike – and for good reason. Each city must regu-

late STRs according to its unique set of circumstances and priorities, and should arrive at an appropriate and equitable policy through open dialogue with the diversity of stakeholders involved. The following are key considerations cities should factor into an STR ordinance.

In crafting an equitable STR policy, we recommend that municipalities focus on how STRs:

- Impact the supply and affordability of housing;
- Provide economic benefit to those with economic need; and
- Affect neighborhood quality.

To address these issues, we recommend that municipalities take the following measures, where appropriate:

- Set clear definitions that distinguish STRs from commercial hotels;
- Limit STRs to primary residences, distinguishing them from vacation rentals;
- Require registration and recordkeeping;
- Institute a cap on rental nights per year;
- Establish protections and complaint procedures for guests and neighbors;
- Limit crowding, noise, and parking strains; and
- Collect transient occupancy tax.

I. INTRODUCTION



Sooner or later, nearly every city will need to address the rapid spread of short-term rentals, such as those facilitated by online platforms including Airbnb, VRBO, Flipkey, and Homeaway. To help local policymakers and advocates draft comprehensive and equitable short-term rental ordinances, Sustainable Economies Law Center (SELC) has conducted a broad survey of local short-term rental policies that have emerged over the past four years, offering this set of issue analyses and recommendations. SELC's goal is for STR policies to generate inclusive opportunities for local wealth-creation, while still balancing the needs of all members of the community.

SELC's goal is for STR policies to generate inclusive opportunities for local wealth-creation, while still balancing the needs of all members of the community.

To create an equitable and appropriate short-term rental policy, each city must regulate short-term rentals according to its unique social and economic circumstances and priorities, and should craft solutions through open dialogue with the diversity of stakeholders involved. Ideally, the result will be a policy that protects public interests such as housing affordability, municipal revenues, health and safety, parking, and the quality and character of neighborhoods, while retaining reasonable latitude for city residents to host and earn money from short-term guests.

II. BACKGROUND

WHAT IS A SHORT-TERM RENTAL?

A short-term rental (STR) refers to a room or housing unit that is rented to a person or group for a short period of time, typically under 30 nights. STRs are distinct from long-term rentals in that the room or unit is rented on a nightly or weekly basis, whereas long-term rentals must exceed the minimum number of nights required by local laws. Due to the brief nature of STR stays, STR guests are typically transient occupants such as travelers who would otherwise stay in a hotel or similar accommodation. Long-term rentals, on the other hand, typically house individuals who work, attend school, or otherwise wish to “permanently” reside in the city.

STRS ARE NOT NEW

STRs are garnering more attention by the day, as are the online platforms that facilitate connections and/or payments between STR guests and hosts. But hosting short-term guests is not a new phenomenon, nor was it invented by these platforms. Before these platforms became available, travelers who wanted a different type of vacation experience were already opting to stay with locals rather than in hotels, in order to more fully experience the culture, food, and lifestyle of the region. Locals who hosted backpackers, “couch surfers,” pilgrims, and touring cyclists often did and continue to do so in exchange for money or skill trades, to be an ambassador of their locale, or simply to interact with visitors from faraway places.

STRS ON THE RISE

Within the past several years, both the *number* of properties available for short-term rental, and the *frequency* with which they are rented, have skyrocketed, transforming the activity from a casual and occasional practice to an increasingly formalized and pervasive activity in cities from San Francisco to Paris. Online platforms have played an essential role in the STR boom, enabling millions of people around the world to list and browse rentals, and to connect, coordinate, and transmit payments through one interface.

The most popular platform, Airbnb, self-reported that from 2013 to 2014, STR bookings in Nashville increased 365 percent, stays in New Orleans increased by 340 percent, and stays in Portland, Maine increased by 328 percent.¹ With such a sudden increase in STR activity and lack of corresponding regulatory action, it's no wonder cities are now feeling the effects of STRs on housing and rental markets, public tax revenues, and neighborhood quality.

San Francisco is one of many cities where STRs have caused heated controversy, particularly around tenant evictions and conversion of residential units to commercial use. A

1. Airbnb Unveils Top 10 Trending U.S. Travel Destinations for Summer 2014, Airbnb (May 1, 2014), <https://www.airbnb.com/press/news/airbnb-unveils-top-10-trending-u-s-travel-destinations-for-summer-2014>.

recent memo from the San Francisco Budget and Legislative Analyst states that between November 2013 and February 2015, the city had an estimated 5,249 to 6,113 Airbnb listings – all during a time when STRs were still illegal.² Not including STR units listed on other platforms or sites, Airbnb units alone were said to amount to 11 to 23.2 percent of the city’s vacant units, entire homes listed on Airbnb were estimated to remove 14.8 percent of the total rental housing available for rent citywide, and private and shared rooms that might otherwise be occupied by roommates were estimated to take even more units off the rental market.³ The same memo stated that STRs could lead to tenant evictions, because hosts have a financial incentive to leave the long-term rental market and enter the short-term rental market. In fact, the memo revealed that neighborhoods with the most intense STR activity also had high numbers of evictions.⁴

Numerous other studies and data scraping exposés have continued to illustrate the scope of STR use and impact in other cities including San Francisco, New Orleans, Nashville, New York, and Los Angeles.⁵ New York state Attorney General Eric Schneiderman, known for his early investigation of the STR impacts, released a report showing that Airbnb rentals in New York City increased from 2,650 in 2010 to 16,500 in 2014, with nearly three-quarters of these listings in violation of city or state laws.⁶ A Los Angeles study showed that 90 percent of Airbnb revenues are generated not by hosts who share a room in their homes, but by hosts who rent out *entire* units, and by leasing companies who rent out two or more entire units.⁷ Short-term renting in Los Angeles has also removed 7,316 rental units from the market, which amounts to the equivalent of seven years’ of affordable housing construction.⁸

Because STR platforms refuse to release detailed usage data, the full extent of STR impacts is still unclear. Despite that, the handful of public and independent investigations into STR impacts on housing, neighborhoods, and tax revenues – though painting only a partial picture – provide valuable insights into how STRs are changing cities on the ground. These investigations also provide clues about what cities can do to encourage fair use of STRs, minimize harms, and penalize those who violate regulations.

2. San Francisco Budget and Legislative Analyst’s Office, Analysis of the impact of short-term rentals on housing, 11 (May 13, 2015), available at <http://www.sfbos.org/Modules/ShowDocument.aspx?documentid=52601>.

3. Ibid.

4. Ibid at 30-31.

5. See, for example: Anti-Eviction Mapping Project. Last viewed November 24, 2015. <http://www.antievictionmappingproject.net/airbnbmap.html>. Inside Airbnb. Last viewed November 24, 2015. <http://inside-airbnb.com>. And, Airbnb and San Francisco: Descriptive Statistics and Academic Research. Alex Marqusee. April 12, 2015.

6. Office of New York State Attorney General Eric Schneiderman, Airbnb in the city, 6 (October 2014).

7. Roy Samaan, Airbnb, Rising Rent, And The Housing Crisis In Los Angeles, 3 (March 2015), available at <http://www.laane.org/airbnb-report>.

8. Ibid.

III. POSITIVE & NEGATIVE IMPACTS OF SHORT-TERM RENTALS

STRs can have a positive impact on cities, in that they can:

- **Contribute to local wealth** by giving residents the opportunity to earn money from hosting tourists, Fewer tourism dollars go to large corporate hotel chains, and more dollars stay within the community;
- **Make efficient use of space** by allowing residents to host guests in a room or unit when it might otherwise be unused;
- **Prevent economic hardship and displacement** by allowing some residents to use STR revenue to make ends meet and stay in their homes;
- **Provide both tourists and hosts with valuable social and cultural exchange**; and
- **Spread tourist dollars beyond typical hotel and tourism districts** by attracting travelers to less frequented neighborhoods and businesses.

At the same time, STRs can have a negative impact on cities, in that they can:

- **Take long-term rental units off the market**, creating a scarcity of housing options, and pushing up prices;
- **Incentivize property owners to keep rooms and units vacant or even evict long-term tenants** in order to make higher profit per night from short-term renters;
- **Unfairly compete with established hotels, inns, and bed and breakfasts** when STRs are not subject to the same level of taxation or regulation;
- **Reduce transient occupancy tax, or “hotel tax” revenues for the city** when STR hosts evade the tax or avoid remitting the tax on the grounds that they are not operating a hotel;
- **Violate residential zoning codes** that are intended to limit noise, traffic, parking shortages, and activities incompatible with the character of a neighborhood;
- **Adversely impact community cohesion** because vacation rentals house a revolving circuit of transient occupants who are not connected to or invested in the community; and
- **Reinforce class, gender, and racial inequities**, because online platforms make it easy for users to act on biases when selecting hosts or guests, and because the opportunity to rent living space to short-term guests, like most other economic opportunities, disproportionately privileges the privileged.

IV. CURRENT LAW



Many municipal codes prohibit residents from hosting short-term guests in exchange for payment unless residents comply with all regulations applicable to commercial hotels and bed and breakfasts.

These laws tend to require zoning approval, compliance with health, building, and safety laws, and payment of a transient occupancy tax (TOT), also known as a “hotel tax.” Given that such laws are generally designed for commercial hotels, in the absence of a local ordinance that tailors such laws to STRs, these local laws effectively ban STRs.

Meanwhile, a growing number of cities and counties have crafted local ordinances that both legalize some form

of STRs and impose limitations and regulatory processes that protect public interests. These cities and counties include Austin, San Francisco, Portland, Nashville, Santa Monica, Madison, and many others. Interestingly, of the dozens of new and emerging STR ordinances around the U.S., no two regulations are exactly alike. Indeed, the differences among them may lend valuable insight into each city’s political priorities, social and economic values, and in some cases, their most influential stakeholders. Each municipality should calibrate its STR ordinance to its particular social and economic circumstances, but there are several basic considerations that all cities and counties should take into account when drafting such a policy. These considerations are outlined below.

Interestingly, of the dozens of new and emerging STR laws around the U.S., no two regulations are exactly alike. Indeed, the differences among them may lend valuable insight into each city’s political priorities, social and economic values, and in some cases, their most influential stakeholders.

V. SELC'S RECOMMENDATIONS: THE BASIC COMPONENTS OF AN STR ORDINANCE



Local governments can benefit from adopting more nuanced regulations that simultaneously lift any outright ban on STRs, channel STR income-earning opportunities to those who need them, and restrict STRs in ways that reduce negative externalities. We believe that such short-term rental regulations must be comprehensive. Therefore, in this section, we highlight some of the key elements of a short-term rental policy, and include examples from local STR regulations throughout the county. Policymakers and advocates should adapt these recommendations to local contexts, and involve a diverse set of stakeholders in doing so. The result should be an STR regulation that fairly and accurately reflects local needs and priorities.

Though adoption of these or similar recommendations ultimately depends on local context, we encourage policymakers to still consider the principles that underlie these recommendations. That includes setting definitions that effectively frame the issues; creating restrictions that preserve housing affordability; devising registration, record-keeping, and reporting processes that encourage compliance and facilitate effective enforcement; and including measures to ensure the safety of guests, the preservation of neighborhood quality, and the protection of public revenues.

A. ESTABLISH CLEAR DEFINITIONS

We recommend that municipalities establish clear definitions that distinguish a “Short-Term Rental” from a long-term rental, as well as describe the qualities that set STRs apart from their more commercial counterparts, including a “Hotel,” “Motel,” “Boarding House,” or a “Bed and Breakfast.” In addition to drawing distinctions between STRs and other activities or establishments, regulators must also address variations among STRs, including whether or not the unit is a the host’s primary residence, and whether or not

the STR is occupied by the host during a guest's stay. Though a municipality's definition of STRs can include more embellishment, our recommended basic definition of STRs and STR subcategories are as follows:

Short-Term Rental (STR) is the rental of a primary residence or portion thereof for a period of less than 30 nights, for which the guest compensates an owner or lessee of the unit.⁹

Primary Residence: A housing unit in which an owner or lessee resides for the majority of the year.¹⁰

Hosted Primary Residence STRs: An STR unit is a Hosted Primary Residence STR if the owner or lessee who is hosting a short-term guest occupies that dwelling unit as his or her primary residence for the majority of the year, and if the owner or lessee hosts one or more guests in a bedroom or some portion of the unit and is generally present for the duration of the rental period.¹¹

Un-Hosted Primary Residence STRs: A unit is an Un-Hosted Primary Residence STR if the owner or lessee occupies the dwelling unit as his or her primary residence for the majority of the year, but leaves his or her unit for a period of time – for example, over a weekend, when traveling for work, or while on vacation – and rents out all or part of the unit in his or her absence.

Vacation Rentals: A Vacation Rental is an entire residential unit that is not a primary residence and is rented to guests on a short-term basis, typically under 30 nights.¹²

B. REQUIRE REGISTRATION AND RECORDKEEPING

Proof of Primary Residency:

We recommend that all STRs be limited to primary residences. As defined above, a primary residence is a housing unit in which a renter or owner resides for the majority of the year. By definition, a person may have only one primary residence, and it follows that a person may have only one STR address.

9. Though we define short-term as less than 30 nights, a common requirement for tenancy, the minimum number of nights for tenancy could be based on existing local tenancy laws if those are more appropriate.

10. We suggest defining majority as a minimum of nine months, with variations depending on local circumstances. If a municipality has an existing definition of primary residence, it could be referenced here.

11. We define "generally present" as having the host present for an average of 6 hours out of any 24-hour period.

12. The Sustainable Economies Law Center does not consider Vacation Rentals to be short-term rentals, but considers them a separate category of transient accommodations. See "Setting Caps on the Number of Rental Nights Per Year" in Section C for a description of how Austin, TX, and Nashville, TN regulate vacation rentals as a separate and distinct activity. See: Austin, Tx., City Land Development Code § 25-2-793 (2014), and Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, § 6.28.030.Q. (2015).

An STR registration process should require hosts to provide records demonstrating that the unit is their primary residence. We recommend that cities follow the example of San Francisco and require hosts to show that the unit is listed as the applicant's residence on at least two of the following documents in order to register: motor vehicle registration, driver's license, voter registration, or a utility bill.¹³ Though the documents listed in San Francisco's administrative code should provide sufficient evidence of primary residency, cities could add to the list of acceptable documentation federal and state tax returns that reflect the address of the residential unit in question. If primary residency is in dispute, regulators could resort to using the various factors that the IRS uses to determine principal residency.

Registration:

Enforcing the provisions of an STR ordinance, particularly caps on the number of units per host, rental nights per year, payment of transient occupancy taxes, and other recommendations outlined below, necessitates that hosts be accountable to some form of local oversight. By requiring STR hosts to register with the Planning Department or some similar office, cities will identify a unit being used for short-term rental, a point person for complaints, and a party who will be held liable for violations. We suggest that cities keep the registration process relatively simple to encourage participation. A primary objective of registration should be to collect basic information from hosts and to open a line of communication between hosts and the city. As discussed below, we do not recommend that approval of registration be contingent on inspection.

Cost of Registration:

We suggest that cities keep both registration costs and subsequent renewal fees as low as possible by relying on registration fees only to cover the administrative cost of processing registrations, as in Anaheim, CA.¹⁴ If registration costs are kept low, cities can factor the costs of fielding complaints and enforcing STR laws into the tax rate and fines for violations. That way, hosts who comply with the law or only engage in short-term rental occasionally will not bear the cost of oversight for those who do not comply.

Registration Renewal:

Registration renewal could be required yearly (as in Anaheim¹⁵ and Dana Point, CA¹⁶), every two years (as in St. Helena, CA¹⁷ and for Type A STRs in Portland, OR¹⁸), or follow a model like Maui County, HI, where permits are valid for one year but are extended to two years if there are no recorded complaints.¹⁹ We recommend that cities follow a responsive approach similar to Maui County's, where permits are valid for two years unless

13. San Francisco, Cal., Administrative Code ch. 41A, § 41A.5.(g)(3)(A) (2015).

14. Anaheim, Cal., Municipal Code ch. 4.05, § 4.05.090 (2014).

15. Anaheim, Cal., Municipal Code ch. 4.05, § 4.05.070 (2014).

16. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.055 (2013).

17. St. Helena, Cal., Municipal Code ch. 17.134, § 17.134.060(F) (2012).

18. Portland, Or., City Code & Charter ch. 33.207, § 33.207.040(C) (2015).

19. Maui County, Haw., County Code ch. 19.65, § 19.65.070(A) (2012).

there are complaints of violation, in which case permits would have to be renewed more frequently. Unless regulators rely on yearly permit renewals to inform them of the number of active STRs, this process would be an effective way to reward law-abiding hosts and reduce paperwork for regulators.

In an effort to encourage compliance with its short-term rental laws, Portland, OR has included a provision in its permitting policy wherein an STR permit can be revoked for failure to comply with the city's set of STR rules.²⁰ We recommend that cities adopt a provision similar to Portland's, including withholding permit renewal for a certain amount of time after a host is found to be in violation of STR laws.

Reporting and Recordkeeping:

To assist with the oversight and enforcement of ordinance requirements, a city may want to require hosts to keep records of guest names, guest contact information, dates of stay, indication of the host's presence or absence during the stay, and revenue earned. Cities already requiring this level of detail in recordkeeping include Madison, WI²¹ and Portland, OR, the latter requiring hosts to also maintain guests' license plate numbers (if traveling by car) and a record of the room assigned to each guest.²² Cities could require hosts to maintain the records for at least two years and make them available to the city upon request when the host is suspected of a violation, or in the event of a randomized inspection.²³ An alternative process could require hosts to regularly submit reports to the city regarding the number of hosted and un-hosted nights the STR was rented, as is required in San Francisco.²⁴

However, the major online STR platforms already collect host, guest, and usage information, and if a city decides to require hosts to record and report that data, it could also require the STR intermediaries themselves to make some information – such as the number of STR units per host, and the number of nights rented per unit – available to the Planning Department or other oversight office as a condition for operating in their jurisdiction. Cities could require platforms to regularly submit a blanket report of all STR activity in their jurisdiction, or to submit the information of suspected violators only as requested by the city. Santa Monica, CA requires STR intermediaries to “Disclose to the City on a regular basis each home-sharing and vacation rental listing located in the City, the names of the persons responsible for each such listing, the address of each such listing, the length of stay for each such listing and the price paid for each stay.”²⁵ We recommend that other cities wishing to improve recordkeeping and reporting follow suit.

Requiring STR platforms to report the information of their customers to local government could cause concerns about the information privacy of STR platform users. To

20. Portland, Or., City Code & Charter ch. 33.207, § 33.207.040(D) (2015).

21. Madison, Wis., Code of Ordinances ch. 28 § 28.151 “Tourist Rooming House” (h) (2014).

22. Portland, Or., City Code & Charter ch. 33.207, § 33.207.060 (2015).

23. Cities may want to require STR hosts to retain records for more than two years in some circumstances, such as if they city adopts a private right of action.

24. San Francisco, Cal., Administrative Code ch. 41A, § 41A.5(g)(3)(C) (2015).

25. Santa Monica, Cal., Municipal Code ch. 6.20, § 6.20.050(b) (2015)

address privacy concerns, these intermediaries could require all users, prior to starting or continuing to use the service, to authorize the platform to share STR usage data with local governments, either regularly or in the event of a suspected violation. If a provision for STR intermediaries to report data were added to a local ordinance, it would also make sense for a host to list, on the municipality's STR registration application and in subsequent reporting and permit renewal, all the platforms that he or she uses to book an STR. Adding this question to STR registration would help authorities to cross check the self-reported information of suspected violators with data on multiple platforms – improving both the reliability of information and facility of enforcement.

Some will argue that requiring STR platforms to report host, guest, and usage data to the city would unduly burden only those platforms that collect such data, and cause STR hosts to migrate to platforms that do not collect this information. However, municipalities might consider reporting as a requirement for operating in their jurisdiction, particularly because without this information, local governments would be unable to effectively enforce STR laws. In fact, the San Francisco Planning Department itself admitted only months after the city's STR law went into effect that booking data from STR platforms was necessary for the effective enforcement of yearly caps and other provisions of the ordinance.

Without reporting from the STR platforms, tracking and regulating STR units to ensure hosts are licensed, registered, and in compliance will remain extremely difficult and require significant public resources – something most cities are unable or reluctant to dedicate to STRs.

Advertisement:

To assist with enforcement, a city should require that hosts include the STR registration or permit number on all advertisements. Municipalities that require disclosure of this information on advertisements include Austin, TX,²⁶ Maui County, HI,²⁷ Dana Point, CA,²⁸ San Francisco, CA,²⁹ and St. Helena, CA.³⁰ We recommend that cities require all STR advertisements, including listings on STR platforms, to include a valid permit number.

In addition to requiring hosts to verify the legality of their listed STR with a valid permit number, cities could also place responsibility on the STR platforms to list only registered STR units, and to remove the listings of any violators. A 2015 ballot initiative in San Francisco proposed placing such responsibility on any STR platform operating in the city, requiring that all listed units be registered with the city, creating a daily penalty for STR platforms that list unregistered units, and mandating that platforms remove the listing of any unit that has surpassed the yearly rental cap.³¹ Maui County places some degree of responsibility on STR platforms by requiring any intermediary advertising an STR-

26 Austin, Tx., City Land Development Code § 25-2-791(F) (2014).

27. Maui County, Haw., County Code ch. 19.65, § 19.65.040(A) (2012).

28. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.080(a)(8) (2013).

29. San Francisco, Cal., Administrative Code ch. 41A, § 41A.5(g)(1)(F) (2015).

30. St. Helena, Cal., Municipal Code ch. 17.134, § 17.134.040(N) (2012).

31 City of San Francisco Initiative to Restrict Short-Term Rentals, Proposition F (November 2015).

within the county to include or link to the municipality's STR policies.³² We believe that, in addition to informing their users of the law, STR platforms should also be responsible for requiring proof that listed STRs comply with the law (e.g., by requiring a valid permit number), and removing listings that are in violation of local laws, such as a yearly cap.

C. ESTABLISH PROTECTIONS FOR THE SUPPLY AND AFFORDABILITY OF HOUSING

STRs can escalate housing costs in at least two ways: 1) each room or unit regularly used for STRs removes from the market a room or unit that might otherwise have been offered to a long-term tenant, and 2) the ability to derive income from a housing unit raises its value, raises the tenant's ability to pay for expensive housing, and thereby raises prevailing housing prices.

Cities have the power to protect multiple public interests by, for example, setting caps on the number of allowed STR units per host and number of nights per year that an STR may be rented to short-term guests. We recommend that cities allow all residents to engage in a limited amount of STR activity within their primary residences, but to set parameters based on the interests the city is aiming to protect.

Preventing Speculation - STRs for Cost-Sharing, Not Profit-Making:

A San Francisco Planning Commission memo framed the STR issue succinctly: "The critical questions for policy makers seeking to protect housing are: when does STR make more efficient use of unused resources and when does it incentivize the conversion of residential space to tourist use?"³³ If the underlying purpose of STRs is helping residents offset the costs associated with owning or renting their home, an STR ordinance should include provisions that prevent people from buying or renting units with the primary goal of earning STR income.

In order to deter individuals or entities from buying or renting a unit with the intention to subsequently turn a profit from its short-term rental, a city could require that a resident have occupied the unit for a minimum number of months or years before hosting STR guests. San Francisco's STR regulations require residents to have occupied their unit for at least 60 days prior to hosting STR guests, which starts to address the issue, but is ultimately too short a time period to effectively deter such speculation.³⁴ Furthermore, in cities experiencing rapid gentrification, requiring a certain length of time of owner or tenant occupancy prior to being eligible to host STR guests could channel STR income-generating opportunities to longer-term residents who risk being crowded out by newer and often wealthier neighbors. Cities may find that directing the income-generating power

32 Maui County, Haw., County Code ch. 19.65, § 19.65.040(B) (2012).

33. San Francisco Planning Commission. Administrative Code Text Change Recommendations to Board of Supervisors, 10 (April 23, 2015). See: <http://commissions.sfplanning.org/cpcpackets/2014-001033PCA.pdf>.

34. San Francisco, Cal., Administrative Code ch. 41A, § 41A.4. "Permanent Resident" (2015).

of STRs to longer-term residents could provide those residents with the economic boost necessary to combat threats of displacement.

In many circumstances, property owners may find STRs to be a more lucrative option than long-term rentals. In order to reduce any incentive to evict tenants, STR regulations must pay special attention to rent-controlled units and units that have recently been

If the underlying purpose of STRs is helping residents offset the costs associated with owning or renting their home, an STR ordinance should include provisions that prevent people from buying or renting units with the primary goal of earning STR income.

subject to an eviction. To preserve the integrity of rent-controlled units, cities can limit the amount that residents of rent-controlled housing may charge for short-term rental of their dwelling. San Francisco's STR ordinance, though it allows renters to host short-term guests, limits the amount that a tenant in a rent-controlled unit may charge short-term guests to the equivalent of what the tenant pays to the landlord each month.³⁵ In order to reduce a property owner's incentive to evict tenants in order to engage in short-term rental, cities with high housing

demand could prohibit units that have recently been subject to an eviction from being registered as an STR.³⁶ A number of high-level San Francisco policymakers recommended instituting such a limitation, suggesting that units that have been subject to an Ellis Act Eviction within the last five years be barred from registering as an STR. Other California cities with high housing demand could find that adopting a similar restriction on STR registration for recent Ellis Act Eviction units could be a powerful way to prevent the tenant abuses and displacement caused by unfettered STR activity.

Preventing Conversion of Housing Stock & Preserving Residential Use:

Cities should adopt regulations that prevent the physical conversion of residential housing to transient use. For example, Portland prohibits remodeling or structurally altering units that would prevent the structure from being used as a residence in the future. Portland even prohibits changes that would make a unit appear "less residential," for example installation of more than three parking spaces, paving of required setbacks, and commercial-type exterior lighting.³⁷

Maui County has attempted to protect housing for permanent residents by deterring

35. San Francisco, Cal., Administrative Code ch. 41A, § 41A.4., § 41A.5. (g)(1)(G) (2015).

36. San Francisco Planning Commission. Administrative Code Text Change Recommendations to Board of Supervisors pp. 2, 16. (April 23, 2015). See: <http://commissions.sfplanning.org/cpcpackets/2014-001033PCA.pdf>.

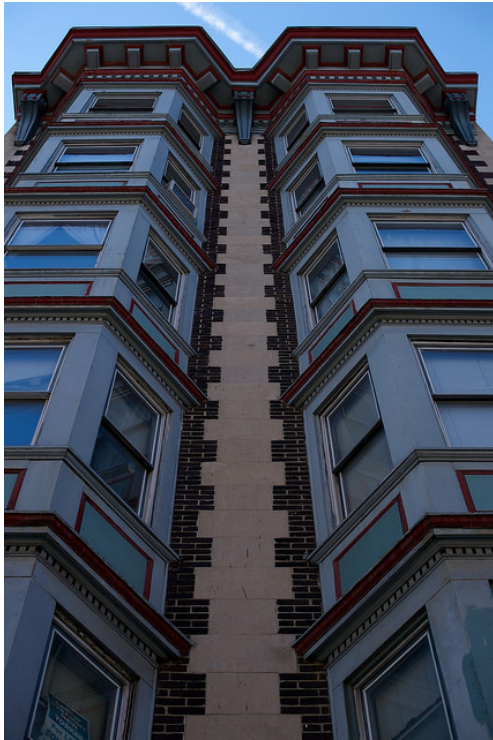
37. Portland, Or., City Code & Charter ch. 33.207, § 33.207.050(B)(9) (2014).

the construction of new homes that are primarily intended for rental to transient guests. The region does so by prohibiting short-term rental of single-family structures that were constructed less than 5 years prior to the date of application for an STR permit.³⁸

Setting Caps on the Number of Rental Nights Per Year:

In addition to limiting short-term rentals to primary residences, we recommend that all cities (with limited exceptions) set a baseline cap on Un-Hosted STR nights per year.

In cities where housing supply and affordability is a primary concern, this cap could be relatively low, for example, 30 nights per year, as is the case in Madison, WI.³⁹ In cities



where housing supply is not a major public concern, these caps could be considerably higher and adapted over time as the housing climate changes. Capping the number of Un-Hosted STR nights per year could encourage residents who leave town for months on end to rent their homes to longer-term tenants, including city residents who are transitioning between rental units, or to workers, students, or academics staying for a season or semester.

Unlike Madison, WI, which limits Un-Hosted STRs to 30 nights per year, but allows an unlimited number of Hosted STR nights per year,⁴⁰ and unlike Santa Monica, which prohibits Un-Hosted STRs but allows unlimited Hosted Primary Residence STR nights per year,⁴¹ we believe that the ideal STR ordinance places a *total cap* on both Hosted STR nights per year and Un-Hosted STR nights per year.

We recommend a cap on both Hosted and Un-Hosted STRs for two reasons. The first reason is that regulators currently face a great challenge in distinguishing between STRs with a host present and STRs that are un-hosted. Indeed, since San Francisco legalized unlimited Hosted STR nights per year, the city's Planning Department has reported that it is "virtually impossible" to discern law-abiding hosts from scofflaws, stating that in order to effectively enforce the law, the department would require a straight cap on the number of days any unit can be rented out per year (i.e. a cap on both Hosted and Un-Hosted STRs).⁴² As long as STR platforms refuse to make STR records available to regulators, and as long as regulating agencies are limited in staff capacity to audit and confirm self-reported information, this challenge is likely to persist.

38. Maui County, Haw., County Code ch. 19.65, § 19.65.030(O) (2012).

39. Madison, Wis., Code of Ordinances ch. 28, § 28.151 "Tourist Rooming House"(e) (2014).

40. Madison, Wis., Code of Ordinances ch. 28, § 28.151 "Tourist Rooming House"(f) (2014).

41. Santa Monica, Cal., Municipal Code ch. 6.20, § 6.20.010(a) (2015).

42. Phil Matier and Andy Ross, 'No way of enforcing' Airbnb law, S.F. planning memo says (March 22, 2015), <http://www.sfchronicle.com/bayarea/matier-ross/article/No-way-of-enforcing-Airbnb-law-S-F-planning-6151592.php>.

The second reason is that an STR host engaging in Hosted Primary Residence STR activities has one or more bedrooms unused and available for travelers (presuming, of course, that the host is offering an entire room, rather than a living room couch or portion of some other shared space). If a cap were placed on the number of permissible Hosted Primary Residence STR nights per year, and a host reached that cap, the host would be prohibited from renting to transient guests for the remainder of the year, and would have an economic incentive to rent the unused bedroom to long-term tenants.

The STR regulations in Austin, TX, and Nashville, TN, bring up an interesting question of how to limit STR activity. Austin includes Vacation Rentals as one of several types of STR units, and limits their density by capping the number of permissible rental units per census tract.⁴³ Similarly, Nashville places a 3% cap on the percentage of non-owner occupied single-family and two-family Vacation Rentals allowed to legally operate in each census tract of the county.⁴⁴ Though a density

There may be situations where a city will want to refrain from capping STRs in any form, such as in a city wanting to encourage tourism and where housing is in relatively abundant supply. However, in the absence of adequate protections for housing affordability, STRs could escalate housing costs and ultimately drive out lower-income and even middle-income residents.

cap may be an approach worth investigating for cities interested in better regulating Vacation Rentals, we do not advocate for caps on the total number of permitted Primary Residence STRs, as that would place a haphazard limit on who can benefit from limited rental of their primary residences to short-term guests. Instead, we recommend that cities wishing to legalize but limit STR activity restrict STRs to primary residences, and then cap the number of permitted STR rental nights per year.

43. Austin, Tx., City Land Development Code § 25-2-793 (2014). Austin classifies its STRs into three types, and the density cap applies only to Type 2 STRs. A Type 2 STR is similar to what is referred to in this brief as a Vacation Rental. Type 2 STRs must be single-family, detached residential structures; cannot be not owner-occupied or associated with an owner-occupied principal residential unit; and cannot include the rental of less than the entire dwelling unit. On February 23, 2016, Austin City Council voted to ban all Type 2 STRs, and the City plans to phase out any existing Type 2 STRs in residential areas by 2022. As of this writing, the final ordinance language has not been released.

44. Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, § 6.28.030(Q) (2015). The Nashville metro area provides an online map illustrating the density of registered non-owner-occupied STRs in each census tract. Property owners interested in applying for a non-owner-occupied STR permit can use this map as a tool to determine their eligibility.

There may be situations where a city will want to refrain from capping STRs in any form, such as in a city wanting to encourage tourism and where housing is in relatively abundant supply. However, in the absence of adequate protections for housing affordability, STRs could escalate housing costs and ultimately drive out lower-income and even middle-income residents.

Below, in Section VI, we explore some creative and as yet untested opportunities for cities to create selective exemptions to STR caps in order to use STRs as a lever for economic development that does not cause or exacerbate resident displacement.

D. CREATE PROTECTIONS FOR THE WELLBEING OF GUESTS

Health and Safety Standards:

Cities should require STR hosts to adhere to basic standards for health and safety of their guests. For example, the city could deny an STR permit to an applicant whose residential unit has outstanding Planning, Building, Housing, Fire, Health, Police, or other applicable City code violations that would make their residence unsafe for short-term guests. In addition, cities could require hosts to apply basic safety precautions such as working smoke detectors in every bedroom, a carbon monoxide detector, and an evacuation plan that identifies all exits.

A city may also want to require that hosts provide guests with basic information, including proof of STR registration, a list of the minimum safety requirements, instructions for lodging a complaint, and the name and contact information for the host and/or another responsible party that could assist guests with any problems that arise during the stay.

Inspections:

Municipalities such as Austin, TX,⁴⁵ Tillamook County, OR,⁴⁶ and St. Helena⁴⁷ and Dana Point,⁴⁸ CA require inspection by the Fire Department, Planning Department, Bureau of Development Services, or a building official. Some of these cities provide a building and safety self-check list for hosts to prepare for the inspection.

We do not advocate for an inspection requirement, but might urge cities to create a self-inspection checklist that hosts can submit along with registration. Inspections would greatly raise the administrative costs for the city and hosts, creating undue barriers particularly for people who would only host guests during one to two weeks per year. A city may, however, wish to require inspections when guests file health & safety complaints.

45. Austin, Tx., City Land Development Code § 25-2-791 (2014). Note that the inspection requirement applies only to Vacation Rentals and multifamily unit STRs; it does not apply to Hosted Primary Residence STRs.

46. Tillamook County, Or., Ordinance 69, Section 9(a)(B) (2012).

47. St. Helena, Cal., Municipal Code ch. 17.134, § 17.134.040(F) (2012), and at § 17.134.080(B).

48. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.080(a)(3) (2013).

Where STRs are arranged through select online portals, it is important to acknowledge that the safety and wellbeing of guests is already partially supported by the guests' access to information and reviews of the hosts. As bookings and profits are largely based on good reviews from past guests, hosts are incentivized to provide safe and clean accommodations in order to maintain a good reputation in the review and rating system.

Insurance:

To ensure that guests have recourse in the event that they are injured during an STR stay, cities should require that hosts are covered by an appropriate insurance policy.

Some examples could include general liability insurance, a homeowners' insurance endorsement, coverage through their STR platform, or other insurance appropriate to cover injuries to STR guests or other losses or damages that could result from the operation of an STR. San Francisco requires that hosts carry liability insurance for claims up to \$500,000, or to conduct STR transactions through an STR platform that provides equal or greater coverage.⁴⁹ Nashville, TN requires STR permit applications to include proof of homeowner's fire, hazard, and liability insurance, with liability insurance covering no less than \$1,000,000 per occurrence.⁵⁰ Dana Point, CA requires proof of general liability insurance with a minimum of \$1,000,000 in coverage, along with an agreement to indemnify and hold the city harmless for any liability claims.⁵¹ Further, the city of Dana Point requires STR permit holders to provide current proof of general liability insurance during each annual permit renewal.⁵²

E. ESTABLISH OVERSIGHT, COMPLAINT, AND SANCTION PROCEDURES FOR THE WELLBEING OF NEIGHBORS

Oversight:

Enforcement of an STR ordinance can present challenges, particularly in enforcing a cap on nights rented. Without access to transactional data from online STR portals, cities must rely primarily on hosts' own self-reporting, complaints by neighbors, and its own investigations of suspected violations. As such, a city could require online STR intermediaries to release, regularly or upon the city's request, information about the number of nights per year that any listed unit in their city was rented to short-term guests and the income received by the host. The city could also mandate that intermediaries do all reporting electronically and in a standardized format to make it easier for cities to aggregate data from multiple platforms. Of course, there are already dozens of companies and websites facilitating STRs, and it would be too large a burden on cities to discover and work with all of them. That being said, even just requiring the biggest players to report data could have a big impact on the ability of local regulators to oversee STR activity.

49. San Francisco, Cal., Administrative Code ch. 41A, § 41A.5(g)(1)(D) (2015).

50. Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, § 6.28.030.D.2. (2015).

51. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.050(d) (2013).

52. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.055 (2013).

Avoiding and Addressing Conflict:

Cities should create channels for neighbors to file complaints about nuisance or STRs believed to be in violation of rental caps. To make neighbors aware of area STRs, an STR ordinance could require that residents applying for an STR permit or license notify adjacent neighbors, as is the case in Nashville, TN, where a permit applicant must provide proof of written notification to any property owner sharing a common wall or a common driveway with the applicant's unit.⁵³

For cases where neighbors are disgruntled about STR activity, but a host is neither in violation of an ordinance nor creating an objective nuisance, we also recommend that cities help fund community mediation services, to give neighbors low-cost conflict resolution mechanisms.

Complaints and Grievances:

A city should establish an accessible system for guests, neighbors, and other stakeholders to bring to the city's attention any host that is in violation of the ordinance or otherwise creating a nuisance or health and safety risk. Prior to resulting in sanctions, the grievance process should give hosts a reasonable opportunity to respond to the city to demonstrate compliance and/or explain measures the host will take to eliminate the concern. For example, Nashville, TN gives the department of codes administration the ability to revoke a host's STR permit if reports of code violation have been received, but not without providing fifteen days prior written notice of the alleged violations to the host and providing him or her the right to appeal the permit denial or revocation.⁵⁴



In addition to creating such a grievance process, a city may also consider creating a private right of action that gives certain stakeholders standing to bring a complaint in court, provided that the stakeholder has already taken a complaint to the city, and the city failed to respond within a specified amount of time. San Francisco's STR ordinance contains a private right of action wherein, following a determination that the STR ordinance has been violated, an interested party (defined as the city, county, unit owner, certain housing nonprofits, homeowners association associated with the STR unit, permanent resident of the building where the alleged STR is located, or permanent resident or owner of a property within 100 feet of the property containing the alleged STR) can

53. Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, § 6.28.030.D.3. (2015).

54. Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, §§ 6.28.030.R.2., 6.28.030.R.3., 6.28.030.R.4. (2015).

bring civil suit against the host for monetary and injunctive relief. In such a suit, the interested party is entitled to attorney's fees if it prevails in the suit.⁵⁵

Sanctions:

We recommend that cities create a graduated scale of sanctions for hosts who are in violation of STR regulations or who are the subject of multiple complaints.

Sanctions might include:

- Reducing the number of nights per year that a host may rent to STR guests;
- Prohibiting un-hosted nights, particularly where neighbors have complained that guests have created a nuisance;
- Inspection of the unit and a requirement that the host pay for costs of inspection;
- Suspension or revocation of the STR registration or permit;
- Fines that increase with the number of violations. For example, Dana Point, CA may penalize a host \$250 for a violation. If, within a single year, the host has multiple violations, the fines rise to \$500, then to \$1,000, and eventually result in revocation of the STR permit;⁵⁶ or
- Ineligibility to reapply for an STR permit for some extended period of time. For example, Nashville, TN imposes a one year waiting period on hosts found operating an STR without a permit,⁵⁷ and Maui County, HI makes a violator ineligible to apply for a permit for five years.⁵⁸

STR platforms should also be subject to sanctions for violation an STR ordinance. For example, San Francisco's STR ordinance states that any hosting platform violating its responsibilities under the code shall be subject to the city's administrative penalties and enforcement provisions, including payment of civil penalties of up to \$1,000 per day for the period of noncompliance.⁵⁹

F. PRESERVE NEIGHBORHOOD QUALITY

Cities play an important role in shaping the livability of neighborhoods, and STRs have the potential to both positively and negatively affect neighborhoods. On the positive side, visitors bring income to a neighborhood, both through payments to STR hosts and by potentially patronizing neighborhood businesses. However, many residential areas are zoned with the goal of preserving a quiet "neighborhood feeling" and promoting social cohesion among neighbors. A constant stream of STR guests can undermine both neighborhood character and simple infrastructure, such as adequate supply of street parking.

55. San Francisco, Cal., Administrative Code ch. 41A §§ 41A.4.; 41A.5.(d) (2015).

56. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.090(b) (2013).

57. Nashville, Tenn., Metropolitan Code Ordinance No. BL2014-951, § 6.28.030.R.6.b. (2015).

58. Maui County, Haw., County Code ch. 19.65, § 19.65.080(D) (2012).

59. San Francisco, Cal., Administrative Code ch. 41A § 41.A.5.(g)(4)(C) (2015).

Limiting Crowding and Noise:

Cities may want to limit the purposes for which residents may host guests. For example, Dana Point, CA,⁶⁰ Anaheim, CA,⁶¹ and Maui County, HI⁶² all limit or prohibit hosting of weddings, parties, and other similar gatherings. St. Helena, CA further specifies that a party may be no larger than twice the number of guests, with a maximum of 20 party guests.⁶³ Both Maui County and St. Helena also impose quiet hours at night.⁶⁴

Managing Parking:

In an effort to address parking concerns, Maui County, HI⁶⁵, Dana Point, CA⁶⁶, and Anaheim, CA⁶⁷ have all required hosts to provide off-street parking for STR guests. Because these requirements could bar residents of transit-oriented units, dense developments, or smaller lots from hosting short-term guests, we recommend against off-street parking requirements for STRs.

G. PRESERVE PUBLIC TAX REVENUES AND LEVEL THE PLAYING FIELD BETWEEN STRS AND COMMERCIAL HOTELS

Taxing STRs:

Cities attract visitors by investing in and cultivating welcoming public spaces, tourist attractions, and basic infrastructure. Cities' efforts to create welcoming environments for visitors provide substantial private benefit to hotels, B&Bs, and STR hosts. By charging a Transient Occupancy Tax (TOT) or "hotel tax," cities can recoup part of this benefit and invest travelers' dollars back into the city.

The hotel tax can be a substantial source of income for cities, generating approximately \$226 million in annual revenue for Washington D.C., \$274 million in San Francisco, and \$536 million in New York City in recent fiscal years.⁶⁸ Transient occupancy taxes from STR stays hosted through Airbnb are estimated to amount to roughly \$11 million per year in San Francisco,⁶⁹ and according to a 2014 estimate published by Airbnb, New York City STRs operating through its platform could generate \$21 million in annual TOT revenues

60. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.080(a)(7) (2013).

61. Anaheim, Cal., Municipal Code ch. 4.05, § 4.05.100.0107 (2014).

62. Maui County, Haw., County Code ch. 19.65, § 19.65.030(Q)(4) (2012).

63. St. Helena, Cal., Municipal Code ch. 17.134, § 17.134.040(J)(4) (2012).

64. See Maui County, Haw., County Code ch. 19.65, § 19.65.030(Q)(1) (2012), and St. Helena, Cal., Municipal Code ch. 17.134, § 17.134.040(J)(1) (2012).

65. Maui County, Haw., County Code ch. 19.65, § 19.65.030(Q)(3) (2012).

66. Dana Point, Cal., Municipal Code ch. 5.38, § 5.38.080(a)(5) (2013).

67. Anaheim, Cal., Municipal Code ch. 4.05, § 4.05.100.0105 (2014).

68. Alison Griswold, Why Airbnb Desperately Wants to Pay Hotel Taxes. And why some cities won't let it (February 13, 2015), http://www.slate.com/articles/business/moneybox/2015/02/airbnb_hotel_taxes_why_does_the_sharing_economy_startup_want_to_pay_them.html.

69. Ibid.

for the city.⁷⁰ If the projected TOT was calculated for all STR units, including those listed independently or facilitated by platforms other than Airbnb, the amount of annual TOT revenues for municipalities like San Francisco and New York City would likely be considerably higher.

Most cities with new STR ordinances require hosts to pay TOT. Due to the adverse effects STRs can have on housing affordability and displacement, we believe that cities should designate all or most of the TOT collected from STR activity toward affordable housing initiatives and other economic support services for low-income, unemployed, and underemployed residents. This could include investing TOT revenues into community land trusts, which are nonprofit housing providers that create permanently affordable homes for low-income residents.⁷¹ In cities where effective enforcement of STR regulations requires additional funds not provided by sanctions and fees, a municipality might also consider directing a portion of the TOT from STR activity toward improving oversight and compliance.

Collecting Taxes Through Intermediaries:

To ensure payment of taxes, cities should require that the third party facilitators of STRs collect and remit the TOT in the same way that these platforms could be required to report residents' STR activity to cities. STR platforms are in the best position to know who is hosting, which units are being rented, and how much revenue is earned. Additionally, because these platforms transfer payments from guests to hosts, they can withhold and remit the taxes with relative ease.

San Francisco's ordinance was the first to require STR platforms and services to collect the city's 14% TOT from guest fees and remit the revenue to the city. In addition, San Francisco requires STR platforms to maintain and make available to the city a record demonstrating that the TOT has been remitted, and the platforms will remain liable for the failure of a user to comply with the requirements of the Business and Tax Regulations Code.⁷² Santa Monica, CA, Portland, OR, and Multnomah County, OR have also required STR intermediaries to collect and remit a TOT.⁷³

70. David Hantman, \$21 million more for New York (April 14, 2014), <http://publicpolicy.airbnb.com/21-million-new-york/>.

71. Community Land Trusts sell or lease homes to low- and middle-income residents while permanently retaining ownership of the underlying land. Through this dual ownership system, CLTs insulate the value of housing from the fluctuating value of land and can preserve the affordability of housing even in areas with substantial increases in land value.

72. San Francisco, Cal., Administrative Code ch. 41A § 41.A.5.(g)(4)(B) (2015).

73. The City of Santa Monica charges a 14% TOT. (Santa Monica, Cal., Municipal Code ch. 6.20, § 6.20.020(a)(3) (2015), and at ch. 6.68, § 6.68.020 (2004).) The City of Portland charges a 6% TOT, and Multnomah County charges 5.5% TOT. See: <http://www.portlandoregon.gov/revenue/29976>.



SAN FRANCISCO: A CASE STUDY

For cities wishing to address the housing affordability issues exacerbated by STRs, it is helpful to use San Francisco as a case study of what not to do. Even those elements of San Francisco's STR ordinance that were intended to address housing affordability and availability were included without the reporting and enforcement mechanisms necessary for their success. Added to that, the San Francisco ordinance only focused on preventing units, but not rooms, from being removed from the long-term rental market. For cities wishing to address the housing affordability issues exacerbated by STRs, it is helpful to use San Francisco as a case study of what not to do. Even those elements of San Francisco's STR ordinance that were intended to address housing affordability and availability were included without the reporting and enforcement mechanisms necessary for their success. Added to that, the San Francisco ordinance only focused on preventing units, but not rooms, from being removed from the long-term rental market.

ATTEMPT TO PROTECT THE SUPPLY OF UNITS: ONE SUCCESS AND ONE FAILURE

San Francisco has attempted to prevent the conversion of residential units into primarily transient use by setting a cap on the number of nights per year that a whole unit may be rented to short-term guests. The city's short-term rental ordinance, which went into effect on February 1, 2015, limits STRs to primary residences, allows an unlimited number of hosted short-term stays (when the host concurrently resides in the unit) and places a 90-night cap on the number of un-hosted nights per year that a unit may be rented to short-term guests.

SAN FRANCISCO: A CASE STUDY, CONTINUED

Though the 90-night cap on un-hosted rentals was likely prompted by the need to prevent the removal of residential units from the market, in the end it is incredibly difficult for regulators to tell the difference between a short-term rental stay that was hosted versus one that was un-hosted, even with regular self-reporting requirements. Some San Francisco regulators say that their ability to reliably distinguish between hosted and un-hosted short-term rentals, as well as the frequency of use, could be greatly improved with access to booking data from the short-term rental platforms. However, STR platforms have refused to release this data, and the great majority of San Francisco's STR



hosts remain unregistered and outside the reach of the city's new rules. As such, and so long as the city lacks mechanisms for reliable reporting and effective enforcement, the provision allowing STR hosts to rent to short-term guests for up to 365 nights per year so long as they are present during the stay essentially opens the doors for year-round un-hosted STRs.

In the end, the element of San Francisco's ordinance that would most effectively reduce the conversion of residential units is actually its restriction of STRs to primary residences. By restricting STRs to primary residences, the ordinance allows only individuals who actually live in a unit to host short-term guests in an extra room, or to rent out the entire unit to short-term guests

for up to 90 nights per year when they are away from their homes. It does not, however, incentivize landlords to evict tenants or permit individuals who own multiple residential units to keep those units empty of tenants in order to rent to short-term guests.⁷⁴

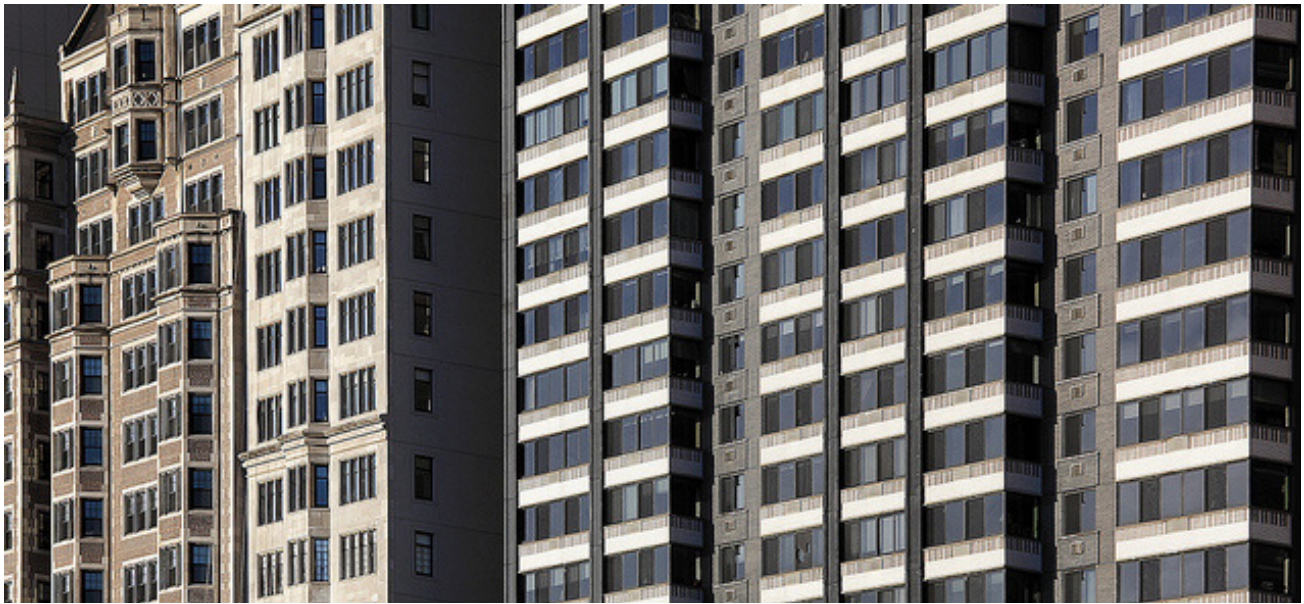
SAN FRANCISCO'S FAILURE TO PROTECT THE SUPPLY OF ROOMS:

As stated above, allowing hosts to engage in unlimited Hosted Primary Residence short-term rentals can reduce the availability and affordability of housing units if unaccompanied by proper reporting and enforcement mechanisms.⁷⁵ But allowing year-round hosted STRs is also problematic for another reason: it creates an incentive for renters and owners to remove rooms from the long-term rental market. If a city does not place a limit on Hosted Primary Residence STRs, people who might otherwise seek a housemate might opt to earn more flexibility or more income per night by using rooms primarily for short-term rental. However bedrooms for rent within a unit are a key source of affordable housing for single individuals, couples, students, and others who cannot afford to rent entire units. Therefore, in cities that are experiencing severe housing pressures, we recommend setting a limit on the number of nights per year that rooms can be rented to short-term guests, whether hosted or un-hosted.

74. Such units would be considered Vacation Rentals, and we recommend that cities where low-income and middle-income households experience difficulty finding affordable housing units strictly limit or even ban Vacation Rentals. See definition of Vacation Rentals in Section V.A.

75. See definition of Hosted Primary Residence STRs in Section V.A.

VI. GOING BEYOND IMPACT MITIGATION: RESTORATIVE APPROACHES TO REGULATING STRS



Although the recommendations above are aimed at mitigating potential harms of STRs, they do not solve the underlying economic imbalances that are damaging communities and motivating the pushback against STR platforms. We believe that it is the responsibility of cities to find ways to address wealth inequality, income inequality, affordable housing shortages, unemployment, under-employment, and poverty. Rather than focusing solely on mitigating the harms of STRs, cities could see STRs as a lever for economic change that can repair persisting economic problems already impacting communities. Indeed, the widespread use of STRs has encroached substantially upon domains under cities' control, namely land use laws and controls on housing supply. For this reason, cities can legitimately maintain their claim on such domains, and perhaps even go as far as prohibit private companies from brokering STRs.

Below, we offer three bold and creative approaches for municipalities interested in harnessing the economic benefits of STRs in addressing local economic issues. That we know of, no city has yet experimented with the following approaches.

Approach #1: Raising STR Caps on the Basis of Financial Need

Gentrification is a powerful economic and cultural process of neighborhood change. The patterns of gentrification can be found in the US and in districts, towns, and cities around the world. Complex and multifaceted, gentrification can occur at differing rates and for different reasons. One main factor, of course, is wealth and income disparities. Cities concerned by the disruptive and exclusionary effects of gentrification could consider STRs as either an agent of gentrification, or a lever against it.

Allowing high-income residents to earn additional income from STRs might intensify the process of gentrification, but allowing low-income residents to earn income from STRs has the potential to protect residents who might otherwise be displaced. Though regulating STRs on a household-by-household basis could be challenging to manage, cities could help low-income long-term residents use STR income to keep pace with increasingly expensive surroundings, remain in place, and benefit from – rather than be displaced by – the economic development of the area.

As STRs have become increasingly popular, many anecdotes have emerged of families, senior citizens, and other individuals avoiding foreclosure or eviction as a result of income generated by hosting short-term guests. Ideally, the potential for residents to use STR income to stay in place would not be fully lost if STR activity was limited by regulation. STR regulation could, in fact, offer cities a lever to create income opportunities for populations that are most impacted by unemployment and underemployment. Cities could even use this lever to selectively raise caps on the number of STR nights per year for households that meet objective financial need criteria.

Granting exemptions to STR caps on a household-by-household basis challenges cities to develop clear objective criteria on which to review applications, and makes the granting of exemptions somewhat more akin to a form of public benefit, like unemployment benefits. An application process might require the applicant to show that he or she has recently become unemployed, recently lost unemployment payments or other public benefits, or recently had a substantial increase in monthly rent. A cap exemption could also be time-limited, recognizing that the exemption acts as a temporary bridge for an individual or household seeking to get back on its feet after a financial blow. Any strategy for raising caps on a household-by-household basis should be carefully reviewed for compliance with constitutional due process provisions.

Selectively raising caps on a household-by-household basis would create substantial administrative costs for a city, but these costs should be seen in the context of the city's economic stabilization and development strategies. Furthermore, the administrative costs of such a program could be offset by TOT if the costs were passed to STR hosts through added STR taxes.

Approach #2: Keeping Wealth Local with a Municipally-Owned STR Platform

In order to recapture wealth that is leaving cities through payments to absentee STR platforms such as Airbnb, cities can prohibit the use of these STR companies, and require that residents use a municipally owned platform with functionality similar to that of Airbnb and other leading STR intermediaries. While this solution may prove difficult to implement at the level of a single city, it would become more financially viable if multiple large cities formed a partnership to jointly invest in the development and ongoing maintenance of the software. The financial return to cities would be nearly guaranteed, given that fees users

are accustomed and willing to pay to existing STR platforms would instead go directly to the City, providing funds for administration, affordable housing, or investment in other city programs. A substantial benefit of a municipal STR platform would be its facilitation of oversight and enforcement, because compliance with the law, including TOT remittances, reporting, and permit renewal, could be carried out directly through the platform.

Approach #3: Building Community Wealth Through a Sharing Economy Trust

Another bold strategy for using STRs to build community wealth is for a City to create a permanent trust for the collection, investment, and distribution of fees from STR bookings, much in the same way that the Alaska Permanent Fund pays all Alaska residents annual dividends from mineral, gas, and oil revenues.⁷⁶ Such a trust would ensure that all city residents benefit from the economic wealth brought by tourism and travel, and the trust could also align residents around the goal of ensuring an adequate supply of housing for all. Peter Barnes's book, *With Liberty and Dividends for All*, describes a variety of strategies for creating trusts that pay universal dividends derived from fees collected on the use of other assets, such as the atmosphere and intellectual property. In this vision, as the recipients of dividends from multiple sources, citizens would ultimately accumulate what amounts to a universal basic income.

We offer this idea because of its potential political viability in comparison to approaches that focus primarily on setting caps and investing tax revenue in affordable housing development. During a 1999 referendum, 83% of Alaskan voters voted to keep the Alaska Permanent Fund in place, demonstrating the potential for universal dividend systems to inspire support from citizens across the political spectrum.

To illustrate how this might work with STRs: Imagine that the City of San Francisco chartered a corporation called the "San Francisco Sharing Economy Trust." The stated purpose of the Trust is to support the long-term creation and preservation of an adequate housing supply for a socio-economically diverse city. Once chartered, the Trust would be somewhat insulated from the dynamics of electoral politics, enabling trustees to make decisions that serve the Trust's purposes, while remaining accountable to San Francisco residents, who are the beneficiaries of the Trust. The Trust could be empowered to determine the City's caps on STR rentals, and, separate from the 14% TOT already collected by the City, the Trust would be empowered to collect an additional percentage of all revenue from STRs. Ideally, the City would mandate that all STR bookings of housing within its borders be made through a municipally-owned or Trust-owned booking platform, rather than a for-profit platform like Airbnb. As such, the 10% to 20% booking fee normally collected by companies like Airbnb could go to the Trust. The Trust could then raise and lower the fee based on the Trust's assessment of housing unit supply in the city. When housing is in short supply, the Trust might raise the booking fee as high

76. For more information about the Alaska Permanent Fund, see <http://pfd.alaska.gov/>.

GOING BEYOND IMPACT MITIGATION, CONT.

as 30% to 40%, thereby giving STR hosts an incentive to put rooms back on the market for long-term rental. Because higher fees could ultimately bring higher dividends to city residents, residents will directly benefit from the Trust's efforts to preserve the housing supply.

There are at least three options for the management of the Trust's funds:

1. The Trust could retain all STR booking income and invest it (in the form of loans) in housing developments and purchases designed to preserve long-term affordability, such as projects stewarded by community land trusts. When the loans begin to pay a return, that income will be divided equally among all city residents and direct-deposited into their bank accounts.
2. The Trust could distribute STR booking income as dividends to residents, without the intermediate step of investing it in affordable housing development.
3. The Trust could strike a balance between the two options above, investing some STR booking income and making direct distributions of the rest.

Like its Alaskan counterpart, the San Francisco Sharing Economy Trust could create an online system to administer the funds. City residents could also use the online system to register and prove their residency in order to receive the dividend deposit. The Trust could set similar eligibility requirements to Alaska's Fund,⁷⁷ such as requiring that someone have lived in the city for at least one year prior to receiving a dividend.

77. See Alaska's residency verification information here: <http://pfd.alaska.gov/Eligibility/EstablishingResidency>.

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Regulating Short-Term Rentals

IT HAS BEEN LESS THAN A DECADE since short-term rentals came onto the municipal scene, but the impacts of allowing them have reverberated through cities nationwide.

At face value, STRs look like a win-win-win. Hosts can use the rental income to pay down mortgages, pay their property taxes, and improve their quality of life; guests get a nice room, often for a lower price than a hotel, and chambers of commerce cite increased tourism's positive effect on the local economy.

But it's more complicated than that, particularly for planning departments and elected officials, who are responsible for code compliance, land-use and zoning conflicts, and budgetary concerns associated with enforcement and taxes. (See "Could You BnB My Neighbor?": planning.org/planning/2016/feb/bnb.htm).

Finding middle ground

While some cities are trying to prohibit STRs, for most there is simply too much voter pressure to ban them outright. The boldest reaction has been from New York City, which uses state law prohibiting advertising to outlaw STRs, but the room rental differentials between hotels and private residences make evasion very tempting.

More recently the conversation has turned to how the various interests may be accommodated. Cities have a few options when looking to effectively—and legally—regulate short-term rentals.

LICENSING. Requiring STRs to be licensed, and establishing a process for the withdrawal of that licensing, not only allows the city to track STRs and collect regulatory fees to operate the program, but also makes enforcement of zoning, city codes, and reporting—possibly the biggest challenge cities face—easier.

In order to ensure the success of a licensing program, it is essential that online purveyors like Airbnb and VRBO report local STR activities to the city. This can be difficult because the company is not physically located in the city (and perhaps not even the state).

Larger cities like San Francisco and Vancouver, B.C. have litigated the issue and have either come to an agreement with purveyors for reporting and cooperation or are moving in that direction. Options for smaller cities include providing uniformity through state legislation (as is proposed in Oregon) or using the precedent established in litigation efforts of larger cities.

FEES. STRs often do not pay city taxes and fees like their hotel and bed-and-breakfast counterparts. This can be problematic because those fees are often used to support the local tourism

industry or raise revenue for the city. One solution is for the online purveyor to report rentals and include (and collect) city fees as part of the rental. This has been accomplished more often as part of settlement agreements following litigation. However, both online purveyors and home owners typically seek to avoid this obligation.

LAND-USE CONTROL. Renting out rooms in a residential zone essentially allows commercial use in an area that prohibits that type of use. It is up to the city whether to ignore the zoning inconsistency, prosecute the landowner, or amend regulations to allow the use, perhaps with uniform limitations. Some municipalities allow one or two rooms to be rented but require the owner to notify neighbors and the neighborhood association; prohibit STRs unless they are within an owner-occupied dwelling; or require that STRs be accompanied by a conditional use or special exception, zone change, or design review. Cities may also place limitations on the number of STRs within a certain radius.

STRUCTURAL, FIRE, AND LIFE SAFETY CODES. A municipality must decide whether it will allow STRs in residential dwellings with or without compliance with these codes, which are often different from those for hotels and B&Bs. Cities may not want to impose upgrade costs on home owners who rent out rooms, but that may change if a fatal fire or structural failure occurs. Many cities have ignored full compliance, while others have taken a selective approach. Portland, Oregon, requires a minimal inspection to resolve more apparent problems, but none of the cities that allow short term rentals currently require upgrades to hotel standards.

INSURANCE. Requiring insurance that guards the host (and sometimes the city) against liability for bodily injury or property loss is another issue best decided at the outset. If a guest slips and falls at the rental site or is attacked by the host or the host's dog, the guest should have some resort for injuries. More importantly, that resort should not ordinarily be the city.

Each of these regulatory approaches is legally recognized, but before planners can act, they and city attorneys must ensure that the city has home rule or statutory authority to regulate. The city must then determine whether it wishes to regulate and, if so, under what circumstances it will undertake that activity.

If properly done, short-term rental guests and hosts can find each other, the online purveyors can thrive, and the city can ensure the health and safety of guests and will have a revenue stream to cover costs and raise revenues for tourism or general city purposes.

—Edward Sullivan

Sullivan is a retired attorney who teaches, writes, and speaks on land-use law matters. He is also a member of APA's Amicus Curiae and Legislative and Policy Committees.

CB VACATION RENTAL TAX HASN'T PUSHED TOURISTS OUT OF TOWN

🕒 September 5, 2018 👁 555 Views

But it has improved neighborhood communication

By Mark Reaman

The town of Crested Butte is on line to pull in about \$300,000 from the new excise tax on short-term vacation rentals that went into effect this year. Despite some raised eyebrows at the total fee people pay for a short-term rental in Crested Butte, town officials say they see no indication that the additional tax has been a deterrent on visitors wanting to stay in town.

The somewhat controversial tax that was added January 1 of this year has brought in revenues of \$111,000 for the first six months of the year. "We are on budget," said town finance director Rob Zillioux. "I've not seen or heard any indication that the excise tax is dampening demand for vacation rentals in town. There is more demand than ever. I believe this has been a success and will certainly help our important efforts with affordable housing in town."

The money raised through the tax is earmarked for the town's affordable housing fund.

Crested Butte has two categories of vacation rental licenses. The first is an unlimited license by which approved properties can be rented as many nights as the owners wish throughout the year. Those licenses cost \$750 annually. The town allows no more than 30 percent of the dwellings in Crested Butte to be licensed in that category. They currently have issued 212 such permits, which is exactly the cap for 2018.

The second category is meant for locals who want to occasionally rent their property. There is no cap on the number of qualified locals who can obtain such a license but those licenses limit the number of rental nights to 60 per year.

Crested Butte community development director Michael Yerman said as more homes are built in town, the number falling in the 30 percent limit will increase by one or two a year.

Lucky and smart

"Sometimes it is better to be lucky than smart, and with the 212 licenses in the unlimited category we are right where we thought we would be," Yerman said. "That's lucky. But looking at the history of the vacation rental market we had a pretty good idea of what to expect and it worked."

Licenses are not automatically transferred with the sale of a property. If there is a waiting list, a new property owner has to go to the end of the line.

This has worked to the point at which there is no waiting list for licenses to turn over in property and licenses take care of themselves.

Crested Butte rental inspector Eric Treadwell said as part of the licensing protocol, each property must undergo an inspection every two years. Neighbors are also given the opportunity to comment on the potential short-term vacation rental property being licensed. Treadwell said that has led to better communications.

"The biggest complaints we hear from neighbors concern parking, noise, trash and lighting," he said. "We talk to the property owners at the inspection and bring the BOZAR [Board of Zoning and Architectural Review] approved plans that show the number of parking spaces they are required to have. We then give them several months to get them in order if they are not in compliance. Parking is probably the biggest expense for some people. Many properties have planted trees where the parking is located so they have to remove and replace the trees and then install real parking areas."

Treadwell said there are common, easy fixes on the rental properties such as installing the required smoke and carbon monoxide detectors. There have been shaky handrail issues on stairs and decks, the need to replace working wildlife-resistant trashcans, and the need for adequate fire extinguishers. "Most things are easy fixes and people are pretty easy with it all," said Treadwell.

When it comes to the more difficult issues like noise complaints and overuse of public parking in a neighborhood, again Treadwell said communication is key. "We let the neighbors know who the required local contact is for each property. So when the noise gets out of hand late at night they have someone to call," he explained. "People complain about parking but I explain that after the onsite spaces are taken, the people have as much right as anyone to utilize parking spots on the streets. It would be like if the locals were having a potluck that drew five or six cars. People are going to park along the street in public spaces."

"This has been a really successful program," added Yerman. "It's not surprising but we have been able to tackle the neighborhood nuisances really well."

"It has done more than expected in helping to address neighborhood nuisances," added Treadwell. "The neighbors across town have been involved and we try to address the concerns. The owners have been

very responsive for the most part. People want to be good neighbors.

"There haven't been any problem properties thus far," Treadwell continued. "It is more the occasional tenant that doesn't understand the Crested Butte rules."

From the trenches

Peak Property director of vacation rental management Kat Hassebroek said the new tax and new system have had both positive and negative consequences. She said the overall costs with the new tax have raised some eyebrows from people using Peak to rent a vacation home. "Some return visitors to Crested Butte really noticed the price difference and chose to rent outside of town," she said. "The extra 5 percent really adds up on larger rentals. New visitors are floored by the almost 20 percent total tax and many find it excessive."

Hassebroek said the inspections and new protocol have positive impacts but also have brought a few surprises to some homeowners. "I was on the original committee to make recommendations to the council on STR [short-term rental] regulations. Safety was our number one concern, so I feel that the safety inspections and protocols set forth are definitely necessary and helpful," she said. "But there have been issues brought to light through these inspections that should have been brought to the attention of owners upon inspection of the property when they purchased it. Owners are being asked to make alterations to their homes/land at their cost, sometimes significant cost, due to the new STR inspections when these 'deficits' were never caught or needed correction upon inspection and purchase of the property. Owners are certainly raising eyebrows at that."

In the big picture, Hassebroek said while some kinks are still part of the town's new vacation rental system, overall it has been good. "I feel that it can work," she wrote in an email. "I feel there is a need for regulations. I'm not sure if I feel that all of the regulations are fair and necessary. I think protecting neighbors from nuisance renters by requiring local contact information for each rental is very important. I think limiting the number of rentals is important, although it is clearly not helping with the long-term rental situation. The safety regulations speak for themselves and are clearly necessary. So for the most part, I would say, yes they are working."

Hassebroek also said Treadwell deserves kudos for handling what can be a difficult job with calm professionalism. "Eric has done an amazing job, given the hefty job he had to tackle. He has been

responsive and patient with explanations to not only me, but my homeowners as well. He stepped in to an enormous job that was not enviable at all and has done a great job.”

Treadwell said no major issues have been discovered through the property inspections. He has finished 104 of the 228 total inspections. Yerman said the license fees are paying for the costs of the program, including Treadwell’s salary and the monitoring software. That software has alerted town officials to a couple of property owners trying to short-term rent their property on the sly. Both were caught and had to pay back taxes plus licensing fees. “Most people really do want to follow the rules,” said Yerman.

Yerman agreed with town finance director Zillioux that the additional tax has not deterred tourists from renting Crested Butte homes, noting too that with the 30 percent cap they essentially put a ceiling on the amount of revenue they could collect from the tax.

“The amount coming in this year essentially would pay for the cost of about one unit at \$300,000,” he said. “But it is a revenue source we can count on and we can leverage it to get more housing.”

“This tax hasn’t stopped anything,” concluded Treadwell. “There is still a high demand for in-town rentals.”

“The ultimate goal,” added Yerman, “is to continue the public outreach regarding things like parking, trash and noise so that owners help the tenants respect the neighborhood they are staying in.”



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Could You Bnb My Neighbor?

A planner's take on the sharing economy.

By Jeffrey Goodman

Since I live in New Orleans, I live near a bar. People are always walking by my house to this bar, so perhaps one day I start offering beer to passersby from my porch. Maybe I sell a beer or two — I could always use the money — and people here have always sold drinks as a hustle during Mardi Gras, so what is the difference?

Perhaps eventually I sell beer all the time and people start coming to my house instead of the bar and maybe I pick up a sponsorship and a little press. Soon, people are coming from miles around to my house, spending money at shops in my neighborhood; everything's great. If I were then to go my local alcohol board, or my zoning board, or my neighborhood association, and argue that since my house-bar is so popular, the rules need to be rewritten to accommodate me — well, I would be run out of town on a rail.

Yet in some ways, this is the path taken in regulating another controversial industry: short-term rentals. Backed by billions of investment dollars and an aggressive strategy of "disruption" that favors expansion above cooperation, companies like Airbnb, VRBO, and others have generated as much controversy as they have profits, stubbornly resisting cities' attempts to rein the industry in.

Of course, what these platforms offer is nothing new; home owners have taken in lodgers since the first settlement of cities. But with such a huge scope — over 34,000 cities on Airbnb alone — how do we balance the potential benefits of these businesses with their real impacts on our communities?

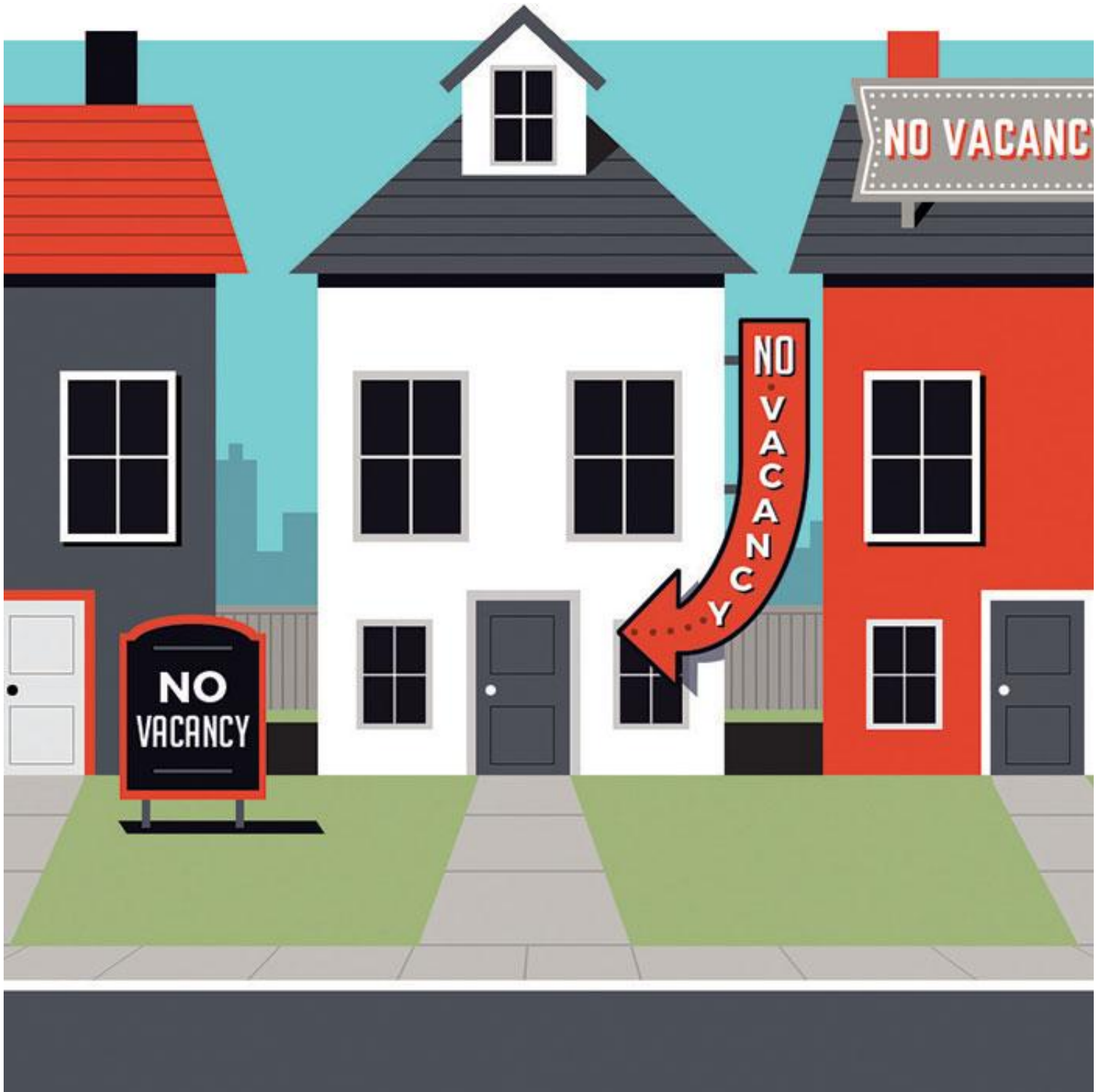


Illustration by John Ueland, uelandillustration.com

Opposing narratives

Because the debate over short-term rentals intersects with so many issues — the role of government, what constitutes a business, the rights of neighbors, and on and on — attempts at regulation can generate impassioned responses from hosts and residents alike. These narratives can be difficult for planners to reconcile.

In the view of short-term renters, hosting has been a great boon for individuals to make a little extra money, for neighborhoods to see tourist dollars, and for cities to promote tourism. The kindly old woman with a bedroom to let to excited millennials: This is the narrative that Airbnb and others focus on when expanding and promoting their services.

Regarding a San Francisco ballot measure, an Airbnb spokesperson was quoted in the *Wall Street Journal* as saying, "This initiative, at the end of the day, is an attack on the middle class of San Francisco, who share their homes to help make ends meet. Home-sharing in this city is a lifeline for thousands."

However, to opponents, Airbnb's hoodie-and-flip-flops vibe obscures a \$25 billion behemoth whose business model has depended on ignoring local regulations in the name of growth and profit. Abetted by these platforms, hosts flout safety, housing, and zoning codes, turn quiet homes into frat parties, drive up rent by displacing residents, outcompete bed-and-breakfasts, and fail to pay their share of taxes.

The narrative of opponents focuses on the absentee landlord with a portfolio of crash pads for bachelor parties; they say this is the reality ignored by Airbnb that planners have to clean up. As one exasperated neighbor in Austin told a *New York Times* reporter, "[Hosts] are leveraging our neighborhood for their profit, telling people to come stay in this beautiful place ... and they are making people miserable."

These competing identities have meant particularly contentious fights over regulation. In San Francisco, a proposed short-term rental ordinance led to 12-hour public meetings, allegations of vote tampering, and a \$9 million proposition fight. (Though Airbnb and the other short-term rental companies prevailed in the end, Airbnb's ad campaign for the proposition essentially told San Franciscans where they could stick the tax money the company pays. People were not amused.)

There is no monolithic "short-term host" but a spectrum of users (couch-surfing holdovers, empty nesters, young couples, and, yes, speculators and profiteers) and a spectrum of uses (occasional hosting, seasonal hosting, and, yes, the faux-hotel.) All of them, to some degree or another, have taken advantage of a regulatory Wild West in order to make money without proper oversight and without proper accountability.



An Airbnb-financed group put this billboard up in San Francisco before a ballot initiative in November that would have limited the home-sharing service. After helping defeat Proposition F, Airbnb pledged to cooperate with local governments. Jason Henry/*The New York Times*.

Getting past the noise

In order to regulate an industry effectively, planners need to understand how these platforms are being used and by whom, and what kinds of impacts they have on neighborhoods.

This is somewhat easier said than done; Airbnb and other companies do not freely release data, citing privacy concerns. When they do use data, the companies present a glowing picture of their activity, one that seems irresistible: Airbnb guests stay twice as long and spend twice as much as a typical visitor, with nearly half of all spending occurring in local neighborhoods.

According to the company, more than half of its hosts are "low to moderate income" and say hosting helped them stay in their homes. In New York City, Airbnb claims to have generated \$632 million in economic activity in one year alone. Opponents note, however, that the company has no reason to release numbers that paint their activity and their tactics in a negative light.

In order to get a clearer picture of the realities on the ground, researchers have had to rely on other means of gathering information, largely by "scraping" the public listings of these websites. (Airbnb, in turn, claims that this type of data collection is flawed.) Another option is to sue for access to the data, which is what the New York State Attorney General did, discovering that as many as 72 percent of Airbnb reservations violated New York law. Despite an effort to be "open and transparent" with cities, even under subpoena Airbnb only releases anonymized data to city governments — no addresses, no names.

Either by automated tools or through simple spreadsheets, trolling through Airbnb can give planners at least a broad outline of their local market, from average price per night (useful in calculating tax revenue) to the characteristics of the units available, like number of bedrooms, amenities, and safety equipment. Even a general map view can help planners see which neighborhoods are most affected or need greater enforcement.

Using these approaches, researchers have undercut Airbnb's narrative. The *Real Deal*, a New York-based real estate journal, found short-term rentals caused residents of some neighborhoods to pay up to an extra \$825 a year in rent by removing units from the market. In New Orleans, far from helping a broad group of residents, nearly 50 percent of all bookings came from just six percent of listings, with some hosts making hundreds of thousands of dollars from dozens of properties without paying a cent in occupancy tax, according to one report.

While Airbnb claims that hosts, on average, book only six days a month, that average conceals a huge spectrum from abandoned listings to faux-hotels. Using the number of reviews as a proxy for activity, planners can start to separate the mom-and-pops from the professionals.

More damningly, some reports cut at the heart of Airbnb's supposed benefits: tourism dollars. San Francisco's Office of Economic Analysis, considering the reduction of long-term residents and housing caused by full-time hosting, wrote that for every 1,000 units lost to short-term tourist rentals, the city's economy loses more than \$250 million each year, far exceeding the benefit from visitor spending and hotel taxes.

This is not to say short-term rentals are all bad or all good, just that the reality of these marketplaces is complex. Planners have to get into the data, fragmented though it may be, in order to begin to categorize activity for regulation.

Where Does Airbnb Pay its Share?

Airbnb, as part of a "Community Compact" released in November 2015, promises to now "pay its 'fair share' of hotel and tourist taxes in cities that have them" though the mechanism for doing so, or the way for cities to participate, remains unclear. In most places, the company relies on hosts to pay all taxes, but agreements in a handful of cities and states require the company to collect and remit taxes, chiefly hotel or transient occupancy taxes (as high as 14.5 percent), but also sales and tourism development taxes. The locations are:

Malibu, California
Oakland, California
Palo Alto, California
San Diego
San Francisco
San Jose, California
Santa Clara, California
Santa Monica, California
Chicago
Florida
Multnomah County and Portland, Oregon
North Carolina
Philadelphia
Phoenix
Rhode Island
Washington State
Washington, D.C.

Source: Airbnb.com

How to regulate?

For planners, the way forward with regulation is a three-part process.

PART 1

Establish a baseline level of safety and accountability. In its Terms of Service, Airbnb is very clear, repeatedly, that the hosts on its platform are 100 percent responsible for following local laws on everything from safety and zoning to taxation and sex offender registries. While any short-term rental should have to conform to local building, occupancy, health, and safety codes, it is up to the local planner to ensure properties are compliant.

The safety of guests, hosts, and neighbors is the highest priority in regulating the short-term rental market. Airbnb and other companies, as part of their response to local pushback about safety, have adopted a policy of assisted self-policing for their hosts by offering free smoke detectors or fill-in-the-blank emergency plans. But a host does not actually need to prove the existence or operation of any safety feature in order to list. When I created a test listing, I was able to simply click "Next."

Similarly, Airbnb has slowly evolved on the issue of insurance, shifting some responsibility away from the hosts. In late 2015, the company augmented a "million dollar host guarantee" to protect against damage caused by its service — which does not cover personal liability, shared or common areas (a big issue for condos) and is specifically described as "not insurance" — to a limited million-dollar policy backed by Lloyd's of London. This system creates a strange network of legal entanglements as Airbnb is both the policyholder and claims administrator for local hosts, who themselves have their own separate insurance.

But because many home insurance companies consider short-term renting a commercial use — and thus not covered under the standard policies — hosts may find themselves at the center of a huge and complicated fight that would make a trial lawyer drool; if a guest booked on Airbnb burns down a condo building and a firefighter is injured in the process, how is that legal mess going to sort itself out? Additionally, any damages and liabilities beyond a million dollars — assuming Airbnb even pays out — will fall on the hosts. The easiest solution is to require short-term renters to carry the appropriate insurance, one that specifically covers their activity and their level of risk.

But being a good host also means taking steps to avoid imposing on your neighbors' quality of life. No one wants to deal with loud guests, or litter, or parking issues, whether from a long-term or a short-term tenant.

Beyond strengthening and enforcing existing nuisance laws, some cities such as Portland, Oregon, and Santa Monica, California, have tried to include more direct accountability into their regulations; basic ideas like having hosts give out contact information to neighbors to report bad guests or only allowing owner-occupied rentals. In this scheme, serial offenders could face punishments that disincentivize their behavior, such as the loss of short-term rental or commercial permits, escalating fines, or code enforcement actions.

Ultimately, despite all the hype about the so-called "sharing economy," short-term rentals are fundamentally a commercial use, one that cities have regulated successfully in the past as bed-and-breakfasts, inns, motels, hotels, or SROs. In places that have traditional bed-and-breakfasts, innkeepers complain that competing with unregulated Airbnb units harms them doubly — as small-business owners and as residents.

Since the act of hosting is the same regardless of how a unit is booked, then the issues — from safety to zoning to garbage fees to taxes — are as well. Planners should simply hold a short-term rental unit to the same standards as any other similar business.

PART 2

Move past simply yes or no. When pressure to "do something" about short-term rentals comes down from City Hall or up from neighbors, the debate is often framed as a yes or no; "anything goes" or "not in my backyard." The answer will be probably be somewhere in between, and while it can be a laborious process, tailoring regulation to your city's particular situation can pay dividends.

As I learned at last year's APA conference in Seattle, the experience of a few Colorado destinations can serve as examples of adapting regulation to local needs.

Durango, a small city that serves as a regional center for the Four Corners, faced tremendous housing pressures after growing rapidly over the past decade. With vacancy rates dipping below one percent in some neighborhoods, and rents high and incomes flat, groups like college students, retirees, and service industry workers had increasingly limited options within the city.

At the same time, Durango welcomes thousands of tourists each year, drawn to the nearby natural beauty, redeveloped downtown, and seasonal festivals. Short-term rentals catered to some visitors, and the popularity (and notoriety) of these units led Durango's city government to develop new regulation. Through research and a series of community meetings, Durango's planners were able to identify three main areas that needed addressing in their city: impacts on tourism, impacts on neighborhoods, and — most important — impacts on housing.

A neighborhood encompassing much of the downtown and the local university had an especially tight market, and neighbors expressed concern about "dark blocks," where the spread of short-term rentals on specific streets left few permanent residents.

Durango's solution limits the density of allowed short-term units within groups of blocks, effectively preventing clustering while still accepting the use as permissible. By making a determination that preserving housing availability was the ultimate community goal, one that both transcended and intersected with short-term renting, Durango's planners could fit the discussion over Airbnb units into a larger narrative about the future of their city.

Aspen had a different problem: empty units. A world-famous destination with seasonal ebbs and flows of tourists, the city is burdened by a hodgepodge of residential properties — condos, ski villages, second homes — that sit disused much of the year. By legalizing and

standardizing requirements for short-term rentals, Aspen's planners were able to enhance the city's tourist economy while still maintaining control over important issues like permitting, taxation, and safety of individual units.

Durango's Street Segment Cap

In order to mitigate the effects of short-term rentals and preserve housing availability, Durango's Land Use and Development Code creates density limits for these rentals in residential zones. Only one permit is allowed per street segment. (For corner lots, the permit counts against both adjacent street segments and the intersection.) While there is no citywide cap on permits, there is a maximum number of permits available in residential districts.

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-
- | | | | |
|---|---------------------------------------|---|----------------------------|
| ★ | PERMITTED VACATION RENTAL | ■ | AFFECTED STREET SEGMENT(S) |
| ✗ | NOT ALLOWED TO HAVE A VACATION RENTAL | ■ | OTHER STREET SEGMENTS |



STREET FRONTAGE



AVENUE FRONTAGE



CORNER FRONTAGE

SOURCE: DURANGO PLANNING DEPARTMENT

Source: Durango Planning Department

Both Durango and Aspen found the key to controlling these concerns was treating short-term rentals as small businesses, allowing them to justify the use of their regulatory tools like zoning and licensing in ways that were consistent, understandable, and enforceable.

PART 3

Ensure enforcement on the ground and online. For short-term rentals, as for anything, regulation is only as good as its enforcement. Cities have struggled in this regard, creating huge opportunities for abuse while frustrating city officials and neighbors alike when long-debated ordinances do little to quiet complaints.

Though it is often spoken of as one concept, the short-term rental industry is really made up of two interrelated markets. One is the multitude of local hosts that interact directly with neighbors. They have to navigate (or disregard) local ordinances and are, even as absentee investors, a part of the community.

The other market, the listing companies like Airbnb and VRBO, has been harder to engage in enforcement efforts or tax collection, repeatedly pushing all responsibility to local hosts and governments.

This policy line — that Airbnb, despite any illegal activity on its site, is essentially blameless — results in awkward complications for enforcement. In New Orleans, for example, Airbnb has a special tab on its website giving tips about how hosts can follow city rules: get a permit, pay your taxes, report nuisances, etc. What it leaves out is telling: that renting for less than 30 days is illegal.

Instead of either confirming permit holders or hard-wiring the law into their business — and thus cutting down the amount of activity that violates local rules — Airbnb punts. It makes it so that a host would have to manually set a minimum stay of 30 days on the Airbnb platform to be compliant — no proof of permit needed.

In other major cities, new short-term rental ordinances become undone by flaws in enforcement. In San Francisco, a much-discussed ordinance only led to 282 applications — out of 6,000 listings — in the first three months, with only 27 units delisted for bad behavior — evidence, critics say, that the self-policing and self-reporting model pushed by Airbnb (and the mayor's office) is deeply flawed.

In Austin, after a *New York Times* expose found some party houses continue to rage on even after racking up 60 code violations, finger-pointing ensued: Airbnb blames the city for allowing serial violators to continue operation, while Austinites wonder why Airbnb keeps letting the houses list.

A simple option, like requiring a listing company to match a permit number to a city database in order to list, would immediately curb many of the worst abuses and reduce the number of listings that need monitoring. Unable to convince Airbnb to collaborate on such a system and frustrated by only one in 10 hosts having permits, Portland, Oregon, threatened fining all the listing companies \$500 per violation per day for every listing that was not permitted. (Though the city has yet to fully curb illegal listings on Airbnb, Portland did sue Homeaway for \$2.5 million for refusing to pay lodging taxes and ensuring proper

permit inspections.) The enforcement officer's message was clear: If a city goes through the hassle of writing a new ordinance, why should anyone without a permit be allowed on these sites?

At the end of the day, the antagonistic system — this sharing economy Wild West in place today — simply does not work for city governments to enforce their laws, does not help legitimate hosts compete with "bad actors," and, ultimately, does not allow Airbnb and other short-term rental companies to live up to their own rhetoric of "belonging everywhere."

Rental units need to be fairly treated as a business, regulations need to be tailored to each city's unique situation, and enforcement needs to hold everyone accountable. Whether in Silicon Valley or Main Street USA, the old adage is still true: Good fences make good neighbors.

Jeffrey Goodman is an urban planner and graphic designer based in New Orleans. His work focuses on the sharing economy, community participation, and data-driven regulation. He has contracted with both the city of New Orleans and Airbnb, and advised researchers on short-term rentals in San Francisco, Portland, New Orleans, and New York. Contact him through JBGoodman.com.

Rent Your Driveway

By Kristen Pope

Rooms to rent on Airbnb, VRBO, and other sites aren't the only things up for grabs in many urban neighborhoods. Another hot commodity going to the highest bidder: parking spaces.

Innovative app developers came up with a solution to this dilemma by creating a slew of apps to rent out spaces to parking-hungry drivers. However, app designers soon discovered a hitch: It was illegal in many locations.

Most of these early apps and parking space brokers worked on the premise that a driver about to leave their public, on-street parking space would log on and let other app users know the location of the soon-to-be-vacant spot, giving another user first dibs (for a fee) on snagging the spot. The new parker's fee, typically between \$5 and \$30, would be split between the departing motorist and the app company.

Since many of these apps were essentially renting out public, on-street parking spaces, municipalities worked quickly to block them. In San Francisco the big players were MonkeyParking, Sweetch, and ParkModo, and the city attorney sent several such apps

cease-and-desist letters in 2014, threatening to fine drivers up to \$300 and the companies up to \$2,500 per violation. The letters also noted a lawsuit was imminent if the apps continued operation in the city.

Then a new — legal — wave of apps came to the city, including SpotHero, ParqEx, and ParkWhiz, allowing people to rent or exchange private parking spaces, including those in parking garages. Paul Rose, chief spokesperson for the San Francisco Municipal Transportation Agency, notes these transactions aren't a concern if they don't impinge on public safety.

"Any [safety] concerns will come out of blocking the right of way, preventing people from walking on the sidewalks, or if parking going on in a driveway causes people to walk out into the street," he says.

However, the transaction itself isn't an issue for the agency. "[If] they're leasing spaces that are a part of private property, that's not something that we would necessarily get involved in," Rose says.

Likewise, Boston officials aren't too concerned about apps that rent out private property. Public property, however, is another matter. In 2014, the city passed an ordinance effectively banning the Haystack app, which let users notify other users — who paid a fee — when they were about to leave a public parking space. The app claimed it was in the business of exchanging information rather than selling public property, but the city disagreed.

However, as long as apps comply with city regulations, they're not a problem, according to the Boston Press Office, which said, "Generally, parking apps that allow a private property owner to rent his or her parking space facilitate a private transaction that does not implicate the city's rules and regulations."

Portland, Oregon, has a far more restrictive policy than Boston or San Francisco. Its zoning rules deem residential neighborhoods — all single-family and most multifamily zones — unfit for many types of commercial activity, including renting out parking spots.

However, Jill Grenda, supervising planner for Portland's Bureau of Development Services, notes that enforcement is driven by complaints. "Like any other zoning violation, it's a complaint-driven enforcement system," she says. "So the city wouldn't know about it unless a grumpy neighbor called our code enforcement line and said, 'My neighbor has different people parking in their driveway every single day, and I know because I live next door. Can you come and investigate?'"

Kristen Pope is a Jackson, Wyoming-based freelance writer and editor who writes about planning, science, conservation, and the outdoors, among other topics. Visit her at kepope.com.



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Vacation Rentals & Glenwood Springs

City Council

Thursday, March 7 2019



Moratorium Background

City Council instituted moratorium on new Vacation Rental Permits, effective November 16-March 14. During that time Council asked staff to conduct thorough public engagement and research on the topic. That included the following:

Public Engagement

Online Survey: Available for 2.5 Months (Closed Feb. 15th)

Public work session: Held January 16, 2019

Research

Tax Information on Glenwood Springs Vacation Rentals

Demographics of Current Vacation Rental Owners

Colorado Municipal Regulation Comparison

Map of rentals

Glenwood Springs HOA analysis

Best Practices

Impact on housing prices

Police Complaints

Glenwood Housing Stock

Staff time

Compliance Regulation Contract Companies



Definitions

☞ Vacation Rental:

☞ The rental of property for a period of time less than thirty (30) consecutive days. Includes STR and ATR categories.

☞ Short Term Rental (STR):

☞ The rental of an entire dwelling unit for monetary consideration for a period of time less than thirty (30) consecutive days.

☞ Accessory Tourist Rental (ATR):

☞ The rental for monetary compensation of not more than one (1) bedroom for transient lodging to guests in those residential dwelling units that contain a minimum of two (2) bedrooms and are owner-occupied or occupied by a resident manager.



Vacation Rental Program Background

☞ Vacation Rental Permits were first instituted in 2012

☞ In 2015, an additional Category for “Accessory Tourist Rental” was added.

☞ Vacation Rentals have grown in number since 2013 exposing new community issues for Council to address.

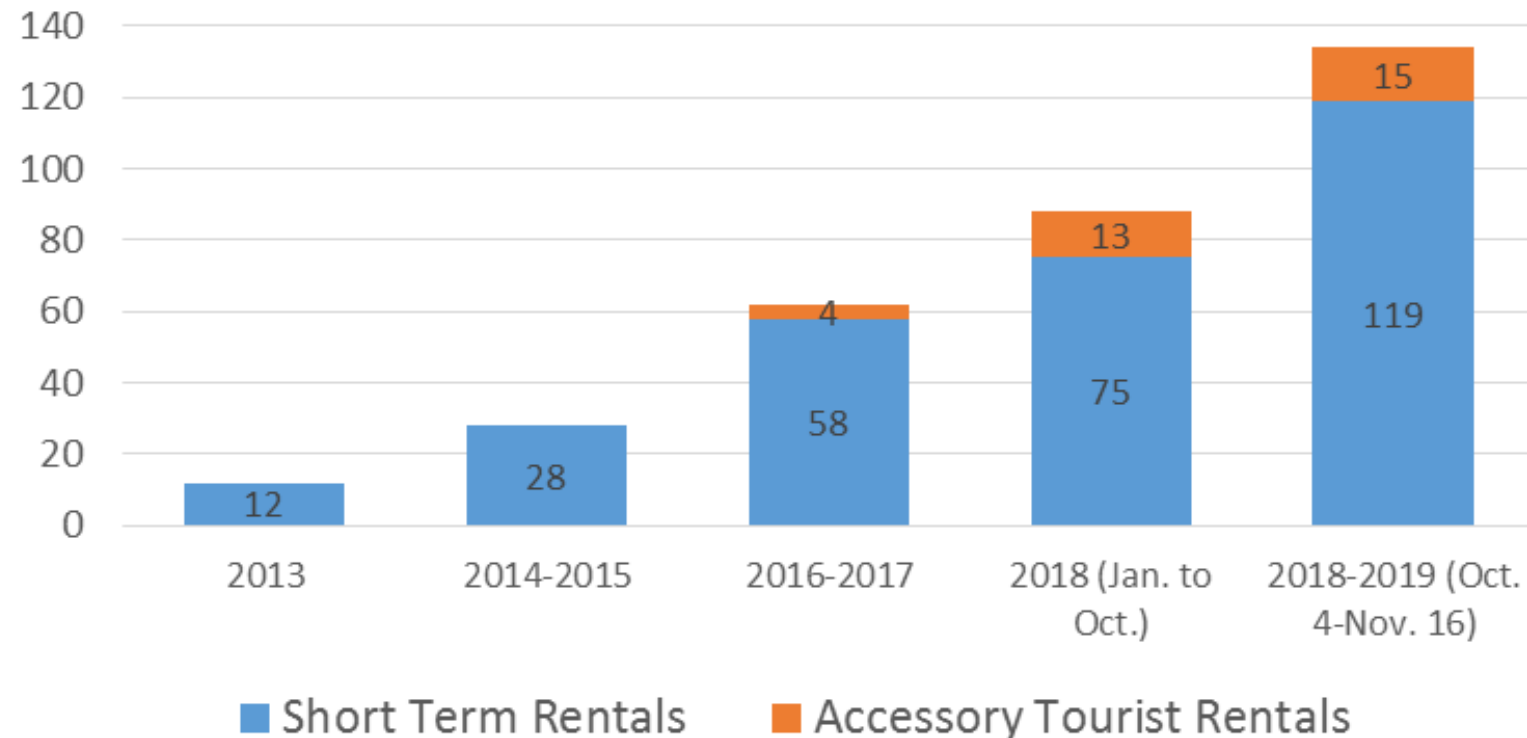
☞ Currently there are **134** Permitted Vacation Rentals within Glenwood Springs municipal boundary



Growth of Vacation Rental Permits

2 Year Permit Cycle	Short Term Rentals	% Increase previous year		Accessory Tourist Rentals	% Increase previous year
2013	12				
2014-2015	28	(16)	133%		
2016-2017	58	(30)	107%	4	
2018 (January to October)	75	(17)	30%	13	225%
2018-2019 (Oct. 4-Nov. 16)	119	(44)	59%	15	15%

Total Permitted Rentals 2019	134
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PUBLIC ENGAGEMENT

1. Survey
2. Public Meeting



Survey

œ482 Respondents

œ390 Glenwood Residents (80%)

œ32 Glenwood Employees

œ57 Outside Glenwood Interest

œ75% of Glenwood Resident Respondents have lived in Glenwood for 6 or more years.

œ86% identify as owning their dwelling.

œ19% of respondents own or operate a Vacation Rental currently.

œ60% of respondents live in a neighborhood with vacation rentals.



Public Meeting

56 People in attendance

A few **common concerns** were raised by participants across several management strategy discussions:

- ❧ Impact on available housing for locals;
- ❧ Impact on availability of affordable housing for locals;
- ❧ Impact on City feel and sense of community; and
- ❧ Consistent regulations/treatment across long- and short-term rentals, bed & breakfasts and hotels (fairness across).



Survey and Public Meeting Results

Allowance and Permits

- ☞ Allow both types of Vacation Rentals
- ☞ Require a Permit

Permit Fee

- ☞ Annual Fee
- ☞ \$100-\$300

Multifamily Building Limitations

- ☞ Limit number of units that can be vacation rentals to 10% of total units.

Building Inspections and Occupancy

- ☞ Require buildings inspections and set occupancy.

Numerical Limits

- ☞ Survey says: YES 50%, NO 34%
- ☞ Public meeting says: YES 46%, NO 54%

Owner Occupancy Requirement

- ☞ Survey YES 45%, NO 42%
- ☞ Public meeting YES 43%, NO 57%

Neighbor Notification

- ☞ Survey only: Require neighbor notification for new vacation rental applications in the immediate area.

Clear Results

Less Clear Results



Starting Point for Actions

Item

1. **Permit Fee**

City Council Resolution

2. **Building Inspections and Occupancy**

City Council Resolution

Building Dept. Recommendation

Fire Department Recommendation

3. **Multifamily Building Limitations**

Text Amendment Recommendation

4. **Numerical Limits**

Text Amendment Recommendation

5. **Violations and Penalties**

Text Amendment Recommendation

Additional Topics

Neighborhood Notification

Parking



Research

- œ Map of rentals

- œ Colorado Municipal Regulation Comparison

- œ Police Complaints

- œ Glenwood Housing Stock

- œ Previous Discussions and Actions by City Council

- œ Recommendations from Commissions and Departments

- œ Building

- œ Fire

- œ Housing

- œ Tax Collection information

- œ Demographics of Current Vacation Rental Owners

- œ Glenwood Springs HOA analysis

- œ Best Practices

- œ Impact on housing prices

- œ Staff time

- œ Compliance Regulation

- Contract Companies (Not in Staff Report)



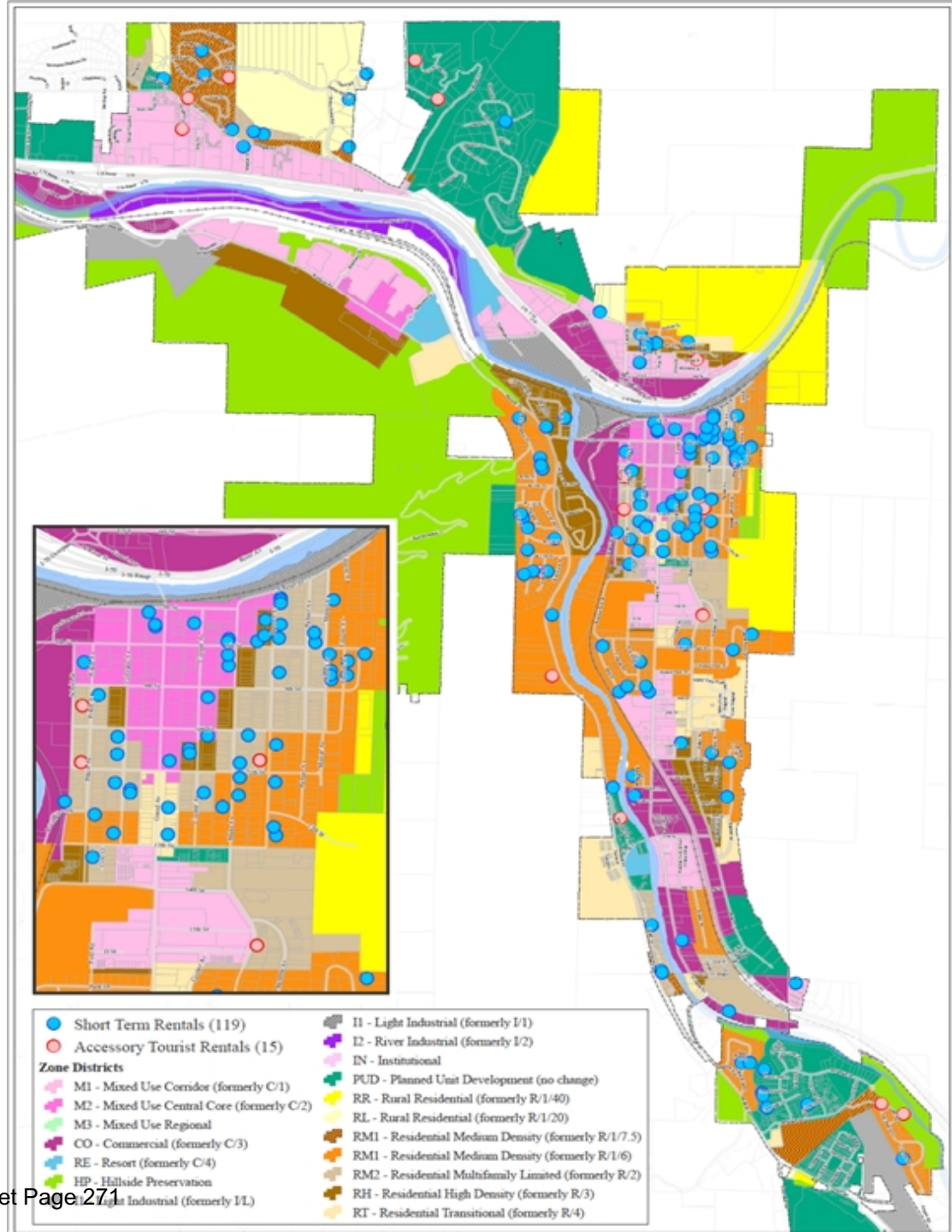
List of Staff Report Exhibits

- A. Map of Glenwood Springs Permitted Rentals
- B. Public Engagement and Research (Unabridged)
- C. Survey Results
- D. Leniency Scale of Municipal Regulations
- E. Municipal Vacation Rental Matrix
- F. Public Meeting Summary
- G. Housing Commission Recommendation
- H. Building Department Memo
- I. Fire Department Memo
- J. Resolution 17-54 Vacation Rental Affidavit and Violation Schedule
- K. International Property Maintenance Code
- L. Staff Report and Minutes from 3-12-2018 City Council (MF and ADU changes discussion)
- M. Police Complaints
- N. Ordinance 11-2018
- O. Old Vacation Rental Permit Application with Building Inspection
- P. Best Practice Papers and Articles





Map of Permitted Vacation Rentals in Glenwood Springs with Zoning Designations



Leniency Scale of Municipal Examples

****Information pulled from multiple sources and is not comprehensive in each category.**

ISSUE	RESTRICT	BALANCE	ENCOURAGE
Allowance & Limits	Not Allowed	Allowed but Limited	ALLOWED
	<u>Morrison, CO</u> <u>Moab, UT</u> (except at previously established) <u>Teton County, WY</u>	<u>Crested Butte</u> : 2 Categories, one primary residence with 60 night limit, and one limited to 30% housing stock <u>Boulder/Denver/Lyons</u> : Primary Residence <u>Durango</u> : 1/block face + zone limits <u>Telluride</u> : Zoning Limitations of frequency & duration <u>Green Mountain Falls</u> : 10% of Housing Stock (60) <u>Georgetown</u> : 7% of each ward housing units <u>Estes Park</u> : 588 permit limit	<u>Snowmass Village</u> <u>Frisco</u> <u>Carbondale</u> <u>Aspen</u> <u>Silverthorne</u> <u>GLENWOOD SPRINGS</u> : No limits by number or zoning
Fee	\$250 Annually and up	\$75-200 Annually	Business License fee or less than \$50 annually
	<u>Crested Butte</u> : \$750 Annually <u>Georgetown</u> : \$500/\$250 Renewal <u>Durango</u> : \$750 Land Use Permit	<u>Blue River</u> : \$200 one time/ \$75 renewa <u>Breckenridge</u> : \$175 annual/Admin fee <u>Boulder</u> : \$130/\$105 renewal <u>Telluride</u> : \$165 +\$22/bedroom annual <u>Estes Park</u> : \$200 +\$50/bedroom <u>Lyons</u> : \$175/ \$50 Renewal <u>Clear Creek County</u> : \$250 one time fee	<u>Denver</u> : \$25 annually <u>Silverthorne/ Frisco/Avon/Aspen</u> : Business License only <u>GLENWOOD SPRINGS</u> : One-time \$110, business license
Additional Tax	Excise Tax Funds Affordable Housing		
	<u>Crested Butte</u> : Additional %5 tax <u>Telluride</u> : Additional %5 tax		
Building Inspection	Building Inspection every year with occupancy limits	Initial Building Inspection, affidavit upon renewal	No Building Inspection
	<u>Georgetown</u> : Annual Inspection <u>Crested Butte</u> : Inspection required to obtain permit and renewal.	<u>Estes Park</u> : Initial inspection <u>Breckenridge</u> : Inspection upon complaint, affidavit <u>Durango</u> : Inspection with Land Use Application <u>Clear Creek County</u> : Initial inspection	<u>Vail</u> : Self certify requirements <u>Lyons</u> : Affidavit self certifying safety standards <u>Boulder</u> : Life Safety Compliance verification form (Both of these Cities require Primary Res) <u>GLENWOOD SPRINGS</u> : No building inspection
Residency Requirement	Primary Residency Required	Some Residency Requirements	No Residency Requirement
	<u>Boulder</u> <u>Lyons</u> : 9 month Residency required <u>Telluride</u>	<u>Crested Butte</u> : No limit to Primary Residence Permits, Limit to Non Primary Residence Permits Packet Page 272	<u>Carbondale</u> <u>Aspen</u> <u>Frisco</u> <u>Snowmass</u> <u>GLENWOOD SPRINGS</u> : No residency requirement

Violations	Revocation	Fine Structure	Basic Municipal Fine Structure		
	<u>Georgetown</u> : Revocation after 3 violations in 1 year <u>Green Mountain Falls</u> : 3 violations in 1 year <u>Crested Butte</u> : Violation penalty is revocation with 2 year suspension. <u>Vail</u> : 3 violations in 1 year, revoked for two years	<u>Breckenridge</u> : Fine Structure and Temporary License Revocation 1st: Suspension 30 days, \$200 Fine in lieu 2nd: Suspension 60 days, \$500 Fine in lieu 3rd: Suspension 90 days, \$999 Fine in lieu 4th+: Suspension 1 year, no fine in lieu	<u>Telluride</u> GLENWOOD SPRINGS: up to \$1,000 penalty, revocation of permit possible		
Violation Response Time	Maximum Response Time	24 Hour Availability to Respond	No Response Time Requirement		
	<u>Vail</u> : 30 Minutes, Agent must reside in 60 miles <u>Breckenridge</u> : 60 Minutes <u>Lyons</u> : 60 Minutes (Responsible Agent must be within 60 miles) <u>Estes Park</u> : (Code states "Immediate" response, no amount of time)	<u>Durango</u> : 24 hour Agent, If no response, penalty <u>Clear Creek County</u> : 24 Hour Agent, Must reside within 1 hour from vacation rental property	GLENWOOD SPRINGS		
Complaint System	Dedicated Vacation Rental Complaint Line		Standard Code Enforcement		
	<u>Breckenridge</u> : STR HELPER, nuisance management system <u>Boulder</u> : Rental Housing Licensing Code Violation Line and Online submittal <u>Vail</u> : Online Reporting Portal		GLENWOOD SPRINGS		
Parking	OFF STREET PARKING REQUIRED	Parking Plan Submittal	No Parking Requirement		
	<u>Estes Park</u> : 2 minimum off street, except Downtown <u>Durango</u> : 1 per Bedroom onsite <u>Green Mountain Falls</u> : Onsite Parking Plan required <u>Clear Creek County</u> : 1 space per Bedroom	<u>Lyons</u> <u>Green Mountain Falls</u> <u>Crested Butte</u> : Over 10 Occupancy requires onsite parking	<u>Estes Park</u> <u>Frisco</u>	<u>Georgetown</u> <u>Avon</u>	<u>Breckenridge</u> <u>Boulder</u> GLENWOOD SPRINGS: No extra parking required
Neighbor Notification	Adjacent Property Mailing	Duplex Only	No Notification		
	<u>Georgetown</u> : 300 Foot Owners <u>Crested Butte</u> : 100 foot owners <u>Durango</u> : 150 Foot Owners <u>Green Mountain Falls</u> : 150 foot owners <u>Estes Park</u> : 100 Foot Owners	<u>Vail</u> 	<u>Carbondale</u> <u>Telluride</u> <u>Aspen</u> <u>Silverthorne</u>	<u>Boulder</u> <u>Blue River</u> <u>Avon</u> <u>Snowmass</u>	<u>Denver</u> <u>Breckenridge</u> <u>Lyons</u> GLENWOOD SPRINGS: No notification
Accessory Dwelling Units	ADU Vacation Rentals Prohibited	One Vacation Rental per Property (Either ADU or Main)	No Regulation		
	<u>Estes Park</u> : Lots with ADU's cant have Vacation Rental <u>Lyons</u> : ADU VR not allowed, Owner occupancy of ADU <u>Glenwood Springs</u> : No Vacation Rental in ADU	<u>Boulder</u> : Either ADU or Main Dwelling can be rental, not both	<u>Carbondale</u> <u>Breckenridge</u> <u>Lyons</u>	<u>Blue River</u> <u>Avon</u> <u>Snowmass</u>	<u>Silverthorne</u>
Occupancy	Maximum People per unit	ICC Regulations (Bedroom Sq. Ft/Common area per Sq. Ft)	No Occupancy Limitation		
	<u>Estes Park</u> : Max 8 <u>Lyons</u> : Max 8 <u>Durango</u> : 3 persons per parking spot OR 2/bedroom plus 1 <u>Crested Butte</u> : 10, unless parking provided <u>Boulder</u> : Up to 4 Family Members, + 2 <u>Clear Creek County</u> : Max 9 people, unless over 2 acres	<u>Breckenridge</u> <u>Snowmass Village</u> <u>Summit County</u> : 1 person/300 square feet <u>Eagle County</u> : 1 person/300 square feet <u>Park City, UT</u> : 75 sq ft/bedroom + 50 sq ft min per person GLENWOOD SPRINGS: Occupancy per ICC	<u>Frisco</u> <u>Georgetown</u> <u>Telluride</u>		



Tool Box Combination

Community approaches to regulation vary depending on the tools they choose. The tools for limitation, Caps, buffers, parking, and residency requirements, usually dictate how strict the rest of the regulations are. Examples include:

☞Crested Butte

- ☞Primary Residence permits have no numerical limit.
- ☞Non-Primary Residence permits capped at 30% housing stock
- ☞Parking required for exceeding 10 person occupancy

☞Boulder, Denver, and Lyons

- ☞Primary Residence requirement
- ☞No building inspection
- ☞Lower application fees

☞Telluride

- ☞Zoning limitations
- ☞Residential zones limited by frequency (alternative residency)
- ☞3 times a year for maximum of 29 days annual cumulatively

☞Durango

- ☞Cap by zone district
- ☞Distance buffer
- ☞NO residency requirement
- ☞Parking requirement

Comments and Recommendations

Building Department Memo

- Reinstitute inspections

Fire Department Memo

- Reinstitute building inspections
- Add Fire inspections

Housing Commission Recommendation

- Reinstitute Building Inspections
- Recurring Application Fee
- No change to Multifamily Limit
- Consider a Numerical Limit
- Violation and Penalty Schedule

Police Chief

- Police Complaint list
- Comments summarized in staff report.



Planning and Zoning Commission Recommendations

1. **Permit Fee**

CITY COUNCIL RESOLUTION

Recommend an initial permit application fee of \$300 and a \$150 renewal fee every other year coinciding with the two year vacation rental permit.

1. **Building Inspections and Occupancy**

Recommend requiring a building inspection at time of application and at renewal every other year.

1. **Multifamily Building Limitations**

ORDINANCE CODE AMENDMENT

Recommend reducing the percentage of units that can be vacation rentals in a single-owner multifamily building to ten (10) percent.

1. **Numerical Limits**

Recommend imposing a numerical cap on Short-Term Rental permits equal to (a) 10% of the City's total housing stock or (b) one short-term rental permit for every block face or for every 500 linear feet where regular block face measurement does not apply, whichever is less.

1. **Violations and Penalties**

Recommend implementing a violation schedule of a fine of \$250 for the first offense and a fine of not less than \$100 and up to \$1,000 for each subsequent offense.

1. **Revocation of Permit**

Recommendation of a text amendments to Title 070.010.080(e) to add the following language: except as provided elsewhere in this code.



Planning and Zoning Commission Discussion

Other Topic Areas without Recommendation

1. **Parking**

- a. Discussion around complaints and comments from survey.

2. **Neighborhood notification**

- a. Discussion around what it would accomplish and how comments would be processed.
- b. May contribute to neighborhood conflict
- c. Idea of “Good Neighbor” pamphlet handout

3. **Owner occupancy and minimum residence requirement**

- a. Discussion on absentee ownership and impact
- b. Somewhat discussed in the “limit” topic area





City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Receipt of Minutes from the February 21, 2019 and March 7, 2019 Regular Meetings

Action Requested:

Department: City Clerk

Presented By:

Background Info:

Issues:

Staff Recommendation:



MINUTES
CITY OF GLENWOOD SPRINGS
REGULAR CITY COUNCIL MEETING
FEBRUARY 21, 2019
101 W. 8TH STREET
6:00 P.M.

5 Roll Call

Mayor Mike Gamba called the meeting to order at 6:00 p.m. Present at roll call: Shelley Kaup, Rick Voorhees, Todd Leahy, Mike Gamba, Steve Davis, Jonathan Godes and Jim Ingraham.

Also present were Debra Figueroa, City Manager; Karl Hanlon, City Attorney; Steve Boyd, COO; Jenn Ooton, Assistant City Manager, Economic and Community Development Director; Catherine Mythen Fletcher, City Clerk; Terry Wilson, Police Chief; Terri Partch, City Engineer; Robin Millyard, Public Works Director; Matt Langhorst, Assistant Public Works Director

6 Pledge of Allegiance

Mayor Gamba led in the Pledge of Allegiance

7 Agenda Changes

Item 11E was moved off consent agenda to be considered separately

8 Conflict of Interest Disclosure

Councilor Godes-Had a conflict with Item B of the Consent Agenda and would not be taking a vote on the Consent Agenda

9 Citizens Appearing Before Council (for items not on the Agenda-comments limited to 3 minutes)

Mark Gould, Gould Construction-Gave an update on the 7th Street project they were working on and reassured Council they would meet the completion deadline

Don Gillespie-Shared concerns about parking in the center of Cooper Avenue, he also spoke about doing rock mitigation before or during the South Midland Project

10 Council Comments

Mayor Gamba-Commented that Lisa Langer, Director of Tourism on the Tourism and Promotion board, told council that Buzzfeed put out a list of 18 Top Family Vacation Destinations in the United States and Glenwood Springs was ranked number 1. Also, Walton Foundation did a study and ranked Glenwood Springs as the 16th most micro-dynamic area.

11 Consent Agenda

A. Approval of Bid BD2019-006, Tandem Dump Truck

- B. Ordinance No. 1, Series of 2019; An Ordinance of the City of Glenwood Springs, Colorado, Amending the Cardiff Glen Planned Unit Development (PUD) (SECOND READING)
- C. Ordinance No. 5, Series of 2019; An Ordinance of the City of Glenwood Springs, Colorado, Repealing Section 010.020.071 to the Municipal Code, Revoking the Authority of the City Council and the City Manager to Temporarily Suspended Enforcement of Portions of the Municipal Code (SECOND READING)
- D. Approval of Ride Glenwood Re-Branding Proposal
- ~~E. Resolution 2019-10; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Adopting Downtown Parking Permit Policies~~
- F. IGA related to Downtown Bathrooms
- G. Planning and Zoning Commission appointment
- H. Resolution 2019-11; Authorizing and Supporting Application of the Fishing is Fun Grant from Colorado Parks and Wildlife for the Two Rivers Shoreline Project
- I. Resolution 2019-12; Authorizing and Supporting the Application for FMLD Grant for Water, Roadway and Drainage Redesign Within Cedar Crest Subdivision
- J. Receipt of Minutes of the February 7, 2019 Regular Meeting

Councilor Ingraham moved, seconded by Councilor Kaup to approve the consent agenda

Motion passed

Councilor Godes abstained

ACTIONS AND/OR PRESENTATIONS

12 Resolution 2019-9, A Resolution of the City Council of the City of Glenwood Springs, Colorado, Moving Forward Together US EPA Area Wide Plan

- A. Resolution 2019-9, A Resolution of the City Council of the City of Glenwood Springs, Colorado, Moving Forward Together US EPA Area Wide Plan

Jenn Ooton presented to Council that Stromberg Garrigan and Associates since 2017 had been developing an implementation plan to revitalize the brownfields located along the Colorado and Roaring Fork Rivers in the City's core, including the 5-acre site of the City's decommissioned wastewater treatment plant. The Moving Forward Together Plan was funded primarily by a \$200,000 EPA Brownfield Area-Wide Planning grant.

Mayor Gamba opened the item for public comment.

Don Gillespie-Suggested that this area be an open public recreation area and to not privatize it, possibly keeping residents from accessing it.

Richard Votero-Explained that other Cities, who have water fronts, were working on uncovering them from being so over developed and reminded Council that the river was an important asset.

Michael Blair-Stated that although at first he thought a private development would be the best option, after some thought and discussion with others he too felt that Council should make it public and open.

Clarke Anderson-Stated that residents are interested in finding a balance of connecting the river to the downtown.

Dean Moffat-Expressed that the City was missing a step of master planning and should take a look at where it wants to go in the future.

Mayor Gamba closed public comment.

Councilor Ingraham moved, seconded by Mayor Pro-Tem Leahy, to approve Resolution 2019-9 the Area Wide Plan and proceed with Request for Qualifications

Motion passed unanimously

11E Resolution 2019-10; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Adopting Downtown Parking Permit Policies

Chief Wilson spoke to Council about the updates to the downtown parking policy that were discussed with City Council at a work session on November 15, 2018 and at the January 3rd Council meeting. Based upon these discussions, staff updated downtown parking policies with the intent of City Council approving the policies by resolution.

Mayor Gamba opened the item for public comment.

Brad Handcock-Expressed his concerns with this plan and asked if there was a different solution other than a fee for residents

Michael Blair-Explained variances to property code, waiting 20-30 years for the improvement district to come up with the money for a parking structure, and employees taking up spaces in the evening were all contributing to the lack of parking downtown

Mayor Gamba closed public comment.

Mayor Pro-Tem Leahy moved, seconded by Councilor Davis, to approve Resolution 2019-10

Ayes: Davis, Gamba, Leahy, Voorhees

Nays: Ingraham, Godes, Kaup

Motion passed

13 Thompson Divide

A. Thompson Divide

Mike Pritchard from Thompson Divide Coalition described how previous City Councils have supported the Thompson Divide Coalition. However, it has been several years since this issue has been raised with City Council. The Thompson Divide Coalition was requesting a Letter of Support from the City Council.

Mayor Gamba opened the item for public comment.

The following people were in support of supporting the Letter for the Thompson Divide Coalition:

- Dawn Randolph
- Richard Voteros
- Dean Moffet
- Paula Stepp
- Judy Fox-Perry

Mayor Gamba closed public comment.

Councilor Kaup moved, seconded by Councilor Davis, to support a letter of support for Thompson Divide

Motion passed unanimously

14 Approval of 7th Street Construction Management for Boundaries Unlimited

A. Approval of 7th Street Construction Management for Boundaries Unlimited

Matt Langhorst presented to Council that on January 3, 2019 City Council awarded the 7th Street construction to Gould Construction. It was requested that Council approve the construction management services contract with Boundaries Unlimited in the Not to Exceed amount of \$125,000.

Mayor Gamba Opened the item for public comment and no comments were noted. Mayor Gamba closed public comment.

Mayor Pro-Tem Leahy moved, seconded by Councilor Voorhees, to approve the Construction Management contract with Boundaries Unlimited in the not to exceed amount of \$125,000

Motion passed unanimously

15 Ordinance No. 7, Series of 2019; Vacating a Utility Easement on 3116 South Grand Avenue

A. Ordinance No. 7, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs Vacating a Utility Easement Located on 3116 South Grand Avenue

Robin Millyard explained to Council that the City previously acquired via plat a utility easement across Lot 17, Block 3, of the Valley View Farm Subdivision, that it has never used ("Platted Easement"). In 1988 the City tried to vacate this platted easement and replace it with a utility easement that was already in place over Lot 17 for a future underground connection ("Proposed Easement"). In 1988 the City passed an ordinance vacating the Platted Easement upon dedication to the City of the Proposed Easement. However, the Proposed Easement was not timely dedicated to the City, and the ordinance was invalidated by its own terms. The City had connected to an existing line along South Grand Avenue and installed facilities and needed an easement to accommodate the new installation. Ordinance 2019-7 vacated both easements upon the dedication to the City of the easement necessary to accommodate the installed facilities.

Mayor Gamba opened the item for public comment and no comments were noted. Mayor Gamba closed public comment.

Councilor Godes moved, seconded by Councilor Kaup, to approve Ordinance No. 7, Series of 2019; Vacating a Utility Easement on 3116 South Grand Avenue

Motion passed unanimously

16 Hanging Lake Professional Service Agreement with H2O Ventures

A. Hanging Lake Professional Services Agreement with H2O Ventures

Debra Figueroa spoke about how the Forest Service was attempting to mitigate damage to the trail and overcrowding during peak hiking season at Hanging Lake. Visitors would be required to purchase a ticket to hike the lake and would ride a shuttle to and from the trail head. Staff issued a Request for Qualifications that was awarded to H2O Ventures, a partnership between a local adventure company and transportation service.

Mayor Gamba Opened the item for public comment.

The following people expressed their concern about the contract and how it would impact other small shuttle businesses:

- Patrick Drake, Blue Sky Adventures
- Sheila Markovitz

- Robert Kadu
- Rob Novel

Mayor Gamba closed public comment.

Councilor Godes moved, seconded by Councilor Voorhees, approve the Hanging Lake Professional Service Agreement with H2O Ventures.

Motion passed unanimously

Mayor Gamba called for a 5 minute break at 8:57pm

17 Landfill Business Plan

A. Landfill Operating Plan

Matt Langhorst presented that the City was preparing to take over landfill operations beginning on April 1, 2019. Staff added information to the operating plan and wanted to provide Council with an update.

18 Board and Commission Appointments

A. Board and Commission Appoints for Tourism, Planning and Zoning, Financial Advisory Board

Financial Advisory Board had one open seat and one applicant.

Councilor Godes moved, seconded by Mayor Pro-Tem Leahy, to appoint Charlie Willman to the Financial Advisory Board

Motion passed unanimously

Planning and Zoning Commission had two regular and two alternate seats available.

Tourism and Promotion Board had one open seat from the restaurant business, one open seat from the lodging industry, and two seats open for applicants with or without a financial interest in the industry.

Councilor Kaup moved, seconded by Mayor Pro-Tem Leahy, to appoint Sumner Schachter, Ingrid Wussow, Carolyn Cipperly, and Dean Kinkel to the Planning and Zoning Commission, and appoint Suzanne Stewart, Scott Dyer, Kristina Clary, and Sharon Brady to the Tourism and Promotion Board

Motion passed unanimously

19 Leslie Bethel Memorial Designation

A. Leslie Bethel Memorial Designation

Debra Figueroa explained that Leslie Bethel worked to improve Downtown Glenwood Springs for a large portion of her career. Her vision for our community has changed and revitalized Downtown Glenwood Springs for many years to come. City Council expressed a desire to memorialize Ms. Bethel's dedication to downtown.

Mayor Gamba opened the item for public comment and no comments were noted. Mayor Gamba closed public comment.

Councilor Davis moved, seconded by Councilor Ingraham, to name the under-bridge area as Bethel Plaza and have a plaque prepared that describes her involvement downtown and placed by the time capsule

Motion passed unanimously

20 Report from City Administration

- A. City Manager – Rock scaling would be happening on South Midland
- B. City Attorney
- C. Correspondence Incoming/Outgoing

Councilor Godes moved, seconded by Councilor Voorhees to move into executive session at 9:54pm

Motion passed Unanimously

21 Executive Session to Conduct a Conference with the City Manager and City Attorney for the Purpose of Discussing the City's Purchase, Acquisition, Lease, Transfer or Sale of Real Property; Determining Positions Relative to Matters That May be Subject to Negotiations, Developing Strategy for Negotiations, and Instructing Negotiators; and to Conduct a Conference with the City Attorney to Receive Legal Advice in Accordance with C.R.S. 24-6-402(4)(a), (b) and (e), related to Hanging Lake and potential litigation regarding haul routes and Ross

Executive session adjourned at 10:25pm

22 Adjournment

The meeting was adjourned at 10:26pm



MINUTES
CITY OF GLENWOOD SPRINGS
REGULAR CITY COUNCIL MEETING
MARCH 7, 2019
101 W. 8TH STREET
6:00 P.M.

6 Roll Call

Mayor Mike Gamba called the meeting to order at 6:00 p.m. Present at roll call: Shelley Kaup, Rick Voorhees, Todd Leahy, Mike Gamba, Steve Davis, Jonathan Godes and Jim Ingraham.

Also present were Debra Figueroa, City Manager; Karl Hanlon, City Attorney; Steve Boyd, COO; Jenn Ooton, Assistant City Manager, Economic and Community Development Director; Catherine Mythen Fletcher, City Clerk; Hannah Klausman, Senior Planner; Jessica Bowser, Assistant City Engineer; Terri Partch, City Engineer; Matt Langhorst, Public Works Director; Brian Smith, Parks and Recreation Director; Trent Hyatt, Senior Planner

7 Pledge of Allegiance

Mayor Gamba led in the Pledge of Allegiance

8 Agenda Changes

Item 16 was moved up to follow the consent agenda with the expectation that the item would be tabled to a future council meeting

9 Conflict of Interest Disclosure

11 Citizens Appearing Before Council (for items not on the Agenda-comments limited to 3 minutes)

Miles Rowvig-Explained that he and his wife, after many years of offering long term rentals, decided to instead offer short term vacation rentals and felt this service helped families, that were larger, have somewhere inexpensive to stay

Bonnie Kranovil, Arts Council-Gave an update about the Arts Council and how they paid off the debt that was accumulated prior to the Center for the Arts closing in 2017

10 27th Street Update

Bryana Starbuck and Jessica Bowser gave an update on the progress of the 27th Street Bridge project

12 Council Comments

Councilor Kaup – Thanked everyone that applied for a City Board and/or Commission and reminded the public that there were still open seats and encouraged all to apply

Councilor Voorhees – Commented on how remarkable it was for the Arts Council to retire \$60,000 in debt from the prior Arts Council. He also commented on reconsidering the \$50 parking fee downtown.

13 Consent Agenda

- A. Excavator Purchase for Landfill
- B. Tourism and Promotion Board Fund Reserves Request to City Council
- C. First Amendment Intergovernmental Agreement for Parking Lot and Common Area Maintenance
- D. Resolution 2019-13; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Adopting the City of Glenwood Springs Noxious Weed Management Plan
- E. Ordinance No. 7, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs Vacating a Utility Easement Located on 3116 South Grand Avenue (SECOND READING)
- F. Bid Award for Police Vehicles

Councilor Voorhees moved, seconded by Councilor Kaup to approve the consent agenda

Motion passed unanimously

ACTIONS AND/OR PRESENTATIONS

16 Vacation Rentals

Hannah Klausman explained that in November of 2018, City Council voted to enact a 4-month moratorium on new vacation rental applications and directed staff to develop a robust public engagement process to gather information on the topic. The City of Glenwood Springs at the time of the moratorium, had 134 permitted and legal vacation rentals. In addition, City Council requested Staff to compile data related to how the City's program had been operating including growth, tax collection, HOA covenants, and other topics.

- A. Planning Item 02-19 Consideration of Text Amendments to 070.030.030 Accessory Tourist Rentals and Short-Term Rentals and City Council Resolution for Vacation Rental Fees and Permit Procedures
- B. Resolution 2019-14; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Amending Vacation Rental Application Fee and Vacation Rental Permit Application
- C. Ordinance No 9, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Revising Code Provisions to Vacation Rentals (FIRST READING)

Councilor Davis moved, seconded by Councilor Ingraham, to table the Vacation Rental discussion in consideration of resolution and ordinances until the work session on March 21, 2019 and a possible vote on April 4, 2019 at the Regular Council Meeting

Motion passed unanimously

14 Planning Item #29-18 – Iddings/City of Glenwood Springs Enclave Annexation, Comprehensive Plan Future Land Use Map Amendment, and Rezoning (initial City zoning)

Trent Hyatt spoke about that application received from Jim Mason on behalf of Mark Iddings, for the annexation of an enclave parcel located at the southern end of the City. On January 22, 2019, the Planning and Zoning Commission held a public hearing to consider the rezoning and Comp Plan amendment applications and related actions.

- A. #29-18 – Iddings/City of Glenwood Springs Enclave Annexation, Comprehensive Plan Future Land Use Map Amendment, and Rezoning (initial City zoning)
- a. Ordinance No 10, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado Annexing an Enclave into the Municipal Limits (FIRST READING)
 - b. Resolution 2019-15; A Resolution of the City Council of the City of Glenwood Springs, Colorado Amending the Comprehensive Plan
 - c. Ordinance No 11, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado Rezoning an Enclave Property Annexed into the Municipal Limits (FIRST READING)

Mayor Gamba Opened the item for public comment and no comments were noted. Mayor Gamba closed public comment.

Councilor Godes moved, seconded by Councilor Davis, to approve the annexation of an enclave property in Ordinance No 10, Series of 2019 with the recommended findings listed on page 136 of the March 7, 2019 City Council Packet

Motion passed unanimously

Councilor Godes moved, seconded by Councilor Davis, to affirm the recommendations of the Planning and Zoning Commission and approve the comprehensive plan future land use map amendment and Resolution 2019-15 with the recommended findings and conditions listed on page 136 of the March 7, 2019 City Council Packet, however revising the condition for the transfer of right away instead to a public access/utility/maintenance easement

Motion passed unanimously

Councilor Godes moved, seconded by Councilor Davis to affirm the recommendation of the Planning and Zoning Commission and approve the rezoning Ordinance No 11, Series of 2019 with the recommended findings listed on page 137 of the March 7, 2019 City Council packet

Motion passed unanimously

Councilor Godes moved, seconded by Councilor Davis to reimburse the applicant in the amount of \$3000 for expenses incurred during this application process

Motion passed unanimously

15 7th Street Change Order # 01

- A. 7th Street Change order

Terri Partch presented that at the direction of Council, the City Engineering Department had been working with Boundaries Unlimited Inc. developing a change order to extend the 7th St Beautification and Sewer Project along the south side of 7th St from Grand Avenue to Colorado Avenue. Gould submitted change order pricing to the City on February 19th. Gould requested \$157,138.60 to perform the additional sidewalk and curb and gutter removal and replacement, as well as an additional 15 days.

Mayor Gamba opened the item for public comment.

Steve Carver, Hotel Denver & Downtown Development Authority-Expressed that the plan to at least have the pedestrian plaza open from east to west with no vehicular traffic was more desirable than any other option presented.

Jerry Alp-Asked about how emergency vehicles would access the area because the plan looked like it had grass and not a road

Mayor Gamba closed public comment.

Councilor Davis moved, seconded by Councilor Ingraham, to approve Option A for the 7th Street Accelerated Schedule with Sewer

Ayes: Ingraham, Godes, Davis, Gamba, Leahy, Voorhees

Nays: Kaup

Motion passed

17 Resolution 2019-16; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Approving the 2019 Street Plan and Alley Reconstruction Plan

- A. Resolution 2019-16; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Approving the 2019 Street Plan and Alley Reconstruction Plan

Matt Langhorst explained that City Council requested a 10-year plan to reconstruct city streets should funding become available.

Mayor Gamba Opened the item for public comment and no comments were noted. Mayor Gamba closed public comment.

Councilor Kaup moved, seconded Councilor Voorhees moved, to approve Resolution 2019-16 adopting the 2019 Street and Alley Reconstruction Plan

Motion passed unanimously

18 South Canyon Study

- A. South Canyon Study

Brian Smith told Council that David Anderson, Director and Chief Scientist with Colorado Natural Heritage Program, submitted a proposal to compile resource survey on South Canyon. A CNHP botanist and zoologist, along with accompanying CSU field technicians would conduct biological surveys field surveys in early summer and mid to late summer. The purpose of this project was to provide the City with current information on the distribution of rare plants, animals, and plant communities at the South Canyon property. This information was needed for conservation management and planning around improvements for the South Canyon Parklands.

Mayor Gamba Opened the item for public comment.

The following public supported doing the study:

- Ty Richardson
- Craig Amischel
- Jerry Alp

Mayor Gamba closed public comment.

Councilor Voorhees moved, seconded by Councilor Kaup, to approve the South Canyon Study

Ayes: Ingraham, Godes, Davis, Leahy, Voorhees, Kaup

Nays: Gamba

Motion passed

19 Board and Commission Appointments for Art & Culture, Parks & Recreation, River, and Transportation

A. Board and Commission Appointments for Art & Culture, Parks & Recreation, River and Transportation

Parks & Recreation Commission had three regular seats, one alternate seat, and one youth representative seat available and three applications for regular seats, one application for an alternate seat, and one youth representative applicant.

Councilor Godes moved, seconded by Mayor Pro-Tem Leahy, to appoint Andrew Mueller, Laura Speck, Bill Coleman, Chelsea Carnoali, and Aeson Akins to the Parks and Recreation Commission

Motion passed unanimously

The Transportation Board had two regular seats and one alternate seat available and three applicants.

Councilor Godes moved, seconded by Councilor Davis, to appoint Sandy Lowell and Ralph Trapani as regular members, and Charlie Willman as an alternate member to the Transportation Board

Motion passed unanimously

The River Commission had two regular seats and two alternate seats available and five applicants.

Councilor Godes moved, seconded by Councilor Davis, to appoint Ryan Davis and Ashley Moffatt as regular members, and Jared Walter and Elise Osenga as alternate members to the River Commission

Motion passed unanimously

20 Report from City Administration

- A. City Manager – EPA Conference Denver April 23-25
- B. City Attorney – Parks and Wildlife IGA
- C. Correspondence Incoming/Outgoing

21 Adjournment

The meeting was adjourned at 8:45

ORDINANCE NO. 10

Series of 2019

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ANNEXING INTO THE CITY OF GLENWOOD SPRINGS CERTAIN LANDS KNOWN AS PARCEL NUMBERS 2185-272-00-003 and 2185-272-20-001

WHEREAS, the City Council has been presented with a request for the annexation of the real property described and depicted on the Annexation Map attached hereto as Exhibit A and known as Parcel Numbers 2185-272-00-003 and 2185-272-20-001 in Garfield County, Colorado (the “Property”);

WHEREAS, the Property has been entirely contained within the boundaries of the City of Glenwood Springs (the “City”) in excess of three years and is an “enclave” as defined by Colorado statute; and

WHEREAS, pursuant to Section 070.060.040(d) of the Glenwood Springs Municipal Code, annexation of land into the City is a legislative act of City Council and shall comply with C.R.S. § 31-12-101 et seq.; and

WHEREAS, C.R.S. § 31-12-106(1) provides that a municipality may annex an enclave by ordinance without complying with C.R.S. §§ 31-12-104, 31-12-105, 31-12-108 and 31-12-109 if said area has been surrounding by the municipality for at least three years; and

WHEREAS, the notice of the proposed annexation of the Property was published as required by C.R.S. § 31-12-106(1) and C.R.S. § 31-12-108(2); and

WHEREAS, City Council finds that the annexation complies with the Municipal Code and Colorado statute and wishes to annex the Property into the City of Glenwood Springs.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ORDAINS:

Section 1. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. The annexation of the Property is hereby approved, and the Property is annexed to and made part of the City of Glenwood Springs, Colorado.

Section 3. Within thirty (30) days after the effective date of this ordinance, the City Clerk shall file the annexation map and the annexation in the office of the City Clerk of the City of Glenwood Springs and shall record a certified copy of this Ordinance and the annexation map with the Garfield County Clerk and Recorder.

INTRODUCED, READ ON FIRST READING, PASSED, AND ORDERED
PUBLISHED BY TITLE ONLY THIS 7TH DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

ATTEST:

Michael Gamba, Mayor

Catherine Mythen, City Clerk

INTRODUCED, READ ON SECOND READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE
OF SECOND PUBLICATION THIS ____ DAY OF _____, 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

ATTEST:

Michael Gamba, Mayor

Catherine Mythen, City Clerk

ANNEXATION MAP:
IDDINGS & GLENWOOD SPRINGS CONGREGATION OF JEHOVAHS WITNESSESS PROPERTIES

SITUATED IN SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF GARFIELD, STATE OF COLORADO.

ANNEXATION DESCRIPTION

A PARCEL OF LAND SITUATED IN THE NE1/4NW1/4 OF SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN; SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE COMMON BOUNDARY OF THE PARCEL DESCRIBED IN THE DEED RECORDED NOVEMBER 18, 1985 AS RECEPTION NO. 366662 (BOOK 679 PAGE 50), LOT 1, KINGDOM HALL SUBDIVISION RECORDED APRIL 15, 2002 AS RECEPTION NO. 601233, A TRACT OF LAND DESCRIBED IN THE QUIT CLAIM DEED RECORDED APRIL 16, 2002 AS RECEPTION NO. 601425 THESE DOCUMENTS FROM THE GARFIELD COUNTY RECORDS AND THE RIGHT-OF-WAY FOR GARFIELD COUNTY ROAD NO. 163; THENCE ALONG THE COMMON BOUNDARY OF SAID TRACT (REC. NO. 601425) AND PARCEL (REC. NO. 366662) THE FOLLOWING TWO (2) COURSES:

- 1) S.28°47'00"W., 25.68 FEET;
- 2) S.61°13'00"E., 80.00 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL (REC. NO. 366662), AN ANGLE POINT ON THE PROPERTY DESCRIBED IN THE QUIT CLAIM DEED RECORDED APRIL 16, 2002 AS RECEPTION NO. 601424, AN ANGLE POINT ON THE PROPERTY DESCRIBED IN THE BOUNDARY LINE ADJUSTMENT AFFIDAVIT RECORDED APRIL 16, 2002 AS RECEPTION NO. 601426 AND A POINT ON THE EASTERLY BOUNDARY OF SAID LOT 1; THENCE LEAVING SAID COMMON BOUNDARY AND ALONG THE COMMON BOUNDARY OF THE PROPERTIES DESCRIBED IN REC. NOS. 601424 AND 601426 AND SAID PARCEL (REC. NO. 366662) THE FOLLOWING TWO (2) COURSES:

- 1) S.61°13'00"E., 220.00 FEET;
- 2) N.28°47'00"E., 18.83 FEET TO THE COMMON BOUNDARY OF SAID PROPERTIES (REC. NOS. 601424 AND 601426), SAID PARCEL (REC. NO. 366662), AND SAID RIGHT-OF-WAY; THENCE LEAVING SAID COMMON BOUNDARY OF SAID PROPERTIES (REC. NOS. 601424 AND 601426) AND ALONG THE COMMON BOUNDARY OF SAID PARCEL (REC. NO. 366662) AND SAID RIGHT-OF-WAY THE FOLLOWING THREE (3) COURSES:

- 1) N.28°47'00"E., 31.17 FEET;
- 2) N.61°13'00"W., 300.00 FEET;
- 3) S.28°47'00"W., 24.32 FEET TO THE POINT OF BEGINNING.

SAID ANNEXATION PARCEL CONTAINS 15,000 SQ. FT. OR 0.344 ACRES, MORE OR LESS.

CERTIFICATION OF OWNERSHIP

KNOW ALL MEN BY THESE PRESENTS THAT MARK IDDINGS BEING OWNER IN FEE SIMPLE OF A PORTION OF THAT REAL PROPERTY DESCRIBED AS THE ANNEXATION PARCEL (REC. NO. 366662) AS DESCRIBED ON THIS PLAT.

OWNER: MARK IDDINGS

STATE OF _____ }
COUNTY OF _____ } SS.

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, A.D. 2019, BY MARK IDDINGS.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

CERTIFICATION OF OWNERSHIP

KNOW ALL MEN BY THESE PRESENTS THAT MARK IDDINGS BEING OWNER IN FEE SIMPLE OF A PORTION OF THAT REAL PROPERTY DESCRIBED AS THE ANNEXATION PARCEL (REC. NO. 601427) AS DESCRIBED ON THIS PLAT.

OWNER: GLENWOOD SPRINGS CONGREGATION OF JEHOVAH'S WITNESSES

BY: _____ AS _____ OF GLENWOOD SPRINGS CONGREGATION OF
JEHOVAH'S WITNESSES

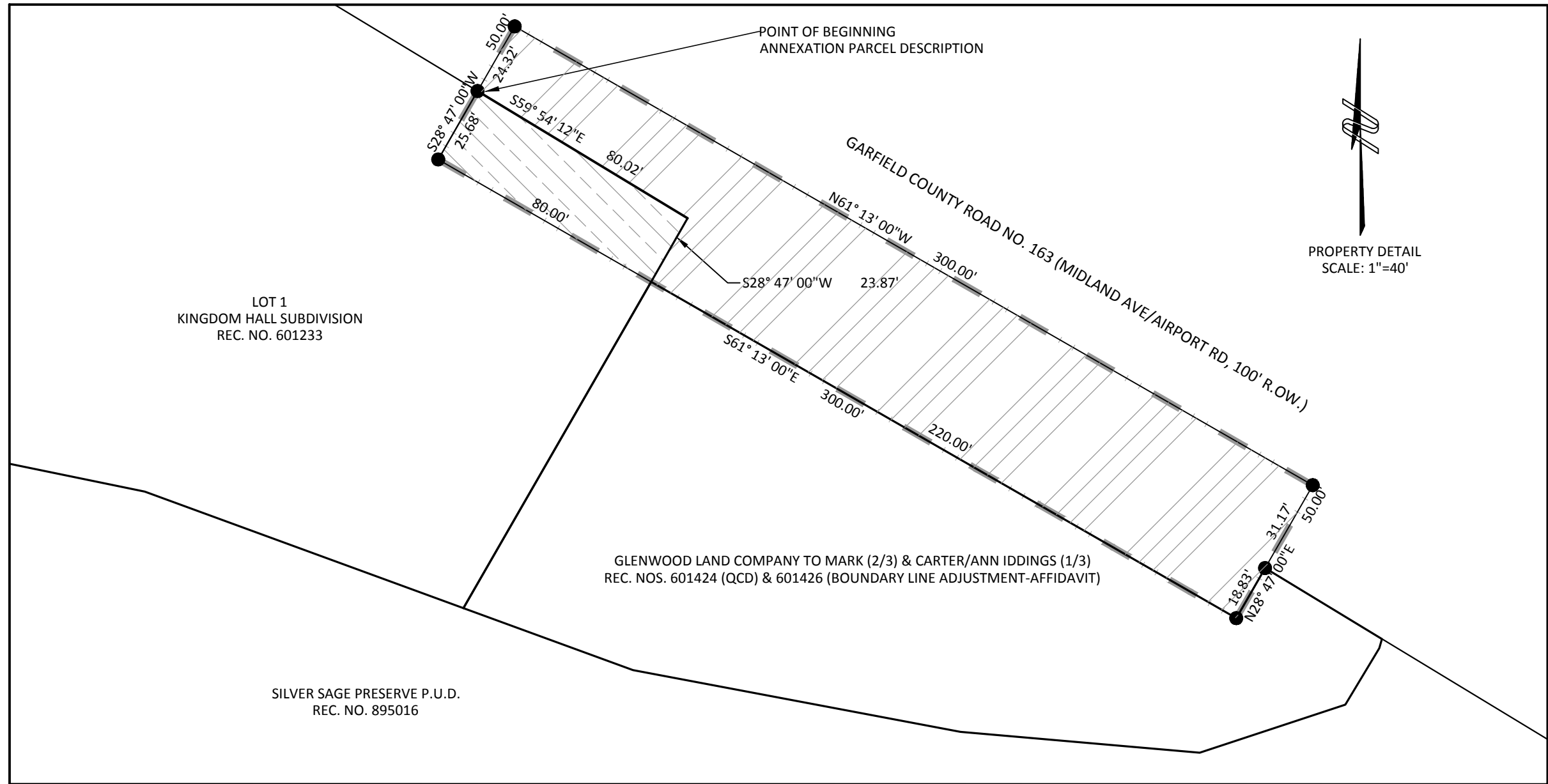
STATE OF _____ }
COUNTY OF _____ } SS.

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, A.D. 2019, BY _____.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC



SOPRIS ENGINEERING - LLC

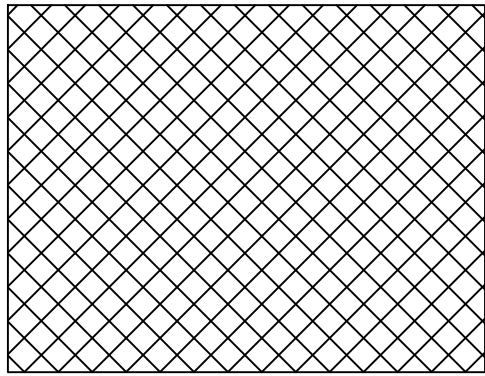
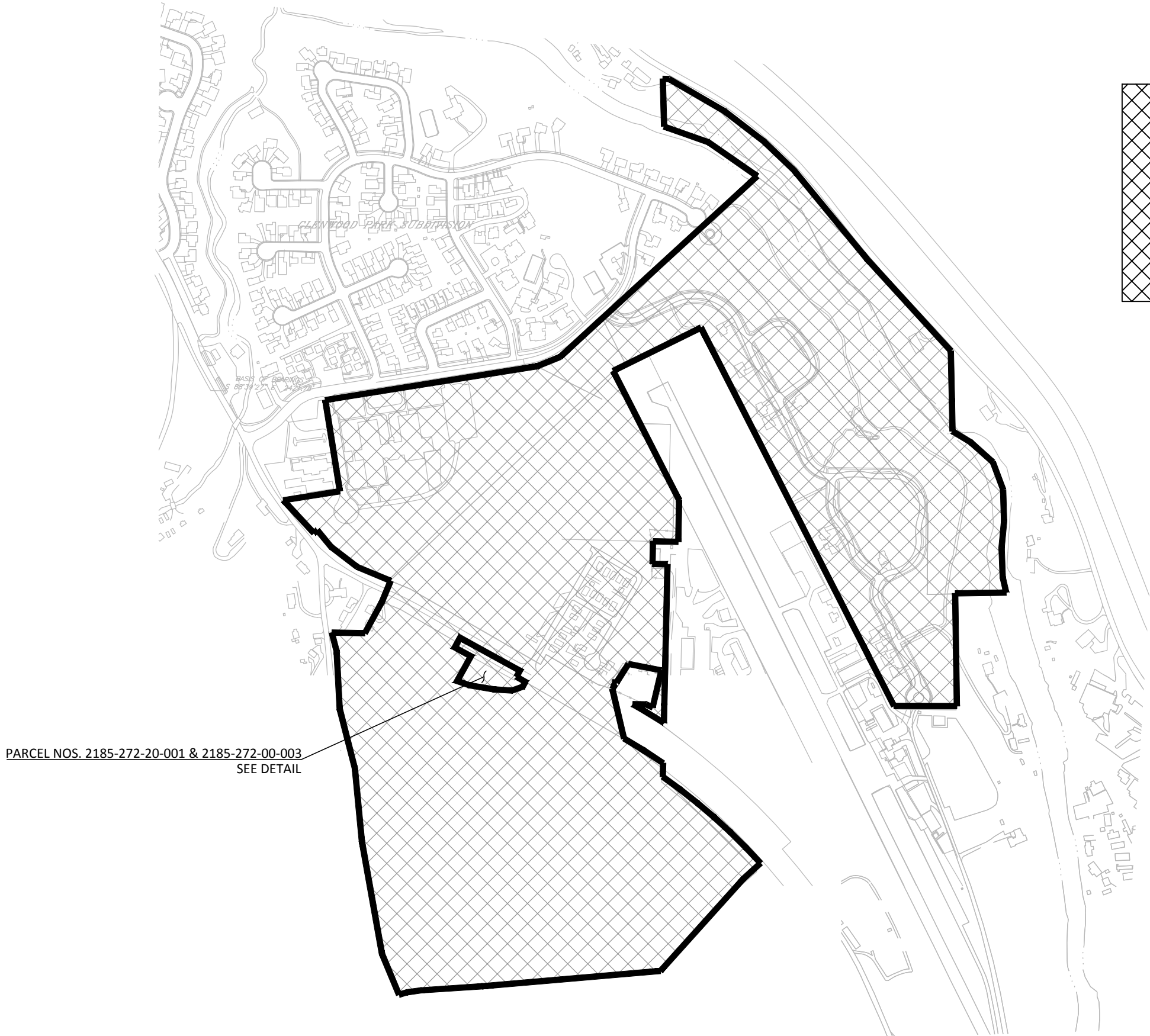
CIVIL CONSULTANTS
502 MAIN STREET, SUITE A3
CARBONDALE, COLORADO 81623
(970) 704-0311 SOPRISENG@SOPRISENG.COM

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

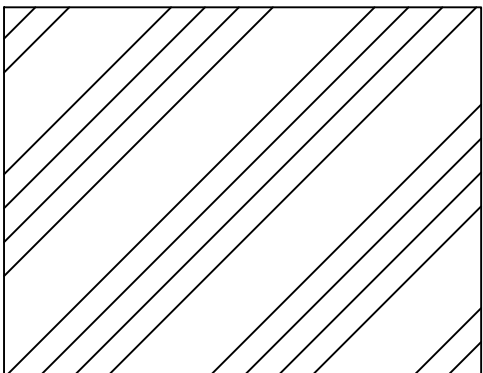
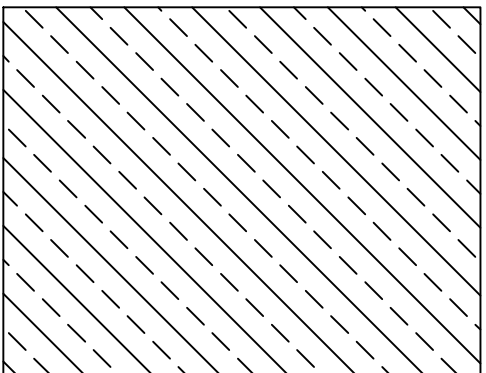
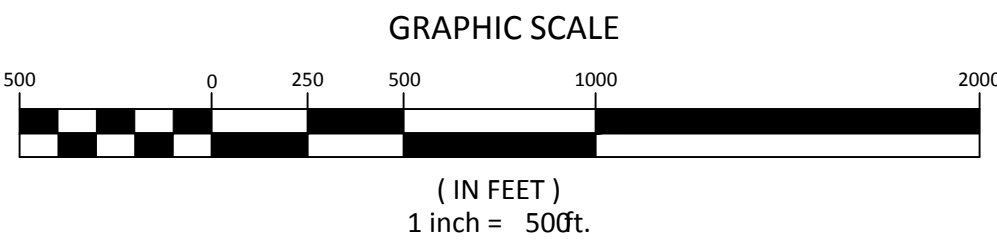
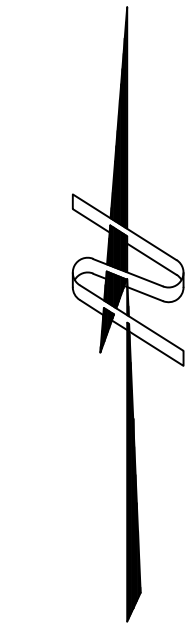
ANNEXATION MAP:

SHEET 1 OF 1

THE PURPOSE OF THIS ANNEXATION MAP IS TO ANNEX THE PROPERTIES LEFT OUT OF THE ANNEXATION MAP RECORDED DECEMBER 30, 1988 AS RECEPTION NO. 398013

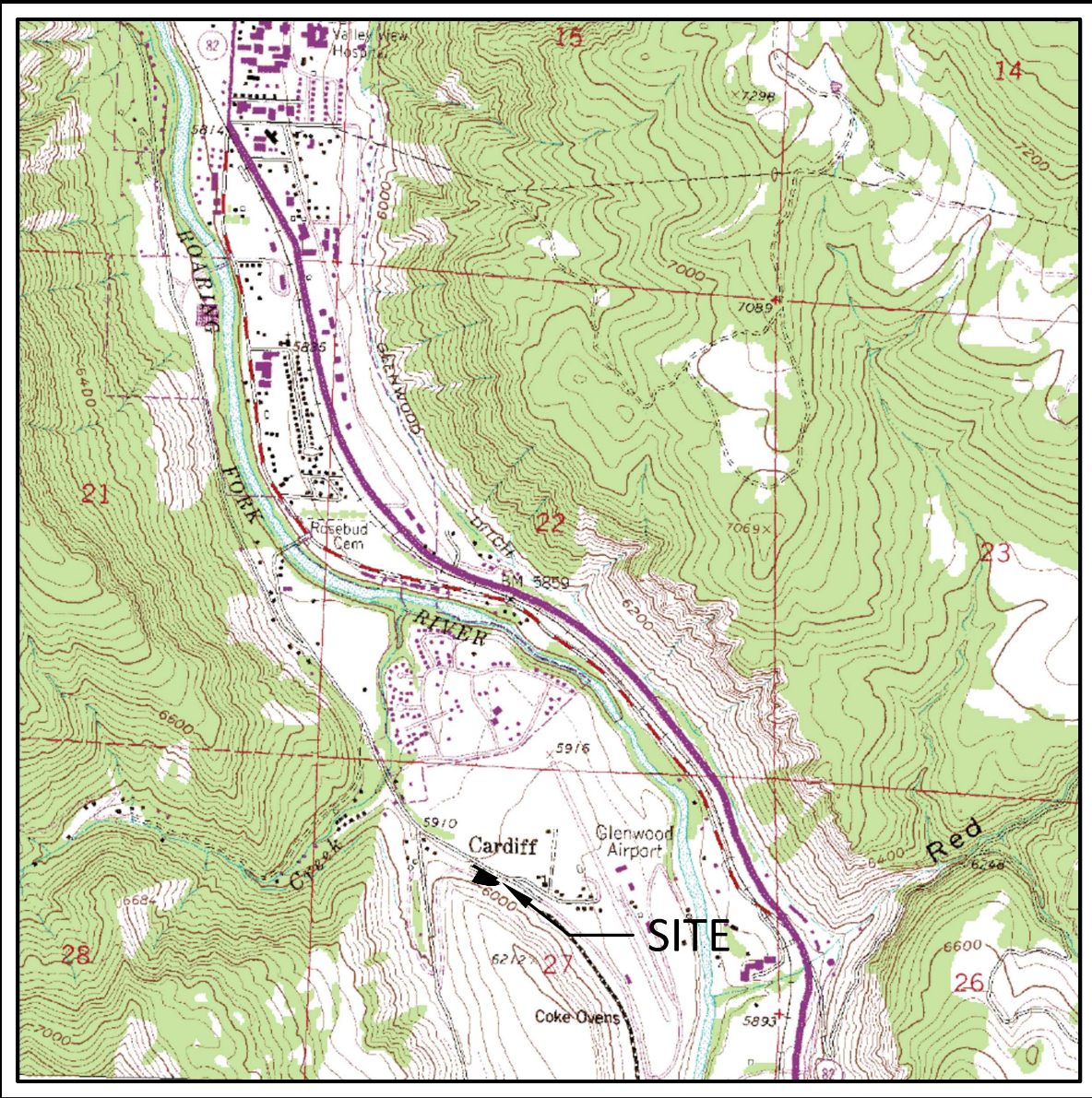


AREA ANNEXED PER MAP RECORDED DECEMBER 30, 1988
AS RECEPTION NO. 398013



PROPERTY DESCRIBED IN QUIT CLAIM DEED FROM IDDINGS TO GLENWOOD LAND COMPANY, LLC APRIL 16, 2002 REC. NO. 601425. A PORTION OF LOT 1, KINGDOM HALL SUBDIVISION (REC. NO. 601233). ENTIRE LOT 1 SOLD TO THE GLENWOOD SPRINGS CONGREGATION OF JEHOVAH'S WITNESSES IN SPECIAL WARRANTY DEED RECORDED APRIL 16, 2002 AS REC. NO. 601427

CONTIGUOUS BOUNDARY WITH THE CITY OF GLENWOOD SPRINGS



VICINITY MAP
SCALE: 1" = 2000'

NOTES

- 1) DATE OF SURVEY: MARCH 20 & 24, 2018.
- 2) DATE OF PREPARATION: DECEMBER, 2018 AND JANUARY, 2019.
- 3) LINEAR UNITS: THE LINEAR UNIT USED IN THE PREPARATION OF THIS PLAT IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
- 4) BASIS OF BEARING: A BEARING OF S 08°43'24" E ALONG EASTERLY RIGHT-OF-WAY OF FOUR MILE ROAD (COUNTY RD. 117) BETWEEN TWO FOUND REBARS AND PLASTIC CAPS (L.S. 27613). THIS IS CONSISTENT WITH THE MONUMENTED LAND AND IMPROVEMENT SURVEY REFERENCED IN NOTE NO. 6. THEREFORE THIS SURVEY HAS BEEN ROTATED 01°06'56" CLOCKWISE FROM THE DEEDS OF RECORD/TITLE DESCRIPTION AND COUNTER-CLOCKWISE 01°11'11" FROM THE CITY OF GLENWOOD SPRINGS DATUM BASED ON A BEARINGS OF N 88°28'00" W ON THE CENTERLINE OF THE 8TH STREET RIGHT-OF-WAY..
- 5) THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SOPRIS ENGINEERING, LLC (SE) TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY AND/OR TITLE OF RECORD, SE RELIED UPON THE PROPERTY INFORMATION BINDER PREPARED BY LAND TITLE GUARANTY COMPANY, ORDER NO. ABS63012620, DATED MARCH 28, 2018 AND DOCUMENTS AND PLATS OF RECORD AS SHOWN IN THE SOURCE DOCUMENTS, HEREON.
- 6) THE ANNEXATION BOUNDARY IS ENTIRELY CONTIGUOUS WITH THE ANNEXATION PARCEL DESRIPTION PER THIS MAP.

SURVEYOR'S STATEMENT

I, GEOFFREY R. KELLER, DO HEREBY STATE THAT THIS ANNEXATION MAP WAS PREPARED BY SOPRIS ENGINEERING, LLC FOR MARK IDDINGS AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

BY: _____
GEOFFREY R. KELLER, L.S. #37997

CLERK AND RECORDER'S CERTIFICATE

THIS ANNEXATION MAP WAS ACCEPTED FOR FILING IN THE OFFICE OF THE CLERK AND RECORDER OF GARFIELD COUNTY, COLORADO, ON THE _____ DAY OF _____, 2019 AND WAS DULY RECORDED IN PLAT BOOK _____ AT PAGE _____ AS RECEPTION NO. _____.

CLERK AND RECORDER OF GARFIELD COUNTY

BY: _____

Exhibit A



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Ordinance No 11, Series of 2019; An Ordinance of the City Council of the City of Glenwood Spring, Colorado Rezoning an Enclave Property Annexed into the Municipal Limits (SECOND READING)

Action Requested: **Action 1 – Rezoning (Ordinance No. 11. Series of 2019)** (initial City zoning) of the Iddings property to Residential High-Density (RH) District and a portion of the Glenwood Springs Congregation of Jehovah Witnesses property to Rural Residential (RR) District.

Department: Economic and Community Development

Presented By: Trent Hyatt, Senior Planner

Background Info: On March 7, 2019, City Council approved the first reading of the subject ordinance. No changes to the ordinance have been made to date.

Issues: None

Staff Recommendation: **Action 1 – Rezoning (Ordinance No. 11. Series of 2019)** (initial City zoning) of the Iddings property to Residential High-Density (RH) District and a portion of the Glenwood Springs Congregation of Jehovah Witnesses property to Rural Residential (RR) District.

Staff recommends **approval** of the second reading of Ordinance No. 11, Series of 2019.

ORDINANCE NO. 11

Series of 2019

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ZONING ANNEXED PROPERTY KNOWN AS PARCEL NUMBERS 2185-272-00-003 and 2185-272-20-001

WHEREAS, by Ordinance No, 10, Series of 19, the City Council of the City of Glenwood Springs annexed into the City real property described and depicted on the Annexation Map attached hereto as Exhibit A and known as Parcel Numbers 2185-272-00-003 and 2185-272-20-001 in Garfield County, Colorado (the “Property”);

WHEREAS, pursuant to Section 070.060.040(d) of the Glenwood Springs Municipal Code, annexation of land into the City is a legislative act of City Council and shall comply with C.R.S. § 31-12-101 et seq., the Municipal Annexation Act of 1965 (the “Act”); and

WHEREAS, C.R.S. § 31-12-115(2) provides that annexed property must be brought under a municipality’s zoning ordinance within 90 days of the annexation of the property; and

WHEREAS, pursuant to the Act and the Municipal Code, a property’s zoning designation must comply with the City’s Comprehensive Plan; and

WHEREAS, by Resolution No. 15, Series of 19, City Council amended the Comp Plan to designate Parcel Number 2185-272-00-003 as Multi-family Residential; and

WHEREAS, the Planning and Zoning Commission held a duly noticed public hearing on January 22, 2019 to consider the zoning designation for the Property and recommended that Parcel Number 2185-272-11-003 be zoned Residential High Density (RH) and that Parcel Number 2185-272-20-001 be zoned Rural Residential (RR); and

WHEREAS, City Council considered the zoning designation for the Property at its duly noticed public meeting on March 7, 2019; and

WHEREAS, based on the Comprehensive Plan as amended by Resolution No. 15, Series of 19, the recommendation of City staff and the Planning and Zoning Commission, and evidence and comments presented at the public meeting, City Council desires to zone the Property as provided herein.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ORDAINS:

Section 1. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. Parcel Number 2185-272-11-003 is hereby zoned Residential High Density (RH) and Parcel Number 2185-272-20-001 is hereby zoned Rural Residential (RR).

Section 3. Pursuant to Section 070.060.040(a)(3)g of the Municipal Code, the Community Development Director shall prepare a revision to the Official Zoning Map for the City of Glenwood Springs to reflect the zoning approved herein and shall record the amendment map and this Ordinance with the Garfield County Clerk and Recorder.

Section 4. Any ordinances or resolutions or parts thereof, which are in conflict with this ordinance, are hereby repealed to the extent of such conflict only.

INTRODUCED, READ ON FIRST READING, PASSED, AND ORDERED
PUBLISHED BY TITLE ONLY THIS 7TH DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

ATTEST:

Michael Gamba, Mayor

Catherine Mythen, City Clerk

INTRODUCED, READ ON SECOND READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE
OF SECOND PUBLICATION THIS ____ DAY OF _____, 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

ATTEST:

Michael Gamba, Mayor

Catherine Mythen, City Clerk

ANNEXATION MAP:
IDDINGS & GLENWOOD SPRINGS CONGREGATION OF JEHOVAHS WITNESSESS PROPERTIES

SITUATED IN SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF GARFIELD, STATE OF COLORADO.

ANNEXATION DESCRIPTION

A PARCEL OF LAND SITUATED IN THE NE1/4NW1/4 OF SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN; SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE COMMON BOUNDARY OF THE PARCEL DESCRIBED IN THE DEED RECORDED NOVEMBER 18, 1985 AS RECEPTION NO. 366662 (BOOK 679 PAGE 50), LOT 1, KINGDOM HALL SUBDIVISION RECORDED APRIL 15, 2002 AS RECEPTION NO. 601233, A TRACT OF LAND DESCRIBED IN THE QUIT CLAIM DEED RECORDED APRIL 16, 2002 AS RECEPTION NO. 601425 THESE DOCUMENTS FROM THE GARFIELD COUNTY RECORDS AND THE RIGHT-OF-WAY FOR GARFIELD COUNTY ROAD NO. 163; THENCE ALONG THE COMMON BOUNDARY OF SAID TRACT (REC. NO. 601425) AND PARCEL (REC. NO. 366662) THE FOLLOWING TWO (2) COURSES:

- 1) S.28°47'00"W., 25.68 FEET;
- 2) S.61°13'00"E., 80.00 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL (REC. NO. 366662), AN ANGLE POINT ON THE PROPERTY DESCRIBED IN THE QUIT CLAIM DEED RECORDED APRIL 16, 2002 AS RECEPTION NO. 601424, AN ANGLE POINT ON THE PROPERTY DESCRIBED IN THE BOUNDARY LINE ADJUSTMENT AFFIDAVIT RECORDED APRIL 16, 2002 AS RECEPTION NO. 601426 AND A POINT ON THE EASTERLY BOUNDARY OF SAID LOT 1; THENCE LEAVING SAID COMMON BOUNDARY AND ALONG THE COMMON BOUNDARY OF THE PROPERTIES DESCRIBED IN REC. NOS. 601424 AND 601426 AND SAID PARCEL (REC. NO. 366662) THE FOLLOWING TWO (2) COURSES:

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- 2) N.61°13'00"W., 300.00 FEET;
- 3) S.28°47'00"W., 24.32 FEET TO THE POINT OF BEGINNING.

SAID ANNEXATION PARCEL CONTAINS 15,000 SQ. FT. OR 0.344 ACRES, MORE OR LESS.

CERTIFICATION OF OWNERSHIP

KNOW ALL MEN BY THESE PRESENTS THAT MARK IDDINGS BEING OWNER IN FEE SIMPLE OF A PORTION OF THAT REAL PROPERTY DESCRIBED AS THE ANNEXATION PARCEL (REC. NO. 366662) AS DESCRIBED ON THIS PLAT.

OWNER: MARK IDDINGS

STATE OF _____ }
COUNTY OF _____ } SS.

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, A.D. 2019, BY MARK IDDINGS.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

CERTIFICATION OF OWNERSHIP

KNOW ALL MEN BY THESE PRESENTS THAT MARK IDDINGS BEING OWNER IN FEE SIMPLE OF A PORTION OF THAT REAL PROPERTY DESCRIBED AS THE ANNEXATION PARCEL (REC. NO. 601427) AS DESCRIBED ON THIS PLAT.

OWNER: GLENWOOD SPRINGS CONGREGATION OF JEHOVAH'S WITNESSES

BY: _____ AS _____ OF GLENWOOD SPRINGS CONGREGATION OF
JEHOVAH'S WITNESSES

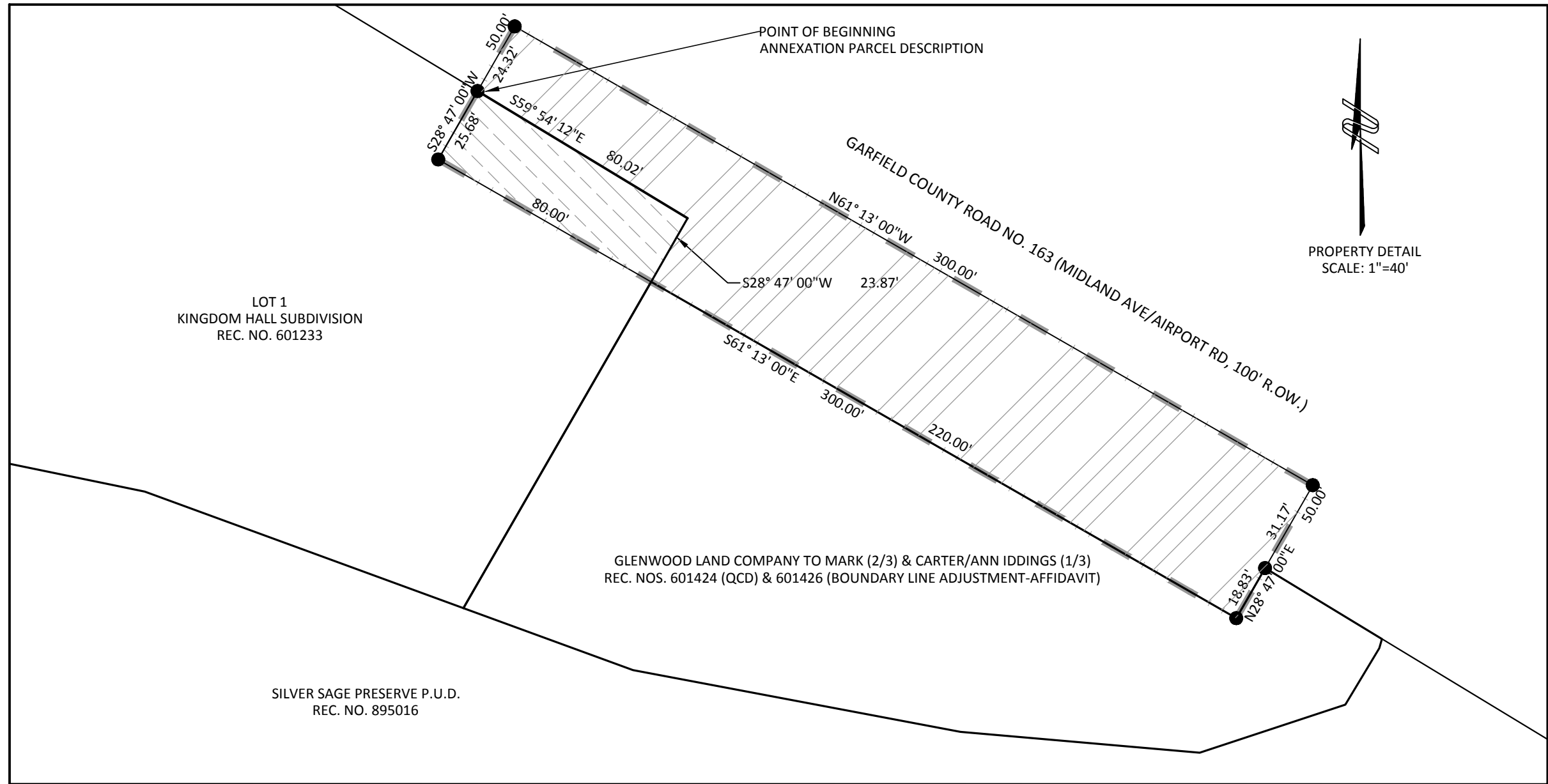
STATE OF _____ }
COUNTY OF _____ } SS.

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, A.D. 2019, BY _____.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC



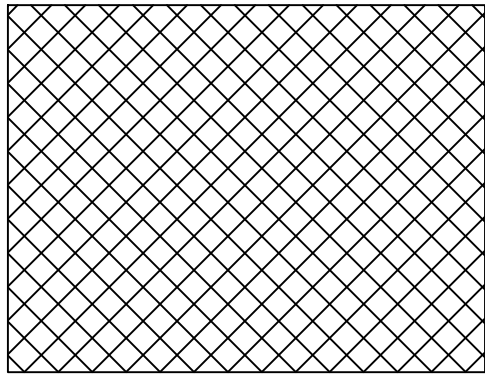
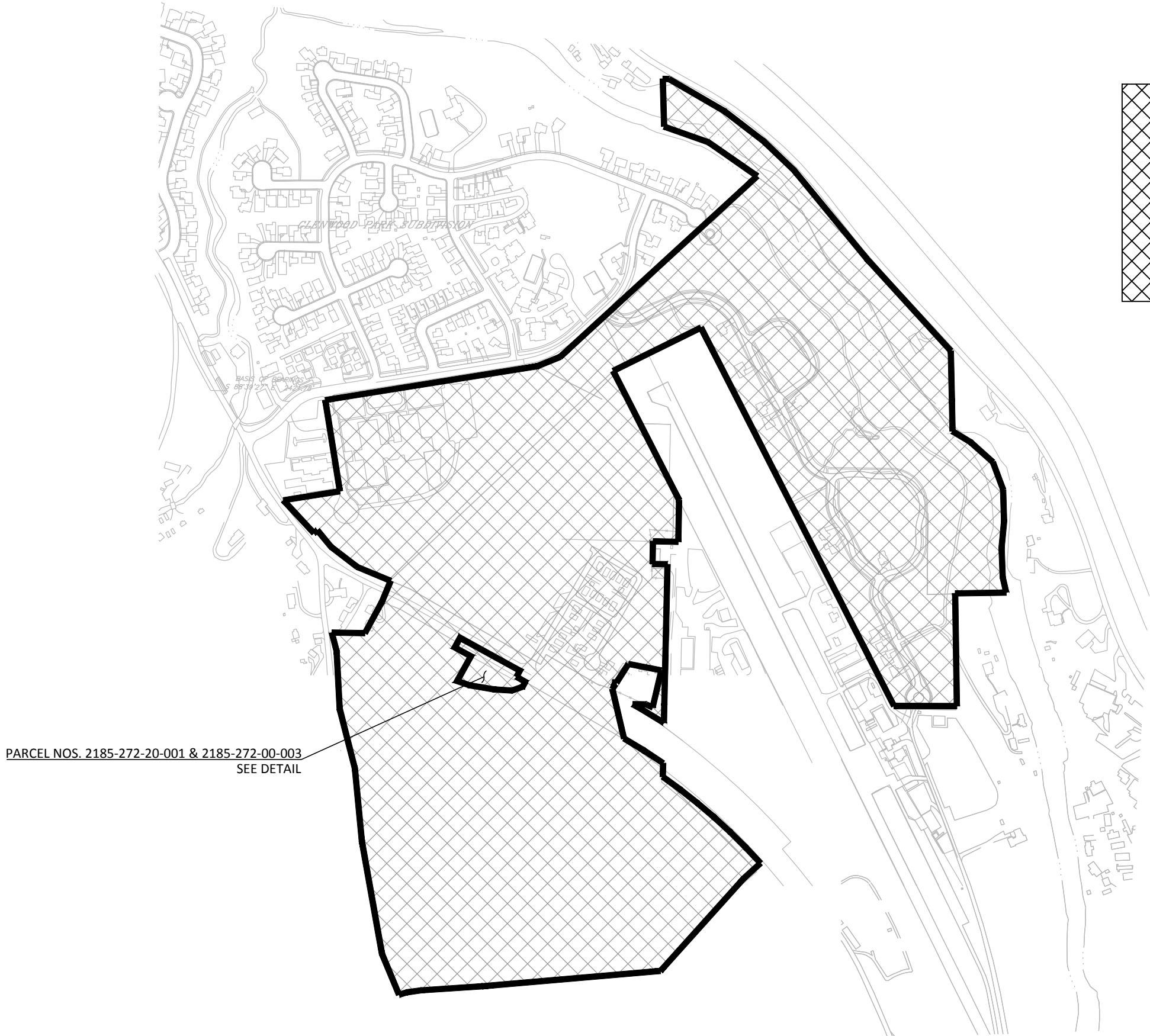
SOPRIS ENGINEERING - LLC

CIVIL CONSULTANTS
502 MAIN STREET, SUITE A3
CARBONDALE, COLORADO 81623
(970) 704-0311 SOPRISENG@SOPRISENG.COM

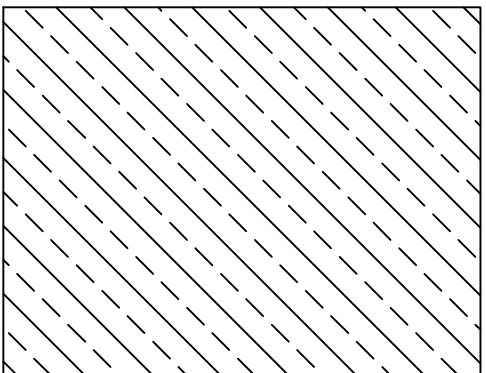
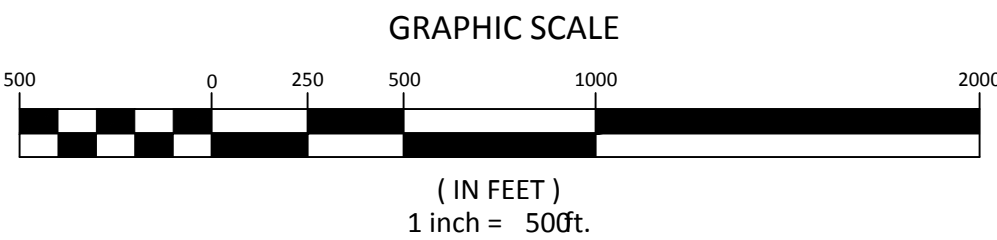
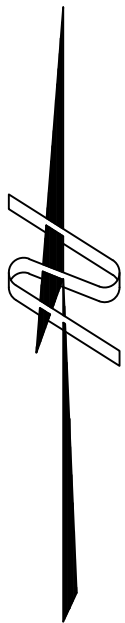
NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

ANNEXATION MAP:

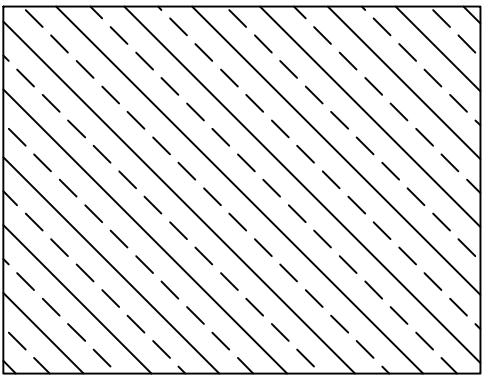
SHEET 1 OF 1
THE PURPOSE OF THIS ANNEXATION MAP IS TO ANNEX THE PROPERTIES LEFT OUT OF THE ANNEXATION MAP RECORDED DECEMBER 30, 1988 AS RECEPTION NO. 398013



AREA ANNEXED PER MAP RECORDED DECEMBER 30, 1988
AS RECEPTION NO. 398013

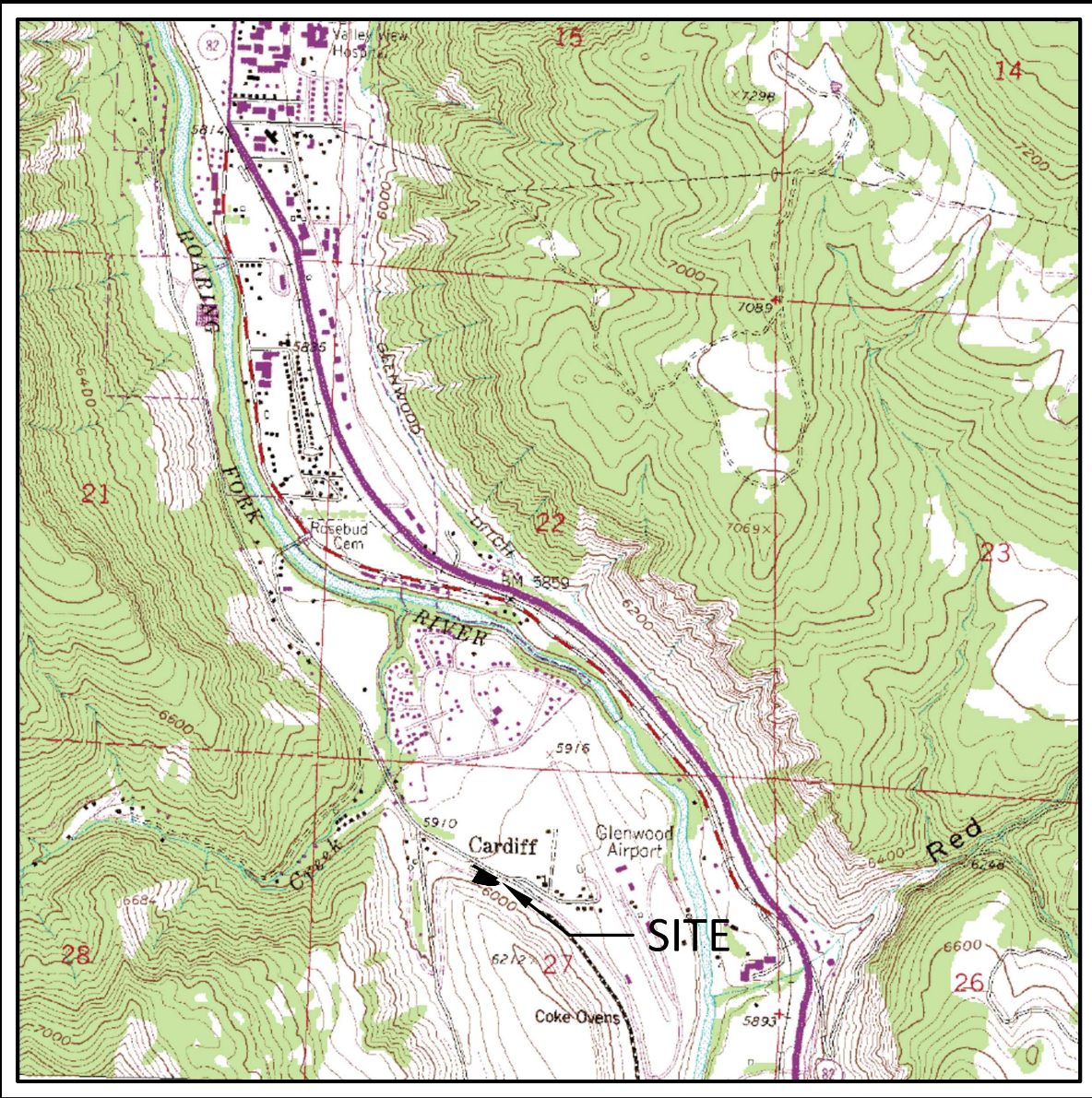


PROPERTY DESCRIBED IN DEED FROM ALPINE BANK TO MARK IDDINGS
NOVEMBER 18, 1985 REC. NO. 366662 (BOOK 679 PAGE 50)
AND
ANNEXATION PARCEL, THIS MAP



PROPERTY DESCRIBED IN QUIT CLAIM DEED FROM IDDINGS TO GLENWOOD LAND COMPANY, LLC
APRIL 16, 2002 REC. NO. 601425. A PORTION OF LOT 1, KINGDOM HALL SUBDIVISION (REC. NO. 601233). ENTIRE LOT 1 SOLD TO THE GLENWOOD SPRINGS CONGREGATION OF JEHOVAH'S WITNESSES IN SPECIAL WARRANTY DEED RECORDED APRIL 16, 2002 AS REC. NO. 601427

CONTIGUOUS BOUNDARY WITH THE CITY OF GLENWOOD SPRINGS



VICINITY MAP
SCALE: 1" = 2000'

NOTES

- 1) DATE OF SURVEY: MARCH 20 & 24, 2018.
- 2) DATE OF PREPARATION: DECEMBER, 2018 AND JANUARY, 2019.
- 3) LINEAR UNITS: THE LINEAR UNIT USED IN THE PREPARATION OF THIS PLAT IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
- 4) BASIS OF BEARING: A BEARING OF S 08°43'24" E ALONG EASTERLY RIGHT-OF-WAY OF FOUR MILE ROAD (COUNTY RD. 117) BETWEEN TWO FOUND REBARS AND PLASTIC CAPS (L.S. 27613). THIS IS CONSISTENT WITH THE MONUMENTED LAND AND IMPROVEMENT SURVEY REFERENCED IN NOTE NO. 6. THEREFORE THIS SURVEY HAS BEEN ROTATED 01°06'56" CLOCKWISE FROM THE DEEDS OF RECORD/TITLE DESCRIPTION AND COUNTER-CLOCKWISE 01°11'11" FROM THE CITY OF GLENWOOD SPRINGS DATUM BASED ON A BEARINGS OF N 88°28'00" W ON THE CENTERLINE OF THE 8TH STREET RIGHT-OF-WAY..
- 5) THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SOPRIS ENGINEERING, LLC (SE) TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY AND/OR TITLE OF RECORD, SE RELIED UPON THE PROPERTY INFORMATION BINDER PREPARED BY LAND TITLE GUARANTY COMPANY, ORDER NO. ABS63012620, DATED MARCH 28, 2018 AND DOCUMENTS AND PLATS OF RECORD AS SHOWN IN THE SOURCE DOCUMENTS, HEREON.
- 6) THE ANNEXATION BOUNDARY IS ENTIRELY CONTIGUOUS WITH THE ANNEXATION PARCEL DESRIPTION PER THIS MAP.

SURVEYOR'S STATEMENT

I, GEOFFREY R. KELLER, DO HEREBY STATE THAT THIS ANNEXATION MAP WAS PREPARED BY SOPRIS ENGINEERING, LLC FOR MARK IDDINGS AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

BY: _____
GEOFFREY R. KELLER, L.S. #37997

CLERK AND RECORDER'S CERTIFICATE

THIS ANNEXATION MAP WAS ACCEPTED FOR FILING IN THE OFFICE OF THE CLERK AND RECORDER OF GARFIELD COUNTY, COLORADO, ON THE _____ DAY OF _____, 2019 AND WAS DULY RECORDED IN PLAT BOOK _____ AT PAGE _____ AS RECEPTION NO. _____.

CLERK AND RECORDER OF GARFIELD COUNTY

BY: _____

Exhibit A



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Resolution 2019- 18; A Resolution of the City Council of the City of Glenwood Springs, Colorado, Authorizing and Supporting the Application for a Grant from the U.S. Department of Agriculture for the Creation of a Revolving Loan Fund to Assist Businesses Install Fire Suppression Systems

Action Requested: Approval of Resolution 2019-18

Department: Economic and Community Development

Presented By: Jennifer Ooton, Assistant City Manager

Background Info: The City's Building and Fire Departments often review initial plans for local businesses that would like to expand their business or change the use in a building. During those reviews the businesses learn during that process that they will have to install a fire suppression system. The systems are expensive, and staff then finds that businesses attempt to find work arounds to avoid installing a sprinkler system or change their business model in order to keep from installing sprinkler systems.

To assist small businesses facing this potential barrier to redevelopment of older building stock, staff would like to pursue a USDA Rural Business Development Grant to assist in establishing a revolving loan fund for these types of building infrastructure improvements. These USDA grants are available to communities outside the urbanized periphery of any city with a population of 50,000 or more. The City would provide a match for the grant of \$30,000, and would be seeking \$50,000 for the fund start up.

Issues:

Staff Recommendation: Approval of Resolution 2019-18

RESOLUTION 2019-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, AUTHORIZING AND SUPPORTING THE APPLICATION FOR A RURAL BUSINESS DEVELOPMENT GRANT FROM THE U.S. DEPARTMENT OF AGRICULTURE FOR THE CREATION OF A REVOLVING LOAN FUND TO ASSIST BUSINESSES INSTALL FIRE SUPPRESSION SYSTEMS.

WHEREAS, the City of Glenwood Springs is a political subdivision of the State of Colorado, and therefore an eligible applicant for a grant awarded by the U.S. Department of Agriculture; and

WHEREAS, the City of Glenwood Springs has submitted a Rural Business Development Grant (RBDG) Application to the U.S. Department of Agriculture (USDA), requesting a total award of Fifty Thousand Dollars (\$50,000.00); and

WHEREAS, the RBDG is a competitive grant designed to support targeted technical assistance, training and other activities leading to the development or expansion of small and emerging private businesses in rural areas that have fewer than 50 employees and less than \$1 million in gross revenues; and

WHEREAS, business expansion in Glenwood Springs into older building stock often requires the installation of fire suppression systems; and

WHEREAS, the cost of a fire suppression system can limit the ability of local businesses to expand their business or change the use in a building; and

WHEREAS, the City Council supports the application for the RBDG and the creation of a revolving loan fund to assist businesses install fire suppression systems if the RBDG is awarded by the USDA.

NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, THAT:

The above recitals are hereby incorporated as findings by the City Council of the City of Glenwood Springs.

Section 1. The above recitals are hereby incorporated as findings by the City Council of the City of Glenwood Springs.

Section 2. The City Council of the City of Glenwood Springs strongly supports the application for the RBDG and the creation of a revolving loan fund for fire suppression systems, and has appropriated matching funds for a grant.

Section 3. The City Council of the City of Glenwood Springs will authorize the expenditure of funds necessary to meet the terms and obligations of any RBDG awarded pursuant to a Grant Agreement with the USDA.

Section 4. If the grant is awarded, the City of Glenwood Springs hereby authorizes the Mayor or Mayor Pro Tem to sign the grant agreement with the USDA.

INTRODUCED, READ AND PASSED THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: WWTF Demolition Asbestos Change Order

Action Requested: Approval of Change Order Number 3 for \$64,383.48 to Gould Construction for additional asbestos removal at the 7th Street WWTF RBC building to complete the demolition portion of the site project.

Department: Public Works

Presented By: Matthew Langhorst, Director Public Works

Background Info: Gould Construction was hired in later 2017 into early 2018 to remove a portion of the old waste water treatment facility located along 7th Street. At that time council authorized \$500,000 worth of the \$1,250,514 million dollar bid to be completed. This was Phase 1 of the overall project which removed the old PSH building and tanks on the east side of the railroad tracks and the lab building and drying beds on the west side of the tracks. This left the site with 4 remaining tanks on the east side of the tracks and the RBC/Administration offices building to be removed. Council approved an \$800,000 budget out of Waste Water to complete this work in 2019, which staff has move forward with. The RBC building was known to have asbestos tile and counter-tops as part of the demotion project along with a tar seal on the roof that needed to be abated prior to demolition. Once the tar seal on the roof was removed it was discovered that the building had a second roof system underneath of the visible roof that had the same asbestos laden material holding it down. This material covers the entire 10,000 square foot roof and is required to be removed prior to demolition of the building.

Issues: The secondary roof system on the RBC building has asbestos coating on it which was not known until a partial demolition of the overlying roof system was completed to remove the known asbestos flashing coating material. This has caused the need to complete a substantial change order to the project, 8.7%, and staff wanted to make Council aware of the CO and the change in timing on the project.

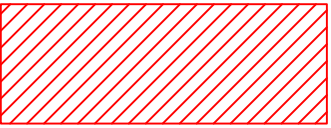
Staff Recommendation: Approval of the change order for \$64,383.48 to Gould to complete additional asbestos abatement on the RBC building roof, Phase 2 of the WWTF demolition project.

Gould Constuction - GWS WWTP Demolition Project
Costs for the Extra Roof Removal at WWTP - GWS

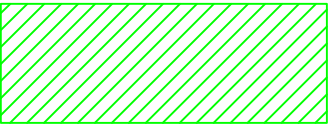
		Novo Tech	Quetzal	ARC
Base Bid	\$	50,880.00	\$ 85,000.00	\$ 72,320.00
Alt for Plywood	\$	1,980.00	\$ 7,500.00	\$ 7,000.00
Total Sub Contract	\$	52,860.00	\$ 92,500.00	\$ 79,320.00
OH & Indirects	15% \$	7,929.00	\$ 13,875.00	\$ 11,898.00
Profit	5% \$	2,643.00	\$ 4,625.00	\$ 3,966.00
Subtotal	\$	63,432.00	\$ 111,000.00	\$ 95,184.00
Bond Add	1.5% \$	951.48	\$ 1,665.00	\$ 1,427.76
TOTAL	\$	64,383.48	\$ 112,665.00	\$ 96,611.76
# of Est. Work Days		17	14+	12
		Did other remediation work for Gould	Asks for 50% Down	

Notes:

1. If tar on concrete roof requires removal, it will be an extra cost.
2. Water and Power will be required for this work. We have assumed that the City will have these services available for this work.

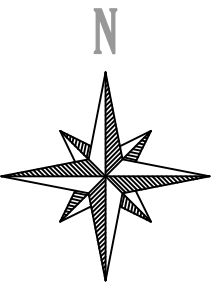


PHASE 2
DEMOLITION



RBC BUILDING
ADD OPTION

MAP NOT TO SCALE



CHANGE ORDER

Order No. 03

Date March 12, 2019

Agreement Date Nov. 27, 2017

NAME OF PROJECT: Wastewater Building Demolition - BD 2017-055

OWNER: City of Glenwood Springs

CONTRACTOR: Gould Construction

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification: Removal of Roof on the RBC / Admin. Building due to asbestos in roofing material

Change to CONTRACT PRICE:

Original CONTRACT PRICE: \$ 500,000.00

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ 1,250,514.00

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (~~decreased~~) by
\$ \$64,383.48

The New CONTRACT PRICE including this CHANGE ORDER will be \$ 1,314,897.48

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (~~decreased~~) by 40 calendar days.

The date for completion of all work will be July 10, 2019 (Date).

APPROVALS REQUIRED:

Approved by Project Manager: _____

Accepted by Contractor: David Hillbrand

Accepted and Approved by Owner: _____

Federal Agency Approval (where applicable): _____



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Intergovernmental Agreement for Public Restroom Installation and Maintenance

Action Requested: Approve the IGA with Garfield County for Public Restroom Installation and Maintenance.

Department: City Administration

Presented By: Debra Figueroa, City Manager

Background Info: At the February 21st City Council meeting, an IGA with Garfield County was approved. County staff ask for clarifications in maintenance responsibilities so staff has amended the draft IGA and is bringing it back for further Council consideration.

Attached to this item are the red-lined changes and a clean copy for approval. The restrooms have been ordered by the DDA.

Issues:

Staff Recommendation:

**INTERGOVERNMENTAL AGREEMENT
FOR PUBLIC RESTROOM INSTALLATION AND MAINTENANCE**

This INTERGOVERNMENTAL AGREEMENT is entered into by and between the BOARD OF COUNTY COMMISSIONERS OF GARFIELD COUNTY, COLORADO (“County” or “BOCC”) and the CITY OF GLENWOOD SPRINGS, COLORADO (“City” or “Council”) (collectively, the “Parties”) for the purpose of defining maintenance responsibilities with respect to the installation of restrooms (the “IGA” or “Agreement”).

RECITALS

A. The County is a body politic and corporate of the State of Colorado whose powers are exercised by the Board of County Commissioners. C.R.S. §§ 30-5-125 and 30-11-103.

B. The City is a Colorado Home Rule Municipality. Colo. Const. art. XX, § 6.

C. The Parties jointly and individually own property in Glenwood Springs, Colorado currently used for common purposes that will benefit from the cooperative maintenance agreements set forth in this IGA.

D. The Parties are authorized and encouraged to enter into such cooperative agreements in the development of public purpose projects by the Colorado Constitution and state statutes. Colo. Const. art. XIV, § 18(2) (a)-(c) and art. XI, § 2; C.R.S. § 29-1-201.

NOW, THEREFORE, in consideration of the mutual covenants and agreements identified, the Parties agree as follows:

AGREEMENT

1. Incorporation of Recitals. The foregoing Recitals are incorporated as if set forth in full.

2. Purpose. The purpose of this IGA is to provide for the installation and maintenance of restrooms in downtown Glenwood Springs on property owned by the City and County.

3. Term. This Agreement shall have an Effective Date of _____, 2019 regardless of the date signed and shall remain in effect as long the City maintains the restrooms, unless sooner terminated by the Parties in accordance with paragraph 8 or by operation of law.

4. Definitions. When used in this Agreement, the following terms shall be defined as stated:

(a) Long-term Maintenance. Long-term Maintenance refers to the level and type of care necessary and appropriate, to ensure the continued safe use of property for its intended purpose.

(b) Short-term Maintenance. Short-term Maintenance refers to the day-to-day and/or seasonal efforts necessary to support the continued use, safety, and enjoyment of a property for its intended purpose, including remediation of vandalism and graffiti or other defacement of the restrooms, based on the resources available to pay for them.

5. Restroom Location. The restrooms shall be located as depicted on the attached Exhibit A.

6. City Responsibilities. In order to maintain the restrooms in the manner desired by the City and County, the City agrees to provide both long term and short-term maintenance, provided the City may contract with third parties to provide such maintenance. If the City fails to provide long and short-term maintenance, as those terms are defined in paragraph 4, and fails to cure any default sent by the County in accordance with paragraph 8(b), the City shall remove the restrooms and restore the location to its original condition at its sole expense.

7. Annual Appropriations. ~~The City's~~All maintenance responsibilities set forth in this Agreement shall be contingent upon the annual appropriation of funds sufficient to perform these duties. This IGA is not intended to, nor does it create a multi-year fiscal obligation as defined by Section 20, Article X of the Constitution of the State of Colorado. The Parties are not under any obligation to make any future apportionment or allocation to this Agreement; however, if the City by their signatures below, both Parties confirm that each has appropriated sufficient funds for the current fiscal year to meet its obligations under this Agreement. If either Party fails to appropriate funds necessary to fulfill the obligations stated in this Agreement in any future year, the City at Party shall immediately notify the County other and this Agreement shall terminate in accordance with paragraph 8+0(c).

8. Termination. This Agreement may terminate prior to expiration under the conditions stated in subparagraphs (a) through (c). Termination shall not relieve a Party from its obligations incurred prior to the termination date.

(a) Without Cause. Either Party may terminate this Agreement, without cause, upon not less than sixty (60) days' written notice, given in accordance with the Notice provisions of this Agreement set forth in paragraph 1720. The terminating Party shall be responsible for removing the restrooms and restoring the location to its original condition at its sole expense.

(b) With Cause. A Party will be considered in default of its obligations under this Agreement if it fails to observe, to comply with, or to perform any term, condition, or covenant contained in this Agreement and such failure continues for thirty (30) days after the non-defaulting Party gives written notice thereof in accordance with paragraph 1720. In the event of default, upon written notice to the defaulting Party, the non-defaulting Party may terminate this Agreement as of the date specified in the notice and may seek relief provided in paragraph 6 or as such other and further relief as may be provided by otherwise provided by law.

(c) By Operation of Law. The Parties' financial participation is subject to annual appropriation and budgeting by each. This IGA is not intended to, nor does it create

a multi-year fiscal obligation as defined by Section 20, Article X of the Constitution of the State of Colorado. Should either party fail to appropriate funds for any fiscal year, this IGA shall terminate by operation of law at the end of the fiscal year.

9. ~~Breach and Notice. If either party fails to perform its respective obligations, the non-breaching party shall provide thirty (30) days' notification of such failure to the breaching party's representative. If the breaching party fails to correct or remedy the breach, the non-breaching party may terminate this IGA by written notification to the other party's representative and shall have no other further obligations under this IGA.~~

9. Indemnity/No Waiver of Governmental Immunity Act. The BOCC and the Council acknowledge that each is subject to the constitutional prohibitions against indemnification set forth in Colo. Const. art XI, § 1. Neither can agree to indemnify the other. Nothing herein shall be interpreted as a waiver of governmental immunity to which the BOCC and City may otherwise be entitled under the provisions of C.R.S. § 24-10-101, *et seq.*, as amended.

10. No Third-Party Beneficiary. No third party may enforce or rely upon this IGA.

11. Amendment and Assignment. This IGA may be amended by the Parties solely through a written agreement signed by both Parties. This IGA may not be assigned by either Party.

12. Counterparts. This IGA may be executed in counterparts, each of which shall be deemed an original, and all of which, when taken together, shall be deemed the same instrument. Facsimile or photographic signatures shall be effective for all purposes.

13. Governing Law, Venue and Survival. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this IGA. Should either party institute legal action for enforcement of this IGA, venue of such action shall be in Garfield County, Colorado.

14. Whole Agreement. This IGA sets forth the whole agreement of the Parties. No representations, either verbal or written, shall be considered binding on either party if not set forth herein.

15. Captions. The captions in this IGA are included for reference and convenience only and are not intended to define, limit or prescribe the scope or intent of this Agreement or any part thereof.

16. Authority. Each person signing this IGA represents and warrants that the individual is fully authorized to enter into and execute this IGA and to bind the Party it represents to the terms and conditions thereof.

17. Notice and Representatives. All notices required under this IGA shall be transmitted in writing and shall be deemed duly given when hand-delivered or sent by certified mail, return receipt requested and postage prepaid, or by electronic communication, addressed to the designated representative(s) as follows:

City of Glenwood Springs:

Garfield County:

City Manager
City of Glenwood Springs
101 West 8th Street
Glenwood Springs, CO 81601
(970) 384-6400
Debra.figueroa@cogs.us

County Manager
Garfield County, Colorado
108 8th Street, Suite 213
Glenwood Springs, CO 81601
(970) 945-5004

With a copy to:

City Attorney
City of Glenwood Springs
201 14th Street
Suite 200
Glenwood Springs, CO 81601
(970) 945-2261
kjh@mountainlawfirm.com

With a copy to:

County Attorney's Office
Garfield County, Colorado
108 8th Street, Suite 219
Glenwood Springs, CO 81601
(970) 945-9150

Either Party may change the identity of its designated representative and the address to which future notices shall be sent by providing written notice in accordance with this paragraph. Formal amendment of this IGA to affect such a change is not required.

18. Severability. Should any provision of this IGA be found to be in conflict with any law of the United States or the State of Colorado or to otherwise be unenforceable, the remaining provisions shall be deemed severable and the validity of such shall not be affected provided that the remaining provisions can be construed in substance to constitute the agreement which the parties intended to enter into under this IGA.

IN WITNESS WHEREOF, the Parties execute this IGA as follows:

ATTEST:

**BOARD OF COUNTY COMMISSIONERS OF
GARFIELD COUNTY, COLORADO**

Clerk to the Board

By: _____
John Martin, Chairman

Date: _____

ATTEST:

**CITY OF GLENWOOD SPRINGS,
COLORADO**

City Clerk

By: _____
Michael Gamba, Mayor

Date: _____

**INTERGOVERNMENTAL AGREEMENT
FOR PUBLIC RESTROOM INSTALLATION AND MAINTENANCE**

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B. The City is a Colorado Home Rule Municipality. Colo. Const. art. XX, § 6.

C. The Parties jointly and individually own property in Glenwood Springs, Colorado currently used for common purposes that will benefit from the cooperative maintenance agreements set forth in this IGA.

D. The Parties are authorized and encouraged to enter into such cooperative agreements in the development of public purpose projects by the Colorado Constitution and state statutes. Colo. Const. art. XIV, § 18(2) (a)-(c) and art. XI, § 2; C.R.S. § 29-1-201.

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City of Glenwood Springs
101 West 8th Street
Glenwood Springs, CO 81601
(970) 384-6400
Debra.figueroa@cogs.us

Garfield County:

County Manager
Garfield County, Colorado
108 8th Street, Suite 213
Glenwood Springs, CO 81601
(970) 945-5004

With a copy to:

With a copy to:

City Attorney
City of Glenwood Springs
201 14th Street
Suite 200
Glenwood Springs, CO 81601
(970) 945-2261
kjh@mountainlawfirm.com

County Attorney's Office
Garfield County, Colorado
108 8th Street, Suite 219
Glenwood Springs, CO 81601
(970) 945-9150

Either Party may change the identity of its designated representative and the address to which future notices shall be sent by providing written notice in accordance with this paragraph. Formal amendment of this IGA to affect such a change is not required.

18. Severability. Should any provision of this IGA be found to be in conflict with any law of the United States or the State of Colorado or to otherwise be unenforceable, the remaining provisions shall be deemed severable and the validity of such shall not be affected provided that the remaining provisions can be construed in substance to constitute the agreement which the parties intended to enter into under this IGA.

IN WITNESS WHEREOF, the Parties execute this IGA as follows:

ATTEST:

**BOARD OF COUNTY COMMISSIONERS OF
GARFIELD COUNTY, COLORADO**

Clerk to the Board

By: _____
John Martin, Chairman

Date: _____

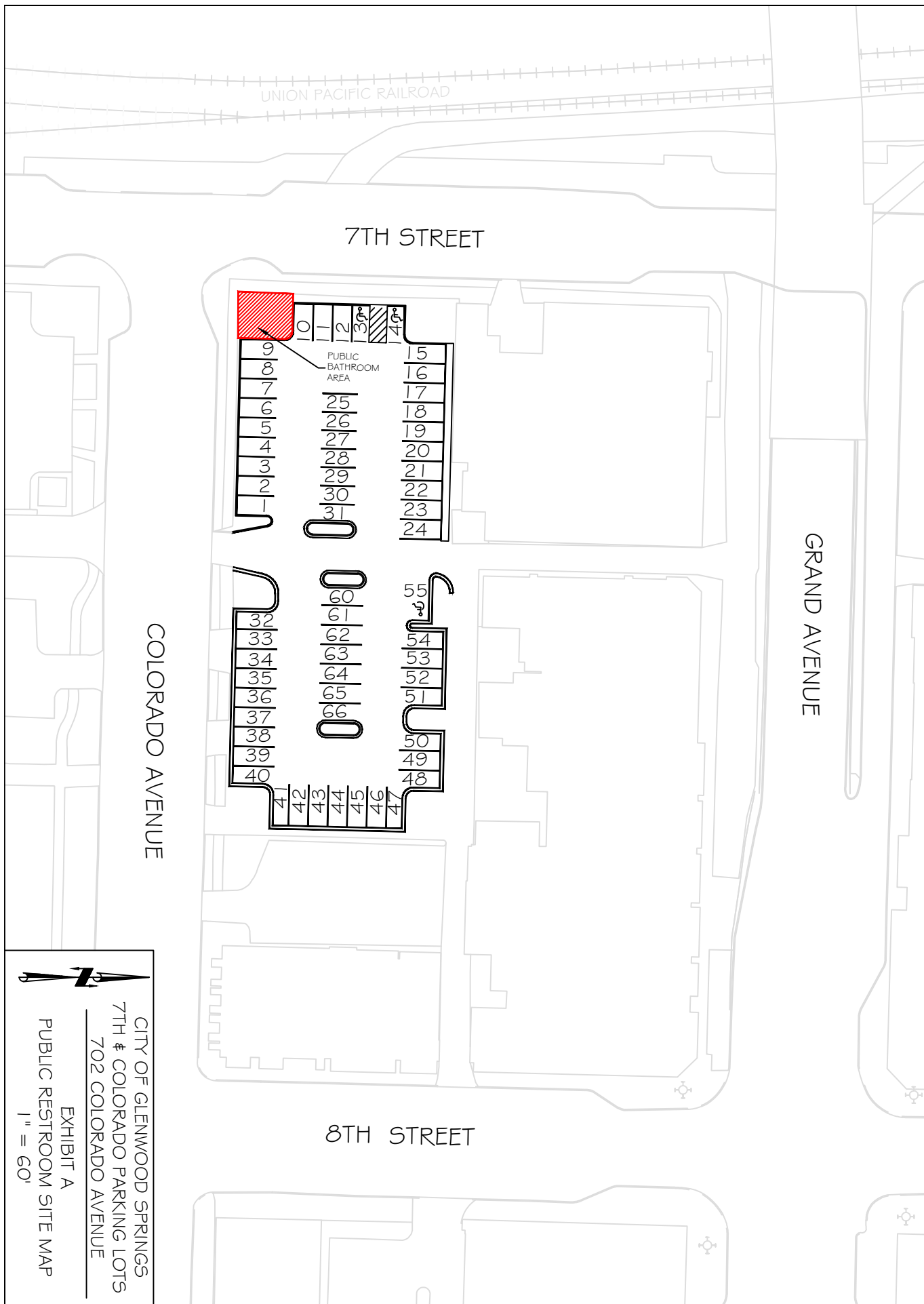
ATTEST:

**CITY OF GLENWOOD SPRINGS,
COLORADO**

City Clerk

By: _____
Michael Gamba, Mayor

Date: _____



CITY OF GLENWOOD SPRINGS
7TH & COLORADO PARKING LOTS
702 COLORADO AVENUE
EXHIBIT A
PUBLIC RESTROOM SITE MAP
1" = 60'



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Resolution 2019-19; A Resolution of the City Council of Glenwood Springs, Colorado, Opposing Expansion of the Transfer Trail Mine and Requesting the Bureau of Land Management Conduct and Environmental Impact Statement Analysis

Action Requested:

Department: City Administration

Presented By:

Background Info: The City of Glenwood Springs is requesting action from federal agencies to prevent the proposal of the Rocky Mountain Resources (RMR) mine expansion on federal land next to Glenwood Springs.

Issues:

Staff Recommendation:

RESOLUTION 2019-19

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, REGARDING EXPANSION OF THE TRANSFER TRAIL MINE AND REQUESTING THE BUREAU OF LAND MANAGEMENT CONDUCT AN ENVIRONMENTAL IMPACT STATEMENT ANALYSIS.

WHEREAS, Glenwood Springs is a small city with an economy based on travel, tourism, outdoor recreation, fishing, hospitality, hot springs, and other sectors that depend upon the mountains, rivers, clear skies, and sounds of nature; and

WHEREAS, the Glenwood Springs was one of Colorado's first tourist destinations with the establishment of historic Hot Springs Pool in 1888; and

WHEREAS, Rocky Mountain Resources owns the small limestone mine referred to as the Transfer Trail Mine (or Mid-Continent Quarry) overlooking the City of Glenwood Springs and seeks to expand that mine by 5,000%; and

WHEREAS, expansion of the mine would lead to large visual impacts, mire the City in truck traffic, damage the thriving tourist economy, and seriously impact the water quality and air quality for thousands of rural Coloradans; and

WHEREAS, this expansion would allow mining 24 hours per day, blasting from 9am-4pm, and hauling out as many as 500 trucks per day; and

WHEREAS, mining and logging only comprise 0.3% of the local economy; and

WHEREAS, although Rocky Mountain Resources ("RMR") is in non-compliance with its current, small mining permit on federal public lands, it now seeks an Operating Plan Modification from the U.S. Department of Interior, Bureau of Land Management ("BLM").

NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, THAT:

Section 1. The above recitals are hereby incorporated as findings by the City Council of the City of Glenwood Springs.

Section 2. The City Council requests that the BLM require RMR to conduct a full Environmental Impact Statement ("EIS") analysis under National Environmental Policy Act ("NEPA") to identify the significant effects the proposed mining expansion will have on the quality of the human environment.

Section 3. The City Council requests the BLM conduct public hearings and make proper findings, determinations and penalties for non-compliance by RMR under its current permit violations.

Section 4. The City Council requests the BLM provide the public a copy of RMR's most recent application for the Operating Plan modification to allow the mining expansion,

Section 5. The City Council requests the Department of Interior to fully answer a Freedom of Information Act request for information about the proposed mine submitted by, the Glenwood Springs Citizens Alliance, a local citizens' group.

Section 6. Glenwood Springs and the region call for support from our Colorado Congressional delegation and request that they stand with the public values and regional economy of Glenwood Springs.

INTRODUCED, READ AND PASSED THIS ____ DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item:	Planning Item #08-19 - Consideration of a request to extend the deadline for filing a site-specific development plan from June 20, 2019 to June 20, 2027 for the Iron Mountain Planned Unit Development
Action Requested:	Staff recommends that City Council approve the requested filing extension to June 20, 2027.
Department:	Economic and Community Development
Presented By:	Gretchen Ricehill, Assistant Director of Economic and Community Development
Background Info:	In 2013 the Planning and Zoning Commission and City Council approved a rezoning of the abandoned limestone quarry, a 27-acre site, from I-1-General Industrial to Planned Unit Development (Planning File 05-13). At the time, the city's Planned Unit Development (PUD) regulations required that within 6 months of receiving PUD zoning approval, the owner file a site-specific development plan of the property. In 2013, City Council approved extending the filing deadline to June 20, 2016. Then in 2016, Council again extended that deadline to June 20, 2019. With this date approaching, property owner Steve Beckley submitted a written request to extend the filing deadline to June 20, 2027. He cited potential significant impacts to his property from the proposed expansion of the Rocky Mountain Resources (RMR) quarry and noted the lengthy federal permitting process associated with that expansion. Until those impacts are divulged and analyzed through the federal permitting process, he indicated that his proposed development is a financial risk. The current Land Use Code-Municipal Code Article 070.060.040 requires that the owner file a site-specific development plan within three years of PUD approval. If that does not occur, the Community Development Director may initiate a public hearing to consider whether the property should be rezoned to its prior classification or to another classification. (Note that the prior zoning designation of this property, I-1-General Industrial, was eliminated during the recent code redrafting process.) Attached to this report is a letter from Mr. Beckley requesting a filing extension and a copy of the 2013 approved PUD zoning plan and conceptual site plan which provides an overview of the intended, previously-approved uses. Those uses include - • Multi-level lodge; • 260 space parking lot; • Funicular to transport guests from the parking area to the top of Iron Mountain; and, • Mining museum.
Issues:	None. Community Development Department staff distributed the application to reviewing departments. No one objected to extending the filing deadline.
Staff Recommendation:	Council make take one of the following actions:

Approve the extension;
Deny the extension; or
Continue the request to a future City Council hearing with a request for specific additional information.

Staff recommends **approval** with the following suggested finding and conditions:

Suggested Finding:

The June 20, 2019 deadline in which to file a site-specific development plan poses a practical financial hardship on the property owner due to the uncertain impacts to the owner's property from the proposed expansion of the Rocky Mountain Resources (RMR) quarry.

Suggested conditions:

1. A complete site-specific development plan that meets the requirements of Title 070 for one or more phases of construction within the Iron Mountain Planned Unit Development shall be filed with the Community Development Department on or before June 20, 2027.
2. All applicable prior approvals and conditions related to Planning Item 05-13 shall remain in full force and effect.

Iron Mountain Properties, LLC

October 4, 2018

Gretchen Ricehill
Senior Planner, Community Development Department
City of Glenwood Springs, Co

Transmitted by e-mail: gretchen.ricehill@cogs.us

Re: Request for Extension of Zoning approval of the Iron Mountain PUD

Dear Gretchen:

Recent conversations with my investment team regarding the Iron Mountain PUD have necessarily focused on the potential dramatic impacts of an expansion of the Rocky Mountain Resources (RMR) quarry. Obviously, our discussions have turned from "refinement of development concepts", to "is it possible to still successfully develop the Iron Mountain PUD given the potential impacts of the limestone quarry expansion"! At this point in time, we have many questions and NO answers.

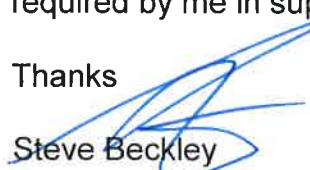
I have joined with others in the community in actively pursuing professional assistance in understanding the implications of the RMR quarry expansion and to collect accurate data on the potential impact of such an expansion. The proposed expansion will require permitting by various governmental agencies, a process that could and likely will take years to complete. In the meantime, identifying a viable development program for the Iron Mountain PUD becomes risky speculation.

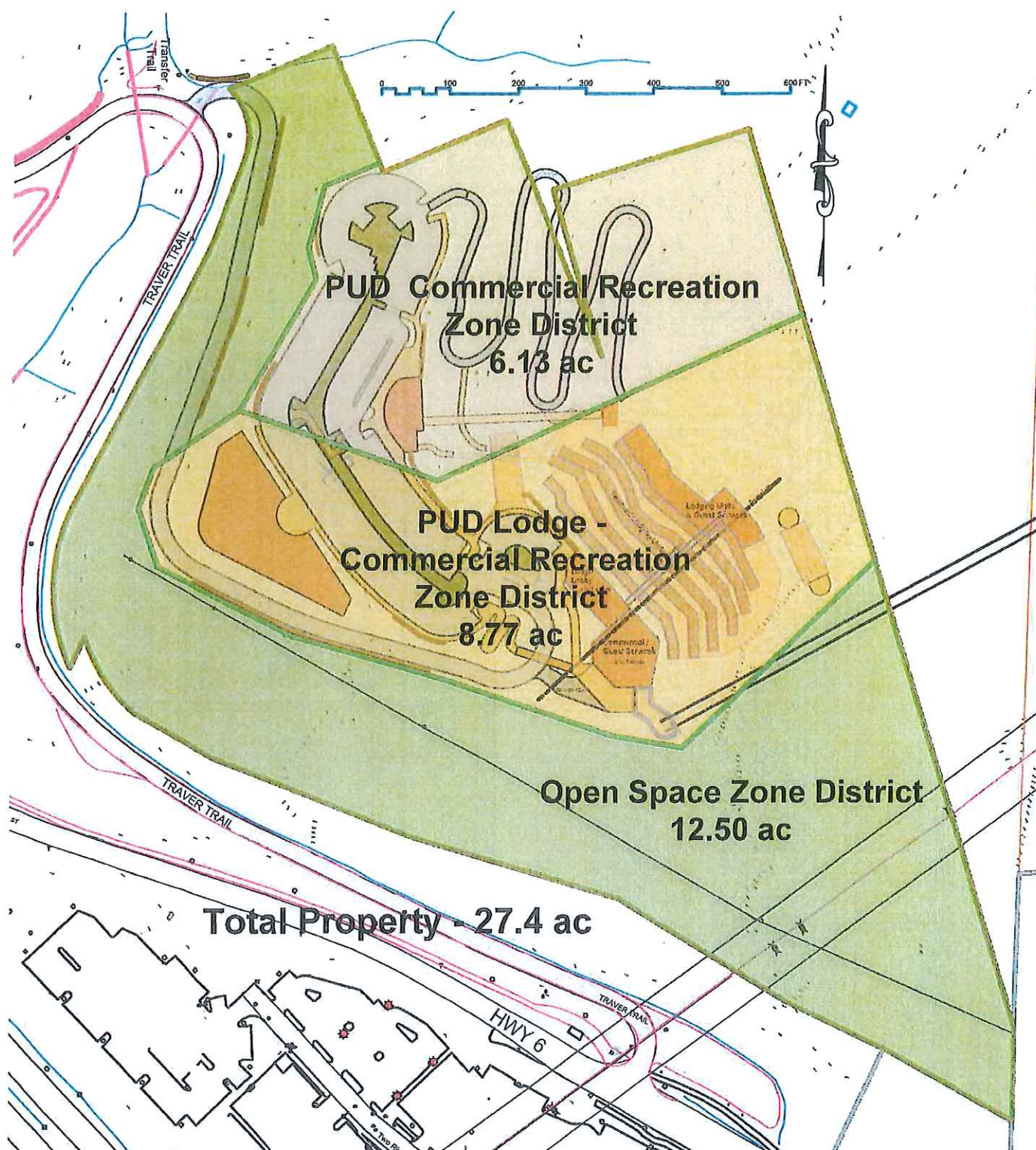
In June of 2016, the Council granted a three-year extension of the Iron Mountain PUD approval to June 20, 2019. Given the potential for extensive impacts on the Iron Mountain PUD and the lengthy governmental review of the RMR quarry expansion, I request an additional extension of the Iron Mountain PUD approval. Due to this multi-year review process and the resulting potential necessity to reevaluate the Iron Mountain PUD development concept, I request an extension of eight (8) years beyond the current June 20, 2019 date.

The growing vibrancy of the Glenwood Springs tourism economy continues to support and excite our visions for the Iron Mountain PUD site. We can only hope that any physical and operational changes at the RMR quarry site will not dim this vision.

Please contact me if you require any additional information or if any further action is required by me in support of this requested extension.

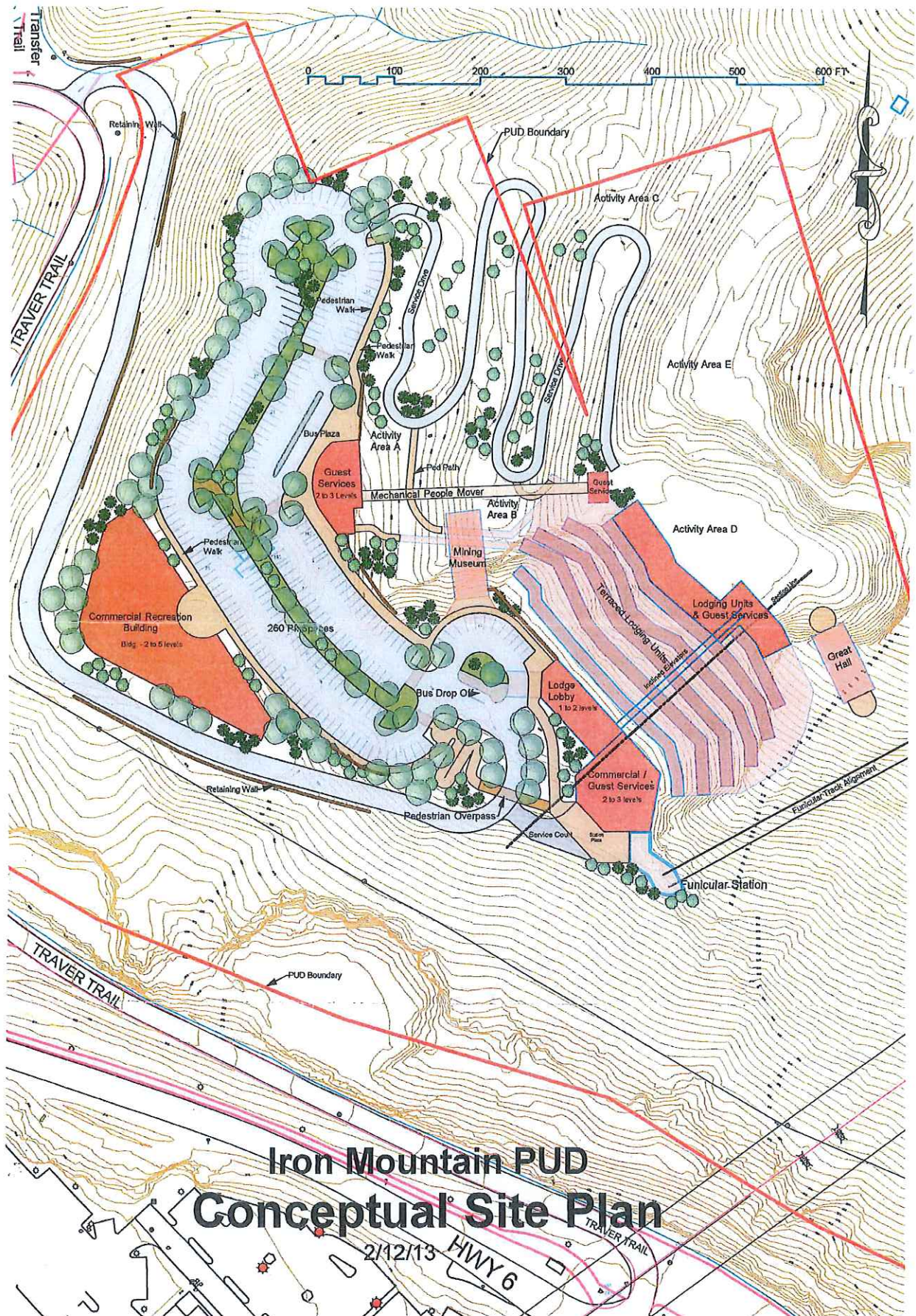
Thanks


Steve Beckley
Manager



Iron Mountain PUD ZONE DISTRICT MAP

2/12/13





City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Planning Item #01-19 - Consideration of a Major Site/Architectural Plan Review for a Multi-Tenant Office/Retail Building, Lot 14 Glenwood Meadows No. 2, Wulfsohn Road

Action Requested: **Action 1 - Major Site/Architectural Plan Review** allowing the construction of a 45,000 square foot multi-tenant office/retail building.

Department: Economic and Community Development

Presented By:

Background Info: The Planning and Zoning Commission (Commission) reviews major site/architectural plan review applications and provides a recommendation to City Council. On February 26, 2019, the Commission held a public hearing to consider the proposal. Attached for your review are copies of the Commission staff report, Commission draft minutes, reviewing agency comments, and the application submittal materials. Please refer to the Commission staff report for analysis of applicable issues and compliance with the *Glenwood Springs Municipal Code* (Code) and/or *Glenwood Meadows Zoning and Development Plan* (Plan) not addressed herein.

Issues: The staff report provided to the Commission outlines numerous areas where the proposal is not in compliance with the Code and/or Plan. Prior to the Commission meeting, the applicant expressed their intent and ability to address these issues and comply with applicable regulations. However, numerous Commissioners expressed concern with the number and significance of the noncompliance issues identified by staff and whether the applicant could make the necessary revisions without making substantial changes to site layout and building design. Some the Commission's general angst can also be attributed to the newly adopted review procedures which require much less information related to site, architectural, and civil drawings and reports than was previously required from any given applicant. Staff explained that future revisions not in compliance with the Code which require a variance or cause a significant change to the application may require additional review.

Section 070.060.050(a)d.4 of the Code provides for certain minor changes to development permit approvals without additional review as outlined in *italics* below. The Director must determine the minor changes:

- i. Could be approved under the allowable administrative adjustments pursuant to 070.060.070(b), had they been requested with the original application;*
- ii. Comply with the standards of this Code;*
- iii. Are necessary to meet conditions of approval; and/or*
- iv. Would not significantly alter the function, form, intensity, character, demand on public facilities, or impact on adjacent properties as approved with the administrative site/architectural plan.*

Table 060.3 (referenced in Section 070.060.070(b)) is depicted below.

Table 060.3: Allowable Administrative Adjustments	
Code Standard	Allowable Administrative Adjustment (maximum percentage)
Site Standards	
Lot area, minimum	15
Lot coverage, maximum	15
Block length, maximum	15
Lot Dimensional Standards	
Front setback, minimum	15
Side setback, minimum	15
Rear setback, minimum	15
Encroachment into setback pursuant to Table 020.20, Authorized Exceptions to Setback Standards, maximum	15
Building Standards	
Building height, maximum (excludes wireless communication facilities)	15
Accessory building height, maximum (excludes wireless communication facilities)	15
Separation between buildings, minimum	15
Projection into height requirement pursuant to Table 020.21, Authorized Exceptions to Maximum Height Standards, maximum	15
Development Standards	
Number of required parking spaces, maximum or minimum	15
Lighting height, maximum	15
Sign height, maximum	15
Fence or wall height, maximum	15 (one foot maximum)
Minimum landscaping requirements	15

Since the February 26 Commission meeting, the applicant has addressed many of the necessary revisions/outstanding issues formerly identified by staff. A response and revised plans are attached which discuss and/or revise issues such as retaining/refuse wall heights, site landscaping percentages, Glenwood Meadows design requirements, and building entrances accordingly. The revised plans appear to be in substantial compliance with the application materials reviewed by the Commission.

Staff Recommendation:

Planning and Zoning Commission Recommendation

After discussing issues associated with necessary revisions outlined above, the Commission voted 5-1 to recommend **approval** of Action Item 1 to City Council.

Action Alternatives and Staff Recommendation

Section 070.060.030(g)(1)d of the Code outlines the review and decision procedures for applications being considered by City Council stating, *"The applicable review body shall approve, approve with conditions, or deny the application based on the applicable approval criteria listed in the application specific procedures. The body may also continue the hearing or refer the application to another authority as provided in 070.060.050(a)(2)c, Referral and Call- Up Procedures."*

Action 1 - Major Site/Architectural Plan Review allowing the construction of a 45,000 square foot multi-tenant office/retail building.

Staff recommends **approval** of the major site/architectural plan review application with the following findings and conditions:

Recommended Findings:

1. The site/architectural plan is consistent with the general purpose and intent of this Code;
2. Upon addressing staff comments outlined herein and attached to the staff report, the site/architectural plan is consistent with the dimensional, design, development, and all other standards of this Code;
3. The site/architectural plan is consistent with the Glenwood Meadows Zoning and Development Plan and other precedent land use approvals; and
4. The site/architectural plan is substantially consistent with the Comprehensive Plan and other adopted City policies and plans.

Recommended Conditions:

1. The applicant shall file the approved site/architectural plan with the Community Development within 60 days of City Council approval.
2. The applicant shall comply with/address all staff comments prior to the issuance of a development permit and/or approval of a Construction Plans application.
3. The applicant must apply for and receive approval of a Construction Plans prior to the submittal of

a building permit application.

4. Major site/architectural plan approval shall expire if the authorized use or construction is not substantially underway as determined by the Director within three years following approval of the application by City Council.



Planning and Zoning Commission Report

Date: February 26, 2019
To: Planning and Zoning Commission
From: Trent L. Hyatt, Senior Planner
Subject: #01-19– Boldt/Glenwood Properties, LLC Office/Retail Building

REQUEST	Major Site/Architectural Plan Review for the construction of a 45,000 square foot multi-tenant office/retail building
APPLICANT	Boldt/Glenwood Properties, LLC
OWNER	Centura Ventures, LLC
LOCATION	Lot 14, Glenwood Meadows No. 2, Wulfsohn Road (PIN: 2185-053-38-014)
ZONE	Mixed-Use (M1) Corridor
SURROUNDING LAND USES	North: Midland Avenue, Union Pacific Railroad South: vacant, multi-family residential East: Glenwood Meadows mixed retail West: RFTA facility
LOT SIZE	Approximately 9.90 acres

ACTION ITEM

The Planning and Zoning Commission (Commission) is the recommending body to City Council for major site/architectural plan review applications. Following any approval (with or without conditions) of a major site/architectural review, an applicant must submit and receive approval of a construction plans application from City staff prior to submitting a building permit application.

Action 1 - Major Site/Architectural Plan Review – to allow for the construction of a 45,000 square foot multi-tenant office/retail building.

Staff recommendation: *Staff recommends **approval (with conditions)** of the Major Site/Architectural Plan Review with the findings and conditions on page 7.*

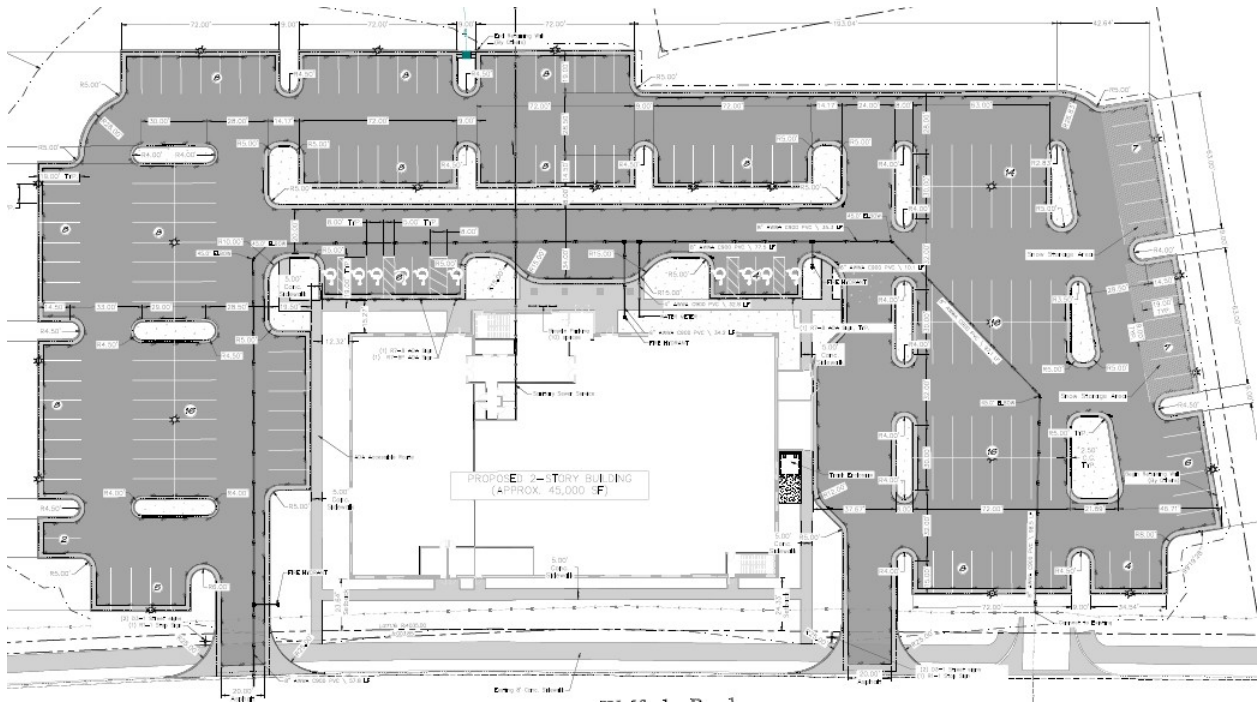
BACKGROUND/ANALYSIS

Proposal

In 2002, City Council approved the annexation, rezoning, and corresponding development plan for the mixed use development known as Glenwood Meadows. The subject property is a portion of Parcel A which is classified as Mixed-Use Campus in the Glenwood Meadows Zoning and Development Plan (Plan). Section VI (beginning on Page 26) of the Plan outlines the general intent of the Mixed-Use Campus as “...a variety of office, research, and development activities in addition to complimentary uses such as restaurants, convenience shopping, childcare and

housing... to function as an integral part of the overall Glenwood Meadows development, providing a range of employment opportunities for nearby residents.”

The applicant proposes an approximately 45,000 square foot office/retail building on approximately 3.43 acres (the area of disturbance) of the 9.9 acre property. Other improvements include parking, open space, and related landscaping and retaining walls. The attached plan set includes a site plan (a portion of which is shown below), floor plans, and elevations as well as preliminary landscaping plans, grading and utilities plans, for your review.



Major Site/Architectural Plan Review

Section 070.040 of the *Glenwood Spring Municipal Code* (Code) outlines the development standards for all land use applications. Additional development standards specific to Glenwood Meadows are outlined in Sections V and VI of the aforementioned Plan. However, many of the applicable standards found in either document are similar in nature. Applicable Code sections/issues are outlined in more detail below.

Mixed-Use Corridor Zone District Standards

The subject property is zoned Mixed-Use (M1) Corridor, formerly C-1 Limited Commercial as referred to in the Plan. Section 070.020.090/Table 020.11 outlines the dimensional standards as shown to the right.

Common Open Space

Commercial uses require a minimum of 10 percent of any development site be set aside as common open space as per Section 070.040.040(c)/Table 040.3.

**Table 020.11: M1 District
Dimensional Standards**

Lot Standards, Minimum

A	Lot area (sq ft)	None
	Landscaped area (%)	15

Setbacks, Minimum

B	Front, min (ft)	5
	Front, max (from arterials) (ft)	60
	Front, max (from other streets) (ft)	25
C	Side, min (ft)	5
D	Rear, with alley, min (ft)	10
	Rear, without alley, min (ft)	7.5

Building Standards, Maximum

E	Building height (ft)	40
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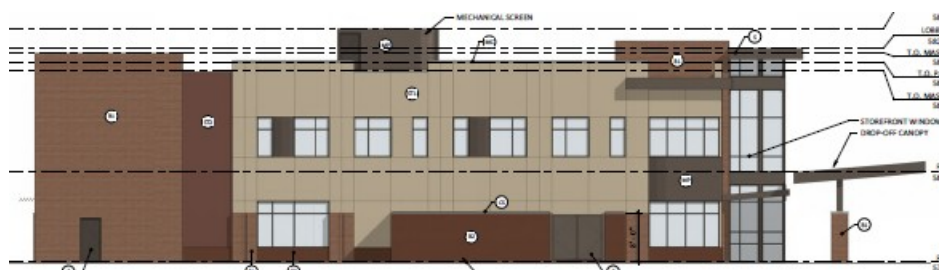
While additional details are needed to determine the exact type and location of these facilities, the applicant proposes 15 percent of the limits of disturbance (that which is required for mixed use project) as common open space for the enjoyment of visitors. This may change as staff comments are addressed by the applicant but will not be less than the required 10 percent.

Landscaping, Screening, and Retaining Walls

Section 070.040.050(f) of the Code outlines that refuse enclosure and retaining wall heights shall not exceed six feet in height. The preliminary grading plan and various elevations depict retaining walls of up to 24 feet and refuse screening walls of up to 8 feet in height. The applicant has begun redesigning the retaining wall to include terraces in compliance with the Code and with Glenwood Meadow design requirements.

Building Design

The Glenwood Meadows development has its own design standards and is exempt from the standard commercial design standards outlined in the Code. However, the vast majority of the standards therein are similar. Nonresidential and Mixed-Use Site and Building Design Standards outlined in Section 070.040.090 of the Code provide guidance for the building scale in relation to building orientation, architectural elements, etc. for new and infill construction in the City. The primary entrance of a building shall be located along the street providing primary access to the site, which is Wulfsohn Road. However, it appears the main entrance is located along the north elevation.



Each wall plane shall incorporate at least two horizontal and vertical articulating design features every 30 feet. Walls facing public rights-of-way shall have 60 percent coverage with windows, entrances, awnings, etc. The design of the proposed building provides more than three features for many façades such as variations in materials, projections and recessions, window and door glazing, change in roofline, awnings. Staff has requested more information regarding the exact footprint of the building to confirm compliance with the depth or projection of said features.



Necessary Revisions

Comments are attached which identify necessary revisions to the plan set required prior to the issuance of a major site/architectural plan development permit and/or a Construction Plans application. Staff recommends said comments are made conditions of approval of the Major Site/Architectural Plan Review application. That being said, the applicant has been committed to full compliance with both the Code and Plan and intends to make any revision requested by staff to ensure that no variance is necessary.

Glenwood Meadows Required Improvements

Certain on and off site improvements are required by the original annexation and development agreement, and amendments thereto, between the original developer of the property and the City. Completion of the Midland Trail and Midland Road improvements are examples of these improvements. If the application receives approval, staff will need evaluate said agreement to determine the remaining payment or improvements the current developer is responsible for, if applicable.

Approval Criteria

A Major Site/Architectural Plan Review application must adhere to the approval criteria outlined in Section 070.060.050(6) of the Code as outlined in ***bold italics*** below. Other language is provided by staff.

a. The site/architectural plan is consistent with the general purpose and intent of this Code;

Exclusive of the compliance issues/concerns addressed above, the proposal is consistent with the general purpose of the Code. Additionally, the applicant has expressed the wiliness and ability to address all code issues outlined by staff.

b. The site/architectural plan is consistent with the dimensional, design, development, and all other standards of this Code;

Exclusive of the compliance issues/concerns addressed above, the proposal is consistent with the dimensional, design, development, and all other standards of the Code. Additionally, the applicant has expressed the wiliness and ability to address all code issues outlined by staff.

c. The site/architectural plan is consistent with any previously approved plat, PUD, or any other precedent land use approval; and

Exclusive of the compliance issues/concerns addressed above, the proposal is consistent with the Glenwood Meadows Zoning and Development Plan. Additionally, the applicant has expressed the wiliness and ability to address all code issues outlined by staff.

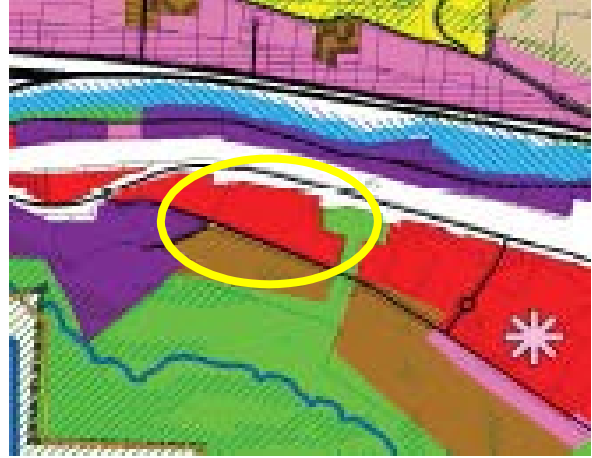
d. The site/architectural plan is consistent with the Comprehensive Plan and other adopted City policies and plans.

The proposal is consistent with Comp Plan as detailed above.

Comprehensive Plan

As shown in the map below, *Map 2.1 Future Land Use – South Portion of the City of the Glenwood Springs* of the Comprehensive Plan (Comp Plan) identifies the property as Commercial in red. According to the Comp Plan, the Commercial designation “...provides a wide range of general retail goods and services for both regional and local markets, in attached and freestanding structures. Retail that would compete directly with Downtown retail is discouraged.” The current proposal is in compliance with the map designation and description.

Numerous community goals and related objectives and strategies outlined in the Executive Summary and subsequent chapters of the Comp Plan encourage economic development, preserving our small town character, convenient transportation, infill development, housing opportunities, social diversity, and preserving natural resources all of which are supported by this proposal. These goals are outlined in the following table.



<u>Comprehensive Plan Goal</u>	<u>Objective and Strategy</u>
-Promote long-term, sustainable, diverse, economic development	-Direct development into a compact form: infill and redevelopment (Chapter 3, Page 34) -Attract diverse businesses and industries (Chapter 4, Page 50) -Maintain the role as regional center (Chapter 4, Page 54) -Retain role as a regional center (Chapter 7, Page 83)
-Maintain Glenwood Springs the regional tourism, retail, commercial, and governmental center of Garfield County as	-Attract diverse businesses and industries (Chapter 4, Page 50) -Retain the long-standing tourist market (Chapter 4, Page 54) -Build on role as a regional medical and education center (Chapter 4, Page 54) -Maintain the role as regional center (Chapter 4, Page 54)
-Preserve small town small town character while maintaining the livability of Glenwood Springs and increasing the vibrancy and commercial success of the downtown	-Develop according to the vision (Chapter 4, Page 34) -Direct development into a compact form: infill and redevelopment (Chapter 3, Page 34) -Enhance pedestrian-friendliness while facilitating traffic (Chapter 3, Page 36) -Direct growth inward (Chapter 9, Page 102)

-Address transportation and provide multiple convenient travel choices	-Direct development into a compact form: infill and redevelopment (Chapter 3, Page 34) -Enhance pedestrian–friendliness while facilitating traffic (Chapter 3, Page 36) -Direct growth inward (Chapter 9, Page 102)
-Direct development to locations and building forms that are cost effective to serve	-Direct development into a compact form: infill and redevelopment (Chapter 3, Page 34) -Direct growth to areas where utilities and services can be provided efficiently (Chapter 7, Page 82) -Retain role as a regional center (Chapter 7, Page 83) -Direct growth inward (Chapter 9, Page 102)
-Support social diversity	-Direct development into a compact form: infill and redevelopment (Chapter 3, Page 34) -Require good design for mixed-use and higher density projects (Chapter 6, Page 78) -Direct growth inward (Chapter 9, Page 102) -Retain role as a regional center (Chapter 7, Page 83) -Direct growth inward (Chapter 9, Page 102)
-Preserve natural resources	-Promote water conservation (Chapter 7, Page 84) -Direct growth inward (Chapter 9, Page 102)

Reviewing Agency Comments

An overview of any comments received from referral agencies is provided below. Said comments are also attached.

Engineering – Comments received outline needed details related to existing hydro-compactive soils, drainage, traffic increase/improvements, utility locations and connections, pedestrian connections, etc.

Water and Wastewater – Comments received outline general details related to utility connections, irrigation, fire sprinklers, sprinklers, ownership of utilities, etc.

ACTION ALTERNATIVES AND STAFF RECOMMENDATION:

Section 070.060.030(g)(1)d outlines the review and decision procedures for applications being considered by the Commission and/or City Council stating, “[T]he applicable review body shall **approve, approve with conditions, or deny** the application **based on the applicable approval criteria** listed in the application-specific procedures. The body may also **continue** the hearing or **refer the application** to another authority as provided in 070.060.050(a)(2)c, Referral and Call- Up Procedures.”

Action 1 - Major Site/Architectural Plan Review – to allow for the construction of a 45,000 square foot multi-tenant office/retail building.

Staff Recommendation/Motion

Staff recommends the Planning and Zoning Commission recommend to City Council **approval with conditions** of the Major Site/Architectural Plan Review with the following **findings** and **conditions**:

Recommended Findings:

1. The site/architectural plan is consistent with the general purpose and intent of this Code;
2. Upon addressing staff comments outlined herein and attached to the staff report, the site/architectural plan is consistent with the dimensional, design, development, and all other standards of this Code;
3. The site/architectural plan is consistent with the Glenwood Meadows Zoning and Development Plan and other precedent land use approvals; and
4. The site/architectural plan is substantially consistent with the Comprehensive Plan and other adopted City policies and plans.

Recommended Conditions:

1. The applicant shall comply with/address all staff comments prior to the issuance of a development permit and/or approval of a Construction Plans application.

Planning Item 01-19
Boldt Multi-Tenant Office/Retail Building
List of Necessary Revisions

- Please provide pedestrian access to from the parking area to the primary entrance of the building. See sheet A101 of the revised plan set
- Please revise the retaining wall heights to an average height of six feet and not to exceed 10 feet at any point. See Boulder letter dated 3/8/19, Pg. 1, #3 in Green
- Please revise or provide detail depicting 60 percent coverage by windows, awnings, or other architectural elements along th south elevation0. See sheet A301 & A302 of the revised plan set
- Please provide details for common open space features/elements.
- Please revise the height of refuse screening walls to a maximum of six feet. Confirmed. See Boulder letter 3/8/19, Pg. 2 #4 in Green
- Please provide details as to the exact footprint of the proposed building.
- Parking shall be a minimum of 25 feet from the property line or a berm shall be provided. Please clarify. Berm to be provided
- 20 percent of the interior of the parking area shall be landscaped. Please clarify.
- Please clarify the differences in site landscaping coverage found on various sheets.
- Please call out building dimensions on the site plan. See sheet A201/202
- Please clarify the number of required and provided parking spaces on various sheets. See sheet A101
- Please call out parking aisle widths and parking stalls from the end of each stall. See sheet A101
- Please call ouf the maximum height of the building on each elevation.

See sheet A101 of the revised plan set

See sheet A101 of the revised plan set

Max. building height per code is 60 feet. All elevations are measured at heights of 5,793 feet at the base of the building and 5,831 feet at the top of the mechanical units. Total height of the building on each elevation is 38 feet.

Building Entrance

To address the requirements of the Glenwood Meadows development code, Boldt will be providing a building entrance off of Wulfsohn Road. This entrance will provide access off Wulfsohn, and will connect to the northern entrance of the building, providing access to the lobby and building suites.

Planning Item 01-19
Boldt Multi-Tenant Office/Retail Building
List of Necessary Revisions

- Please provide pedestrian access to from the parking area to the primary entrance of the building.
- Please revise the retaining wall heights to an average height of six feet and not to exceed 10 feet at any point.
- Please revise or provide detail depicting 60 percent coverage by windows, awnings, or other architectural elements along th south elevation0.
- Please provide details for common open space features/elements.
- Please revise the height of refuse screening walls to a maximum of six feet.
- Please provide details as to the exact footprint of the proposed building.
- Parking shall be a minimum of 25 feet from the property line or a berm shall be provided. Please clarify.
- 20 percent of the interior of the parking area shall be landscaped. Please clarify.
- Please clarify the differences in site landscaping coverage found on various sheets.
- Please call out building dimensions on the site plan.
- Please clarify the number of required and provided parking spaces on various sheets.
- Please call out parking aisle widths and parking stalls from the end of each stall.
- Please call ouf the maximum height of the building on each elevation.

GLENWOOD SPRINGS

ABBREVIATIONS

A/C	air conditioning	FA	fire alarm	MISC	miscellaneous	STL	steel
AB	anchor bolt	FAAP	fire alarm annunciator panel	MID	molding, moulding	STOR	storage
ABV	above	FAS	fasten(er)	MM	millimeter(s)	STRUCT	structure(al)
AC	acoustical	FB	face brick	SUSP	membrane	SUSP	suspended
AC BD	acoustic board	FBO	furnished by other	MO	masonry opening	SV	spray vinyl
AC TL	acoustic tile	FBD	fiberboard	MOD	modular	SYM	symmetry(ical)
AC	asphaltic concrete	FD	floor drain	MOV	movable	SYN	synthetic
ACC	access	FE	fire extinguisher	MRB	marble	SYS	system
ACC PNL	access panel	FE	fixed equipment	MRD	metal roof deck	T&G	tongue & groove
ADH	adhesive	FEC	fire extinguisher cabinet	MT	mount(ing)	T	tread(s)
ADJ	adjacent	FF	factory finish	MTD	mounted	TB	towel bar
ADI	adjustable	FFE	finished floor elevation	MTL FUR	metal furring	TO	tolerance
AF	above finished floor	FFL	finished floor line	MTL	metal	TC	terra cotta
AGG	aggregate	FGL	fiberglass	MTL THR	metal threshold	TD	tinted
AL or ALUM	aluminum	FHC	fire hose cabinet	MULL	mullion	TELE	telephone
ALT	alternate	FHMS	flat head machine screw	MWK	millwork	TEMP	tempered
ALPA	area line pressure alarm	FHS	fire hose station	N	nitrogen	THK	thick(ness)
ANC	anchor, anchorage	FHWS	flat head wood screw	N	north	TK BD	tack board
ANOD	anodized	FIN	finish	NAT	natural	TL	tile
APPROX	approximately	FLG	flashing	N	nurse call	TO PL	top of plate
ARCH	architect(ural)	FLR CO	floor cleanout	NIC	not in contract	TO	top of
ASPH	asphalt	FLR	floor(ing)	NMT	nonmetallic	TOL	tolerance
AUTO	automatic	FLT	float	NO	nitrous oxide	TOS	top of steel
BD	board	FLUOR	fluorescent	NOM	nominal	TOW	top of wall
BE	below	FUR	flexible	NOM	noise reduction	TP	transparent
BET	between	FN	fence	NRC	noise reduction coefficient	TPD	toilet paper dispenser
BIT	bituminous	FND	foundation	NTS	not to scale	TPTN	toilet partition transom
BLDG	building	FDC	face of concrete	O	oxygen	TR	transom
BLK	block	FOF	face of finish	OA	overall	TRM	thermal
BLKG	blocking	FOM	face of masonry	OB	obscure	TS	tube steel
BM	beam	FOS	face of stud	OBS	obscure	TSL	top of slab
BO	bottom of	FP	fireproof(ing)	OC	on center	TTD	treated
BOT	bottom	FPL	floor plate	OD	outside diameter	TV	television
BRG PL	bearing plate	FR	fire-resistant	OH	opposite hand	TYP	typical
BRG	bearing	FRC	fire-resistant coating	OH	overhead	TZ	terrazzo
BRK	brick	FRT	fire-retardant	OI	owner installed	UC	undercut
BRZ	bronze	FS	floor sink	OI	open-web joist	UNF	unfinished
BSMT	basement	FTG	footing	OP	opaque	UR	unless noted otherwise
BT	bolt	FUR	furred(ing)	OP	owner provided	UR	urinal
BU BD	bulletin board	FUT	future	OPG	opening	V	vacuum
BUR	built-up roof	GA	gage, gauge	OPP	opposite	VAR	varies, variable
BVL	bevel	GALV	galvanized	OR	operating room	VB	vinyl base
CAB	cabinet	GB	galvanized	ORD	overflow roof drain	VCT	vinyl composition tile
CB	code blue	GC	general contract(or)	OS	opposite surface	VERT	vertical
CCTV	closed circuit television	GDC	grade	PLAM or PL	plastic laminate	VIF	verify in field
CEM PLAS	cement plaster (portland)	GR	glass fiber reinforced	PAR	parallel	VIN TL	vinyl tile
CEM	cement	GRC	concrete	PB	panic bar	VIN	vinyl
CER	ceramic	GRI	gasket	PBD	particle board	VJ	vertical joint
CG	corner guard	GL	glass, glazing	PCF	pounds per cubic foot	VNR	veneer
CI	cast iron	GKT	gasket	PCT CONC	precast concrete	VRM	vermiculite
CIR	circle	GL	glass, glazing	PERF	perforate(d)	VWC	vinyl wall covering
CIRC	circumference	GLB	glass block	PERI	perimeter	W	width, wide
CJ	control joint	GLS	glass	PFN	prefinished	W	width, wide
CK	caulking, caulk(ing)	GP	galvanized pipe	PH	panic hardware	W/O	without
CL	center line	GRN	granite	PK	parking	WB	wood base
CLG	ceiling	GT	grout	PL	plate	WC	water closet
CLG HGT	ceiling height	GVL	gravel	PLAS	plaster	WD	wood
CLK BD	chalkboard	GWB	gypsum wallboard	PLF	pounds per linear foot	WDO	window
CLD	clear	GYP BD	gypsum board	PLY WD	plywood	WDW	window
CLS	closure	GYP PLAS	gypsum plaster	PNL	panel(ed)(ing)	WH	wall hung
CMU	concrete masonry unit(s)	GYP LA	gypsum lath	PNT	paint	WP	waterproof(ing)
CO	column	GYP TL	gypsum tile	PRE-FAB	prefabricate(d)	WPT	working point
COL	combination	HB	hose bibb	PRF	preformed	WR	water resistant
CONB	combination	HBD	hardboard	PSC	prestressed concrete	WR	wire(d)
COMP	compressed(ion)(ible)	HC	hollow core	PSF	pounds per square foot	WSCT	wainscot
COMPO	composition, composite	HD	heavy duty	PT	point	WTW	wall to wall
COMPT	compartment	HDR	header	PTC	post-tensioned concrete	WWM	woven wire mesh
CONC	concrete	HDW	hardware	PTD	paper towel dispenser	ZVB	zone valve box
CONST	construction	HGX	hexagonal	PTR	partition		
CONT	continue, continuous	HGT or H	height	PTR	paper towel receptor		
CONTR	contract(or)	HM	hollow metal	PVC	poly vinyl chloride		
CORR	corrugated	HORIZ	horizontal	PVMT	pavement		
CI	contractor installed	HR	hour	QT	quarry tile		
CP	contractor provided	HTG	heating				
CPR	copper	HVAC	heating/ventilation/				
CPT	carpet(ed)(ing)	HWD	hardwood				
CS	countersink(sunk)	ID	inside diameter				
CT	ceramic tile	INCL	included(d)(ing)				
CTR	counter	INCL	included(d)(ing)				
CTR FLG	counter flashing	INS CONC	insulating concrete				
CU FT	cubic foot	INSUL	insulate(d)(ion)				
CU YD	cubic yard(s)	INT	interior				
CV	cover	INV	invert				
D	depth	IPS	iron pipe size				
D	drain	J	joist				
DBL	double	JAN CLO	janitor closet				
DEMO	demolish, demolition	JF	joint filler				
DEP	depression	JT	joint				
DF	drinking fountain	KIT	kitchen				
DIAG	diagonal	KO	knock-out				
DIAM	diameter	L	length				
DIM	dimension(s)	LAB	laboratory				
DIV	division	LAD	ladder				
DL	dead load	LAM	laminated				
DN	down	LAV	lavatory				
DP PF	dampproofing	LBL	label				
DPR	dampener	LH	left hand				
DR	door	LL	live load				
DS	downspout	LPT	low point				
DSPR	dispenser	LT	light				
DTL	detail	LTL	lintel				
DWG	drawing	LVR	louver				
DWR	drawer	LW	lightweight				
E	east	LWC	lightweight concrete				
EA	elevation	M	meter(s)				
EL or ELEV	elevation	MAP	map				
ELEC PNL BD	electrical panel board	MAS	masonry				
ELECT	electric(al)	MATL	material				
ELEV	elevator	MAX	maximum				
EMERG	emergency	MB	machine bolt				
ENCL	enclosure	MD	medium				
EP	epoxy	MECH	mechanical				
EQ	equal	MED CAB	medicine cabinet				
EST	estimate	MFD	metal floor decking				
ET	elapsed timer	MFR	manufacture(r)				
EW	each way	MH	manhole				
EW	electric water cooler	MHO	magnetic hold open				
EX	exposed	MIN	minimum				
EXH	exhaust	MIR	mirror				
EXIST or E	existing						
EXP JT or EJ	expansion joint						
EXT	exterior						

PROJECT SYMBOL LEGEND

VIEW REFERENCES

DRAWING TITLES

WALL/DETAIL SECTIONS

PLAN/DETAIL CALLOUTS

DATUM SYMBOLS

BUILDING SECTION

EXTERIOR / INTERIOR ELEVATIONS

PROJECT SYMBOLS AND ANNOTATION

NOTE: SEE INDIVIDUAL SHEETS FOR ADDITIONAL SYMBOLS.

MATERIAL GRAPHIC LEGEND

SECTION

EARTH (CUT)

AGGREGATE BASE COURSE (CUT)

SAND

CONCRETE (CUT)

PRECAST CONCRETE

CONCRETE MASONRY UNIT

BRICK MASONRY

MORTAR CUT

STONE (CUT)

MARBLE

STEEL, STAINLESS STEEL (LARGE SCALE)

ALUMINUM (LARGE SCALE)

CERAMIC TILE (LARGE SCALE)

WOOD FRAMING - CONTINUOUS (LARGE SCALE)

WOOD FRAMING - DISCONTINUOUS (LARGE SCALE)

PLYWOOD (SMALL SCALE)

PLYWOOD (LARGE SCALE)

FINISH WOOD (LARGE SCALE)

EIPS (CUT)

RIGID INSULATION (LARGE SCALE)

BATT INSULATION (LARGE SCALE)

FIREPROOFING

STUCCO CUT

GYPNUM BOARD (LARGE SCALE CUT)

TERRAZZO (LARGE SCALE)

GLASS (LARGE SCALE)

METAL SIDING (VERTICAL)

METAL SIDING (HORIZONTAL)

PLASTER, CONCRETE, STUCCO

MASONRY

GLASS BLOCK, CERAMIC TILE

GLASS ELEVATION

SITE/ ARCHITECTURAL PLAN REVIEW

PROJECT DIRECTORY

OWNER BOLDT 1110 N. OLD WORLD THIRD ST., STE 610 MILWAUKEE, WI 53203 PHONE: 414-276-4631	STRUCTURAL ENGINEER MARTIN/MARTIN INC. 12499 WEST COLFAX AVENUE LAKEWOOD, CO 80215 PHONE: 303-431-6100
ARCHITECT BOULDER ASSOCIATES, INC. 1426 PEARL STREET, STE 300 BOULDER, CO 80302 PHONE: 303-499-7795	MECHANICAL ENGINEER WSP 5613 DTC PARKWAY, STE 500 GREENWOOD VILLAGE, CO 80111 PHONE: 303-694-4755
GENERAL CONTRACTOR HASELDEN CONSTRUCTION 6950 SOUTH POTOMAC ST. CENTENNIAL, CO 80112 PHONE: 303-751-1478	ELECTRICAL ENGINEER WSP 5613 DTC PARKWAY, STE 500 GREENWOOD VILLAGE, CO 80111 PHONE: 303-694-4755
CIVIL ENGINEER RIVER CITY CONSULTANTS 744 HORIZON CT., STE 110 GRAND JUNCTION, CO 81506 PHONE: 971-241-4722	LANDSCAPE ARCHITECT NORRIS DESIGN 409 EAST MAIN ST., STE 207 FRISCO, CO 80443 PHONE: 970-368-7068

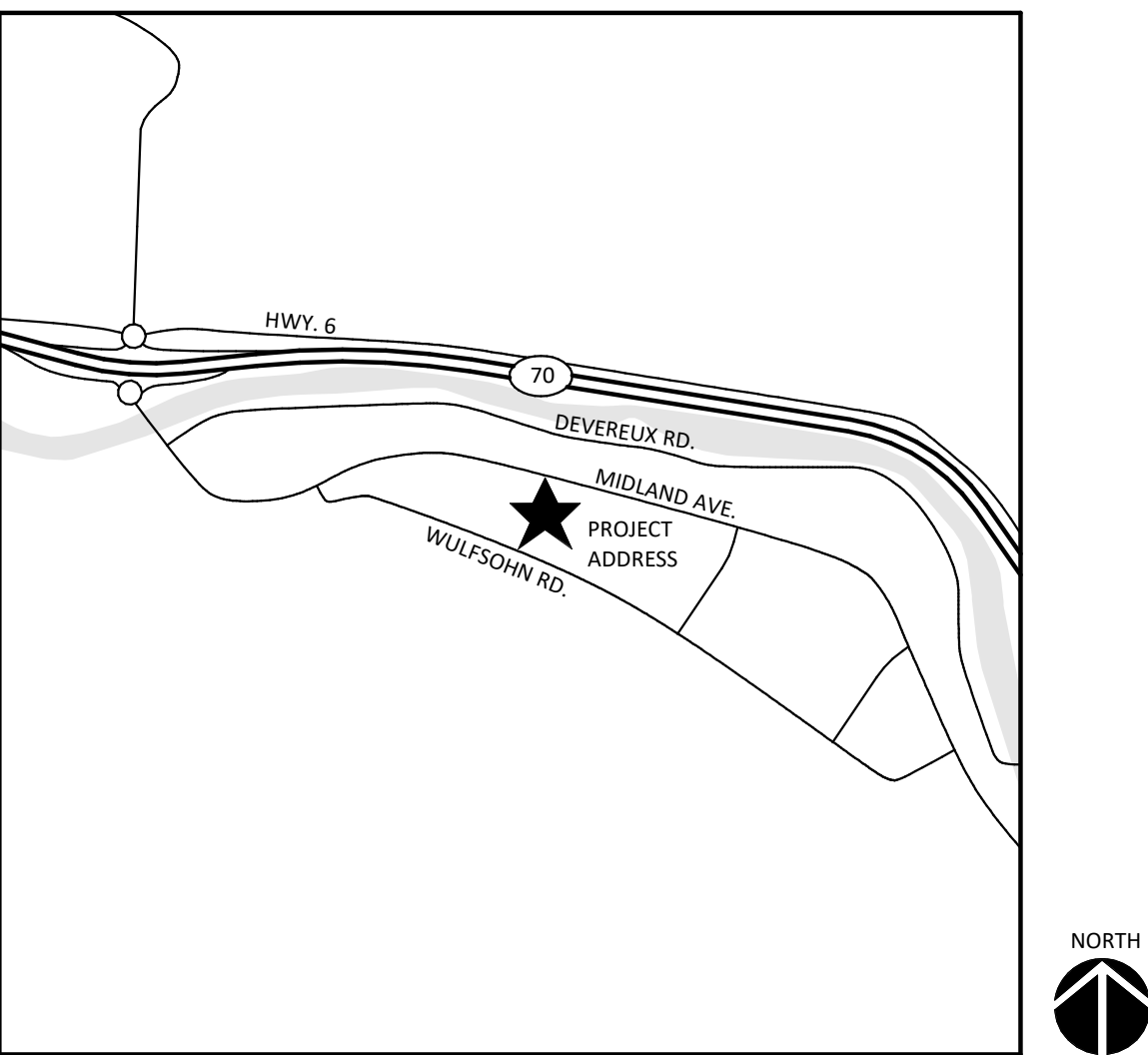
SITE REVIEW SHEET INDEX

G-001	COVER SHEET
C001	LEGEND
C002	OVERALL SITE PLAN
C003	PRELIMINARY SITE PLAN
C004	PRELIMINARY GRADING PLAN
L100	LANDSCAPE NOTES
L200	LANDSCAPE PLAN
L300	LANDSCAPE DETAILS
A-101	ARCHITECTURAL SITE PLAN
A-201	FIRST FLOOR PLAN
A-202	SECOND FLOOR PLAN
A-203	ROOF PLAN
A-301	EXTERIOR ELEVATIONS
A-302	EXTERIOR ELEVATIONS
E1.1	SITE LIGHTING PHOTOMETRICS
E2.1	LIGHT FIXTURE CUTSHEET
E2.2	LIGHT FIXTURE CUTSHEET

GENERAL PROJECT DATA

PROJECT TYPE OFFICE BUILDING TWO STORIES ABOVE GRADE
APPLICABLE CODES 2015 INTERNATIONAL BUILDING CODE 2015 INTERNATIONAL PLUMBING CODE 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL FUEL GAS CODE 2015 INTERNATIONAL FIRE CODE 2014 NATIONAL ELECTRICAL CODE (NFPA 70) 2009 INTERNATIONAL ENERGY CODE 2010 ASHRAE STANDARD 90.1 2009 ICC/ ANSI A117.1 ACCESSIBILITY CODE 2010 ADA (AMERICANS WITH DISABILITIES ACT)
DEFERRED SUBMITTALS FIRE SUPPRESSION SYSTEM FIRE ALARM SYSTEM
BUILDING DEPARTMENT CITY OF GLENWOOD SPRINGS
FIRE DEPARTMENT CITY OF GLENWOOD SPRINGS FIRE DEPARTMENT

VICINITY MAP



PROJECT NUMBER 184101.00	DRAWN BY K. Fronczak
DATE 01/02/19	
REVISIONS	DESCRIPTION
REV	
PROPERTY DESCRIPTION	
Lot 14, Glenwood Meadows No. 2 A Parcel of Land Situate in the SW 1/4 of Section 5, Township 6 South, Range 89 West of the 6th P.M. City of Glenwood Springs, County of Garfield, State of Colorado	

BOULDER ASSOCIATES

ARCHITECTS

Boulder Associates, Inc. Architecture + Interior Design 1426 Pearl Street, Suite 300 Boulder, Colorado 80302 303.499.7795 F 303.499.7767 www.boulderassociates.com
OWNER
BOLDT 1110 N. Old World Third St., Suite 610 Milwaukee, WI 53203 414.276.4631 ben.ganther@boldt.com

PROJECT
GLENWOOD SPRINGS
LOT 14 GLENWOOD MEADOWS NO. 2 TBD WULFSOHN RD. GLENWOOD SPRINGS, CO 81601

SITE/ ARCHITECTURAL PLAN REVIEW

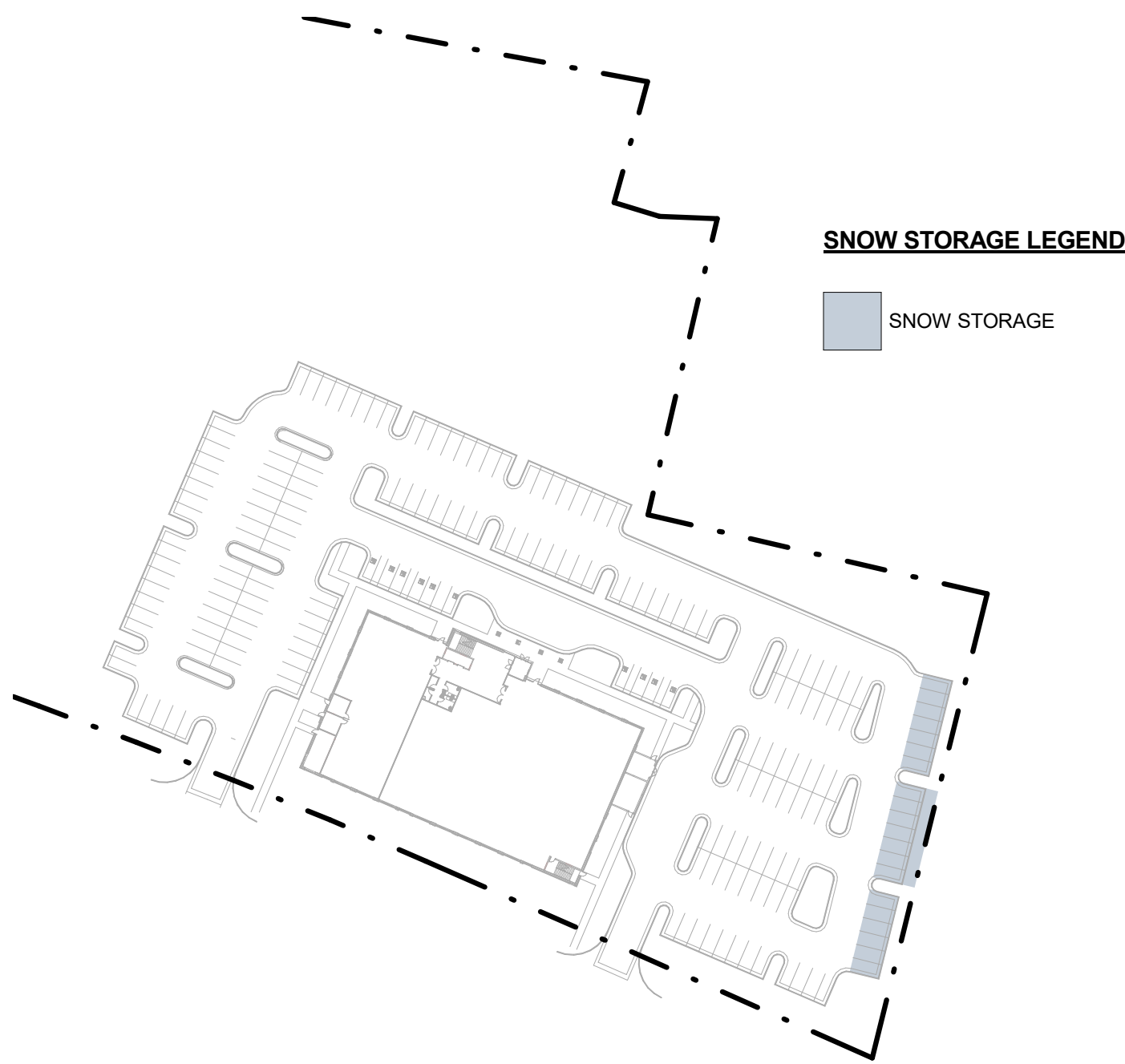
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SHEET NUMBER G-001

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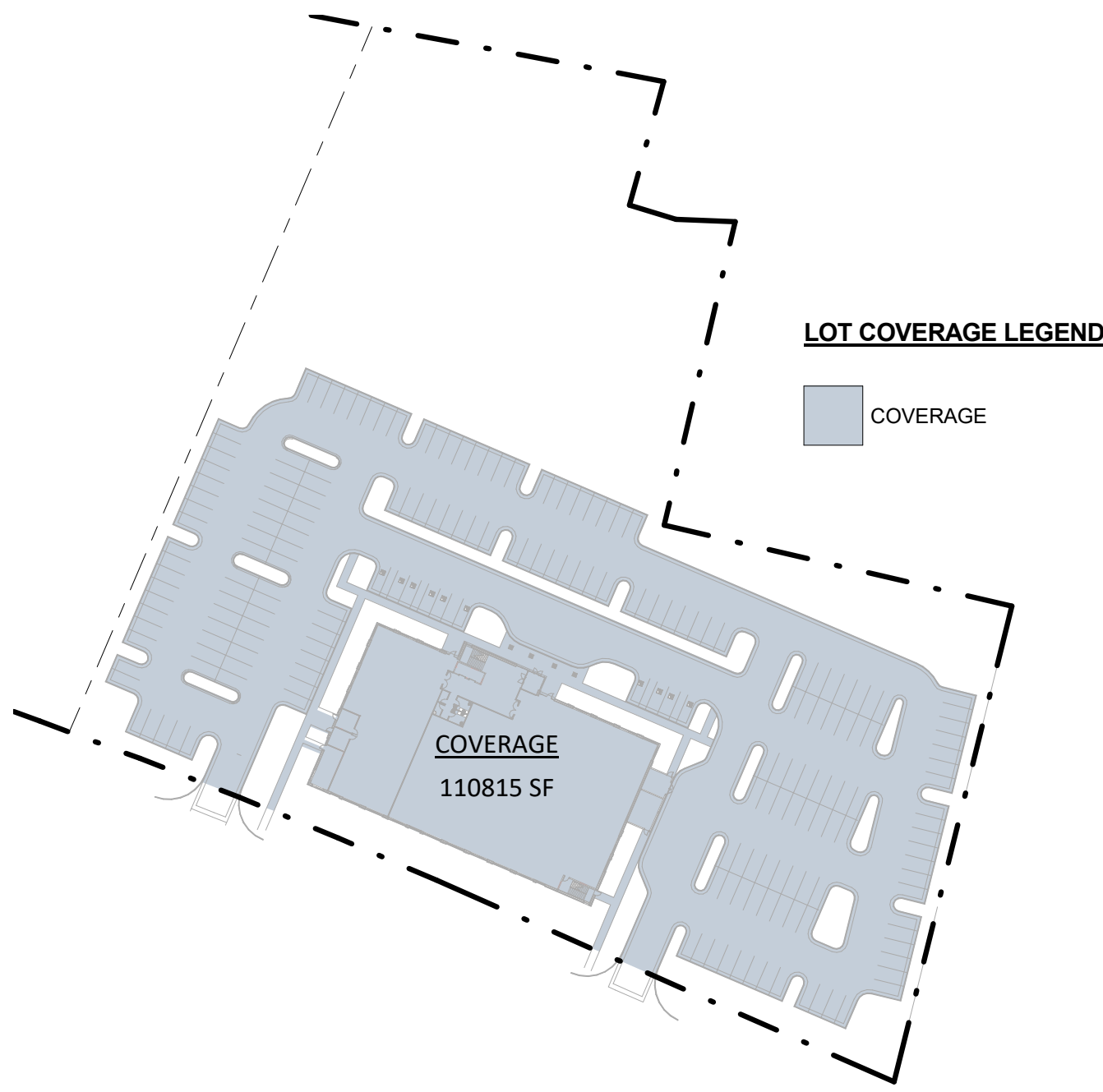


PROJECT DESCRIPTION						
LOT SIZE INFORMATION	ACRES	SQUARE FEET	LOT COVERAGE	EXISTING (SQFT & %)	PROPOSED (SQFT)	(%)
	9.9	431,224		N/A	110,815	25.7%
LIMITS OF DISTURBANCE	EXISTING (SQFT & %)	PROPOSED (SQFT & %)	AVERAGE SLOPE WITHIN LIMITS OF DISTURBANCE	PERCENTAGE (%)		
	N/A	149,235				
OFF-STREET PARKING SPACES	REQUIRED # VEHICLE...	PROPOSED # VEHICLE...	BICYCLE PARKING	REQUIRED # SPACES	PROPOSED # SPACES	
	174	189 (STANDARD) 10 (HANDICAP) 199 (TOTAL)		10	10	
OPEN SPACE	REQUIRED (SQFT & %)	PROPOSED (SQFT & %)	NON-RESIDENTIAL USES	TYPE OF USE	GROSS FLOOR AREA (SQFT ...)	
	22,385	23,000		MULTI-USE	43,333	
BUILDING HEIGHT	MAX	PROPOSED	TOTAL LANDSCAPED AREA	EXISTING (SQFT & %)	PROPOSED (SQFT)	(%)
	40' - 0"	35' - 0"		N/A	38,420	25.7%
SNOW STORAGE	REQUIRED (SQFT)	PROPOSED (SQFT)	TOTAL IMPERVIOUS AREA	EXISTING (SQFT & %)	PROPOSED (SQFT)	(%)
	NO MINIMUM	4,084 (20 PARKING SPACES)		N/A	110,815	74.3%

PLEASE SEE THE REVISED CALCULATIONS REFLECTING THE DEVELOPED AREA (LIMITS OF DISTURBANCE)



SNOW STORAGE DIAGRAM



LOT COVERAGE DIAGRAM

PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

REVISIONS
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PROJECT
GLENWOOD SPRINGS

LOT 14
GLENWOOD MEADOWS NO. 2
TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
ARCHITECTURAL SITE PLAN

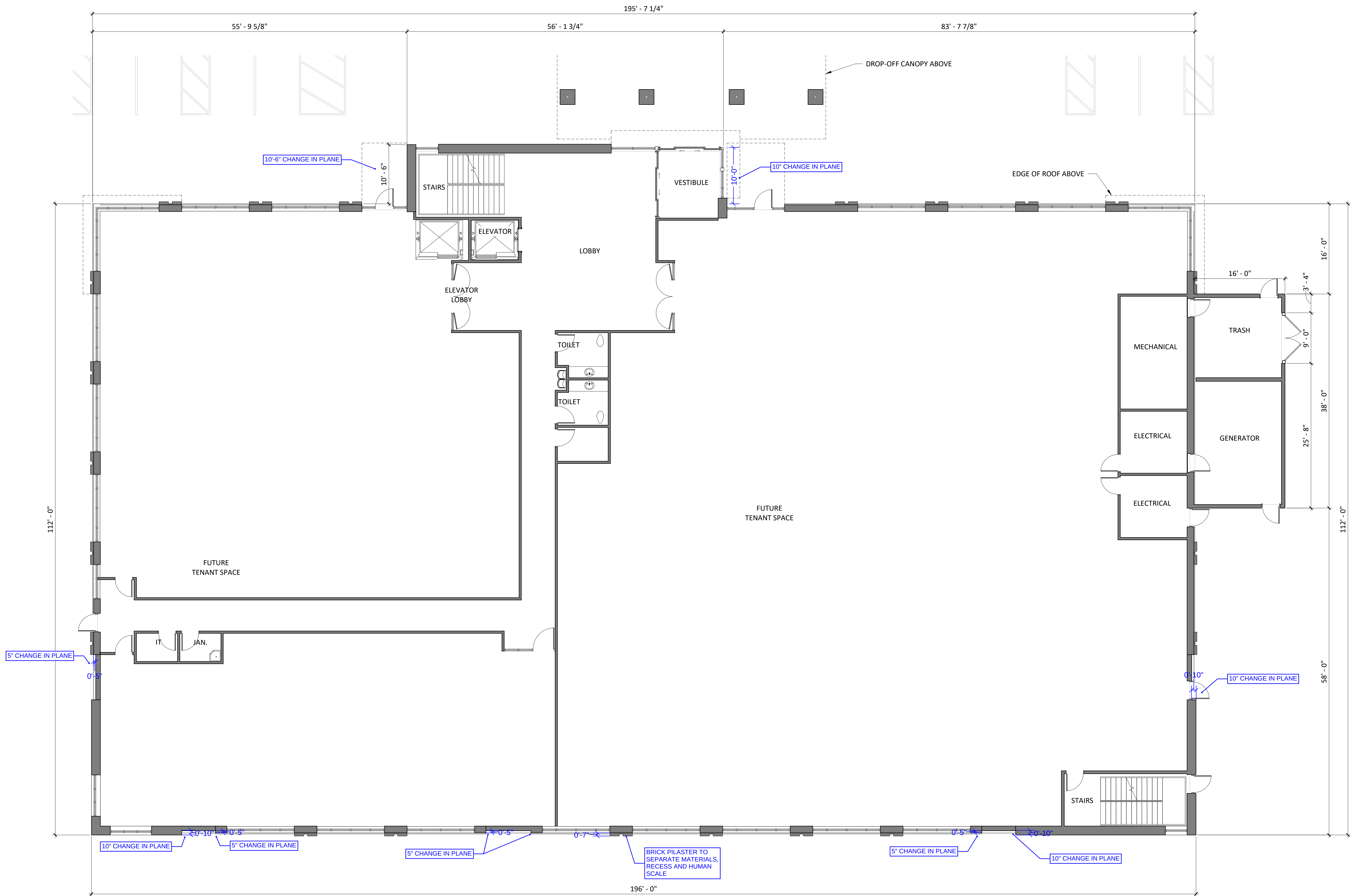
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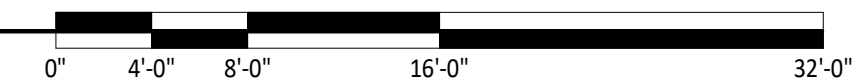
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1 FIRST FLOOR PLAN

A3.10 | A-201 1/8" = 1'-0"



PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/04/19

REVISIONS
REV DESCRIPTION DATE

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PROJECT
**GLENWOOD
SPRINGS**

LOT 14
GLENWOOD MEADOWS NO. 2
TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

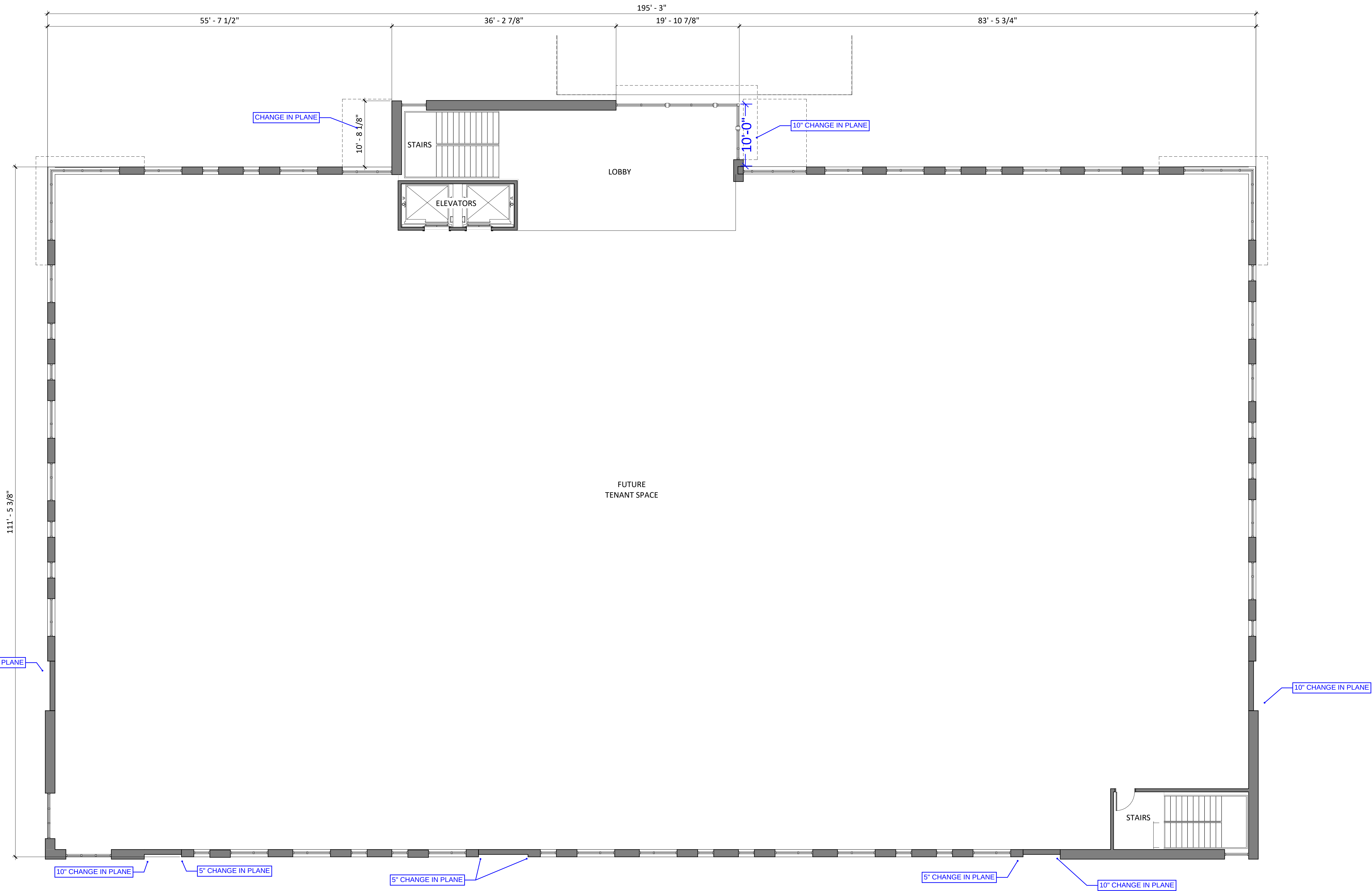
SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
FIRST FLOOR PLAN

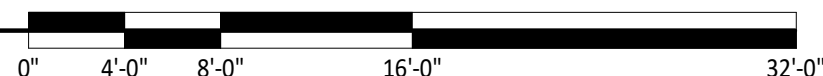
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A-201

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1 SECOND FLOOR PLAN
A3.10 | A-202 1/8" = 1'-0"



PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

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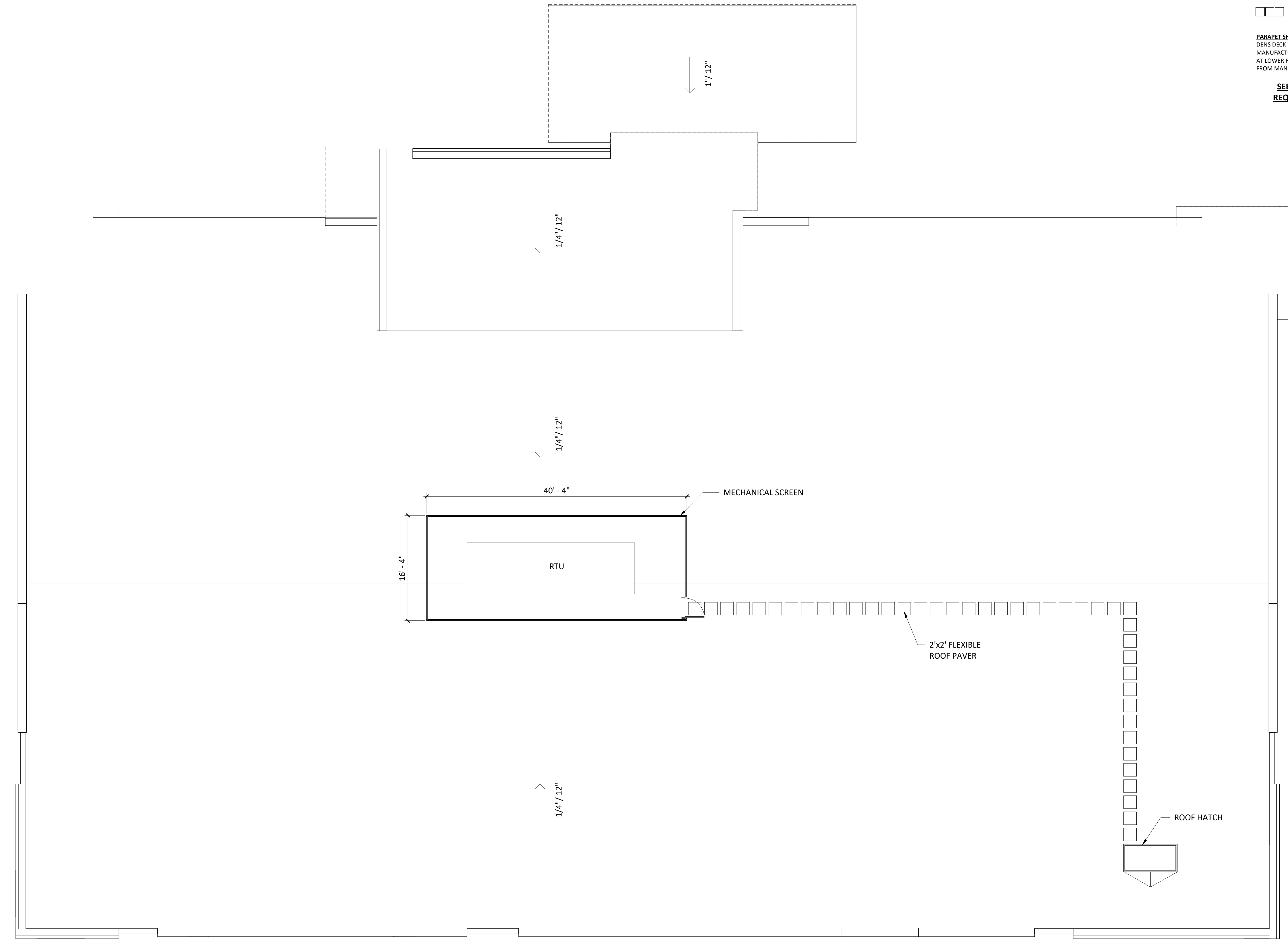
SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
SECOND FLOOR PLAN

SHEET NUMBER

A-202

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ROOF PLAN LEGEND

- MEMBRANE ROOF SYSTEM**
FULLY ADHERED, 60 MIL UNREINFORCED WHITE EPDM OVER 5/8" COVER BOARD OVER MINIMUM R-30 RIGID INSULATION OVER METAL DECK, SEE STRUCTURAL, SEE ALSO BACK OF PARAPET SHEATHING BOARD
- TAPERED INSULATION, SLOPE @ 1/4" PER FOOT, SEE ARROWS FOR SLOPE DIRECTION. TAPER UP FROM MINIMUM R-30 INSULATION.
- EPDM ROOF PAVER

PARAPET SHEATHING BOARD
DENS DECK PRIME W/ METAL STRAP BACKING AS REQUIRED BY MANUFACTURER FOR PULL-OUT RESISTANCE. BACK OF PARAPETS AT LOWER ROOFS TO RECEIVE MANUFACTURER'S PAINT, COLOR TBD FROM MANUFACTURER'S STANDARD RANGE.

SEE SPEC FOR WIND SPEED WARRANTY REQUIREMENTS FOR ALL ROOFING TYPES
V_{ult} = 120 mph
V_{asd} = 93 mph

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PROJECT

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LOT 14
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TBD WULFSOHN RD.
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SITE/ ARCHITECTURAL PLAN REVIEW

SHEET TITLE

ROOF PLAN

SHEET NUMBER

A-203

1 ROOF PLAN

A-203 1/8" = 1'-0"

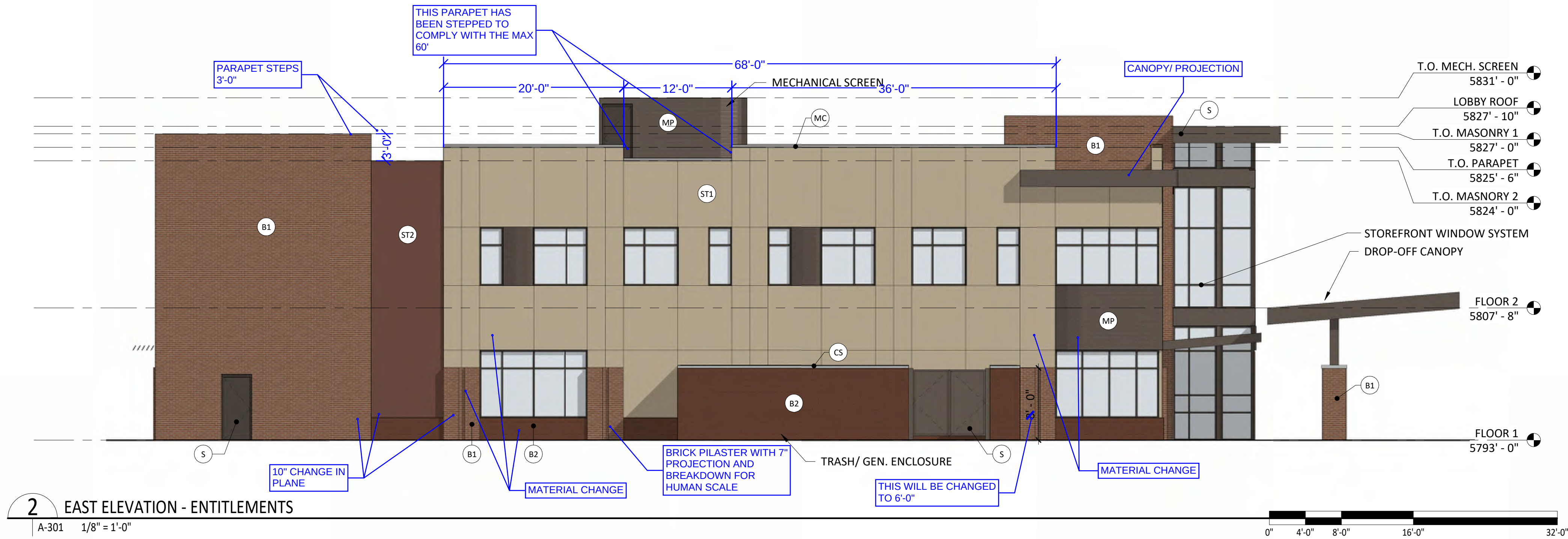
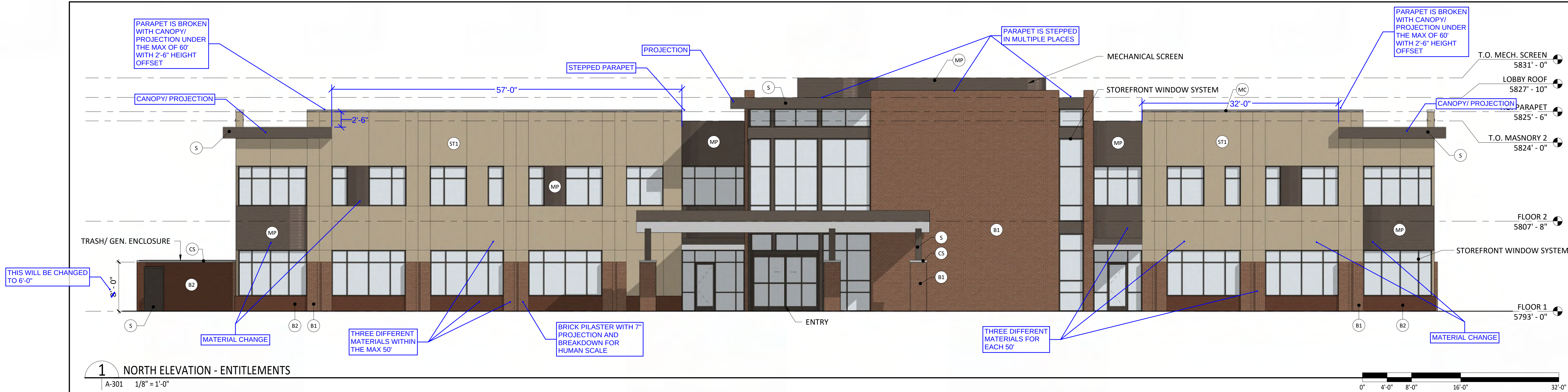
0" 4'-0" 8'-0" 16'-0" 32'-0"



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EXTERIOR ELEVATION MATERIAL LEGEND

B1	BRICK 1
B2	BLOCK/ BRICK 2
ST1	STUCCO 1
ST2	STUCCO 2
S	STEEL, PAINTED "BRONZE"
MP	METAL PANEL, "BRONZE"
CS	CAST-STONE
MC	PREFINISHED METAL COPING

ELEVATION LENGTH				
	FEATURE LENGTH (FEET)	OVERALL LENGTH (FEET)	PERCENTAGE OF LENGTH (FEET)	60% MIN. OF FAÇADE
NORTH	164.58	195.25	84%	OK
EAST	90.13	122.00	74%	OK
SOUTH	139.19	196.00	71%	OK
WEST	79.82	122.00	65%	OK

NOTE: PER SECTION V.D.2.d THE FEATURE LENGTH INCLUDES EITHER OF THE FOLLOWING: WINDOWS, ENTRANCES, ARCADES, AWNINGS, OR OTHER FEATURES.

NORTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,328	NA
STUCCO (NET*)	2,062	32.6%
MASONRY (NET*)	1,618	25.6%
METAL PANEL (NET*)	587	9.3%
GLAZING	2,061	32.6%

SOUTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,394	NA
STUCCO (NET*)	2,934	45.9%
MASONRY (NET*)	1,926	30.1%
METAL PANEL (NET*)	161	2.5%
GLAZING	1,373	21.5%

NOTE: THESE ELEVATIONS ARE CONCEPTUAL IN NATURE. INDIVIDUAL BUILDING ELEVATIONS MAY VARY BUT WILL BE EVALUATED FOR COMPLIANCE WITH DESIGN STANDARDS CONTAINED WITHIN TITLE 070 OF THE GLENWOOD SPRINGS MUNICIPAL CODE AT THE TIME OF SUBMITTING A BUILDING PERMIT APPLICATION.

NET* EXCLUDES ROOF FORMS, AWNINGS, AND SIMILAR FEATURES.

EAST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	3,622	NA
STUCCO (NET*)	1,658	45.8%
MASONRY (NET*)	1,114	17.6%
METAL PANEL (NET*)	128	3.5%
GLAZING	722	19.9%

WEST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	3,975	NA
STUCCO (NET*)	1,596	40.2%
MASONRY (NET*)	1,440	36.2%
METAL PANEL (NET*)	181	2.9%
GLAZING	758	19.1%

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PROJECT
**GLENWOOD
SPRINGS**

LOT 14
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TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

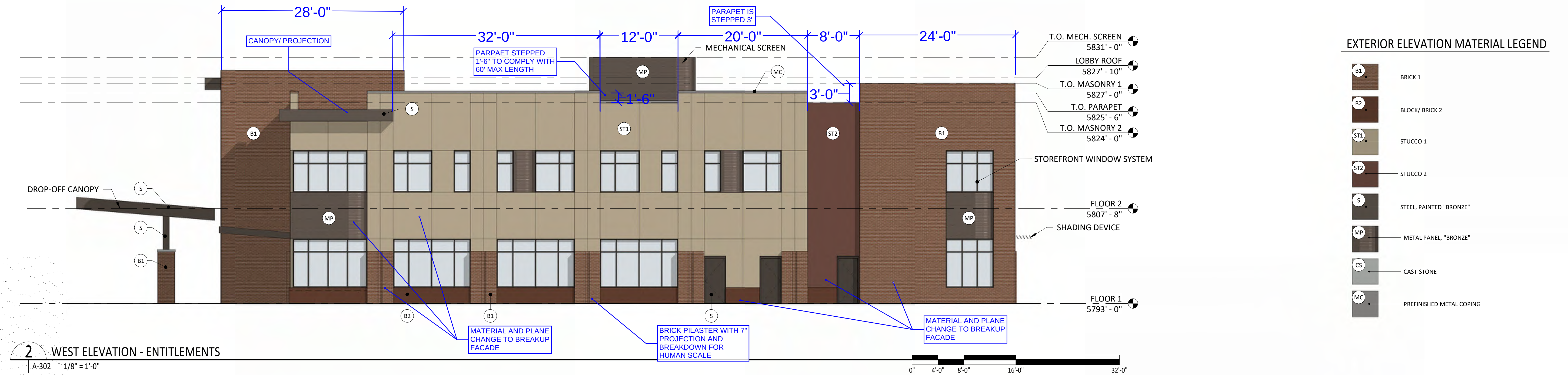
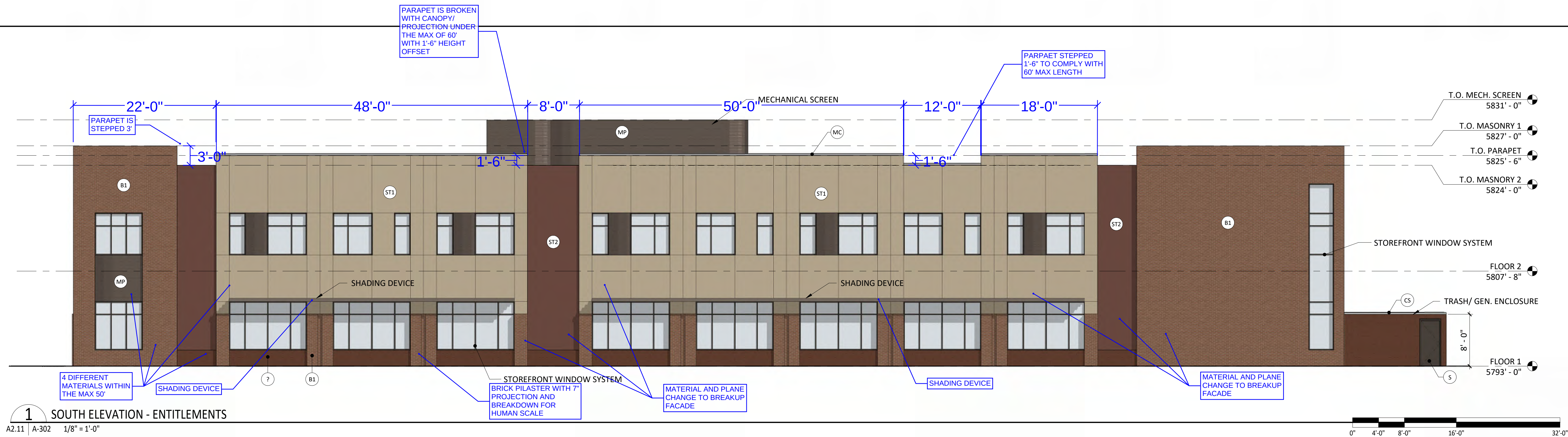
SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
**EXTERIOR
ELEVATIONS**

SHEET NUMBER

A-301

C:\Revit Local Files\184101.00 Glenwood Springs MOB-A18 Central Alternate Option - Kfronczak.rvt
12/21/2018 3:18:17 PM
TTLbx-110221



ELEVATION LENGTH				
	FEATURE LENGTH (FEET)	OVERALL LENGTH (FEET)	PERCENTAGE OF LENGTH (FEET)	60% MIN. OF FAÇADE
NORTH	164.58	195.25	84%	OK
EAST	90.13	122.00	74%	OK
SOUTH	139.19	196.00	71%	OK
WEST	79.82	122.00	65%	OK

NOTE: PER SECTION V.D.2.d THE FEATURE LENGTH INCLUDES EITHER OF THE FOLLOWING: WINDOWS, ENTRANCES, ARCADES, AWNINGS, OR OTHER FEATURES.

NORTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,328	NA
STUCCO (NET*)	2,062	32.6%
MASONRY (NET*)	1,618	25.6%
METAL PANEL (NET*)	587	9.3%
GLAZING	2,061	32.6%

SOUTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,394	NA
STUCCO (NET*)	2,934	45.9%
MASONRY (NET*)	1,926	30.1%
METAL PANEL (NET*)	161	2.5%
GLAZING	1,373	21.5%

NOTE: THESE ELEVATIONS ARE CONCEPTUAL IN NATURE. INDIVIDUAL BUILDING ELEVATIONS MAY VARY BUT WILL BE EVALUATED FOR COMPLIANCE WITH DESIGN STANDARDS CONTAINED WITHIN TITLE 070 OF THE GLENWOOD SPRINGS MUNICIPAL CODE AT THE TIME OF SUBMITTING A BUILDING PERMIT APPLICATION.

NET* EXCLUDES ROOF FORMS, AWNINGS, AND SIMILAR FEATURES.

EXTERIOR ELEVATION MATERIAL LEGEND

- B1 BRICK 1
- B2 BLOCK/ BRICK 2
- ST1 STUCCO 1
- ST2 STUCCO 2
- S STEEL, PAINTED "BRONZE"
- MP METAL PANEL, "BRONZE"
- CS CAST-STONE
- MC PREFINISHED METAL COPING

PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

REVISIONS
REV DESCRIPTION DATE

PROPERTY DESCRIPTION
Lot 14, Glenwood Meadows No. 2
A Parcel of Land Situate in the SW 1/4
of Section 5, Township 6 South,
Range 89 West of the 6th P.M.
City of Glenwood Springs,
County of Garfield, State of Colorado

**BOULDER
ASSOCIATES**

ARCHITECTS

Boulder Associates, Inc.
Architecture + Interior Design
1426 Pearl Street, Suite 300
Boulder, Colorado 80302
303.499.7795 F 303.499.7767
www.boulderassociates.com

OWNER

BOLDT
1110 N. Old World Third St., Suite 610
Milwaukee, WI 53203
414.276.4631
ben.ganther@boldt.com

PROJECT
**GLENWOOD
SPRINGS**

LOT 14
GLENWOOD MEADOWS NO. 2
TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
**EXTERIOR
ELEVATIONS**

SHEET NUMBER

A-302

March 8, 2019

BOULDER
ASSOCIATES

ARCHITECTS

Glenwood Springs Planning Commission Preliminary Response Memo

RE: Glenwood Springs (File No. 01-19) Plan Review – Engineering Comments Memo

Civil:

3. 24' walls will require step backs. Check with Community Development. All walls over 4' require an engineer's stamp.

- a. *The current retaining walls located on the North/ Northeast of the site are in the process of being eliminated by revising some of the parking layout.*

Please note, the Glenwood Meadows Development Plan (Plan) allows higher walls than the City's standard Development Code. Section V.H.6.b outlines that walls in commercial areas may be up to 10 feet in height, having a 3 foot step back/terraces with a 2:1 slope maximum between each section. Retaining walls shall be faced with stone or earth colored materials and have a 12 inch minimum recession or projection every 50 feet.

- *Acknowledged and noted. The intent is to eliminate the retaining walls along all the North portion of the site with slight revisions to parking. If retaining walls are still required, we will comply with Section V.H.6.b as indicated above from your comments.*

General Notes, Sanitary Notes and Waterline Notes:

1. A101. Snow Storage. Placing the snow storage on the east end of the lot and allowing it to melt and sheet flow across the asphalt to the drain/outfall will cause icing.
 - *The snow storage locations will be revised to the furthest north 24 parking spaces closer to the outfall to eliminate potential for icing.*

Additional Comments:

1. The height of the retaining wall at the north-easternmost portion appears to be approximately 24 feet which significantly exceeds the maximum 6 foot permitted by the Municipal Code.
 - *The current retaining walls located on the North/ Northeast of the site are in the process of being eliminated. Only a small retaining wall of less than 6'-0" in height may remain satisfying the requirement for step backs.*
2. The M1 zone district requires that landscaping make up a minimum of 15 percent of the site and it appears you provide only 8.9 percent.
 - *The landscaped area requirement was calculated from the limit of disturbance area of 149,200 sqft located on sheet L100 providing us with 26% landscaped area. We used this calculation to isolate a square footage based on this specific project area within the overall site with the intent that future development on the site will account for the remaining required landscape for each development.*

Acknowledged. It appears the project description table on the cover sheet and elsewhere in the plan set may need revising. Please see the pic reference below.

Boulder Associates, Inc.

1426 Pearl Street | Suite 300 | Boulder, Colorado 80302 | 303.499.7795 | www.boulderassociates.com

BOULDER ■ SACRAMENTO ■ ORANGE COUNTY ■ SAN FRANCISCO ■ DALLAS

EXISTING (SQFT & %)	PROPOSED (SQFT)	(%)
N/A	38,420	8.9%
EXISTING (SQFT & %)	PROPOSED (SQFT)	(%)
N/A	110,815	25.7%

- Please see the revised table on Sheet A-101 providing the calculations using the proposed developed area (Limits of Disturbance).
- 3. It seems the plans lack internal pedestrian access from parking areas to the building entrance(s).
 - Pedestrian access will be added into the parking design to allow for safe access for pedestrians walking from the parking lot to the building entrance.
- 4. The height of the refuse enclosure (8 feet) exceeds the maximum of 6 feet outlined in the Municipal Code.
 - The refuse enclosure will be lowered to 6'-0" to comply with Section 070.040.050.f.1.3.
- 5. It is difficult to determine if the elevations meet all of the building design guidelines as the site plan does not represent every projection and recession in each of the building walls. Can you provide a site plan which represents the exact building footprint? Also, please call out the architectural features you propose on each side of the building (i.e. projections/recessions a minimum of 24 inches in depth, glazed windows and doors for 30 percent of the elevation (this is required as one of the three features for elevations facing the right-of-way), change in texture and/or masonry pattern, change in building roofline height a minimum of two feet; and/or awnings/canopies/marquees extending at least four feet beyond the building face.)
 - Per section 070.040.090.b.2.b "Properties subject to the Glenwood Meadows Annexation and Development Agreement." we are required to comply with Glenwood Meadows Zoning and Development Plan.

Acknowledged
 - Per Glenwood Meadows Development Standards V.D.2.C. all the facades comply with buildings less than 60,000 sqft. Providing two or more of the following for each 30 horizontal feet of the building façade or wall. We utilize the options below to break-up the façade:
 - Option 1 – Changes in color, texture, or materials.
 - Option 2 - Projections, recesses, and reveals, expressing structural bays, entrances, or other aspects of the architecture with a minimum change of plane of 4-6 inches.

Please call out the elements provided for each wall on each elevation accordingly. -Does the site plan accurately depict the buildings projections, recesses, etc. accordingly? Please clarify

 - Please refer to Sheet A-201 First Floor Plan (Exhibit) identifying the changes in plane etc. for compliance with this section. The site plan depicts the elements but do to scale may be difficult to delineate, please refer to A-201 in the attached exhibit for clarification.
 - Per Glenwood Meadows Development Standards V.D.2.D. the building façades or walls comply with the requirement of subdividing the proportions along 60% of the horizontal length.

Please provide a call out column in the materials table (example below) on the elevations sheets which depicts compliance with this requirement.

 - Please refer to the added table on Sheet A-301 Exterior Elevations and A-302 Exterior Elevations (Exhibit) indicating the proportions along 60% of the horizontal length.

- *Per Glenwood Meadows Development Standards V.D.2.E. Parapet walls on each façade comply with the requirements for stepping the parapet for each 60 lineal feet of parapet.*

Please call out compliance with this requirement on the elevation sheets.

- *Please refer to Sheet A-301 Exterior Elevations and A-302 Exterior Elevations (Exhibit) identifying the stepping of the parapets in compliance with this section. We have either stepped or provided a roof projection to the roof/ parapets to be less than the max 60' in length.*

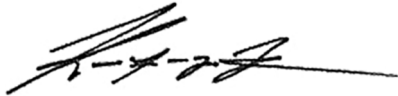
6. It does not appear (per sheet A-302) you provide a building entrance on the south elevation which faces the principal street providing access to the site. That being said, the preliminary site plan (but not architectural site plan) appears to show sidewalk connections to this side of the building. Please clarify.

- *Per section 070.040.090.b.2.b "Properties subject to the Glenwood Meadows Annexation and Development Agreement." we are required to comply with Glenwood Meadows Zoning and Development Plan. Referenced section 070.040.090 Nonresidential and Mixed-Use Site and Building Design does not apply per the section stated above.*

Section VI.D.3 requires building are oriented towards the adjacent street. Additionally, Section II of the Plan states that the Municipal Code shall apply where the Plan does not address a specific subject.

Sincerely,

BOULDER ASSOCIATES, INC.



Keith Fronczak, AIA

Associate

Glenwood Meadows Lot 14

Drainage:

Both soils reports identify a significant risk of hydrocompactive soils. Identify the locations and sizing of the proposed detention/ water quality ponds. If a pond is proposed next to the City's concrete trail, lining and fencing may be required.

Basin OS2 is routed around the development. Show how that occurs.

Add a smaller scale drainage basin map. Show developed drainage design points and connection to the existing system to the Colorado River. Show Midland road grading and basin delineation lines.

All water quality facilities will require a maintenance agreement with the City.

The geotechnical report states that an interceptor drain system should be built to intercept subsurface drainage.

Utilities

All water and sewer crossings must meet the CDPHE requirements

Coordinate with City Fire for hydrant locations and capacity

Traffic

Please justify no project driven increase in traffic on West Meadows. It seems unlikely that project based traffic will not use the most convenient access to Midland to the east. The report shows a 37% split of traffic bypassing West Meadows to use a less convenient outlet. Some people may by pass West Meadows due to congestion, but not at a 37% split. Analyze the effect of the additional traffic on other intersections to the east.

The City would prefer to have a roundabout at Wulfsohn Road intersection, if it were economically and physically feasible. The City will evaluate the different intersection configurations, and ask the project developer to contribute to a future intersection improvement.

Trip generation is based on retail. No restaurant uses are proposed?

Civil

A CDPHE stormwater Permit will be required.

New utility location regulations were in acted in Colorado. Determine whether the existing utility design requirements apply to this project.

24' walls will require step backs. Check with Community Development. All walls over 4' require an engineer's stamp.

General Notes, Sanitary Notes and Waterline Notes: The contractor will provide 72 hours notice before proceeding with general construction, or with and sanitary or sewer line construction.

Sheet C002. Please add Basis of Bearing Lot Line labels

The waterline appears to be on the south side of the road. Show the waterline connection, road cut and trenching details.

Sheet C002. Show ADA access (ramps). We recommend that you review the site accommodations with Rocky Mountain ADA.

Sheet C003. Parking spaces on the west side of the building are effectively narrowed to 3' with a car bumper overhang.

Do you want to provide any pedestrian connection to the trail north of the building?

Grades in the parking lot exceed City standard of 8% maximum.

L200. Landscaping layout does not reflect civil grading and retaining walls.

A101. Snow Storage. Placing the snow storage on the east end of the lot and allowing it to melt and sheet flow across the asphalt to the drain/outfall will cause icing

Water/Wastewater (W/WW) Department Comments

Planning Item: 01-19 Boldt Mulita-Tenant Office Building
Applicant: Boldt/Glenwood Properties, LLC
Owner: Centura Ventures, LLC
Location: Wulfsohn Road, Glenwood Meadows No. 2, Lot 14
Zone: Mixed Use Corridor (M1) District
Parcel: 2185-053-38-014

The following are water/wastewater (W/WW) Department comments based on a review of the application package and the Department Review meeting held on 2/4/2019.

Project Understanding

- We understand that the applicant is proposing construction of an approximately 45,000 square foot multi-tenant office building on Lot 14 of the Glenwood Meadows No. 2 Subdivision located along Wulfsohn Road.

W/WW Department Comments

General.

- The W/WW department requests the applicant submit a revised utility plan to the City for review and approval that includes design changes based on the comments provided in this document.
- All publically-owned or maintained water and sewer infrastructure must meet the requirements of the City's engineering standards. In addition, private water mains that feed a City-maintained fire hydrant must also meet the requirements of the City's engineering standards. The current version can be found at the following link: <http://cogs.us/EngineeringStandards>.
- Per Colorado 811 and City requirements, tracer wire and utility warning tape shall be installed with all underground water and sewer infrastructure.
- In this particular geologic area, the City strongly recommends restrained joint piping systems for all underground water and sewer piping, including bell-restraints.
- The City's minimum cover on water and sewer pipe is 5.5', not 4.5' as noted on sheet C001.

Potable Water Service and Fire Hydrants.

- There is an existing 8" potable water stub-out for this property that is tapped on the water main located in Wulfsohn Rd. The applicant proposes connecting to the existing stub-out, looping a new 8" service main through the development, and re-connecting to the main in Wulfsohn Rd. at a new tap.
- The water mains and services installed within the development will be private. The public/private demarcation point will be the 8" isolation valves located at the mainline taps in Wulfsohn Rd. The demarcation points for water and sewer services shall be shown on the plans and referenced in the development agreement. Legal agreements shall be in place defining operations, maintenance, and financial responsibilities for the private system.
- The City will accept ownership and O&M responsibilities for the new fire hydrant(s) installed as part of this project. However, the hydrants (and private water mains serving them) must meet City specifications.
- The public/private demarcation point for fire hydrants is the hydrant lead valve. The owner shall provide the City with utility easements for the hydrants in accordance with Section 3.4 of the City's engineering standards.
- We understand fire sprinkler system(s) will be installed in the buildings within the development. All water mains used to supply water for fire protection must be designed and tested in accordance with NFPA 24. The contractor shall be responsible for providing the City with a copy a completed "Contractor's Material and Testing Certificate for Underground Piping" prior to issuance of a Certificate of Occupancy.
- Please provide a detail showing the proposed new tap in Wulfsohn Rd. The City prefers installation of a cut-in tee vs. a live ("hot") tap whenever possible.
- There are several water/sewer crossings shown on the plans. Water/sewer main alignments and crossings must meet the separation requirements defined in the City's rules and regulations and the CDPHE Design Criteria for water and sewer systems. When vertical and/or horizontal separation requirements are not met, encasement in a pipe sleeve is the preferred encasement approach (vs. concrete encasement).
- Please consult with the Fire Department to verify that the proposed location and quantity of new fire hydrants is acceptable.

Irrigation Service.

- Per the City Code, all outdoor irrigation for this proposed development must utilize raw (untreated) water. The City's raw water main is located in Wulfsohn Rd.
- Our records indicate that there is an existing 2" stub-out installed for this parcel, however the raw water service has not been field-verified by W/WW staff. Please

contact the W/WW department for more information regarding the raw water irrigation requirements, stub-out location, metering, and cross-connection requirements.

Sanitary Sewer Service.

- The utility plan provided in the application package shows a tie-in to the City's existing 8" sanitary sewer line. Please provide a detail of the proposed 6" tap.
- The slope of the proposed sanitary service line is shown as 21.7%. The City requests that a private manhole be installed on the customer-side of the tap to dissipate energy of the flow from this highly-sloped service line. Please provide a detail of the manhole for City review and approval.

Cross-connection Control Requirements.

- **This project requires that a-cross connection/backflow prevention hazard survey be completed (by the City) before a certificate of occupancy will be issued.** A City-approved cross-connection/ backflow device must be installed on water service lines if a hazard exists. At the customer's request, W/WW Department staff will perform an initial Cross Connection Hazard Survey and provided preliminary recommendations during the planning phases of the project. Upon completion of the project, a follow-up inspection of the property is required (per State law) to ensure that acceptable backflow devices have been properly installed and tested. We recommend that you contact the W/WW department to discuss specific requirements as soon as possible to avoid unforeseen installation issues during the construction phase.

Please note that backflow prevention devices cannot be installed below grade per International Plumbing Code (IPC). In addition, certain backflow prevention devices require drainage requirements. We encourage the customer to consider these requirements and address them during the design phase of the project.

Water Meters.

- All water services must be metered. **A water meter inspection must be performed by City staff before a certificate of occupancy will be issued.** We recommend that you contact the W/WW department to discuss specific requirements as soon as possible to avoid an unforeseen installation issues.

Water meters must be installed per manufacturer's requirements. They may be subjected to performance testing before being accepted by the City.

Please note that water meters must be installed in a location that can be accessed by the City for inspection and future maintenance. Please refer to the attached schematic for meter installation instructions, including additional requirements for isolation valves, pressure reducing valves, and cross-connection devices (**see attached water meter installation schematic**). Note that if the water system pressure exceeds 80 psi, a pressure reducing valve must be installed downstream of the water meter.

W/WW Department Contact Information:

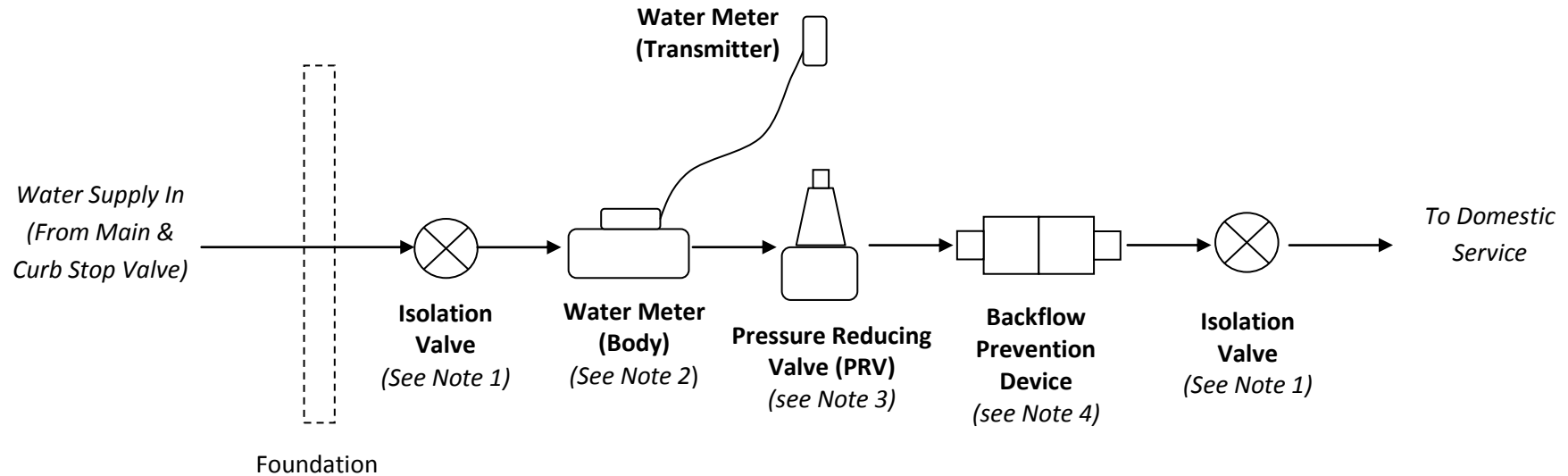
- o Horacio Diaz – 379-1974 (Sewer Services & Taps)
- o Mike Hoffman – 989-3902 (Water Services & Taps, Cross Connections, Water Meter Inspections)
- o Brad Zachman – 384-6388 (General Information)
- o Utility Billing – 384-6400 (Account setup; Water Meter Purchase)
- o Community Development Department – 384-6411 (Improvements Fees)

Attachments:

- o Water Meter Installation Schematic
- o NFPA 24 - Contractor's Material and Testing Certificate for Underground Piping

Water Meter Installation Schematic

Glenwood Springs Water Department



Notes:

1. It is strongly recommended that isolation valves be installed at the locations shown. These valves allow for the water supply to be shut off during repairs or for replacement of the water meter equipment.
2. To assure accurate measurements, water meters must be installed per manufacturer's specific instructions. Contact the City's Water Department for a copy of these instructions or if you have any questions regarding the installation requirements.
3. A pressure reducing valve (PRV) regulates incoming pressure from the main. A PRV is recommended for all installations, but is required for all services that are fed off of water mains with static water pressure of 80 psi or greater. Contact the water department (**384-6344 or 989-3902**) for more information regarding the static water main pressure that serves your property.
4. A backflow prevention device protects the City's water supply from contamination or pollution due to backflow conditions. Please contact the City's cross connection technicians (**384-6345**) to discuss specific backflow prevention requirements and installation procedures.
5. Requests for water meters can be initiated by contacting the City's Utility Billing Office (**384-6400**). Once payment is made, water meters can be picked up from the Water Department at 401 7th St. (**384-6344 or 989-3902**).
6. Contact the Water Department to schedule a final inspection of the meter (**384-6344 or 989-3902**) and the backflow device (**384-6345**).

Updated June 2016

Contractor's Material and Test Certificate for Underground Piping	
PROCEDURE Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job. A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.	
Property name _____ Date _____	
Property address _____	
Plans	Accepted by approving authorities (names) _____
	Address _____
	Installation conforms to accepted plans ☐ Yes ☐ No Equipment used is approved ☐ Yes ☐ No If no, state deviations _____
	Has person in charge of fire equipment been instructed as to location of control valves and care and maintenance of this new equipment? ☐ Yes ☐ No If no, explain _____
Instructions	Have copies of appropriate instructions and care and maintenance charts been left on premises? ☐ Yes ☐ No If no, explain _____
	Location _____ Supplies buildings _____
Underground pipes and joints	Pipe types and class _____ Type joint _____
	Pipe conforms to _____ standard ☐ Yes ☐ No Fittings conform to _____ standard ☐ Yes ☐ No If no, explain _____
	Joints needing anchorage clamped, strapped, or blocked in accordance with _____ standard ☐ Yes ☐ No If no, explain _____
Test description	Flushing: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags at outlets such as hydrants and blow-offs. Flush at one of the flow rates as specified in 10.10.2.1.3. Hydrostatic: All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi (13.8 bar) or 50 psi (3.5 bar) in excess of the system working pressure, whichever is greater, and shall maintain that pressure ± 5 psi (0.35 bar) for 2 hours. Hydrostatic Testing Allowance: Where additional water is added to the system to maintain the test pressures required by 10.10.2.2.1, the amount of water shall be measured and shall not exceed the limits of the following equation (for metric equation, see 10.10.2.2.6): $L = \frac{SD\sqrt{P}}{148,000}$ L = testing allowance (makeup water), in gallons per hour S = length of pipe tested, in feet D = nominal diameter of the pipe, in inches P = average test pressure during the hydrostatic test, in pounds per square inch (gauge)
Flushing tests	New underground piping flushed according to _____ standard by (company) ☐ Yes ☐ No If no, explain _____
	How flushing flow was obtained ☐ Public water ☐ Tank or reservoir ☐ Fire pump
	Through what type opening ☐ Hydrant butt ☐ Open pipe
	Lead-ins flushed according to _____ standard by (company) ☐ Yes ☐ No If no, explain _____
Flushing tests	How flushing flow was obtained ☐ Public water ☐ Tank or reservoir ☐ Fire pump
	Through what type opening ☐ Y connection to flange and spigot ☐ Open pipe

FIGURE 10.10.1 Sample of Contractor's Material and Test Certificate for Underground Piping.

Hydrostatic test	All new underground piping hydrostatically tested at _____ psi for _____ hours		Joints covered ☐ Yes ☐ No	
Leakage test	Total amount of leakage measured _____ gallons _____ hours			
	Allowable leakage _____ gallons _____ hours			
Forward flow test of backflow preventer	Forward flow test performed in accordance with 10.10.2.5.2: ☐ Yes ☐ No			
Hydrants	Number installed	Type and make	All operate satisfactorily ☐ Yes ☐ No	
Control valves	Water control valves left wide open If no, state reason		☐ Yes ☐ No	
	Hose threads of fire department connections and hydrants interchangeable with those of fire department answering alarm		☐ Yes ☐ No	
Remarks	Date left in service			
Signatures	Name of installing contractor			
	Tests witnessed by			
	For property owner (signed)	Title	Date	
	For installing contractor (signed)	Title	Date	
Additional explanation and notes				
© 2012 National Fire Protection Association NFPA 24 (p. 2 of 2)				

FIGURE 10.10.1 Continued

GLENWOOD SPRINGS

ABBREVIATIONS

A/C	air conditioning	FA	fire alarm	MISC	miscellaneous	STL	steel
AB	anchor bolt	FAAP	fire alarm annunciator panel	MID	molding, moulding	STOR	storage
ABV	above	FAS	fasten(er)	MM	millimeter(s)	STRUCT	structure(al)
AC	acoustical	FB	face brick	SUSP	membrane	SUSP	suspended
AC BD	acoustic board	FBO	furnished by other	MO	masonry opening	SV	spray vinyl
AC TL	acoustic tile	FBD	fiberboard	MOD	modular	SYM	symmetry(ical)
AC	asphaltic concrete	FD	floor drain	MOV	movable	SYN	synthetic
ACC	access	FE	fire extinguisher	MRB	marble	SYS	system
ACC PNL	access panel	FE	fixed equipment	MRD	metal roof deck	T&G	tongue & groove
ADH	adhesive	FEC	fire extinguisher cabinet	MT	mount(ing)	T	tread(s)
ADJ	adjacent	FF	factory finish	MTD	mounted	TB	towel bar
ADI	adjustable	FFE	finished floor elevation	MTL FUR	metal furring	TO	tolerance
AF	above finished floor	FFL	finished floor line	MTL	metal	TC	terra cotta
AGG	aggregate	FGL	fiberglass	MTL THR	metal threshold	TD	tinted
AL or ALUM	aluminum	FHC	fire hose cabinet	MULL	mullion	TELE	telephone
ALT	alternate	FHMS	flat head machine screw	MWK	millwork	TEMP	tempered
ALPA	area line pressure alarm	FHS	fire hose station	N	nitrogen	THK	thick(ness)
ANC	anchor, anchorage	FHWS	flat head wood screw	N	north	TK BD	tack board
ANOD	anodized	FIN	finish	NAT	natural	TL	tile
APPROX	approximately	FLG	flashing	N	nurse call	TO PL	top of plate
ARCH	architect(ural)	FLR CO	floor cleanout	NIC	not in contract	TO	top of
ASPH	asphalt	FLR	floor(ing)	NMT	nonmetallic	TOL	tolerance
AUTO	automatic	FLT	float	NO	nitrous oxide	TOS	top of steel
BD	board	FLUOR	fluorescent	NOM	nominal	TOW	top of wall
BE	below	FUR	flexible	NOM	noise reduction	TP	transparent
BET	between	FN	fence	NRC	noise reduction coefficient	TPD	toilet paper dispenser
BIT	bituminous	FND	foundation	NTS	not to scale	TPTN	toilet partition transom
BLDG	building	FDC	face of concrete	O	oxygen	TR	transom
BLK	block	FOF	face of finish	OA	overall	TRM	thermal
BLKG	blocking	FOM	face of masonry	OB	obscure	TS	tube steel
BM	beam	FOS	face of stud	OBS	obscure	TSL	top of slab
BO	bottom of	FP	fireproof(ing)	OC	on center	TTD	treated
BOT	bottom	FPL	floor plate	OD	outside diameter	TV	television
BRG PL	bearing plate	FR	fire-resistant	OH	opposite hand	TYP	typical
BRG	bearing	FRC	fire-resistant coating	OH	overhead	TZ	terrazzo
BRK	brick	FRT	fire-retardant	OI	owner installed	UC	undercut
BRZ	bronze	FS	floor sink	OI	open-web joist	UNF	unfinished
BSMT	basement	FTG	footing	OP	opaque	UNO	unless noted otherwise
BT	bolt	FUR	furred(ing)	OP	owner provided	UR	urinal
BU BD	bulletin board	FUT	future	OPG	opening	V	vacuum
BUR	built-up roof	GA	gage, gauge	OPP	opposite	VAR	varies, variable
BVL	bevel	GALV	galvanized	OR	operating room	VB	vinyl base
CAB	cabinet	GB	galvanized	ORD	overflow roof drain	VCT	vinyl composition tile
CB	code blue	GC	general contract(or)	OS	opposite surface	VERT	vertical
CCTV	closed circuit television	GDC	grade	PLAM or PL	plastic laminate	VIF	verify in field
CEM PLAS	cement plaster (portland)	GR	glass fiber reinforced	PAR	parallel	VIN TL	vinyl tile
CEM	cement	GRC	concrete	PB	panic bar	VIN	vinyl
CER	ceramic	GRF	concrete	PBD	particle board	VJ	vertical joint
CG	corner guard	GI	galvanized iron	PCT CONC	precast concrete	VNR	veneer
CI	cast iron	GKT	gasket	PERF	perforate(d)	VRM	vermiculite
CIR	circle	GL	glass, glazing	PERF	perimeter	VWC	vinyl wall covering
CIRC	circumference	GLB	glass block	PERI	perimeter	W	width, wide
CJ	control joint	GLS	glass	PFN	prefinished	W	width, wide
CK	caulking, caulk(ing)	GP	galvanized pipe	PH	panic hardware	W/O	without
CL	center line	GRN	granite	PK	parking	WB	wood base
CLG	ceiling	GT	grout	PL	plate	WC	water closet
CLG HGT	ceiling height	GVL	gravel	PLAS	plaster	WD	wood
CLK BD	chalkboard	GW	gypsum wallboard	PLF	pounds per linear foot	WDO	window
CLD	clear	GWB	gypsum board	PLY WD	plywood	WDW	window
CLS	closure	GYP BD	gypsum board	PNL	panel(ed)(ing)	WH	wall hung
CMU	concrete masonry unit(s)	GYP PLAS	gypsum plaster	PNT	paint	WP	waterproof(ing)
COL	column	GYP LA	gypsum lath	PRE-FAB	prefabricate(d)	WPT	working point
COL	column	GYP TL	gypsum tile	PRF	preformed	WR	water resistant
COMB	combination	HB	hose bibb	PSC	prestressed concrete	WR	water resistant
COMP	compressed(ion)(ible)	HBD	hardboard	PSF	pounds per square foot	WSCT	wainscot
COMPO	composition, composite	HC	hollow core	PT	point	WTW	wall to wall
COMP	compartment	HD	heavy duty	PTC	post-tensioned concrete	WWM	woven wire mesh
CONC	concrete	HDR	header	PTD	paper towel dispenser	ZVB	zone valve box
CONST	construction	HDX	hardware	PTR	partition		
CONT	continue, continuous	HEX	hexagonal	PTR	paper towel receptor		
CONTR	contract(or)	HGT or H	height	PVC	poly vinyl chloride		
CORR	corrugated	HM	hollow metal	PVMT	pavement		
CI	contractor installed	HORIZ	horizontal	QT	quarry tile		
CP	contractor provided	HR	hour				
CPR	copper	HTG	heating				
CPT	carpet(ed)(ing)	HVAC	heating/ventilation/				
CS	countersink(sunk)	HWD	hardwood				
CT	ceramic tile	ID	inside diameter				
CTR	counter	INCL	included(d)(ing)				
CTR FLG	counter flashing	INS CONC	insulating concrete				
CU FT	cubic foot	INSUL	insulate(d)(ion)				
CU YD	cubic yard(s)	INT	interior				
CV	cover	INV	invert				
D	depth	IPS	iron pipe size				
D	drain	J	joist				
DBL	double	JAN CLO	janitor closet				
DEMO	demolish, demolition	JF	joint filler				
DEP	depress(ed)	JT	joint				
DF	drinking fountain	KIT	kitchen				
DIAG	diagonal	KO	knock-out				
DIAM	diameter	L	length				
DIM	dimension(s)	LAB	laboratory				
DIV	division	LAD	ladder				
DL	dead load	LAM	laminated				
DN	down	LAV	lavatory				
DP PF	dampproofing	LBL	label				
DPR	dampener	LH	left hand				
DR	door	LL	live load				
DS	downspout	LPT	low point				
DSR	downspout	LT	light				
DTL	detail	LTL	lintel				
DWG	drawing	LTV	louver				
DWR	drawer	LW	lightweight				
E	east	LWC	lightweight concrete				
EA	elevation	M	meter(s)				
EL or ELEV	elevation	MAP	map				
ELEC PNL BD	electrical panel board	MAS	masonry				
ELECT	electric(al)	MATL	material				
ELEV	elevator	MAX	maximum				
EMERG	emergency	MB	member				
ENCL	enclosure	MD	medium				
EP	epoxy	MECH	mechanical				
EQ	equal	MED CAB	medicine cabinet				
EST	estimate	MFD	metal floor decking				
ET	elapsed timer	MFR	manufacture(r)				
EW	each way	MH	manhole				
EW	electric water cooler	MHO	magnetic hold open				
EX	exposed	MIN	minimum				
EXH	exhaust	MIR	mirror				
EXIST or E	existing						
EXP JT or E	expansion joint						
EXT	exterior						

PROJECT SYMBOL LEGEND

VIEW REFERENCES

DRAWING TITLES

WALL/DETAIL SECTIONS

PLAN/DETAIL CALLOUTS

DATUM SYMBOLS

BUILDING SECTION

EXTERIOR / INTERIOR ELEVATIONS

PROJECT SYMBOLS AND ANNOTATION

NOTE: SEE INDIVIDUAL SHEETS FOR ADDITIONAL SYMBOLS.

MATERIAL GRAPHIC LEGEND

SECTION

EARTH (CUT)

AGGREGATE BASE COURSE (CUT)

SAND

CONCRETE (CUT)

PRECAST CONCRETE

CONCRETE MASONRY UNIT

BRICK MASONRY

MORTAR CUT

STONE (CUT)

MARBLE

STEEL, STAINLESS STEEL (LARGE SCALE)

ALUMINUM (LARGE SCALE)

CERAMIC TILE (LARGE SCALE)

WOOD FRAMING - CONTINUOUS (LARGE SCALE)

WOOD FRAMING - DISCONTINUOUS (LARGE SCALE)

PLYWOOD (SMALL SCALE)

PLYWOOD (LARGE SCALE)

FINISH WOOD (LARGE SCALE)

EIPS (CUT)

RIGID INSULATION (LARGE SCALE)

BATT INSULATION (LARGE SCALE)

FIREPROOFING

STUCCO CUT

GYPSON BOARD (LARGE SCALE CUT)

TERRAZZO (LARGE SCALE)

GLASS (LARGE SCALE)

METAL SIDING (VERTICAL)

METAL SIDING (HORIZONTAL)

PLASTER, CONCRETE, STUCCO

MASONRY

GLASS BLOCK, CERAMIC TILE

GLASS ELEVATION

SITE/ ARCHITECTURAL PLAN REVIEW

PROJECT DIRECTORY

OWNER

BOLDT

1110 N. OLD WORLD THIRD ST., STE 610

MILWAUKEE, WI 53203

PHONE: 414-276-4631

STRUCTURAL ENGINEER

MARTIN/MARTIN INC.

12499 WEST COLFAX AVENUE

LAKEWOOD, CO 80215

PHONE: 303-431-6100

ARCHITECT

BOULDER ASSOCIATES, INC.

1426 PEARL STREET, STE 300

BOULDER, CO 80302

PHONE: 303-499-7795

MECHANICAL ENGINEER

WSP

5613 DTC PARKWAY, STE 500

GREENWOOD VILLAGE, CO 80111

PHONE: 303-694-4755

GENERAL CONTRACTOR

HASELDEN CONSTRUCTION

6950 SOUTH POTOMAC ST.

CENTENNIAL, CO 80112

PHONE: 303-751-1478

ELECTRICAL ENGINEER

WSP

5613 DTC PARKWAY, STE 500

GREENWOOD VILLAGE, CO 80111

PHONE: 303-694-4755

CIVIL ENGINEER

RIVER CITY CONSULTANTS

744 HORIZON CT., STE 110

GRAND JUNCTION, CO 81506

PHONE: 971-241-4722

LANDSCAPE ARCHITECT

NORRIS DESIGN

409 EAST MAIN ST., STE 207

FRISCO, CO 80443

PHONE: 970-368-7068

SITE REVIEW SHEET INDEX

G-001	COVER SHEET
C001	LEGEND
C002	OVERALL SITE PLAN
C003	PRELIMINARY SITE PLAN
C004	PRELIMINARY GRADING PLAN
L100	LANDSCAPE NOTES
L200	LANDSCAPE PLAN
L300	LANDSCAPE DETAILS
A-101	ARCHITECTURAL SITE PLAN
A-201	FIRST FLOOR PLAN
A-202	SECOND FLOOR PLAN
A-203	ROOF PLAN
A-301	EXTERIOR ELEVATIONS
A-302	EXTERIOR ELEVATIONS
E1.1	SITE LIGHTING PHOTOMETRICS
E2.1	LIGHT FIXTURE CUTSHEET
E2.2	LIGHT FIXTURE CUTSHEET

GENERAL PROJECT DATA

PROJECT TYPE

OFFICE BUILDING

TWO STORIES ABOVE GRADE

APPLICABLE CODES

2015 INTERNATIONAL BUILDING CODE

2015 INTERNATIONAL PLUMBING CODE

2015 INTERNATIONAL MECHANICAL CODE

2015 INTERNATIONAL FUEL GAS CODE

2015 INTERNATIONAL FIRE CODE

2014 NATIONAL ELECTRICAL CODE (NFPA 70)

2009 INTERNATIONAL ENERGY CODE

2010 ASHRAE STANDARD 90.1

2009 ICC/ ANSI A117.1 ACCESSIBILITY CODE

2010 ADA (AMERICANS WITH DISABILITIES ACT)

DEFERRED SUBMITTALS

FIRE SUPPRESSION SYSTEM

FIRE ALARM SYSTEM

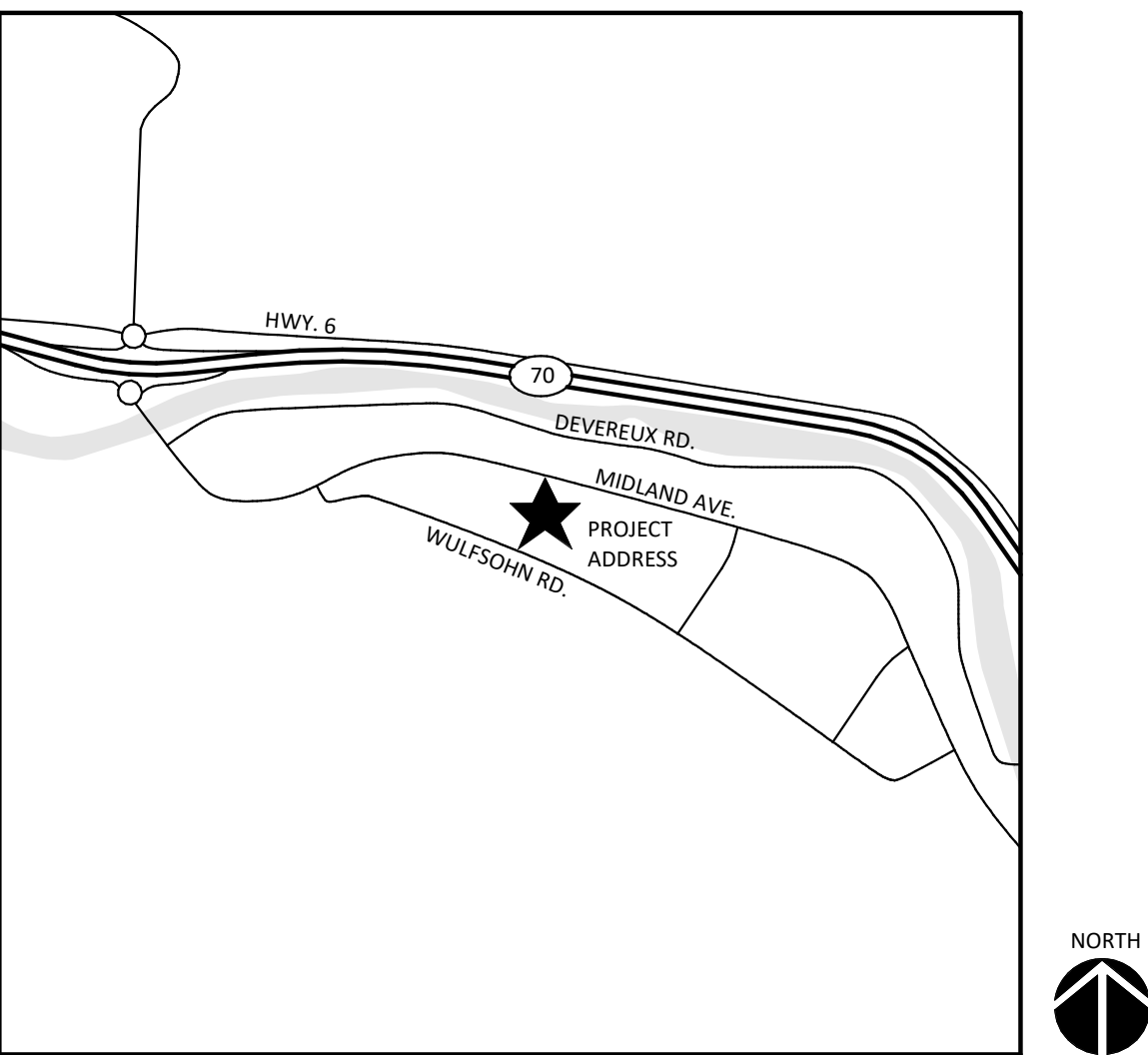
BUILDING DEPARTMENT

CITY OF GLENWOOD SPRINGS

FIRE DEPARTMENT

CITY OF GLENWOOD SPRINGS FIRE DEPARTMENT

VICINITY MAP



PROJECT NUMBER

184101.00

DRAWN BY

K. Fronczak

DATE

01/02/19

REVISIONS

REV	DESCRIPTION	DATE
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PROPERTY DESCRIPTION

Lot 14, Glenwood Meadows No. 2

A Parcel of Land Situate in the SW 1/4 of Section 5, Township 6 South, Range 89 West of the 6th P.M.

City of Glenwood Springs, County of Garfield, State of Colorado

BOULDER ASSOCIATES

ARCHITECTS

Boulder Associates, Inc.

Architecture + Interior Design

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Boulder, Colorado 80302

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OWNER

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Milwaukee, WI 53203

414.276.4631

ben.ganther@boldt.com

PROJECT

GLENWOOD SPRINGS

LOT 14

GLENWOOD MEADOWS NO. 2

TBD WULFSOHN RD.

GLENWOOD SPRINGS, CO 81601

SITE/ ARCHITECTURAL PLAN REVIEW

SHEET TITLE

COVER SHEET

SHEET NUMBER

G-001

LEGEND

	Toe of Slope		Existing Manhole
	Top of Slope		Existing Manhole
	Edge of Water		Existing Manhole
	100-YR Flood Limits		Existing Manhole
	500-YR Flood Limits		Proposed Manhole
	Floodway Limits		Proposed Manhole
	Edge of Wetlands		Proposed Manhole
	Tree Mass Area		Proposed Manhole
	Edge of Asphalt		Proposed Services
	Edge of Concrete		Proposed Services
	Edge of Gravel		Proposed Services
	Flowline		Cleanouts
	Railroad		Cleanouts
	Building		Cleanouts
	Building Overhang		Inlets
	Wire Fence		Inlets
	Chain Fence		Inlets
	Gate		Fire Hydrant/Blowoff/Meter
	Wood Fence		Fire Hydrant/Blowoff/Meter
	Quadrail		Fire Hydrant/Blowoff/Meter
	Existing Major Contour		Well/Yard Hydrant/Box
	Existing Minor Contour		Well/Yard Hydrant/Box
	Existing Cable TV		Well/Yard Hydrant/Box
	Existing Comm Duct		Valve/Cap/Thrust Block
	Existing Electric		Valve/Cap/Thrust Block
	Existing Fiber Optic		Valve/Cap/Thrust Block
	Existing Gas		Box/Pump/Valve
	Existing Irrigation		Box/Pump/Valve
	Existing Overhead Electric		Box/Pump/Valve
	Existing Overhead Telephone		Roof Drain/Vent Pipe/Pedestal
	Existing Storm Drain		Roof Drain/Vent Pipe/Pedestal
	Existing Sanitary Sewer		Roof Drain/Vent Pipe/Pedestal
	Existing Sewer Force Main		Utility Boxes
	Existing Telephone		Utility Boxes
	Existing Unknown Utility		Utility Boxes
	Existing Water		Utility Pedestals
	Out Extents		Utility Pedestals
	Fill Extents		Utility Pedestals
	Proposed Demolition or Removal		Meters
	Drainage Flowline		Meters
	Proposed Parcel Boundary		Meters
	Proposed Easement		Utility Marker/Transformer/Valve
	Proposed Lot Line		Utility Marker/Transformer/Valve
	Proposed Right of Way		Utility Marker/Transformer/Valve
	Proposed Setback		Monitor Well/Borehole/Posthole
	Proposed Tract		Monitor Well/Borehole/Posthole
	Proposed Striping		Monitor Well/Borehole/Posthole
	Milling Limits		Decid Tree/Conif Tree/Shrub
	Sawcut Line		Decid Tree/Conif Tree/Shrub
	Proposed Major Contour		Decid Tree/Conif Tree/Shrub
	Proposed Minor Contour		Utility Pole/Guy Wire/Guy Pole
	Common Utilities		Utility Pole/Guy Wire/Guy Pole
	Irrigation Line		Intersection Sign/Sign/Delineator
	Irrigation Service Line		Intersection Sign/Sign/Delineator
	Storm Drain Line (with Flow Direction)		Intersection Sign/Sign/Delineator
	Sanitary Sewer Line (with Flow Direction)		Ballard/Light/Mailbox
	Sanitary Sewer Force Main Line		Ballard/Light/Mailbox
	Sanitary Sewer Service Line		Ballard/Light/Mailbox
	Water Line		Proposed Asphalt
	Water Service Line		Proposed Concrete

LIST OF ABBREVIATIONS

ABC Aggregate Base Course	ELEV Elevation	LC Level Crown	PRELUM Preliminary	TCE Temporary Construction Easement
AC Acre	ENC End Normal Crown	LF Linear Feet	PT Point of Tangency	TFC Top Face Curb
ADJ Adjacent	EOA Edge of Asphalt	LP Low Point	PVC Polyvinyl Chloride	TGC Top of Curb
AL Alignment	EOP End of Pavement	LS Lump Sum	PVI Point of Vertical Intersection	TOP Top of Pipe
BFS Begin Full Superelevation	ER End of Radius	LVC Length of Vertical Curve	R Radius	TW Top of Wall
BLDG Building	ESMT Easement	MAX Maximum	RC Reverse Crown	Typ Typical
BLM Bureau of Land Management	EVCE End of Vertical Curve Elevation	MC&C Mountable Curb & Cutter	RCC River City Consultants, Inc.	VC Vertical Curve
BM Benchmark	EVCS End of Vertical Curve Station	MCQS Mountable Curb, Gutter, & Sidewalk	RCP Reinforced Concrete Pipe	VPC Vertical Point of Curvature
BNC Begin Normal Crown	EX Existing	MCSM Mesa County Survey Marker	REQ'D Required	VPI Vertical Point of Intersection
BOC Back of Curb	FDC Fire Department Connection	MDS Maximum Design Speed	RIM Rim Elevation	VPT Vertical Point of Tangency
BOW Back of Walk	FES Flared End Section	MH Manhole	RoW Right of Way	WSEL Water Surface Elevation
BVCE Beginning Vertical Curve Elevation	FFE Finished Floor Elevation	MIN Minimum	SAN Sanitary Sewer	WQCV Water Quality Capture Volume
BVCS Beginning Vertical Curve Station	FG Finished Grade	MPE Multi-Purpose Easement	SDMH Storm Drain Manhole	WTR Water
CBC Concrete Box Culvert	FL Flow Line	MTR Meter	SF Square Feet	Δ Central Angle (Delta)
CDOT Colorado Department of Transportation	GB Grade Break	MUTCD Manual on Uniform Traffic Control Devices	SH State Highway	
CGS Curb, Gutter & Sidewalk	GV Gate Valve	N Northing Coordinate	SHLDR Shoulder	
CL Center Line OR Class	HDPE High Density Polyethylene	NO Number	SS Sanitary Sewer	
CMP Corrugated Metal Pipe	HOA Home Owners Association	NTS Not to Scale	SSMH Sanitary Sewer Manhole	
CY Cubic Yard	HP High Point	PC Point of Curvature	STA Station	
E Easting Coordinate	INC Incorporated	PCC Point of Compound Curvature	STR Structure	
EA Each	INV Invert	PI Point of Intersection	STRM Storm Drain	
EFS End Full Superelevation	IRR Irrigation	PL Property Line	SVC Service	
EGTC Electric, Gas, Telephone, Cable	K Design Coefficient	PLS Professional Licensed Surveyor	SY Square Yard	
EL Elevation	L Length	PR Proposed	TAN Length of Tangent	
ELEC Electric		PRC Point of Reverse Curvature	TBC Top Back Curb	

GENERAL CONSTRUCTION NOTES

- All boundary linework, project control, underground utility locations, and topographic survey data shown hereon was provided by Bookcliff Survey Services, Inc. Locations of underground utilities as shown hereon are based on visible evidence from above ground structures, markings by the respective utility companies and/or their locator services, and drawings provided by the utility companies. No excavations were made during this survey to determine exact locations and depths of underground utilities and structures. Actual locations may vary from those as shown hereon and additional underground utilities may exist. Existence and locations of all underground utilities and structures should be verified prior to any construction on this property.
- Contractor shall give 48 hour notice to all authorized inspectors, superintendents, or person in charge of public and private utilities affected by his operations prior to commencement of work. Contractor shall assure himself that all construction permits have been obtained prior to commencement of work. All permits obtainable by the Contractor are required to be obtained at the Contractor's expense.
- The Contractor shall limit construction activities to those areas within the project limits of disturbance and/or toes of slopes as shown on the plans and cross sections. Any disturbance beyond these limits shall be restored to the original condition by the contractor at the contractor's expense. Construction activities in addition to normal construction procedure shall include the parking of vehicles or equipment, disposal of debris or any other action which could alter the existing conditions. The contractor shall not stockpile or store equipment within 30 feet of the edge of traveled way during the project, unless protected by temporary barrier or existing guardrail.
- All satisfactory excess excavation from either utility or street construction shall be spread uniformly across the lots as directed by the Owner or his designated representative. All unsatisfactory or waste material including vegetation, roots, concrete, rocks, or other debris, shall be hauled from the project by the Contractor at the Contractor's expense.
- All road construction and related work, all materials, performance, and quality of work, shall conform to the requirements of the City of Glenwood Springs Standard Specifications.
- All utility installations are to be performed in accordance with the technical specifications of the City of Glenwood Springs. All water and sewer lines must be tested and approved prior to street construction. All waterlines are to be constructed in accordance with the technical specifications of the local water district.
- All sign fabrication and installation shall conform to the Manual on Uniform Traffic Control Devices (MUTCD) and City of Glenwood standards.

PAVING CONSTRUCTION NOTES

- All road widths, and radii are to flowline unless noted otherwise. Any "spot" design elevations are to flowline unless otherwise noted.
- The top of existing ground or the top of areas cut to final grade are to be scarified, brought to the optimal water content, and recompacted to 95% of AASHTO T99 before placing fill or before base is placed.
- Contractor is to protect existing utilities and appurtenances. Manholes, drainage inlets, utility lines, etc., damaged, covered or filled with dirt or debris by the Contractor shall be cleaned and repaired or replaced at no expense to the Owner.
- Where proposed pavement is to match existing pavement, sawcut the existing pavement 1 foot back from the existing edge of and remove pavement. From the sawcut line, mill existing pavement half existing pavement depth (or a minimum of 2 inches), a width of 2 feet. Existing surface is to be tack-coated before new pavement is placed. See T-Lock detail below.
- Include backing of curb and gutter and/or sidewalk with native fill material per the typical roadway section in the unit price bid for embankment.
- For site specific geotechnical requirements and recommendations, see the referenced geotechnical report which shall supercede all other geotechnical references:

Subsurface Exploration Program Geotechnical and Pavement Section Recommendations
Glenwood Meadows Lot 14, Glenwood Springs, Colorado
Ground Engineering Consultants, Inc.
41 Inverness Drive East
Englewood, CO 80112-5412
Job #07-6051
January 15, 2008

TESTING NOTES

- Contractor shall familiarize themselves with the geotechnical testing requirements of the City of Glenwood Springs. It shall be the responsibility of the Contractor to contact the Testing Firm 24 hours in advance of the need for testing, and to verify that the appropriate number of tests have been taken. The results of the required types of tests and number of passing tests shall be furnished to the Engineer for verification before final acceptance by the Owner will be granted. All failing tests shall be brought to the immediate attention of the Engineer and re-tests shall be performed until passing results are obtained. All utility lines, including service lines, failing within the Public right-of-way or the Public easements shall be tested. Payment of testing is the Contractor's responsibility and shall not be paid for separately but shall be incidental to the work.
- Only materials on which a proctor and accurate nuclear density test can be performed are approved for utility trench backfill, unless otherwise approved by the Engineer.
- Backfilling of trenches without testing during the backfill operation is strongly discouraged and will result in removal and replacement of backfill back to the last documented passing test.

SANITARY SEWER CONSTRUCTION NOTES

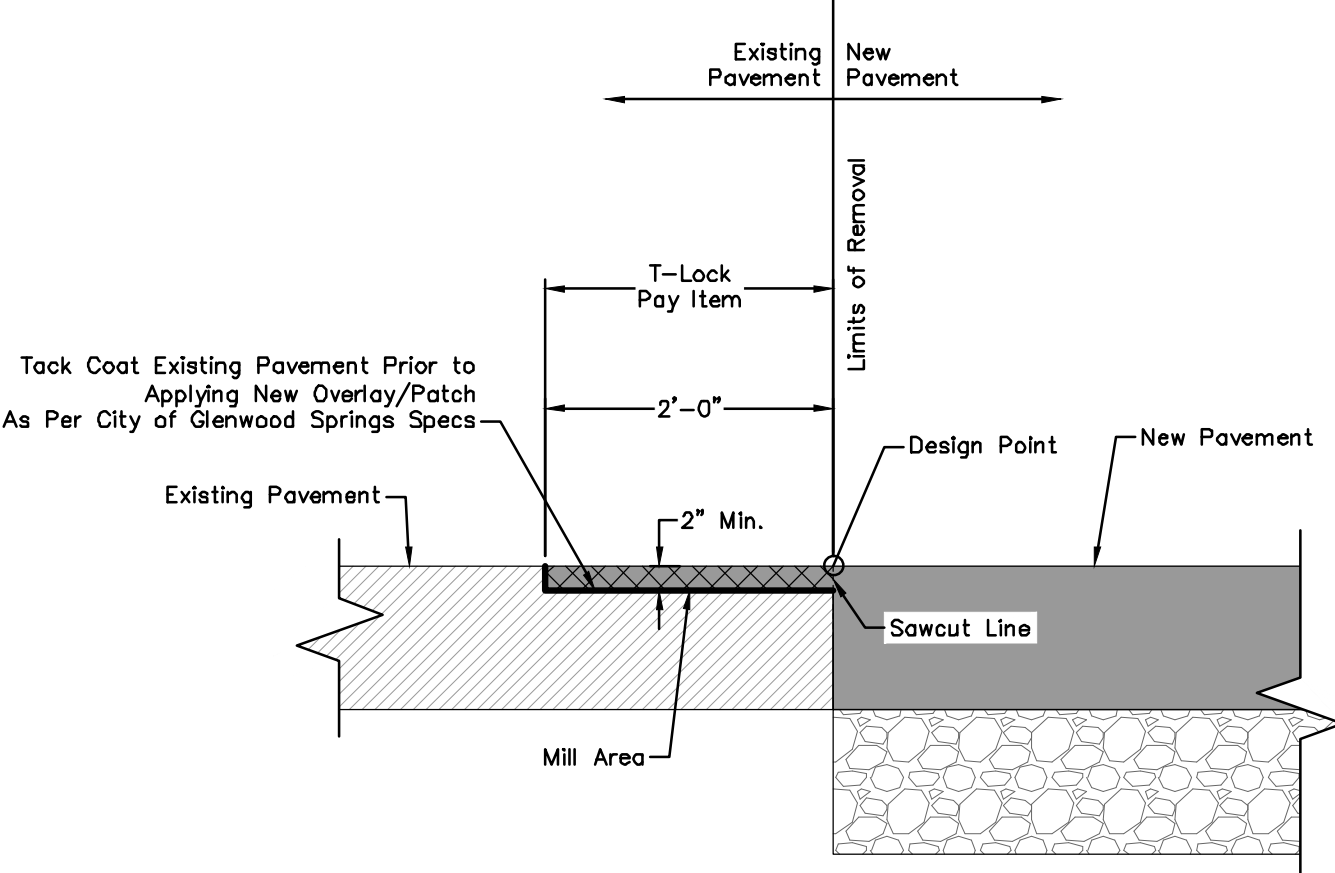
- All sewer line construction shall conform to the City of Glenwood Springs Standards and Specifications.
- Contractor shall have one signed copy of plans and a copy of the City of Glenwood Springs Standard Specifications at the job site at all times.
- All sewer mains shall be PVC SDR-35 (ASTM 3034) unless otherwise noted.
- All sewer mains shall be laid to grade utilizing a pipe laser.
- All service line connections to new mains shall be accomplished with full body wyes or tees. Tapping saddles will not be allowed.
- Service line connections to existing non-PVC mains shall be accomplished using "Inserta Tees" manufactured by Fowler Manufacturing Company of Hillsboro, Oregon. For existing PVC mains, tapping saddles shall be used.
- 4 inch services shall not be connected directly into manholes. All 6 inch services shall be connected to the main at a manhole.
- The contractor shall notify the City Inspector 48 hours prior to commencement of construction.
- The contractor is responsible for all required sewer line testing to be completed in the presence of the engineer or his representative. Pressure testing will be performed after installation of dry utilities, after all compaction of street subgrade and prior to street paving. Final lamping will also be accomplished after paving is completed. These tests shall be the minimum basis of acceptance of the sewer line extension.
- The contractor shall obtain City of Glenwood Springs street cut permit for all work within existing city right-of-way prior to construction.
- A clay cut-off wall shall be placed 10 feet upstream from all new manholes unless otherwise noted. The cut-off wall shall extend from 6 inches below to 6 inches above granular backfill material and shall be 2 feet wide. If native material is not suitable, the contractor shall import material approved by the engineer.
- Sewer service stub outs shall be capped and plugged. Stub out shall be marked with a 4x4 inch post painted green buried with 3 feet above grade. As-built surveying for vertical grade of stub out required prior to backfill.
- Red line as-builts shall be submitted to the City Development Engineer at least 72 hours prior to paving for review.
- The City of Glenwood Springs may require tracer wires for pipes and additional sanitary sewer clean-outs. Contractor is to follow the City's Standard Contract Documents.
- Contact City Staff at least 48 hours prior to construction.

WATERLINE CONSTRUCTION NOTES

- All water line construction shall be in accordance with the City of Glenwood Springs Standards and Specifications.
- Contractor shall notify the City 48 hours PRIOR to the beginning of construction.
- All trenches shall be compacted according to the recommendations in the Geotechnical Report. Contractor shall be required to perform all compaction tests through a certified soils lab.
- Minimum cover required over top of new waterlines is 4'-6" (54 inches).
- All water mains to be DR-18 PVC conforming to AWWA C-900.
- All water mains are to be bedded per City of Glenwood Springs Standards.
- All service connections to be 3/4 inch Type "K" copper, unless specified otherwise.
- Ductile iron fittings to conform to AWWA C-110.
- Fire Hydrants shall conform to AWWA C-502.
- All materials, labor and equipment required for testing and disinfection of waterlines shall be furnished by Contractor. Disinfection of waterlines shall conform to City Standards.
- All pipe bends/angle points, both horizontal and vertical, as called for on the plans are to be thrust blocked per the City Details and Technical Specifications.
- Only material on which a proctor test can be performed and accurate nuclear density tests can be run are approved for waterline trench backfill unless otherwise approved by the Engineer.
- All water meter pits shall be located on opposite lot side of dry utility transformers and pedestals. There shall be no dry utility transformers/pedestals located within five feet of any fire hydrant. These are utility/customer/consumer safety issues.
- No privacy fences are to be allowed to enclose meter pits or fire hydrants located within streets & road ROWs and multi-purpose easements.

STORM DRAIN CONSTRUCTION NOTES

- All Reinforced Concrete storm drain pipe shall conform to ASTM Standard Specifications, C-76, Class III unless otherwise noted.
- All polyvinyl chloride (PVC) pipe and fittings shall conform to ASTM Standard Specifications, D3034 and F679, SDR-35 unless otherwise noted.
- All High Density Polyethylene (HDPE) pipe and fittings to conform to the following:
 - 12 inch to 36 inch shall meet ASSHTO M294, and
 - 42 inch to 48 inch shall meet ASSHTO MP6.
- All 30 inch and larger HDPE pipe shall be covered to top of pipe with Class 6 base course.



01 T-Lock Detail
SCALE: N.T.S.

PROJECT NUMBER

1458-003

DRAWN BY

BMS

DATE

12/27/2018

REVISIONS

REV

DESCRIPTION

DATE

BOULDER ASSOCIATES

ARCHITECTS

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1426 Pearl Street, Suite 300
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303.499.7795 F 303.499.7767
www.boulderassociates.com

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Grand Junction, CO 81506
Phone: 970.241.4722
Fax: 970.241.5841
www.rcwva.com

PROJECT

Glenwood Springs

ADDRESS

WULFSOHN ROAD
GLENWOOD MEADOWS LOT 14
GLENWOOD SPRINGS, CO 81601

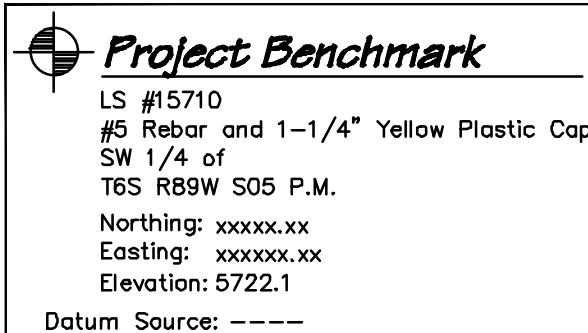
SITE/ ARCHITECTURAL PLAN REVIEW

SHEET TITLE

Legend

SHEET NUMBER

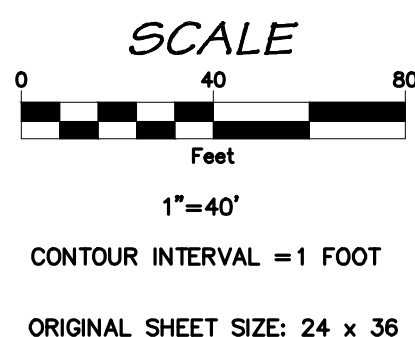
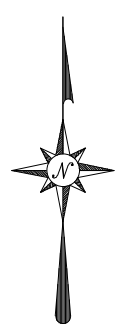
C001



S:\PROJECTS\1458 Boulder Associates\03 Medical Office Building, GWS, Phase 1\Drawn\DWG\04-Sheet Files\0003-004 Site.dwg

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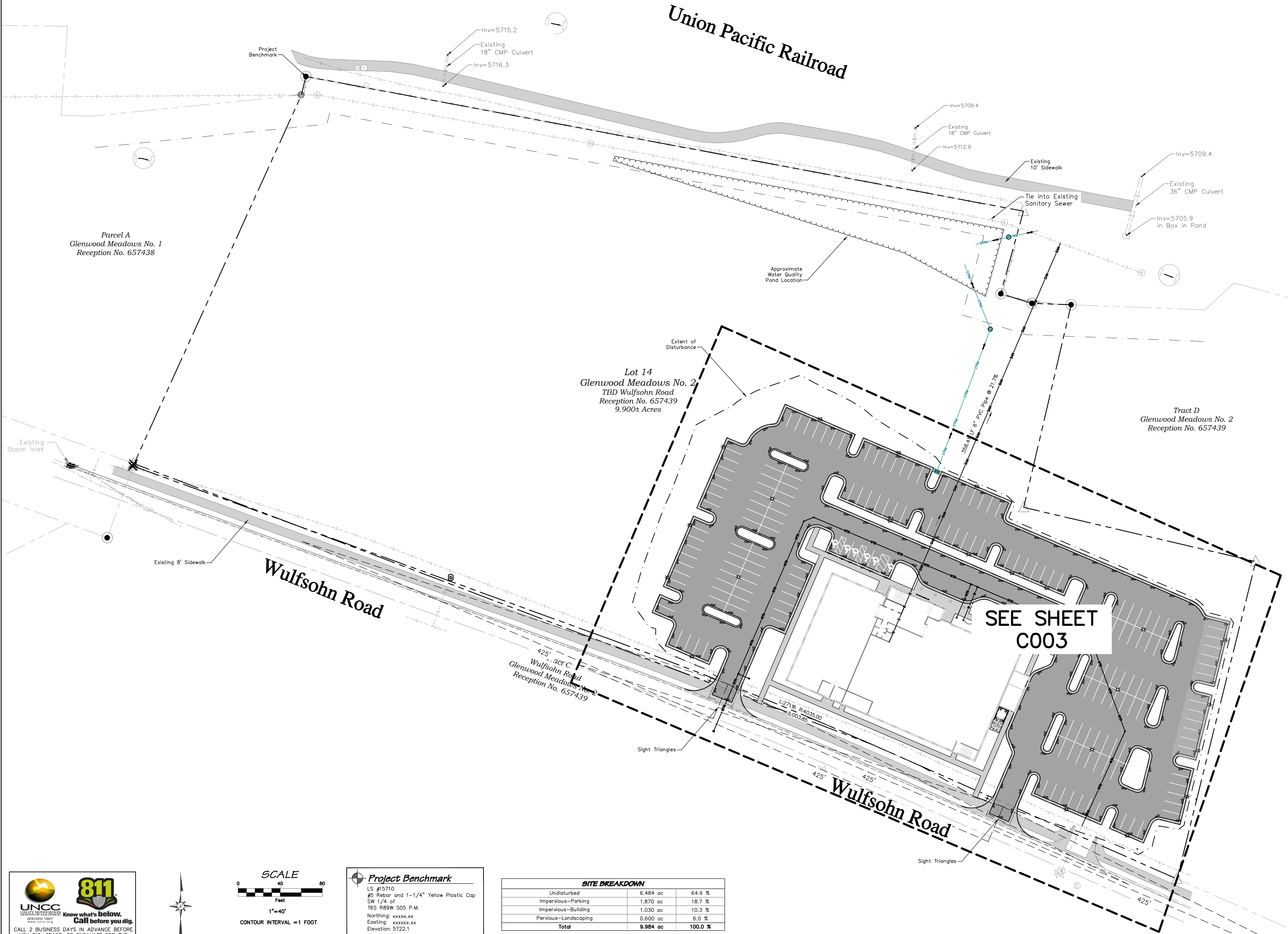
TTLW-110221



Project Benchmark

LS #15710
#5 Rebar and 1-1/4" Yellow Plastic Cap
SW 1/4 of
T6S R89W S05 P.M.
Northing: xxxxxx.xx
Easting: xxxxxx.xx
Elevation: 5722.1
Datum Source: ----

SITE BREAKDOWN		
Undisturbed	6.484 ac	64.9 %
Impervious--Parking	1.870 ac	18.7 %
Impervious--Building	1.030 ac	10.3 %
Pervious--Landscaping	0.600 ac	6.0 %
Total	9.984 ac	100.0 %



PROJECT NUMBER
1458-003

DRAWN BY
BMS

DATE
12/26/2018

REVISIONS
REV DESCRIPTION DATE

BOULDER ASSOCIATES

ARCHITECTS

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Architecture + Interior Design
1426 Pearl Street, Suite 300
Boulder, Colorado 80302
303.499.7795 F 303.499.7767
www.boulderassociates.com



PROJECT
Glenwood Springs

ADDRESS
WULFSOHN ROAD
GLENWOOD MEADOWS LOT 14
GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
Overall Site Plan

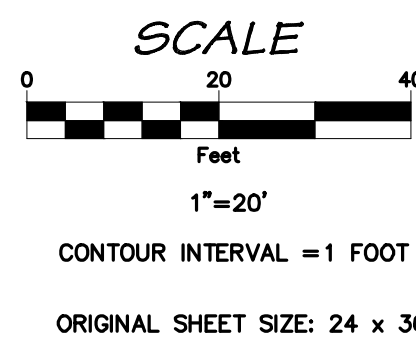
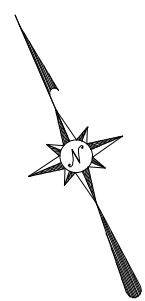
SHEET NUMBER
C002

PRELIMINARY

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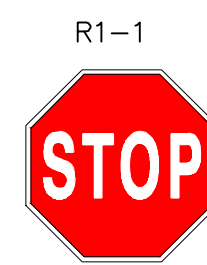
TTLW:110221



Project Benchmark

LS #15710
#5 Rebar and 1-1/4" Yellow Plastic Cap
SW 1/4 of
T6S R89W S05 P.M.
Northing: xxxxxx.xx
Easting: xxxxxx.xx
Elevation: 5722.1
Datum Source: ----

PARKING BREAKDOWN			
Standard Spaces Required	150	Standard Spaces Provided	173
ADA Spaces Required	6	ADA Spaces Provided	10
Total Required	156	Total Provided	183



Signs

NTS



NOTES:

- Utilities shall comply with the City of Glenwood Springs Standards and respective utility provider standards.

PROJECT NUMBER
1458-003

DRAWN BY
BMS

DATE
12/26/2018

REVISIONS

REV	DESCRIPTION	DATE
-----	-------------	------

BOULDER ASSOCIATES

ARCHITECTS

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Glenwood Springs

ADDRESS
WULFSOHN ROAD
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GLENWOOD SPRINGS, CO 81601

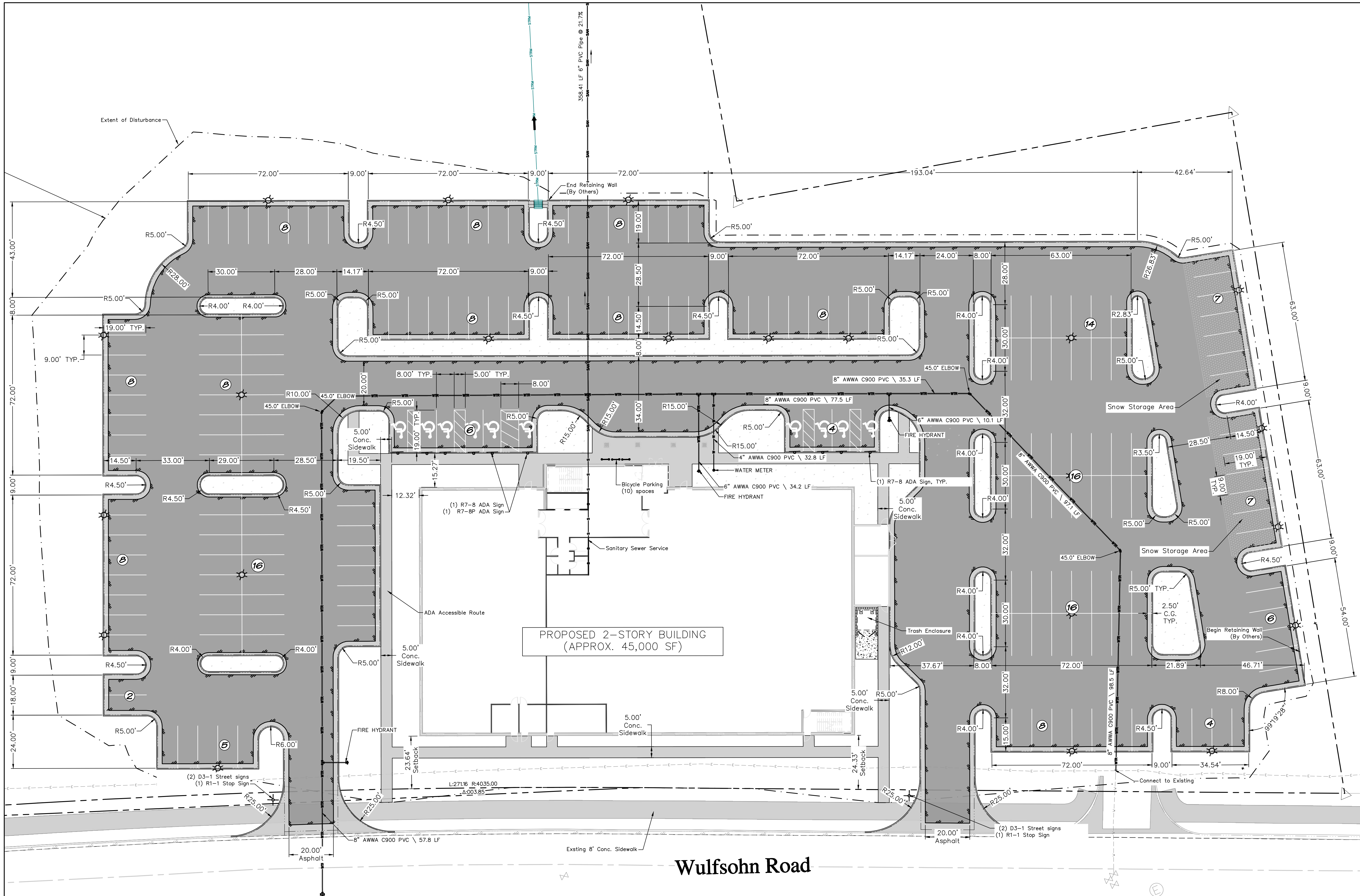
SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
Preliminary Site Plan

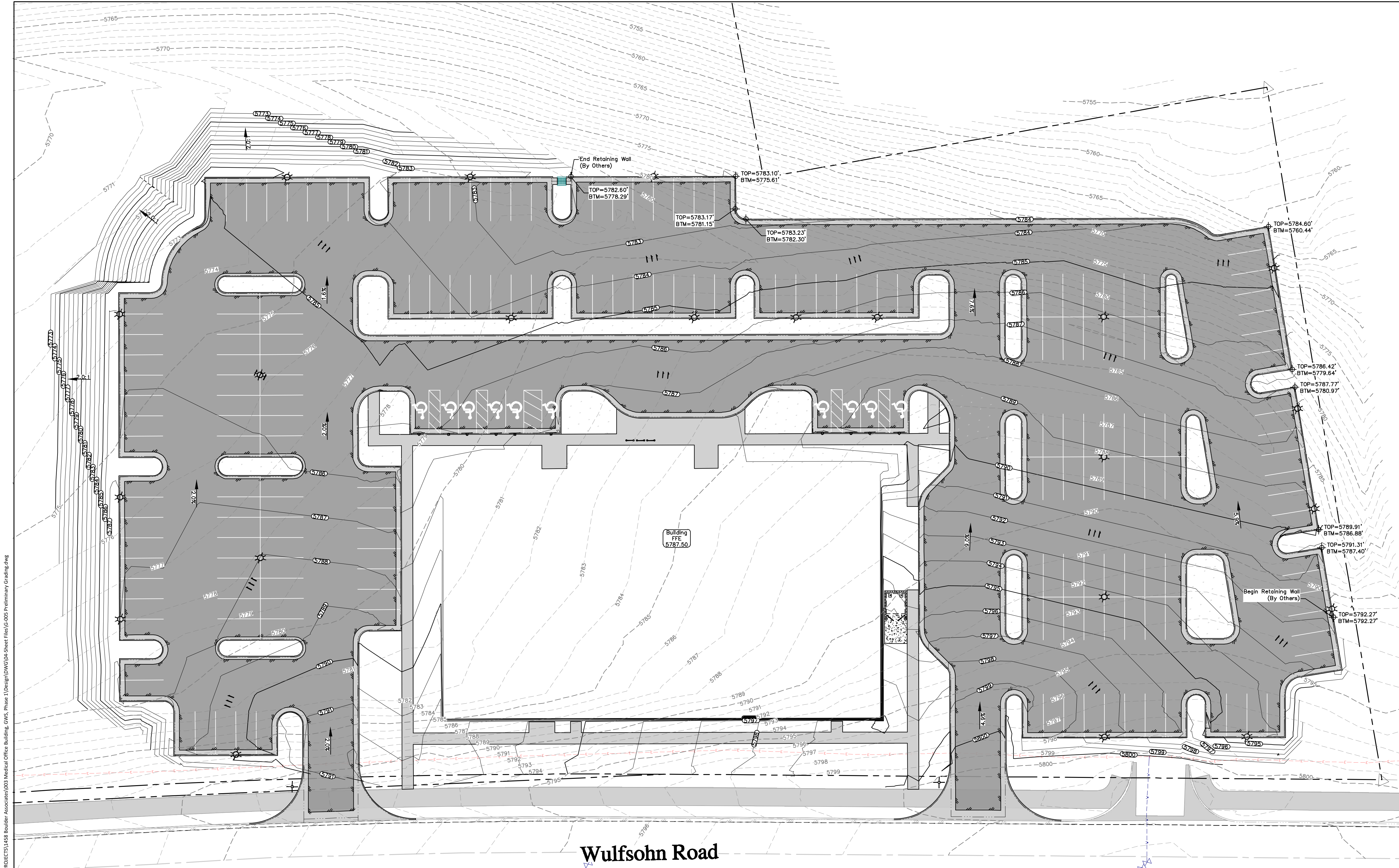
SHEET NUMBER

C003

PRELIMINARY



Wulfsohn Road

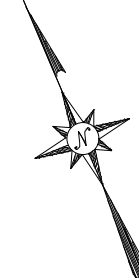


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89
2018-12-26 4:18:26 PM
TTLW.110221



**Know what's below.
Call before you dig.**

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE
YOU DIG, GRADE, OR EXCAVATE FOR THE
MARKING OF UNDERGROUND MEMBER UTILITIES.



SCALE

0 20 40
Feet
1"=20'

CONTOUR INTERVAL = 1 FOOT
ORIGINAL SHEET SIZE: 24 x 36



Project Benchmark

LS #15710
#5 Rebar and 1-1/4" Yellow Plastic Cap
SW 1/4 of
T6S R89W S05 P.M.
Northing: xxxxxx.xx
Easting: xxxxxx.xx
Elevation: 5722.1
Datum Source: ----

PROJECT NUMBER
1458-003

DRAWN BY
BMS

DATE
12/27/2018

REVISIONS
REV DESCRIPTION DATE



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Glenwood Springs

ADDRESS
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GLENWOOD MEADOWS LOT 14
GLENWOOD SPRINGS, CO 81601

**SITE/
ARCHITECTURAL
PLAN REVIEW**

SHEET TITLE
Preliminary Grading Plan

SHEET NUMBER
C004

GENERAL NOTES

1. THESE PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION OR PERMITTING UNLESS STATED FOR SUCH USE IN THE TITLE BLOCK.
2. SIGHT TRIANGLES AND SIGHT LINES SHALL REMAIN UNOBSTRUCTED BY EQUIPMENT, CONSTRUCTION MATERIALS, PLANT MATERIAL OR ANY OTHER VISUAL OBSTACLE DURING THE CONTRACT PERIOD AND AT MATURITY OF PLANTS PER LOCAL JURISDICTIONAL REQUIREMENTS. NO PLANT MATERIAL OTHER THAN GROUND COVER IS ALLOWED TO BE PLANTED ADJACENT TO FIRE HYDRANTS AS STIPULATED BY JURISDICTIONAL REQUIREMENTS.
3. SIGHT TRIANGLES SHALL REMAIN UNOBSTRUCTED BY PLANT MATERIAL, OR ANY OTHER VISUAL OBSTACLE, OVER 30" IN HEIGHT.
4. LOCAL, STATE AND FEDERAL JURISDICTIONAL REQUIREMENTS, RESTRICTIONS OR PROCEDURES SHALL SUPERSEDE THESE PLANS, NOTES AND SPECIFICATIONS WHEN MORE STRINGENT. NOTIFY THE OWNER'S REPRESENTATIVE IF CONFLICTS OCCUR.
5. THIS SHEET SET IS PREPARED WITH INFORMATION SUFFICIENT FOR CITY OF GLENWOOD SPRINGS SITE PLAN APPROVAL AND MAY NOT BE SUFFICIENT FOR CONSTRUCTION BIDDING OR AS CONSTRUCTION DOCUMENTS. IT IS RECOMMENDED THAT THE CONTRACTOR CONTACT THE OWNER'S REPRESENTATIVE FOR ADDITIONAL INFORMATION.

LANDSCAPE NOTES

1. ALL LANDSCAPED AREAS ARE TO RECEIVE ORGANIC SOIL PREPARATION AT 3.5 cu.yrds/1,000sf.
2. ALL UTILITY EASEMENTS SHALL REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR THE MAINTENANCE EQUIPMENT ENTRY.
3. THE OWNER/DEVELOPER, HIS SUCCESSORS AND ASSIGNS, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF ALL LANDSCAPING MATERIALS SHOWN OR INDICATED ON THE APPROVED SITE PLAN OR LANDSCAPE PLAN ON FILE IN THE PLANNING DEPARTMENT. ALL LANDSCAPING WILL BE INSTALLED AS DELINEATED ON THE PLAN, PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
4. ALL LANDSCAPED AREAS AND PLANT MATERIAL, EXCEPT FOR NON-IRRIGATED NATIVE, RESTORATIVE AND DRYLAND GRASS AREAS SHALL BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
5. LANDSCAPE MATERIAL PLACEMENT SHALL NOT BE PLACED OR KEPT NEAR FIRE HYDRANTS, FIRE DEPARTMENT INLET CONNECTIONS OR FIRE PROTECTION CONTROL VALVES IN A MANNER THAT WOULD PREVENT SUCH EQUIPMENT OR FIRE HYDRANTS FROM BEING IMMEDIATELY DISCERNABLE. THE FIRE DEPARTMENT SHALL NOT BE DETERRED OR HINDERED FROM GAINING IMMEDIATE ACCESS TO FIRE PROTECTION EQUIPMENT OR HYDRANTS.
6. A 5-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS.
7. LANDSCAPING MATERIAL SHOWN WITHIN THE SITE PLAN CANNOT ENCROACH INTO ROADWAYS THAT ARE DEDICATED (OR DESIGNATED) AS FIRE LANE EASEMENTS (OR CORRIDORS).
8. SHRUB BEDS SHALL BE MULCHED WITH 3" DEPTH OF SHREDDED WOOD MULCH. FOR AREAS SPECIFIED AS COBBLE, USE 3"-4" LOCAL RIVER ROCK. WEED BARRIER IS REQUIRED UNDER COBBLE AND RIVER ROCK MULCH. AREAS OF PERENNIALS AND ANNUALS TO BE MULCHED WITH 3" DEPTH OF GORILLA HAIR SHREDDED MULCH WITH NO WEED BARRIER NECESSARY.
9. SIGHT TRIANGLES SHALL REMAIN UNOBSTRUCTED BY PLANT MATERIAL, OR ANY OTHER VISUAL OBSTACLE, OVER 30" IN HEIGHT.

PLANTING SCHEDULE

QTY.	SYM.	COMMON NAME	BOTANICAL NAME	SIZE & COND.
DECIDUOUS TREES (76)				
		RED MAPLE	ACER RUBRUM	3" CAL, B&B
		COMMON HACKBERRY	CELTIS OCCIDENTALIS	3" CAL, B&B
		THORNLESS HONEYLOCUST	GLEDISTSIA TRIACANTHOS INERMIS	3" CAL, B&B
		AMUR MAPLE	ACER GINNALA	2" CAL, B&B
		SHADBLOW SERVICEBERRY	ARNELANCHIER CANADENSIS	2" CAL, B&B
		WASHINGTON HAWTHORNE	CRATEGUS PHAENOPHYRUM	2" CAL, B&B
		NEWPORT PLUM	PRUNUS CERASIFERA 'NEWPORT'	2" CAL, B&B
		CALLERY PEAR	PYRUS CALLERYANA	2" CAL, B&B
EVERGREEN TREES (9)				
		AUSTRIAN PINE	PINUS NIGRA	6' HT. MIN., B&B
		COLORADO BLUE SPRUCE	PICEA PUNGENS	6' HT. MIN., B&B
EVERGREEN SHRUBS (26)				
		ARMSTRONG JUNIPER	JUNIPER CHINENSIS 'ARMSTRONG'	#5 CONT.
		SEA GREEN JUNIPER	JUNIPEROUS HORIZONTALIS 'WILTONII'	#5 CONT.
		BLUE STAR JUNIPER	JUNPEROUS SQUAMATA "BLUE STAR"	#5 CONT.
		MUGO PINE	PINUS MUGO	#5 CONT.
DECIDUOUS SHRUBS (680)				
		PEKING COTONEASTER	COTONEASTER LUCIDUS	#5 CONT.
		BLUE MIST SPIREA	CARYOPTERIS CLANDENOSIS	#5 CONT.
		MOUNTAIN NINEBARK	PHYSOCARPUS MONOGYNUS	#5 CONT.
		BARBERRY	BERBERIS THUNBERGII ATROPURPEA	#5 CONT.
		BUTTERFLY BUSH	BUDDLEIA	#5 CONT.
		DOGWOOD	CORNUS SERICEA	#5 CONT.
		HONEYSUCKLE	LONICERA SPP.	#5 CONT.
		FORSYTHIA, SPRING GLORY	FORSTHIA INTERMEDIA 'SPRING GLORY'	#5 CONT.

LANDSCAPE CALCULATIONS

SITE CALCULATIONS		
	AREA	PERCENTAGE
LIMITS OF DISTURBANCE	149,200 SF	
IMPERVIOUS/LOT COVERAGE	110,815	74%
TOTAL LANDSCAPE AREA	38,420 SF	26%
OPEN SPACE LANDSCAPE	26,390 SF	
PARKING LANDSCAPE	7,530 SF	
STREETSCAPE	4,500 SF	

LANDSCAPE REQUIREMENTS		
TOTAL LANDSCAPE AREA	30,890 SF	
	REQUIRED	PROVIDED
1 TREE / 400 SF	78	30
1 SHRUB / 25 SF	1,236	341
1 PERENNIAL / 5 SF	6,178	1,200

STREET TREES		
STREETSCAPE (LF)	508 LF (4,500 SF)	
	REQUIRED	PROVIDED
1 TREE / 35 LF	15	14

PARKING LOT LANDSCAPE	
PARKING LANDSCAPE ISLANDS	7,530 SF

		REQUIRED		PROVIDED	
		TREES	SHRUBS	TREES	SHRUBS
SINGLE LOADED (1TREE/5 SHRUBS)	12 ISLANDS	12	60		
DOUBLE LOADED (2TREE/5 SHRUBS)	9 ISLANDS	18	45		
TOTAL		30	105	41	365

SUMMARY						
	TREES REQUIRED	TREES PROVIDED	SHRUBS REQUIRED	SHRUBS PROVIDED	PERENNIALS REQUIRED	PERENNIALS PROVIDED
LANDSCAPE	78	30	1236	341	6,178	1,200
STREETSCAPE	15	14	0	0	0	0
PARKING LOT	30	41	105	365	0	0
TOTAL	127	85	1,642	706	6,178	1,200

SHEET INDEX

- L100 LANDSCAPE NOTES
L200 LANDSCAPE PLAN
L300 LANDSCAPE DETAILS

PROJECT NUMBER
184101.00

DRAWN BY
NORRIS DESIGN
K. KRAMER / B. RICE

DATE
01/01/2019

REVISIONS	DESCRIPTION	DATE



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www.norris-design.com

PROJECT
GLENWOOD SPRINGS

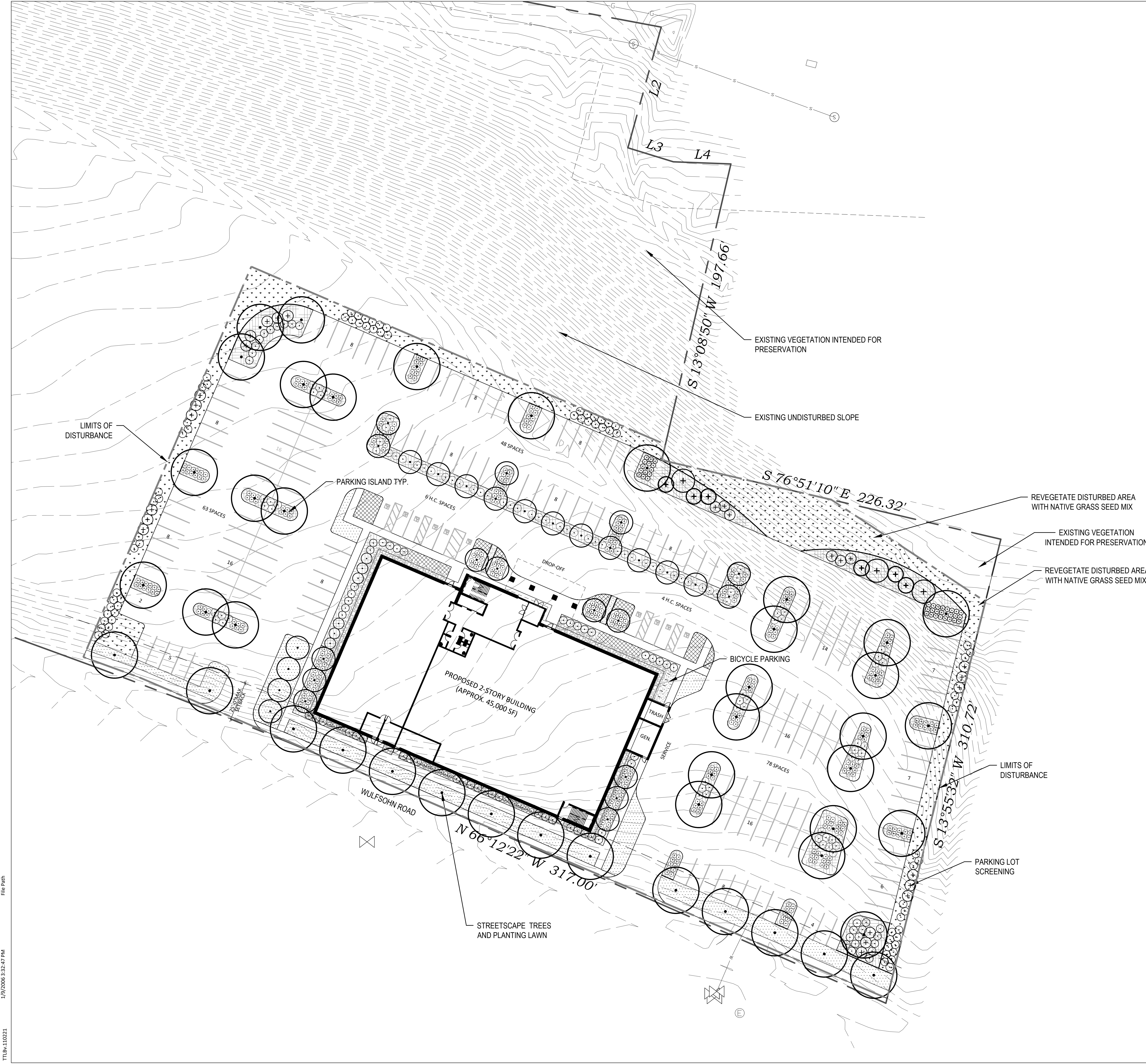
WULFSOHN ROAD,
GLENWOOD MEADOWS LOT 14
GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
LANDSCAPE
NOTES

SHEET NUMBER
L100

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION



LEGEND

DECIDUOUS TREES (REFER DETAIL 1/L300)

EVERGREEN TREES (REFER DETAIL 1/L300)

SHRUBS (REFER DETAIL 2/L300)

EDGER

LIMIT OF DISTURBANCE

PERENNIAL BED (REFER DETAIL 3/L300)

SOD

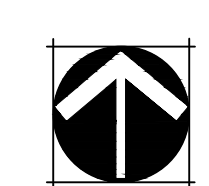
COBBLE DRIP EDGE

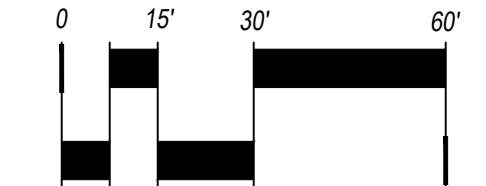
NATIVE SEED

CRUSHER FINE PATH

LANDSCAPE BED

BICYCLE RACKS (5 RACKS / CAPACITY OF 10 BIKES)


NORTH


SCALE: 1" = 30'

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

PROJECT NUMBER
184101.00

DRAWN BY
NORRIS DESIGN
K. KRAMER / B. RICE

DATE
01/01/2019

REVISIONS	DESCRIPTION	DATE
REV		

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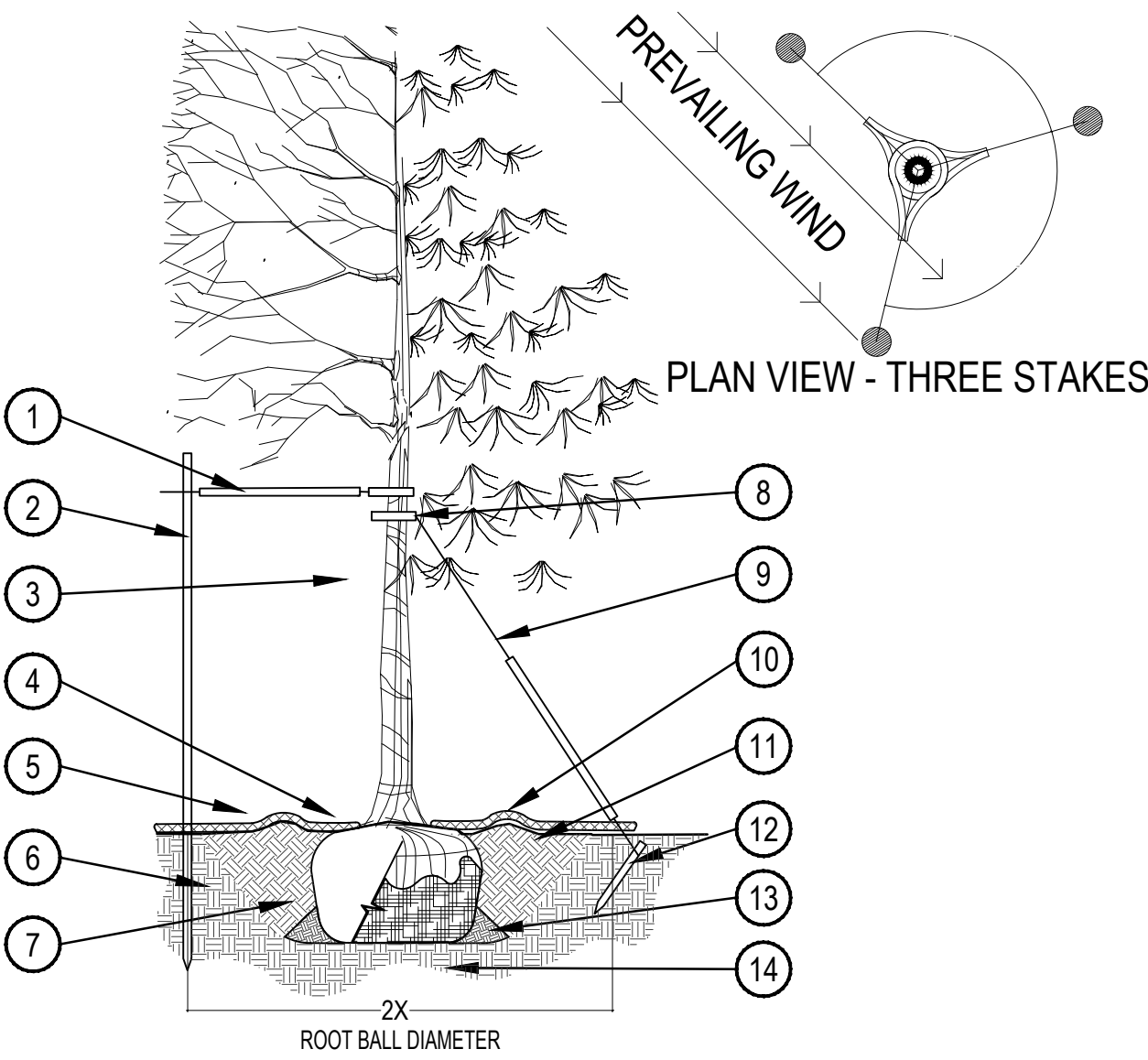
PROJECT
GLENWOOD SPRINGS

WULFSOHN ROAD,
GLENWOOD MEADOWS LOT 14
GLENWOOD SPRINGS, CO 81601

**SITE/
ARCHITECTURAL
PLAN REVIEW**

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
L200

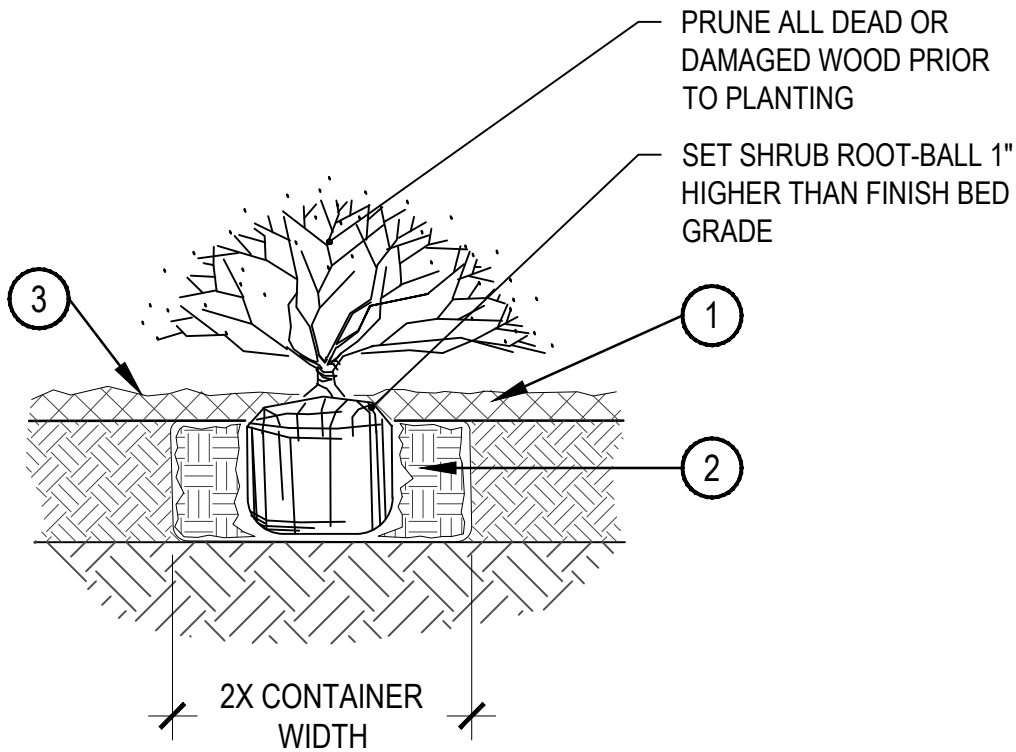


- PRUNING NOTES:
- ALL PRUNING SHALL COMPLY WITH ANSI A300 STANDARDS.
 - DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKING NOTES:
- STAKE TREES PER FOLLOWING SCHEDULE, THEN REMOVE AT END OF FIRST GROWING SEASON.
 - 1- $\frac{1}{2}$ " CALIPER SIZE - MIN. 1 STAKE ON SIDE OF PREVAILING WIND (GENERALLY N.W. SIDE)
 - 1- $\frac{1}{2}$ " - 3" CALIPER SIZE - MIN. 2 STAKES - ONE ON N.W. SIDE, ONE ON S.W. SIDE (OR PREVAILING WIND SIDE AND 180° FROM THAT SIDE)
 - 3" CALIPER SIZE AND LARGER - 3 STAKES PER DIAGRAM
 - WIRE OR CABLE SHALL BE MIN. 12 GAUGE, TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. NYLON STRAPS SHALL BE LONG ENOUGH TO ACCOMMODATE 1- $\frac{1}{2}$ " OF GROWTH AND BUFFER ALL BRANCHES FROM WIRE.

- PLACE MIN. $\frac{1}{2}$ " PVC PIPE AROUND EACH WIRE. EXPOSED WIRE SHALL BE MAX. 2" EACH SIDE
- 6 FT. UNTREATED WOOD POST (MIN. 1.5" DIAMETER). ALL SHALL BE DRIVEN OUTSIDE ROOTBALL AND IN UNDISTURBED SOIL.
- TREE WRAP TO BE INSTALLED ONLY FROM OCTOBER 1 THROUGH APRIL 30. (DECIDUOUS ONLY)
- PLANT TREE SO THAT FIRST ORDER MAJOR ROOT IS 1"-2" ABOVE FINAL GRADE.
- 3" DEEP MULCH RING PLACED A MINIMUM OF 4 FT. IN DIAMETER. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK (FINISHED GRADE REFERENCES TOP OF MULCH).
- 1:1 SLOPE ON SIDES OF PLANTING HOLE.
- REMOVE ALL TWINE, ROPE, BURLAP AND WIRE FROM ENTIRE ROOT BALL AND TRUNK
- GROMMETED NYLON STRAPS
- GALVANIZED WIRE, MIN. 12 GAUGE CABLE - TWIST WIRE ONLY TO KEEP FROM SLIPPING.
- 4-6" HIGH WATER SAUCER IN NON-TURF AREAS.
- BACKFILL WITH BLEND OF EXISTING SOIL AND A MAXIMUM 20% (BY VOLUME) ORGANIC MATERIAL. WATER THOROUGHLY WHEN BACKFILLING
- 2 FT. STEEL T-POST. ALL SHALL BE DRIVEN BELOW GRADE AND OUTSIDE ROOTBALL IN UNDISTURBED SOIL.
- PLACE SOIL AROUND ROOT BALL FIRMLY, DO NOT COMPACT OR TAMP. SETTLE SOIL WITH WATER TO FILL ALL AIR POCKETS.
- PLACE ROOT BALL ON UNDISTURBED SOIL TO PREVENT SETTLEMENT.

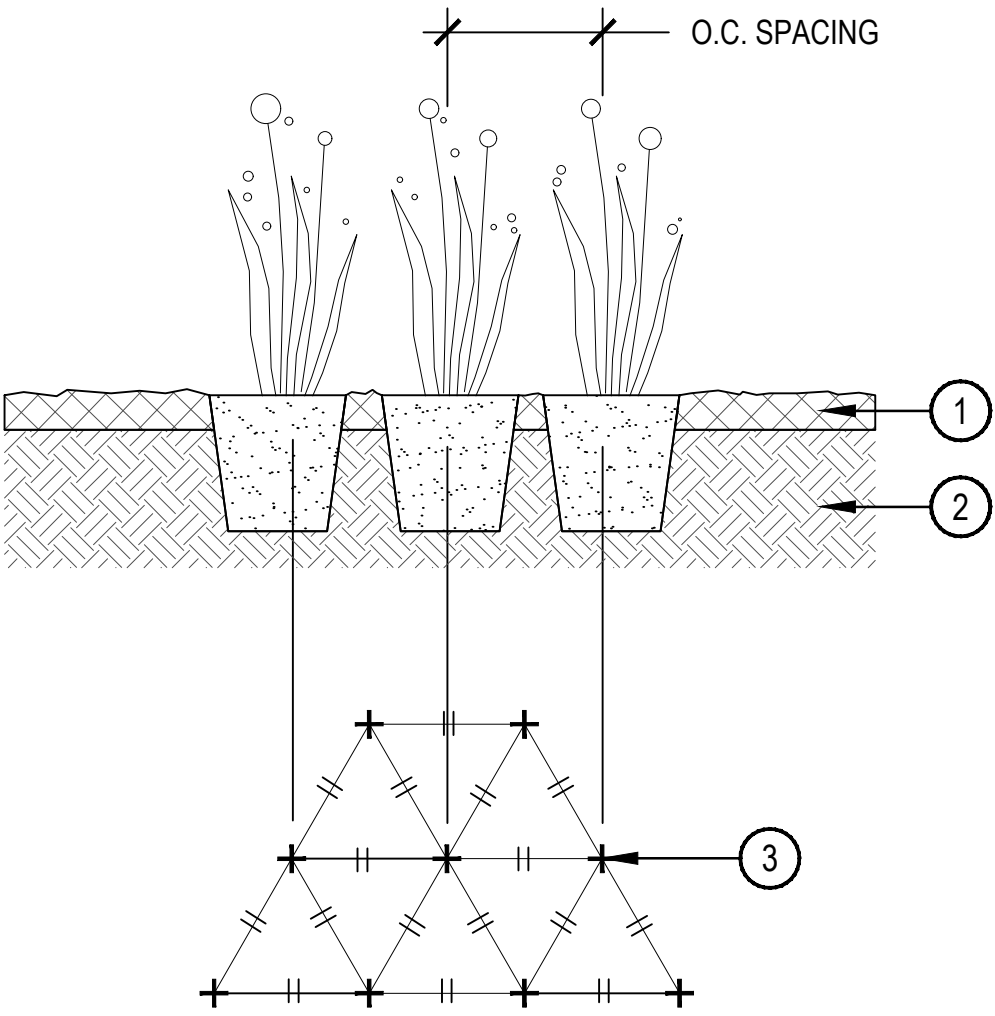
1 TREE PLANTING DETAIL

SCALE: 3/16" = 1'-0"

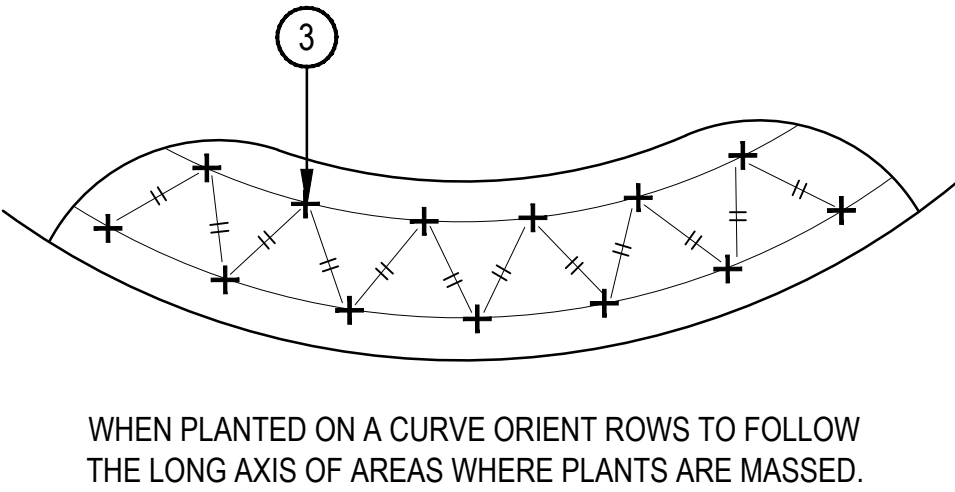


- SPECIFIED MULCH
- AMENDED SOIL IN PLANTING BED PER SPECIFICATIONS. TILL SOIL TO A DEPTH OF EIGHT INCHES.
- FINISH GRADE (TOP OF MULCH)

- NOTE:
- BROKEN OR CRUMBLING ROOT-BALLS WILL BE REJECTED
 - CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOT-BALL WHEN REMOVING IT FROM ITS CONTAINER
 - ALL JUNIPERS SHOULD BE PLANTED SO THE TOP OF THE ROOT-BALL OCCURS ABOVE THE FINISH GRADE OF THE MULCH LAYER
 - DIG PLANT PIT TWICE AS WIDE AND HIGH AS THE CONTAINER



- SPECIFIED MULCH
- AMENDED PLANTING BED TILLED TO A DEPTH OF 6"
- CENTER OF PLANT



WHEN PLANTED ON A CURVE ORIENT ROWS TO FOLLOW THE LONG AXIS OF AREAS WHERE PLANTS ARE MASSES.

2 SHRUB PLANTING

SCALE: 1-1/2" = 1'-0"

3 PERENNIAL PLANT LAYOUT

SCALE: 1" = 1'-0"

PROJECT NUMBER
184101.00

DRAWN BY
NORRIS DESIGN
K. KRAMER / B. RICE

DATE
01/01/2019

REVISIONS

REV	DESCRIPTION	DATE
-----	-------------	------

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PROJECT
GLENWOOD SPRINGS

WULFSOHN ROAD,
GLENWOOD MEADOWS LOT 14
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SITE/
ARCHITECTURAL
PLAN REVIEW

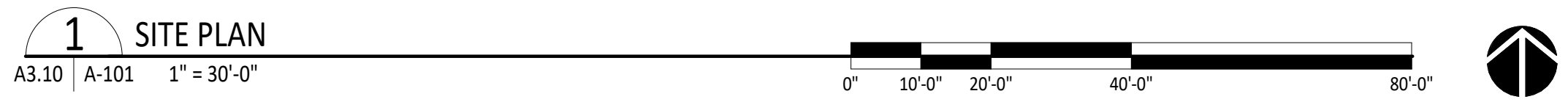
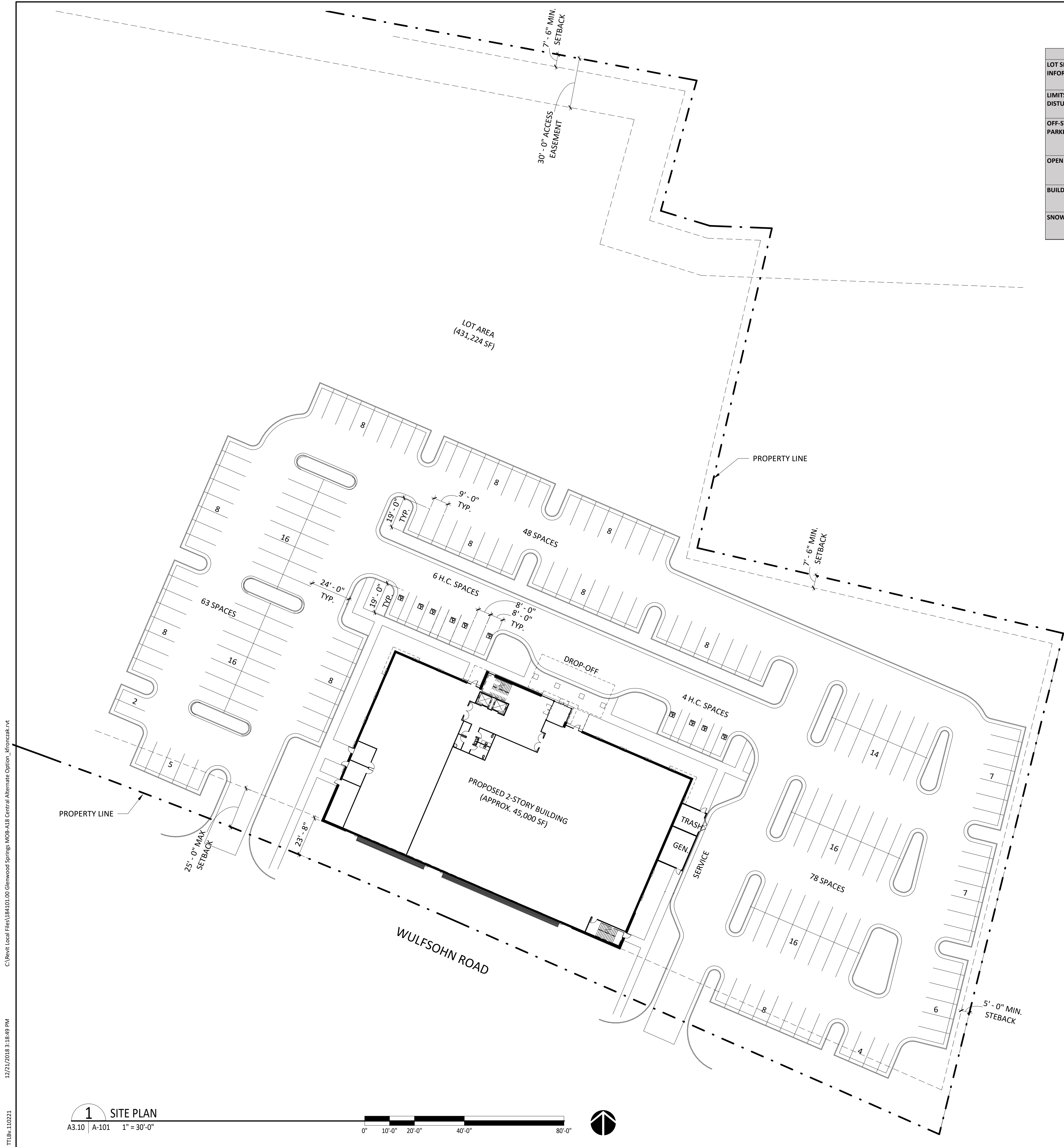
SHEET TITLE
LANDSCAPE DETAILS

SHEET NUMBER

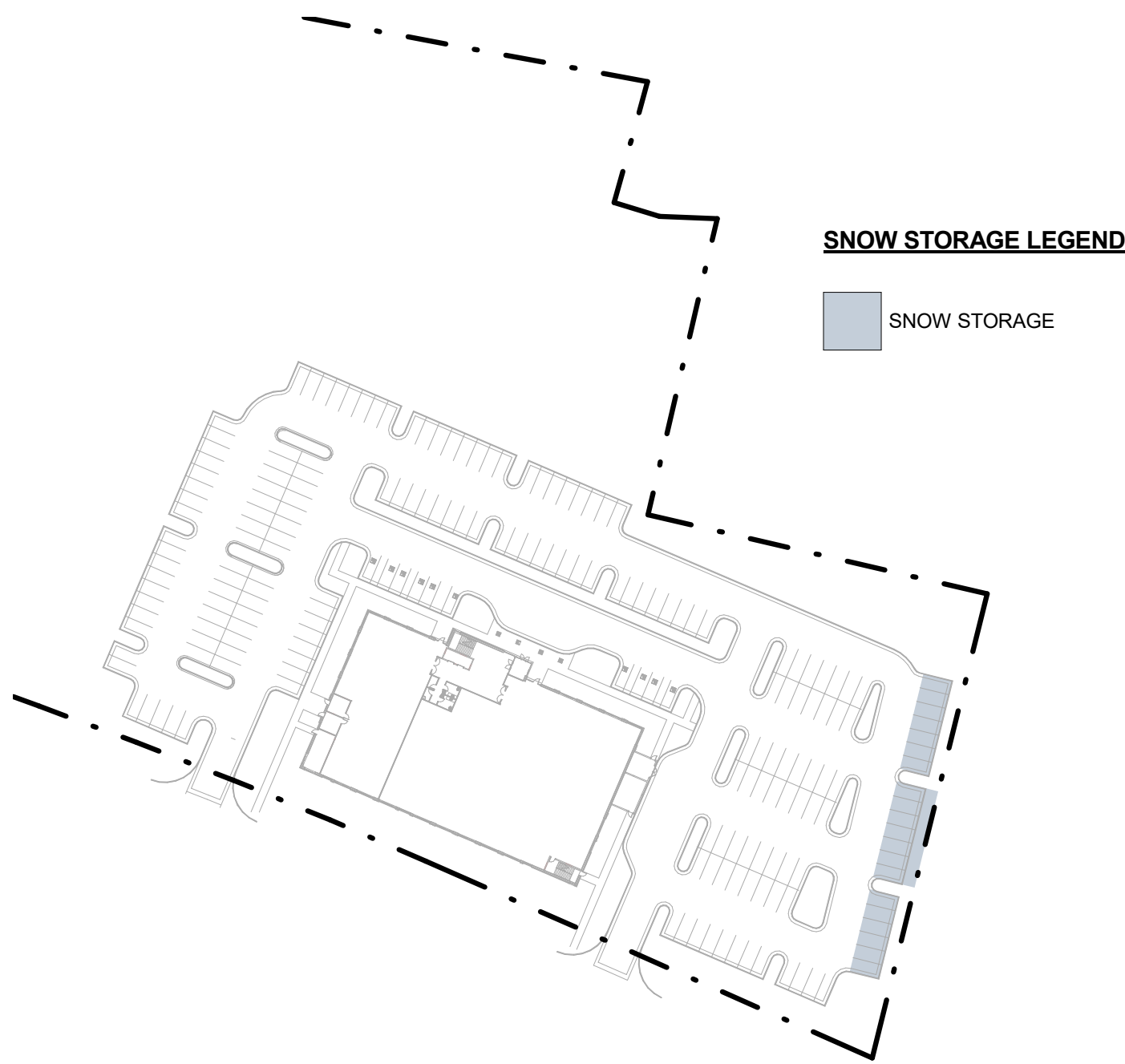
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PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

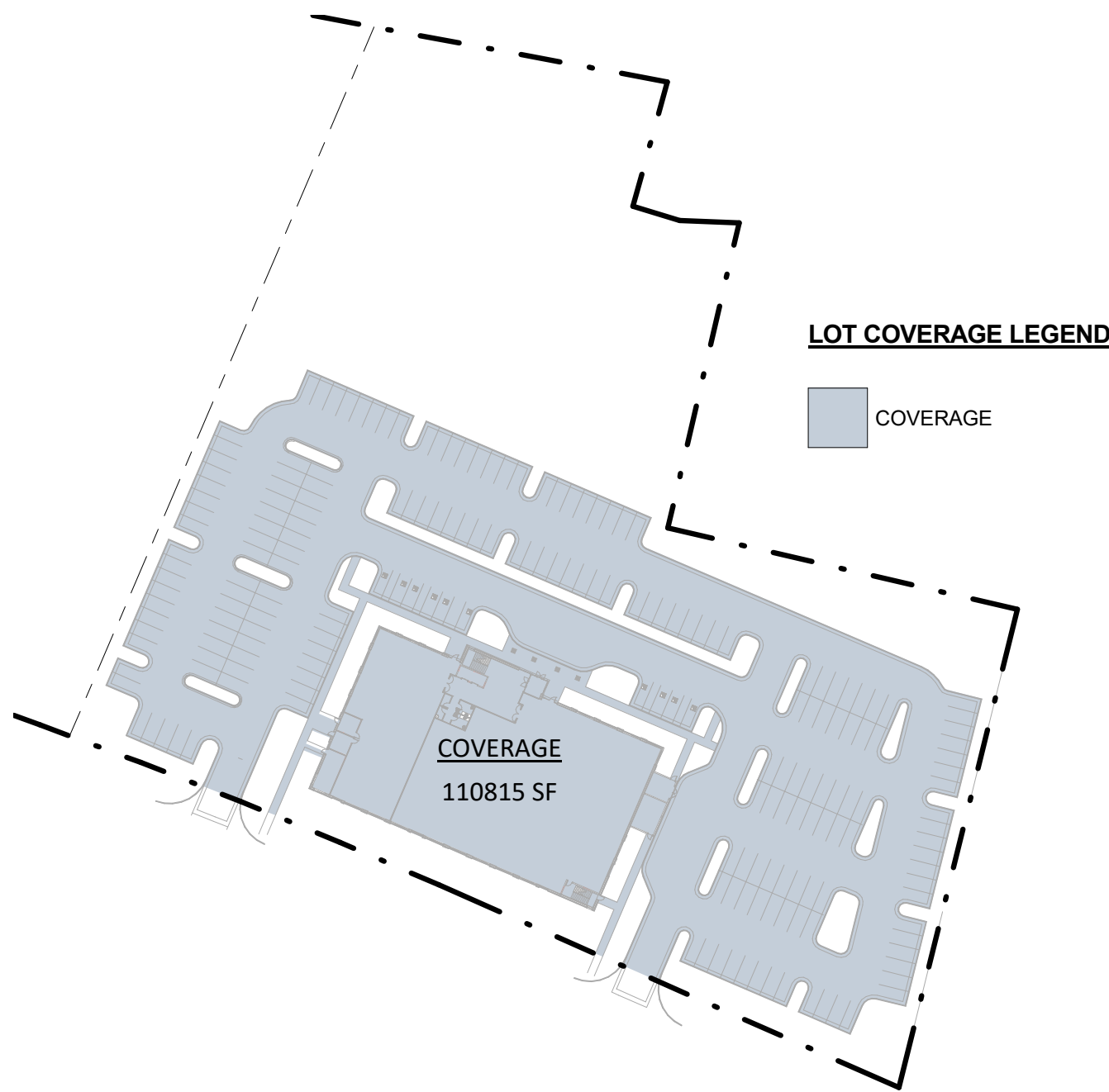
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12/21/2018 3:18:49 PM
TLBx-110221



PROJECT DESCRIPTION					
LOT SIZE INFORMATION	ACRES	SQUARE FEET	LOT COVERAGE	EXISTING (SQFT & %)	PROPOSED (SQFT) (%)
	9.9	431,224		N/A	110,815 25.7%
LIMITS OF DISTURBANCE	EXISTING (SQFT & %)	PROPOSED (SQFT & %)	AVERAGE SLOPE WITHIN LIMITS OF DISTURBANCE	PERCENTAGE (%)	
	N/A	149,235			
OFF-STREET PARKING SPACES	REQUIRED # VEHICLE...	PROPOSED # VEHICLE...	BICYCLE PARKING	REQUIRED # SPACES	PROPOSED # SPACES
	174	189 (STANDARD) 10 (HANDICAP) 199 (TOTAL)		10	10
OPEN SPACE	REQUIRED (SQFT & %)	PROPOSED (SQFT & %)	NON-RESIDENTIAL USES	TYPE OF USE	GROSS FLOOR AREA (SQFT ...)
	22,385	23,000		MULTI-USE	43,333
BUILDING HEIGHT	MAX	PROPOSED	TOTAL LANDSCAPED AREA	EXISTING (SQFT & %)	PROPOSED (SQFT) (%)
	40'-0"	35'-0"		N/A	38,420 8.9%
SNOW STORAGE	REQUIRED (SQFT)	PROPOSED (SQFT)	TOTAL IMPERVIOUS AREA	EXISTING (SQFT & %)	PROPOSED (SQFT) (%)
	NO MINIMUM	4,084 (20 PARKING SPACES)		N/A	110,815 25.7%



SNOW STORAGE DIAGRAM



LOT COVERAGE DIAGRAM

PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

REVISIONS
REV DESCRIPTION DATE

BOULDER ASSOCIATES

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PROJECT
GLENWOOD SPRINGS

LOT 14
GLENWOOD MEADOWS NO. 2
TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

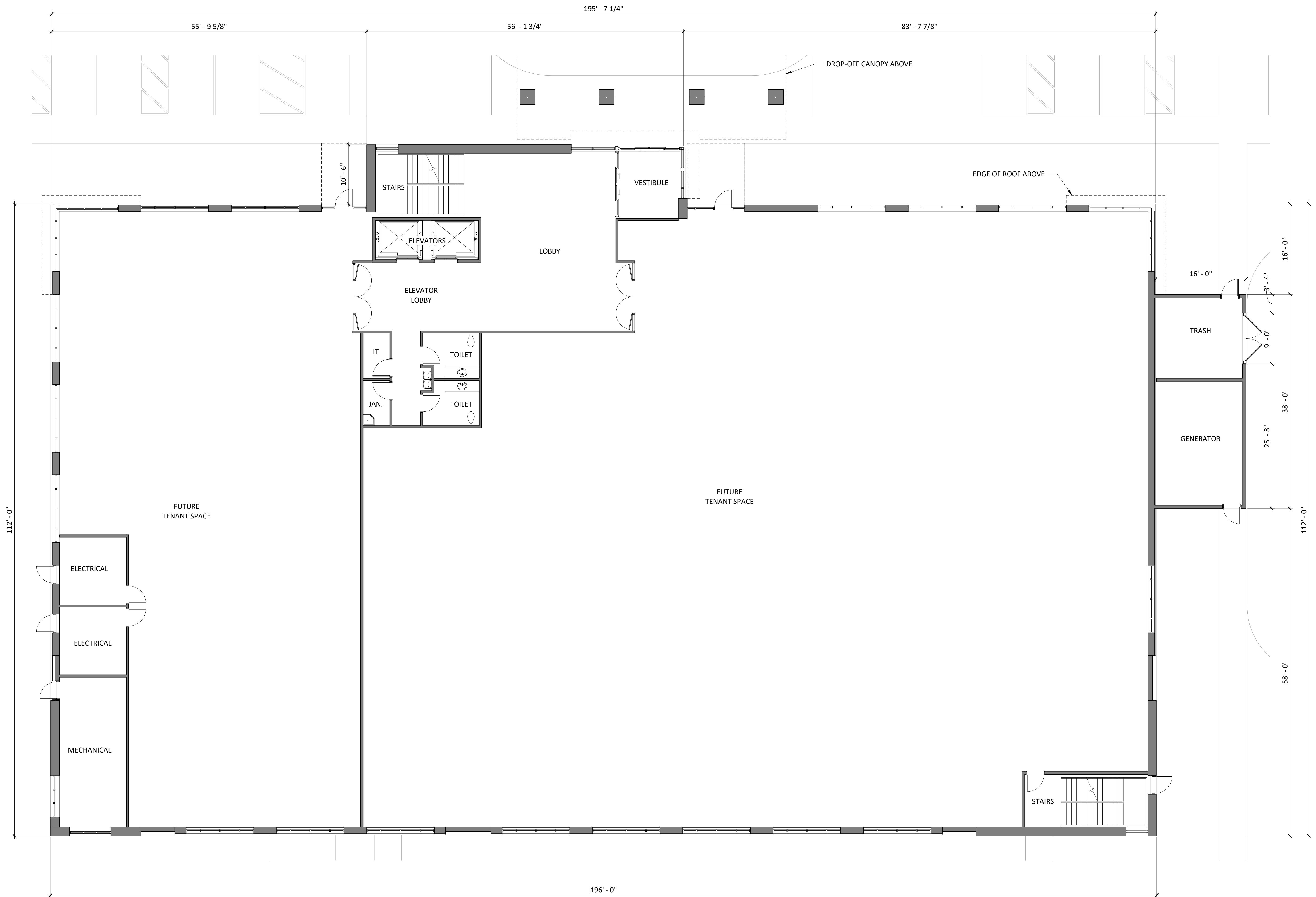
SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
ARCHITECTURAL SITE PLAN

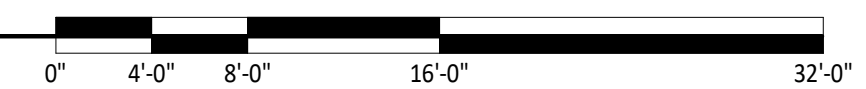
SHEET NUMBER

A-101

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TTLBx-110221



1 FIRST FLOOR PLAN
A3.10 | A-201 1/8" = 1'-0"



PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

REVISIONS	DESCRIPTION	DATE
REV		

PROPERTY DESCRIPTION
Lot 14, Glenwood Meadows No. 2
A Parcel of Land Situate in the SW 1/4
of Section 5, Township 6 South,
Range 89 West of the 6th P.M.
City of Glenwood Springs,
County of Garfield, State of Colorado

**BOULDER
ASSOCIATES**

ARCHITECTS

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OWNER

BOLDT
1110 N. Old World Third St., Suite 610
Milwaukee, WI 53203
414.276.4631
ben.ganther@boldt.com

PROJECT
**GLENWOOD
SPRINGS**

LOT 14
GLENWOOD MEADOWS NO. 2
TBD WULFSOHN RD.
GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
FIRST FLOOR PLAN

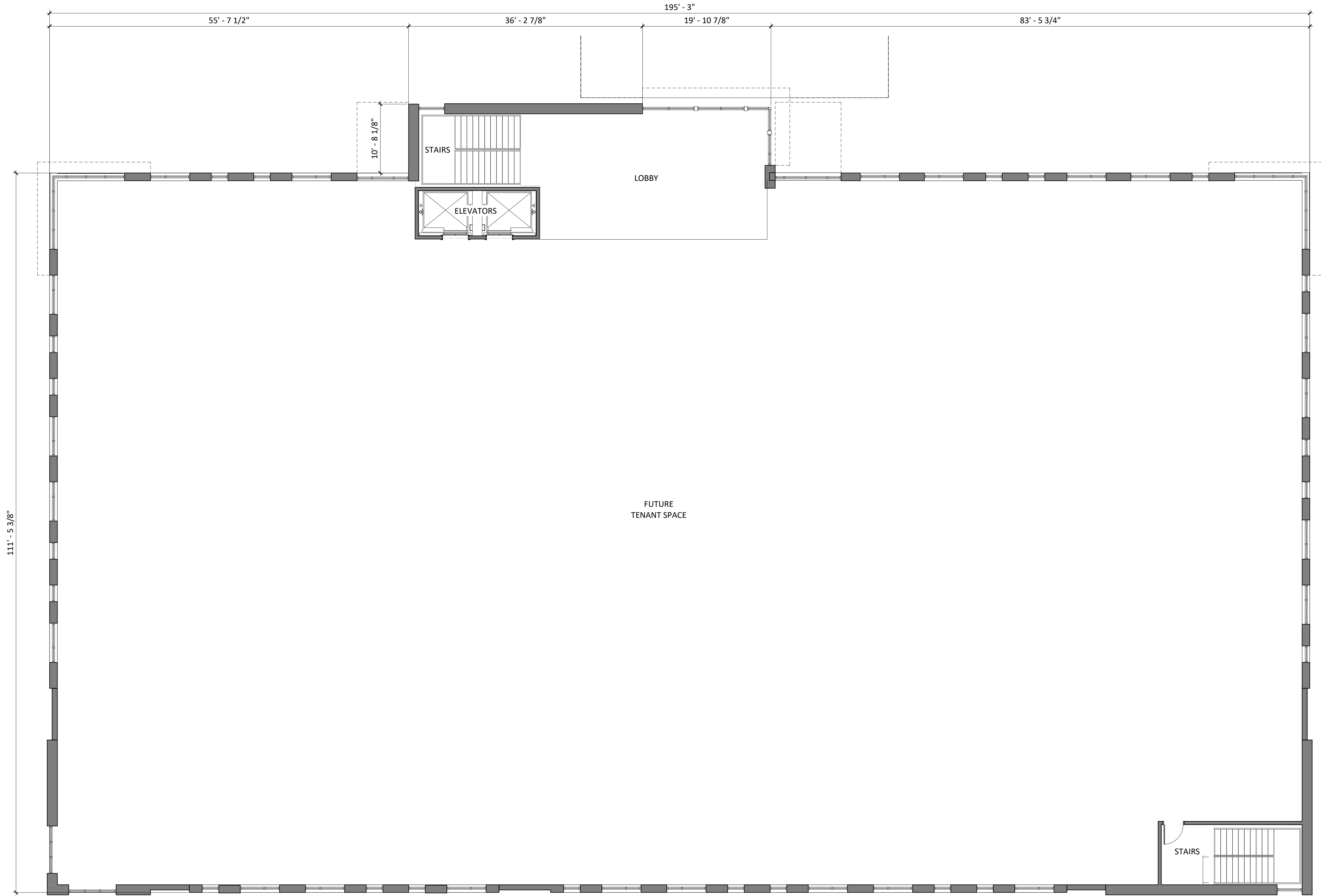
SHEET NUMBER

A-201

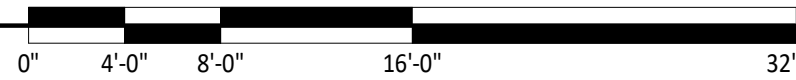
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TL18x-110221



1 SECOND FLOOR PLAN
A3.10 | A-202 1/8" = 1'-0"



PROJECT NUMBER
184101.00

DRAWN BY
K. Fronczak

DATE
01/02/19

REVISIONS	DESCRIPTION	DATE
REV		

PROPERTY DESCRIPTION
Lot 14, Glenwood Meadows No. 2
A Parcel of Land Situate in the SW 1/4
of Section 5, Township 6 South,
Range 89 West of the 6th P.M.
City of Glenwood Springs,
County of Garfield, State of Colorado

BOULDER
ASSOCIATES

ARCHITECTS

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OWNER

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PROJECT
GLENWOOD
SPRINGS

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GLENWOOD SPRINGS, CO 81601

SITE/
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PLAN REVIEW

SHEET TITLE
SECOND FLOOR PLAN

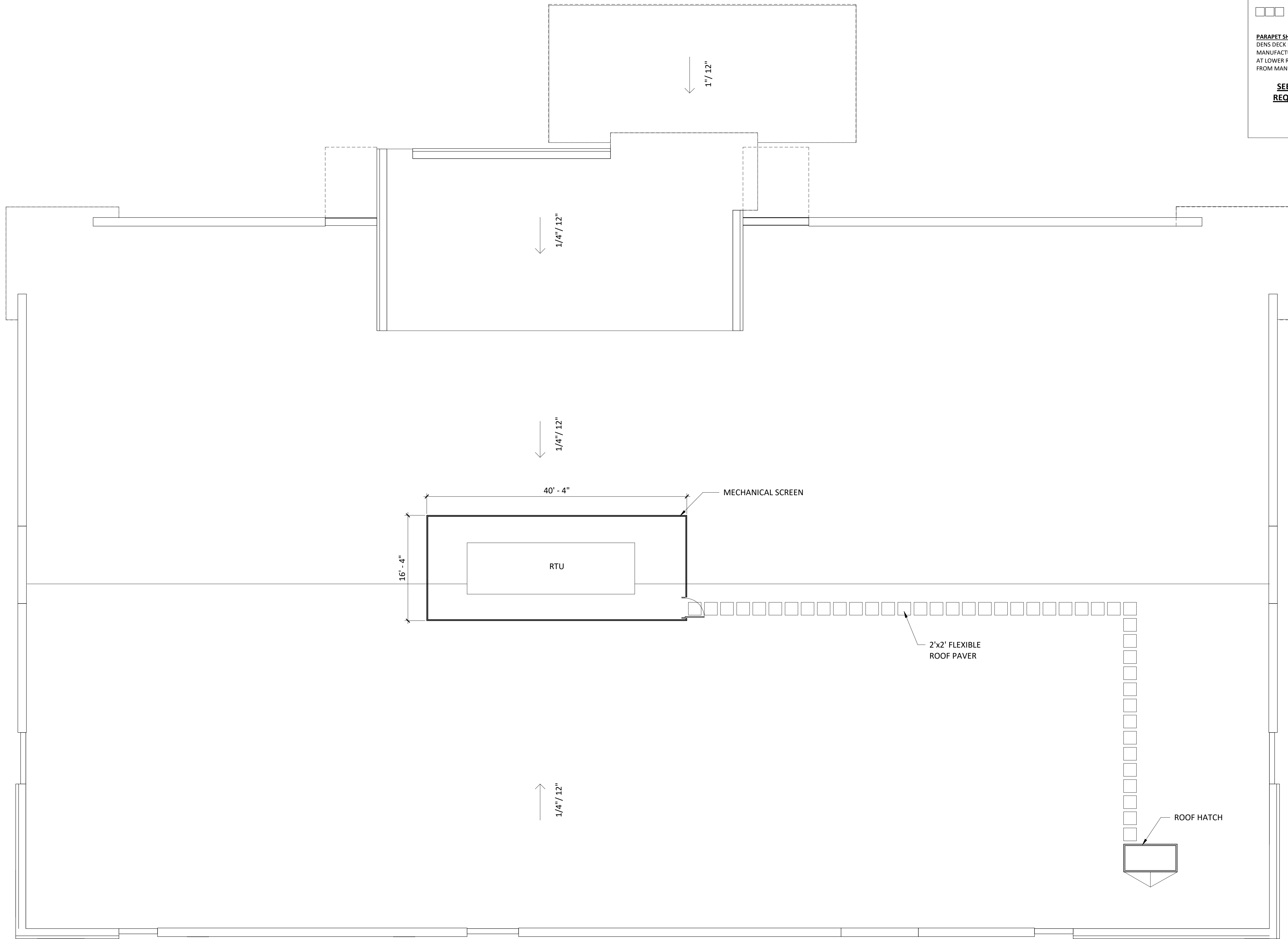
SHEET NUMBER

A-202

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TTLBx-110221



ROOF PLAN LEGEND

- MEMBRANE ROOF SYSTEM**
FULLY ADHERED, 60 MIL UNREINFORCED WHITE EPDM OVER 5/8" COVER BOARD OVER MINIMUM R-30 RIGID INSULATION OVER METAL DECK, SEE STRUCTURAL, SEE ALSO BACK OF PARAPET SHEATHING BOARD
- TAPERED INSULATION, SLOPE @ 1/4" PER FOOT, SEE ARROWS FOR SLOPE DIRECTION. TAPER UP FROM MINIMUM R-30 INSULATION.
- EPDM ROOF PAVER

PARAPET SHEATHING BOARD
DENS DECK PRIME W/ METAL STRAP BACKING AS REQUIRED BY MANUFACTURER FOR PULL-OUT RESISTANCE. BACK OF PARAPETS AT LOWER ROOFS TO RECEIVE MANUFACTURER'S PAINT, COLOR TBD FROM MANUFACTURER'S STANDARD RANGE.

SEE SPEC FOR WIND SPEED WARRANTY REQUIREMENTS FOR ALL ROOFING TYPES
 $V_{ult} = 120 \text{ mph}$
 $V_{asd} = 93 \text{ mph}$

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SITE/ ARCHITECTURAL PLAN REVIEW

SHEET TITLE

ROOF PLAN

SHEET NUMBER

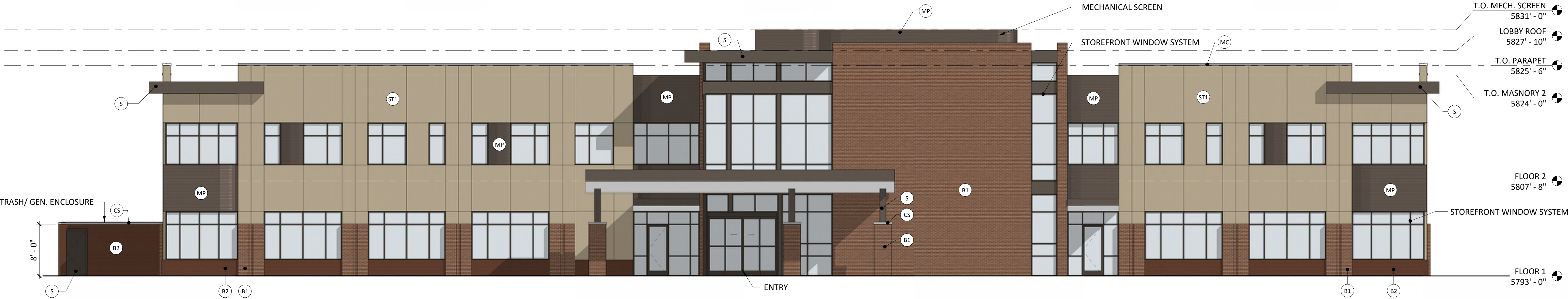
A-203

1 ROOF PLAN
A-203 1/8" = 1'-0"

0" 4'-0" 8'-0" 16'-0" 32'-0"

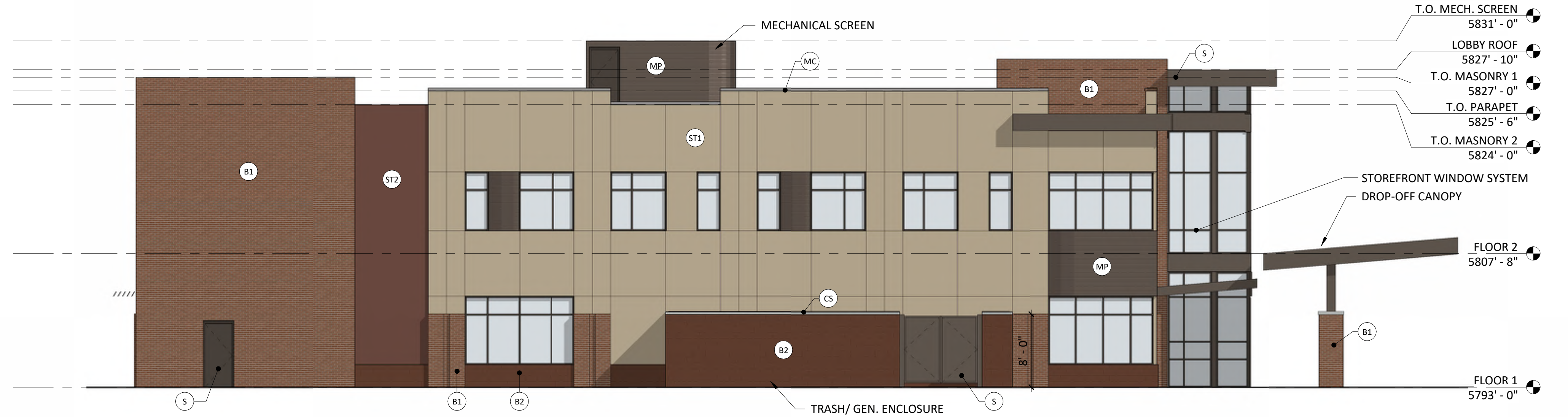
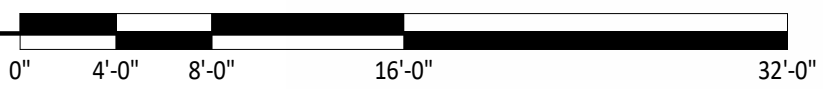


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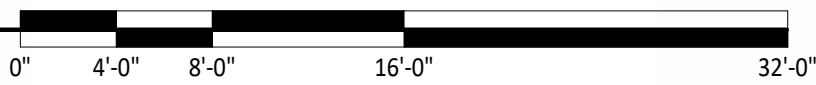
1 NORTH ELEVATION - ENTITLEMENTS

A-301 1/8" = 1'-0"



2 EAST ELEVATION - ENTITLEMENTS

A-301 1/8" = 1'-0"



EXTERIOR ELEVATION MATERIAL LEGEND

- B1 BRICK 1
- B2 BLOCK/ BRICK 2
- ST1 STUCCO 1
- ST2 STUCCO 2
- S STEEL, PAINTED "BRONZE"
- MP METAL PANEL, "BRONZE"
- CS CAST-STONE
- MC PREFINISHED METAL COPING

NORTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,328	NA
STUCCO (NET*)	2,062	32.6%
MASONRY (NET*)	1,618	25.6%
METAL PANEL (NET*)	587	9.3%
GLAZING	2,061	32.6%

SOUTH ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,394	NA
STUCCO (NET*)	2,934	45.9%
MASONRY (NET*)	1,926	30.1%
METAL PANEL (NET*)	161	2.5%
GLAZING	1,373	21.5%

NOTE: THESE ELEVATIONS ARE CONCEPTUAL IN NATURE. INDIVIDUAL BUILDING ELEVATIONS MAY VARY BUT WILL BE EVALUATED FOR COMPLIANCE WITH DESIGN STANDARDS CONTAINED WITHIN TITLE 070 OF THE GLENWOOD SPRINGS MUNICIPAL CODE AT THE TIME OF SUBMITTING A BUILDING PERMIT APPLICATION.

NET* EXCLUDES ROOF FORMS, AWNINGS, AND SIMILAR FEATURES.

EAST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	3,622	NA
STUCCO (NET*)	1,658	45.8%
MASONRY (NET*)	1,114	17.6%
METAL PANEL (NET*)	128	3.5%
GLAZING	722	19.9%

WEST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	3,975	NA
STUCCO (NET*)	1,596	40.2%
MASONRY (NET*)	1,440	36.2%
METAL PANEL (NET*)	181	2.9%
GLAZING	758	19.1%

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GLENWOOD SPRINGS, CO 81601

SITE/
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
EXTERIOR
ELEVATIONS

SHEET NUMBER

A-301

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12/21/2018 3:18:17 PM
TTLbx-110221



1 SOUTH ELEVATION - ENTITLEMENTS
A2.11 | A-302 1/8" = 1'-0"



2 WEST ELEVATION - ENTITLEMENTS
A-302 1/8" = 1'-0"

EXTERIOR ELEVATION MATERIAL LEGEND

B1	BRICK 1
B2	BLOCK/ BRICK 2
ST1	STUCCO 1
ST2	STUCCO 2
S	STEEL, PAINTED "BRONZE"
MP	METAL PANEL, "BRONZE"
CS	CAST-STONE
MC	PREFINISHED METAL COPING

NORTH ELEVATION			EAST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*		SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,328	NA	GROSS OF WALL	3,622	NA
STUCCO (NET*)	2,062	32.6%	STUCCO (NET*)	1,658	45.8%
MASONRY (NET*)	1,618	25.6%	MASONRY (NET*)	1,114	17.6%
METAL PANEL (NET*)	587	9.3%	METAL PANEL (NET*)	128	3.5%
GLAZING	2,061	32.6%	GLAZING	722	19.9%

SOUTH ELEVATION			WEST ELEVATION		
	SURFACE AREA	PERCENTAGE OF NET*		SURFACE AREA	PERCENTAGE OF NET*
GROSS OF WALL	6,394	NA	GROSS OF WALL	3,975	NA
STUCCO (NET*)	2,934	45.9%	STUCCO (NET*)	1,596	40.2%
MASONRY (NET*)	1,926	30.1%	MASONRY (NET*)	1,440	36.2%
METAL PANEL (NET*)	161	2.5%	METAL PANEL (NET*)	181	2.9%
GLAZING	1,373	21.5%	GLAZING	758	19.1%

NOTE: THESE ELEVATIONS ARE CONCEPTUAL IN NATURE. INDIVIDUAL BUILDING ELEVATIONS MAY VARY BUT WILL BE EVALUATED FOR COMPLIANCE WITH DESIGN STANDARDS CONTAINED WITHIN TITLE 070 OF THE GLENWOOD SPRINGS MUNICIPAL CODE AT THE TIME OF SUBMITTING A BUILDING PERMIT APPLICATION.

NET* EXCLUDES ROOF FORMS, AWNINGS, AND SIMILAR FEATURES.

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SPRINGS

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GLENWOOD SPRINGS, CO 81601

SITE/
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PLAN REVIEW

SHEET TITLE
EXTERIOR
ELEVATIONS

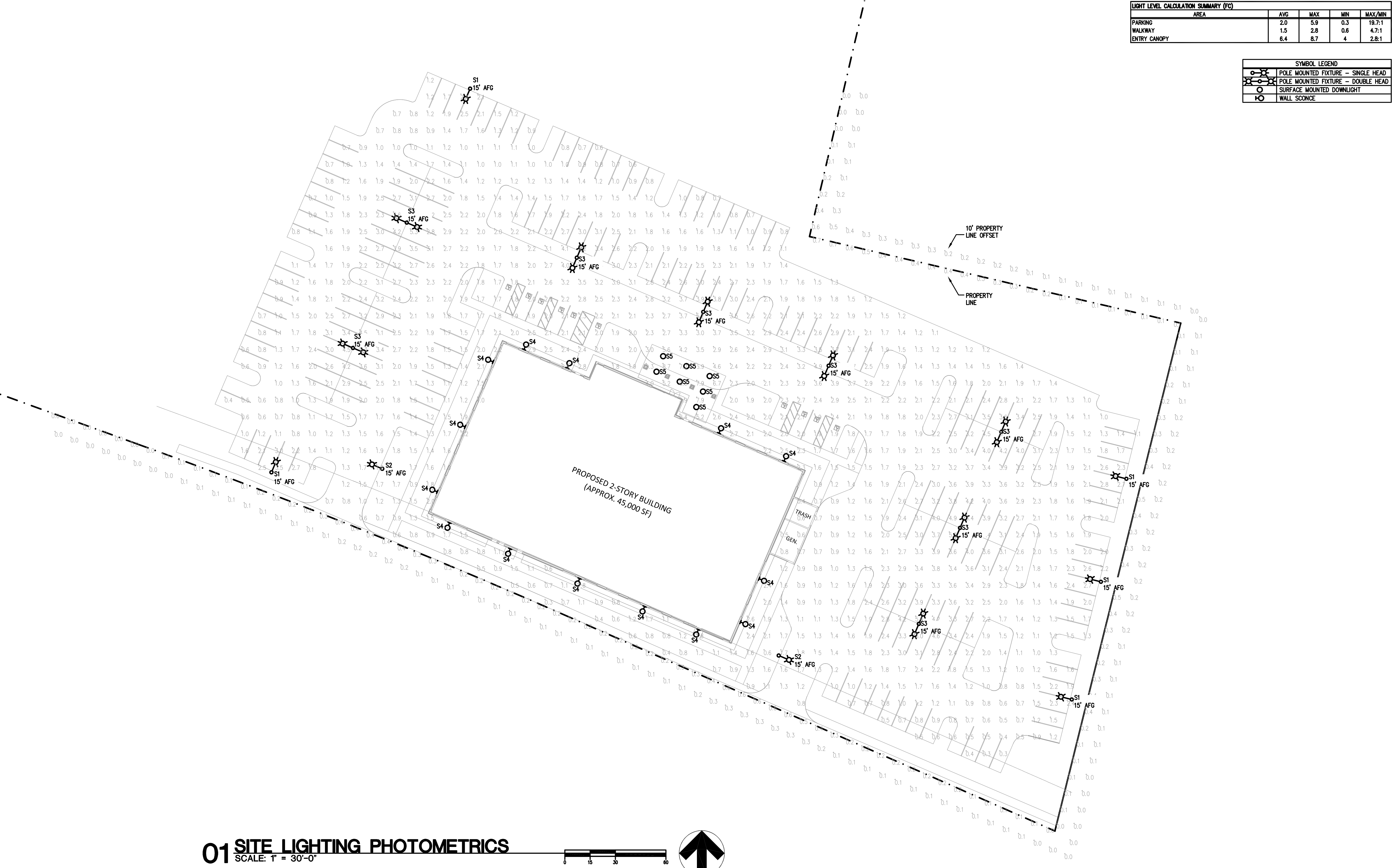
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A-302

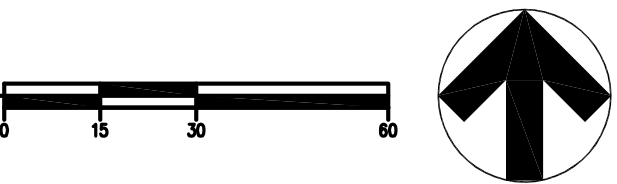
ELECTRICAL LUMINAIRE FIXTURE SCHEDULE																	
	PHYSICAL DESCRIPTION					ELECTRICAL SPECIFICATIONS							MANUFACTURER INFORMATION				
TYPE	DESCRIPTION	HOUSING	REFLECTOR	SHIELDING	FINISH	MOUNTING	COLOR TEMP.	LAMP	LUMENS	HOURS	VA	UNITS	BALLAST/DRIVER/XFRM	VOLTAGE	MANUFACTURER	CATALOG NUMBER	REMARKS
S1	SINGLE HEAD SITE FIXTURE, SINGLE PIECE HOUSING, HOUSE SIDE SHIELD, IP65, UL LISTED FOR WET LOCATIONS. INTEGRAL 5-PIN TWIST LOCK RECEPTACLE FOR WIRELESS DIMMING CONTROLLER.	DIE-CAST ALUMINUM	TYPE II	NONE	TGIC THERMOSET POWDER COAT FINISH IN DARK BRONZE	POLE MOUNTED - 12'-6" SQUARE ALUMINIUM POLE ON 2'-6" CONCRETE BASE	4,000K	LED	4,700	100,000 @ L85	38 VA	EACH	LED 0-10V DIMMING DRIVER - DIM TO 10%	277 V	LITHONIA	DSX0LED-P1-40K-T2M-277-SPA-PER5-HIS-DDBXKD	
S2	SINGLE HEAD SITE FIXTURE, SINGLE PIECE HOUSING, IP65, UL LISTED FOR WET LOCATIONS. INTEGRAL 5-PIN TWIST LOCK RECEPTACLE FOR WIRELESS DIMMING CONTROLLER.	DIE-CAST ALUMINUM	TYPE V	NONE	TGIC THERMOSET POWDER COAT FINISH IN DARK BRONZE	POLE MOUNTED - 12'-6" SQUARE ALUMINIUM POLE ON 2'-6" CONCRETE BASE	4,000K	LED	4,700	100,000 @ L85	38 VA	EACH	LED 0-10V DIMMING DRIVER - DIM TO 10%	277 V	LITHONIA	DSX0LED-P1-40K-T5M-277-SPA-PER5-DDBXKD	
S3	DOUBLE HEAD SITE FIXTURE, SINGLE PIECE HOUSING, HOUSE SIDE SHIELD, IP65, UL LISTED FOR WET LOCATIONS. INTEGRAL 5-PIN TWIST LOCK RECEPTACLE FOR WIRELESS DIMMING CONTROLLER.	DIE-CAST ALUMINUM	TYPE IV	NONE	TGIC THERMOSET POWDER COAT FINISH IN DARK BRONZE	POLE MOUNTED - 22'-6" SQUARE ALUMINIUM POLE ON 2'-6" CONCRETE BASE	4,000K	LED	15,400	100,000 @ L85	276 VA	EACH	LED 0-10V DIMMING DRIVER - DIM TO 10%	277 V	LITHONIA	DSX1LED-P5-40K-T4M-2777-SPA-PER 5-DDBXKD	
S4	LED WALL SCONCE, SINGLE PIECE FULL CUTOFF HOUSING, IP65, UL LISTED FOR WET LOCATIONS.	DIE-CAST ALUMINUM	TYPE II	NONE	TGIC THERMOSET POWDER COAT FINISH IN DARK BRONZE	WALL MOUNT - 9'-6" AFG	4,000K	LED	1,300	100,000 @ L88	14 VA	EACH	LED 0-10V DIMMING DRIVER - DIM TO 10%	277 V	LITHONIA	PSXW1LED-10C-350-40K-T2M-MVOLT -DDBXKD	
S5	LED OPEN DOWNLIGHT, 6" APERTURE.	DIE-CAST STEEL	WIDE	NONE	SEMI-SPECULAR CLEAR	RECESSED IN CEILING - VERIFY CEILING TYPE	4,000K	LED	1,000	60,000 @ L70	12 VA	EACH	LED 0-10V DIMMING DRIVER - DIM TO 10%	277 V	LITHONIA	EVO-40/10-6AR-WD-LSS-MVOLT-EZ10	

LIGHT LEVEL CALCULATION SUMMARY (FC)				
AREA	AVG	MAX	MIN	MAX/MIN
PARKING	2.0	5.9	0.3	19.7:1
WALKWAY	1.5	2.8	0.6	4.7:1
ENTRY CANOPY	6.4	8.7	4	2.8:1

SYMBOL LEGEND	
	POLE MOUNTED FIXTURE - SINGLE HEAD
	POLE MOUNTED FIXTURE - DOUBLE HEAD
	SURFACE MOUNTED DOWNLIGHT
	WALL SCONCE



01 SITE LIGHTING PHOTOMETRICS
SCALE: 1" = 30'-0"



PROJECT NUMBER
184101.00

DRAWN BY
CL

DATE
01/02/2019

REVISIONS
REV DESCRIPTION DATE



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PROJECT
GLENWOOD SPRINGS

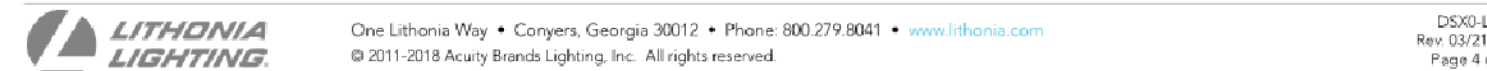
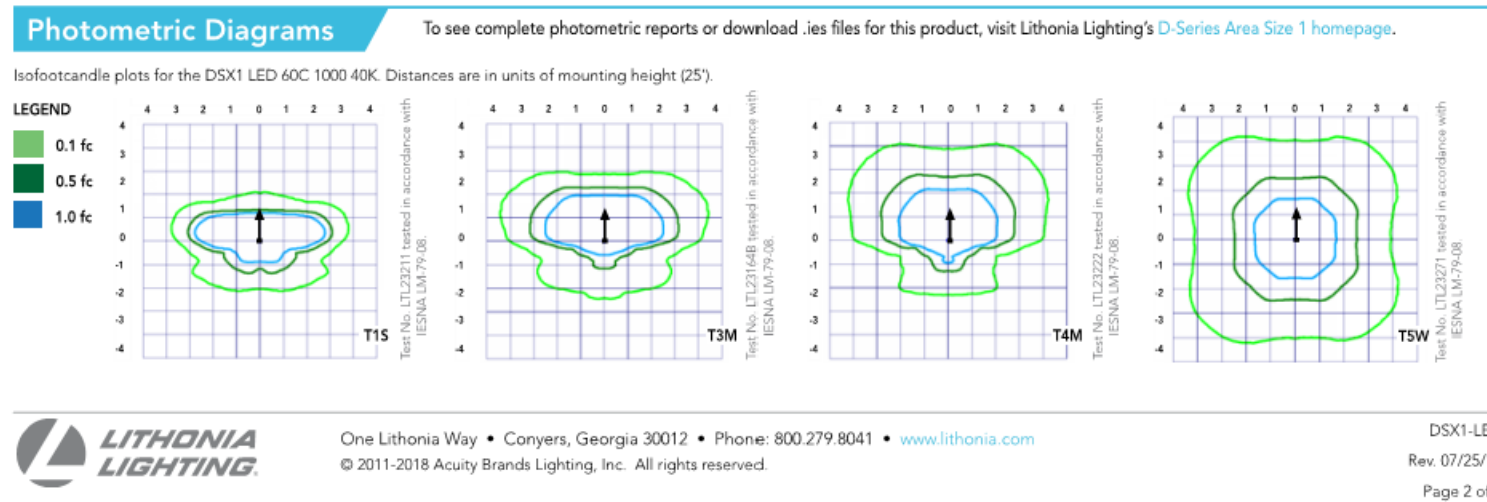
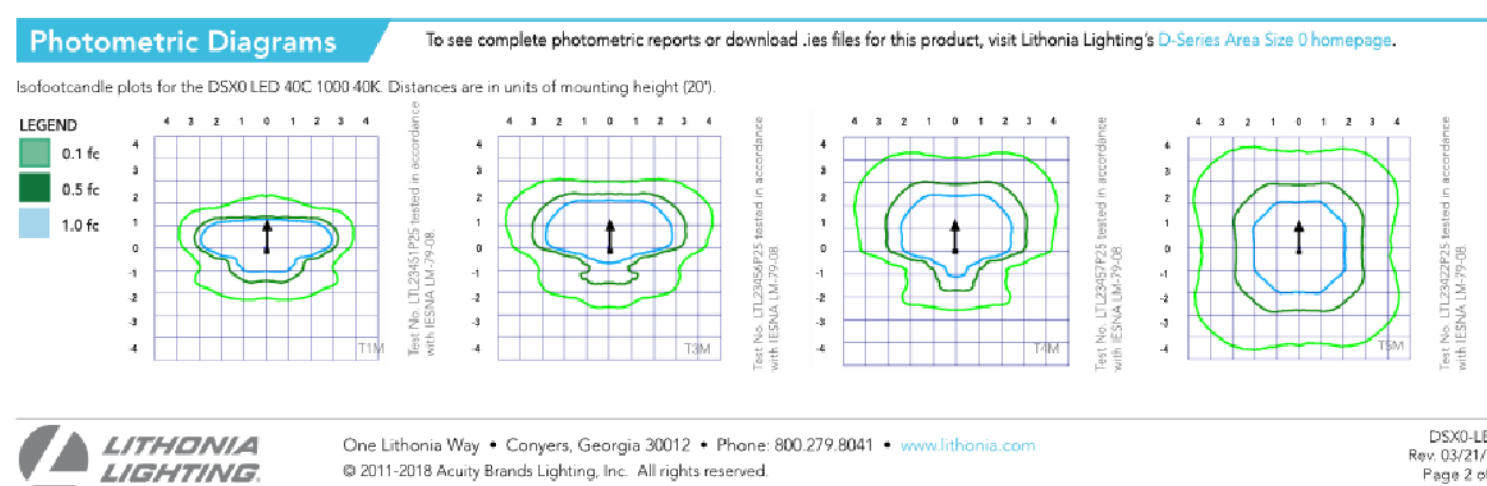
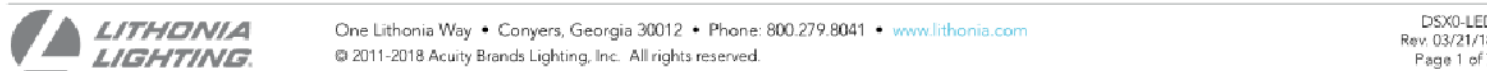
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SITE /
ARCHITECTURAL
PLAN REVIEW

SHEET TITLE
SITE LIGHTING
PHOTOMETRICS

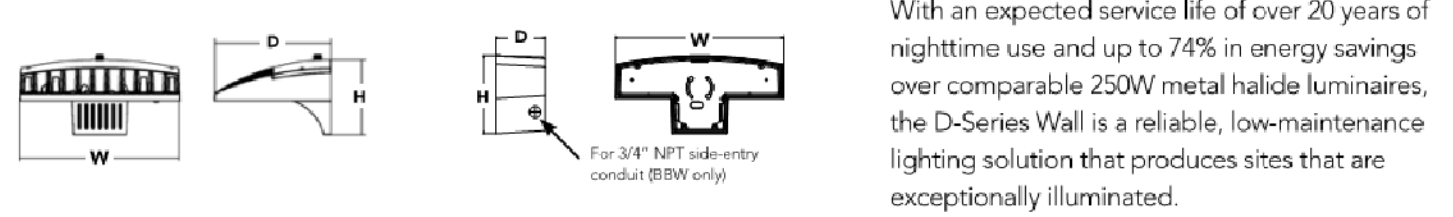
SHEET NUMBER

E1.1





Specifications		Back Box (BBW, ELCW)	
Luminaire		Width: 13-3/4" (34.9 cm)	
Width: 13-3/4" (34.9 cm)		Depth: 4" (10.2 cm)	
Depth: 4" (10.2 cm)		Height: 6-3/8" (16.2 cm)	
Height: 6-3/8" (16.2 cm)		Weight: 12 lbs (5.4 kg)	
Weight: 12 lbs (5.4 kg)		BBW Weight: 5 lbs (2.3 kg)	
BBW Weight: 5 lbs (2.3 kg)		ELCW Weight: 10 lbs (4.5 kg)	
ELCW Weight: 10 lbs (4.5 kg)		For 3-1/2" NPT side-entry conduit (BBW only)	



Ordering Information		EXAMPLE: DSWX1 LED 20C 1000 40K T3M MVOLT DBDXTD	
Series	LEDs	Drive Current	Color temperature
DSWX1 LED	10C 10 LEDs (one engine)	350 350mA	30K 3000K
	20C 20 LEDs (two engines)	700 350mA	40K 4000K
		1000 350mA (1 A)	50K 5000K
			60K 6000K
			70K 7000K
			80K 8000K
			90K 9000K
			100K 10000K
			110K 11000K
			120K 12000K
			130K 13000K
			140K 14000K
			150K 15000K
			160K 16000K
			170K 17000K
			180K 18000K
			190K 19000K
			200K 20000K
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			2120K 212000K
			2130K 213000K
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			3440K 3440

Preliminary Drainage Report

Glenwood Meadows Lot 14

December 31, 2018
(Revised -----)

Prepared for:
Boulder Associates
1426 Pearl Street #300
Boulder, CO 80302

Prepared by:
Marc J. Kenney, P.E.
State of Colorado Reg. No. 41215



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Phone: (970) 241-4722
Fax: (970) 241-8841

Job No. 1458-003

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Engineering Certification

"I hereby affirm that this drainage report for the Glenwood Meadows Lot 14 was prepared by me (or under my direct supervision) for the owners thereof in accordance with the provisions of the City of Glenwood Springs Stormwater, Drainage, Water Quality and Erosion Control Chapter and approved variances and exceptions listed thereto. I understand that it is the policy of the City of Glenwood Springs that the City of Glenwood Springs does not and will not assume liability for drainage facilities designed by others."

(Stamped for the Final Drainage Report - but not at Preliminary)

Marc J. Kenney, P.E.
State of Colorado Reg. No. 41215

I. Introduction

A. Background

The purpose of this Preliminary Drainage Report is to address developed drainage conditions for the proposed Glenwood Meadows Lot 14 Project. This report addresses the following items with respect to the site: existing drainage, potential drainage issues resulting from development, solutions to the potential drainage issues, detention and stormwater quality requirements, and floodplain boundaries.

This preliminary report outlines all the content and requirements of the final drainage report and includes some preliminary calculations and estimates.

River City Consultants, Inc. prepared this Preliminary Drainage Report for **Boulder Associates**.

B. Project Location

Glenwood Meadows Lot 14 (of Filing No. 2) is listed as parcel number 2185-053-38-014 on the Garfield County website. The project location is bordered on the north by Midland Avenue, on the west by Glenwood Springs Park & Ride, on the east by the Glenwood Meadows retail development, and on the south by Wulfsohn Road. In more legal terms, the site is within the southwest $\frac{1}{4}$ of Section 5, Township 6 South, Range 89 West of the 6th Principal Meridian.

Access to the site will be from Wulfsohn Road. The surrounding land use is a mixture of commercial and undeveloped land. Refer to Figure 1 for the General Location Map.

The proposed project location is outside any FEMA mapped floodplains (see the FEMA Firm Map in Appendix F).

C. Project Description

The project site is comprised of a single parcel of 9.9 acres. Only the eastern portion of Lot 14 will be developed as part of this project, the western portion will remain undeveloped. The proposed land use is a commercial building and associated parking. The proposed building will be 2 stories and approximately 45,000 square feet. The parking area will consist of approximately 200 spaces, curb and gutter, and landscape areas. Approximately 20% of the lot is unbuildable due to topography and will remain undisturbed. There are no existing irrigation facilities on-site.

D. Previous Investigations

Previous investigations include the Master Drainage Report for Glenwood Meadows, by High Country Engineering, Inc., revised March 4, 2004 and a Final Drainage Report for Glenwood Meadows Lot 14 prepared by V3 Companies Ltd. dated January 30, 2009. The V3 Report was prepared, but the associated project was not constructed.

II. Drainage System Description

A. Existing Drainage Conditions

The Site is currently undeveloped and ground cover consists of native and non-native grasses and shrubs. There are no structures located on the parcel. Existing topography of the site consists of a bench sloped at 1-5% and areas of steeper slopes (3H:1V). The site generally slopes from south to north. The bench slopes from the southeast to the northwest.

Historically, runoff flows across the site via sheet and shallow concentrated flow. Eventually the flows concentrate in natural depressions and channels and are directed to a pond on Tract D. The Tract D pond discharges to an existing 36-inch culvert under the concrete trail south of Midland Avenue. Flows from the 36-inch culvert are conveyed under Midland Avenue via an existing 48-inch culvert. Flows continue within a well-defined drainage channel then through a second 48-inch culvert under the Union Pacific Railroad tracks. The flows are directed through a third 48-inch culvert under Devereux Road before being discharged to the Colorado River. Please refer to the Existing Conditions Drainage Map, Figure 2.

The existing site was divided into a single on-site basin and several off-site basins for modeling purposes. The off-site basins make up the tributary areas that flow to and/or around the site or are tributary to downstream conveyances that were analyzed (e.g., the railroad culvert).

According to the NRCS web site, the soils present at the site consist of Begy sandy loam, 6-12% slopes (7.5%) and Chilton channery loam, 12-25% slopes (22%). Both are classified as Hydrologic Soil Group A "high infiltration rate and low runoff potential". Soil information is included in Appendix A.

The allowable release rates are based on the historic peak flow values for the site and were calculated by using Autodesk's Storm and Sanitary Analysis. Modeling results will be discussed in "Section III. G. Results" of this report.

B. Master Drainage Plan

A Master Drainage Report was prepared for the Glenwood Meadows Subdivision by High Country Engineering, Inc. and dated revised March 4, 2004. This report was reviewed as part of this project's drainage design and development of this drainage report.

The Master Drainage Plan shows stormwater from Lot 14 of the Glenwood Meadows Subdivision (Basin PR-A of the Master Plan) being directed to "Pond 4" in Tract D. Pond 4 is the smaller of the two ponds within Tract D and is in the northwest corner of Tract D. Basin PR-A consisted of 15.23 acres and the Master Plan assumed a SCS Curve Number of 92 for the entire basin.

The Master Plan states "Each parcel inside the property will be required to evaluate their site-specific design to ensure they meet or exceed the requirements of this study and the City of Glenwood Springs Development Code." ... "In addition to this study, each parcel will be required to implement best management practices and erosion control measures to reduce stormwater sediment and pollutant transport to downstream sources. Water quality measures are the responsibility of individual lot owners and may include detaining the 2-year storm (the water quality capture volume) and or providing baffled oil skimmers or vortech systems to reduce potential pollutants."

The stormwater requirements of Lot 14 as per the Master Plan are to

1. Evaluate the assumptions made in the Master Plan and compare them to the proposed development (i.e., SCS Curve Number).
2. Determine what, if any, modifications are required to Pond 4 and its outlet structure to accommodate the developed Lot 14 flows.
3. Design and construct stormwater quality measures for Lot 14.

C. Onsite and Offsite Tributary Area

Eight basins will be modeled under existing conditions. Seven of those basins are offsite basins and flow to, through, and around the site or are tributary to downstream conveyances. The proposed site grading will minimize any flow through the project by off-site stormwater. Wulfsohn Road cuts-off and concentrates flows south (upstream) of the site. No culverts under Wulfsohn Road were identified on the existing site survey.

Basin OS1 and OS3 both flow to the debris flow pond. The debris flow pond discharges via an 8-inch pipe to the CDOT Pond in the bottom of OS4.

Basin OS2 flows to the site and will be routed around the site to the extent possible via grading. Basin EX1 is the historic basin for Lot 14. Basin OS5 is

from the centerline of Midland Avenue south to the site. All of these basins discharge to an existing culvert under Midland Avenue (listed as 48-inch CMP in the V3 report).

Basin OS6 is the additional tributary area to the existing culvert under the Union Pacific Railroad (also listed as 48-inch CMP in the V3 report). Lastly, Basin OS7 is tributary to the existing culvert under Devereux Road (48-inch CMP as per the V3 report).

D. Proposed Drainage System Description

Under proposed conditions, runoff will sheet flow until intercepted and concentrated by v-pans and curb and gutter. The concentrated flow will be directed to an on-site water quality pond and then routed to Pond 4 in Tract D (as per the Master Drainage Plan for the Glenwood Meadows Subdivision). The on-site water quality pond will be located along the northern property line just south of Midland Avenue. The water quality pond's outlet structure will be a modified Agri-Drain In-Line Water Level Control Structure (refer to the Manufacturer's information in Appendix H). The pond will convey flows through an outlet control structure to Pond 4 (located in adjacent Tract D), which discharges to the existing 48-inch culvert under Midland Avenue. Pond 4 was designed and sized in the Master Drainage Plan by High Country Engineering for a catchment area that included Lot 14. The Pond 4 outlet control structure will be analyzed to ensure peak developed discharge rates are limited to historic peak rates.

A Geotechnical Investigation is scheduled for this site, but has not yet been received by River City Consultants, Inc..

A model of the developed site will be prepared in Autodesk's Storm and Sanitary Analysis. The developed model will use the existing model as a base. The offsite basins and conveyances will not change and the only basin that will change is Basin EX1, which will likely be divided into more detailed developed sub-basins for inlet and pipe sizing purposes. The developed model will include the water quality pond and existing Pond 4. The developed model will simulate the pond outlet works to ensure developed peak flows are reduced to historic values. This will be depicted in a Developed Drainage Basin Map, Figure 3 (to be included in the Final Report).

E. Project Impacts on Adjacent Facilities and Areas

The development of the eastern half of Lot 14 will have minimal impact on the surrounding facilities and area. The historic pathway of stormwater will be altered slightly. However, potential negative impacts will be mitigated by

stormwater ponds that will provide water quality and will reduce peak flows to historic rates by detaining stormwater. Downstream facilities will be checked to ensure they are sufficiently sized to convey the peak 25-year 24-hour storm flows.

E. Drainage Facility Maintenance

The on-site water quality pond will require periodic inspection and maintenance. The inspection and maintenance of drainage facilities outside the right-of-way will be performed by the Property Owner. RCC advises annual inspections of on-site drainage facilities and inspections following any major storms (greater than 1-inch of rainfall). Reports documenting inspection activities shall be kept as proof of inspection.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

The policy, design criteria, design constraints, methods of analysis, recommendations, and conclusions presented in this report are in conformance with standard engineering practice, the City of Glenwood Springs Engineering Design Standards, Chapter 4: Stormwater, Drainage, Water Quality, and Erosion Control, and the Urban Drainage and Flood Control District's Drainage Criteria Manual Volumes 1, 2, and 3 regarding stormwater quality.

B. Development Criteria/Constraints

This project has been designed using the criteria in the City of Glenwood Springs design standards and development code. No drainage constraints were noted for this project.

C. Hydrologic Criteria

The hydrologic design criteria presented in this report are in conformance with standard engineering practice. The rainfall values were generated by the NOAA Precipitation Frequency Data Server (NOAA Atlas 14) for the project location (see Appendix G).

D. Hydraulic Criteria

The hydraulic design criteria presented in this report are in conformance with standard engineering practice.

E. Variance from Criteria

No variances are requested.

F. Calculation Methodology

The calculation methodology used within this report is consistent with the City of Glenwood Springs Development code and standard engineering practice.

G. Modeling Results

This section will be completed at final, but will include the following information:

Existing basin peak flows for the 25-year and 100-year 24-hour storm events. The historic peak flows at critical design points (i.e., existing culvert crossings that will not be replaced).

Developed basin peak flows and the peak flows at critical design points.

Detention pond information, including depth to groundwater and the following table

	WSEL	Volume (cubic ft)	Discharge (cfs)
Top of Detention Pond			---
Detention Pond 100 Year 24 Hour			
Detention Pond 10 Year & WQCV			---
Weir Invert (Top of Stop Logs)		---	---
Detention Pond 10 Year 24 Hour			
Detention Pond WQCV			
Bottom of Detention Pond		0	0.00

Detention pond outlet works (water quality orifices, minor storm orifice, and major storm weir).

Water quality capture volume calculation results, water quality features and permanent stormwater BMPs.

Inlet capacity and pipe sizing calculation results.

A discussion of downstream conveyance capacity (existing culverts under the railroad and streets). Confirmation that downstream structures can convey the proposed post-development flows.

Recommended minimum finished floor elevation vs pond 100-year storm peak WSEL.

IV. CONCLUSIONS

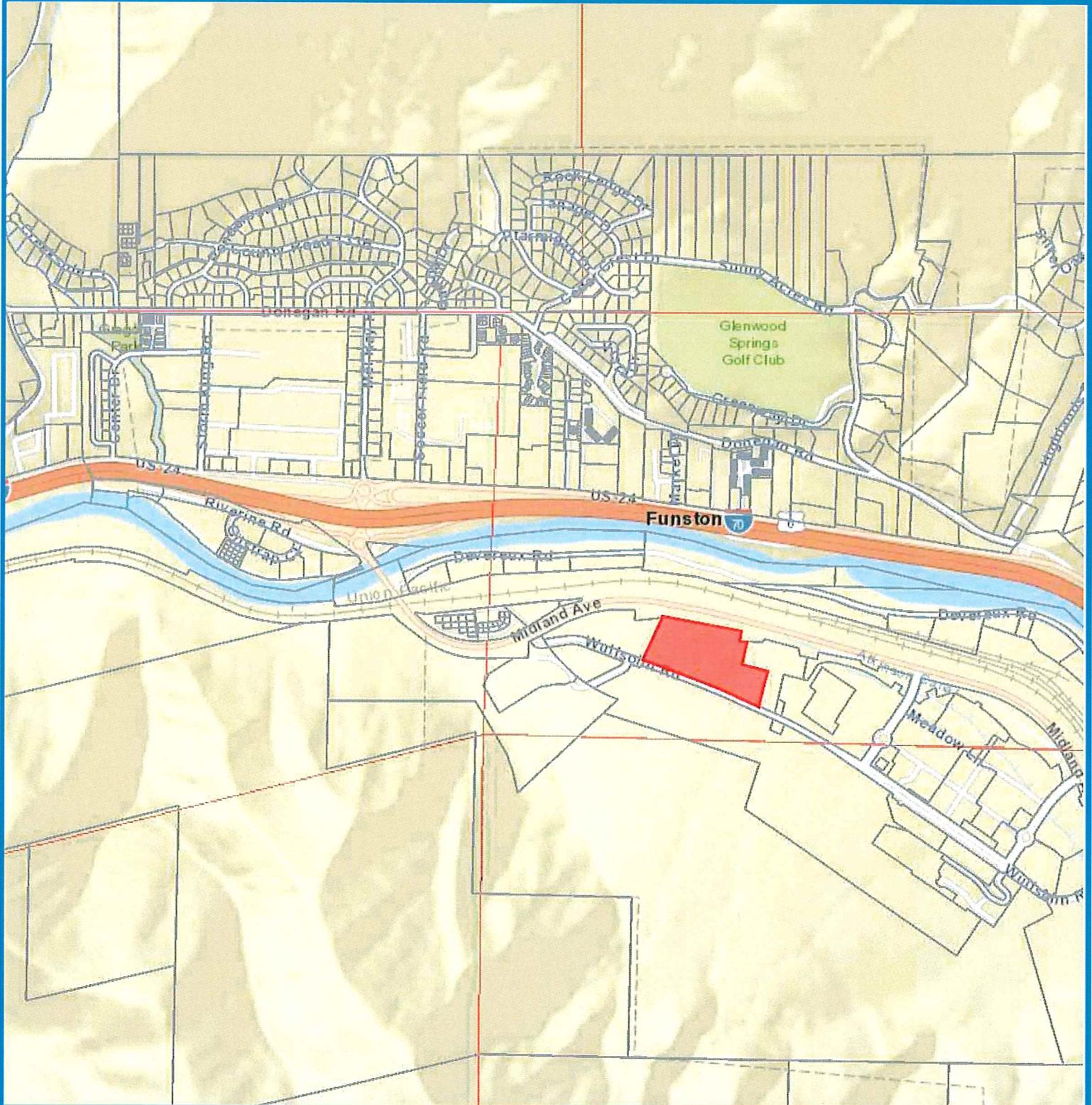
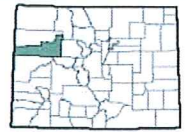
The proposed storm water conveyance system will be designed to handle the 25-year 24-hour storm runoff from this site. The storm sewer system will

convey the 25-year 24-hour peak flows. The proposed outlet works of the detention pond will limit the peak discharge rates to historic rates and will provide improved stormwater quality due to the extended detention basin.

VI. REFERENCES

1. Engineering Design Standards, Chapter 4: Stormwater, Drainage, Water Quality, and Erosion Control; City of Glenwood Springs, July 2018.
2. Garfield County Colorado GIS Website,
<https://gis.garfield-county.com/LandExplorer/index.html> .
3. Natural Resources Conservation Service National Cooperative Soils Survey Website,
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> .
4. Drainage Criteria Manual, Urban Drainage and Flood Control District, Volumes 1, 2, & 3; Denver, Colorado 2001.

FIGURES



Garfield County Land Explorer

GENERAL LOCATION MAP

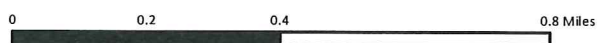
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FIGURE 1



1 inch = 1,505 feet

1 inch = 0.28 miles



Garfield County

Garfield County Colorado
www.garfield-county.com

Colorado

Disclaimer
This is a compilation of records as they appear in the Garfield County Offices affecting the area shown. This drawing is to be used only for reference purposes and the County is not responsible for any inaccuracies herein contained.

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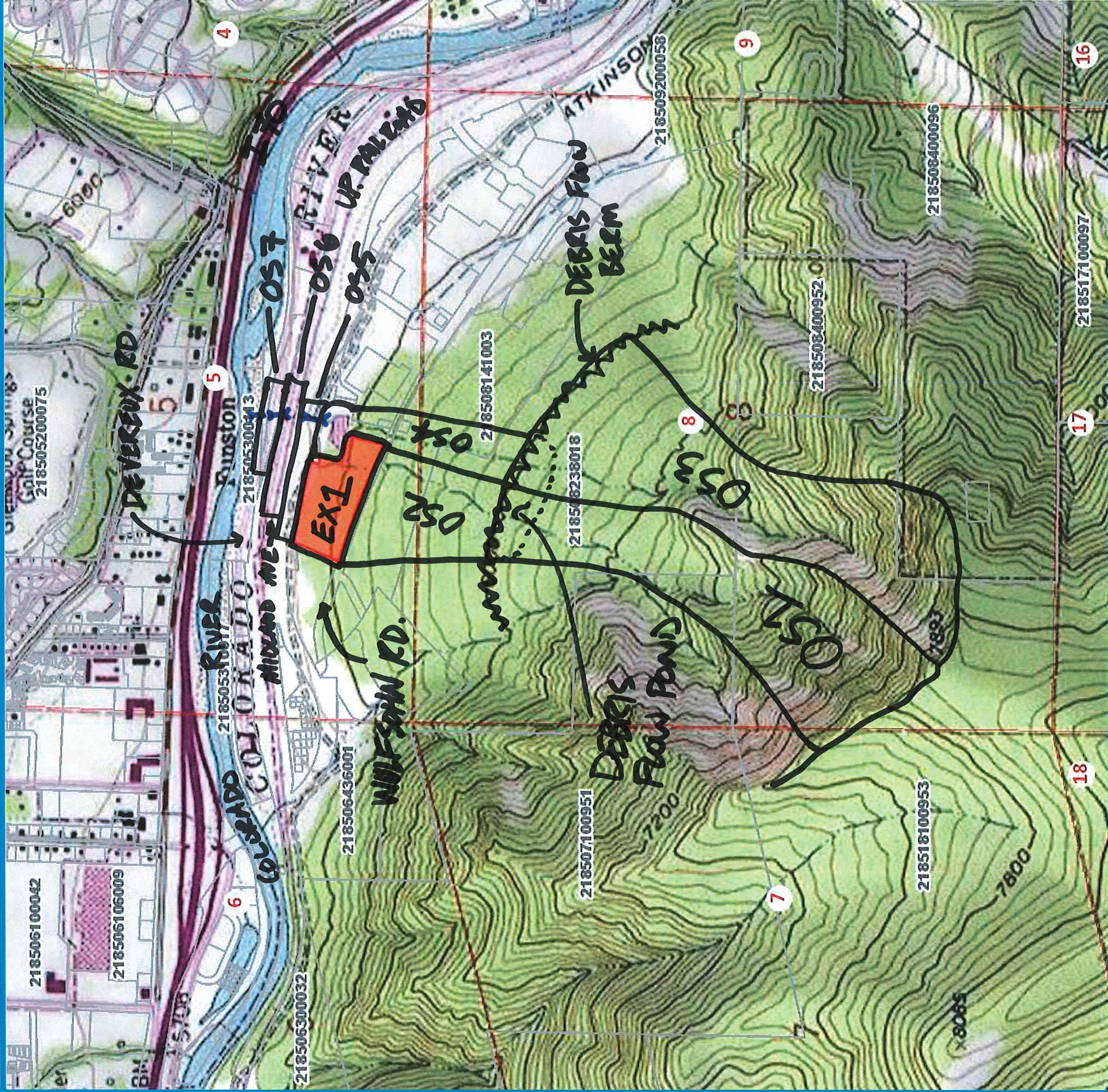
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Garfield County

Garfield County Land Explorer

Garfield County, Colorado



Garfield County Land Explorer

GLENWOOD MCB HISTORIC DRAINAGE BASINS

Printed by Web User

1 inch = 1,505 feet
1 inch = 0.28 miles

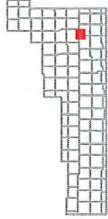
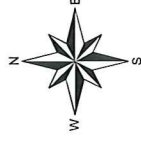


FIGURE 2

Garfield County Colorado

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Colorado

Disclaimer

This is a compilation of records as they appear in the Garfield County Offices affecting the area shown. This drawing is to be used only for reference purposes and the County is not responsible for any inaccuracies herein contained.

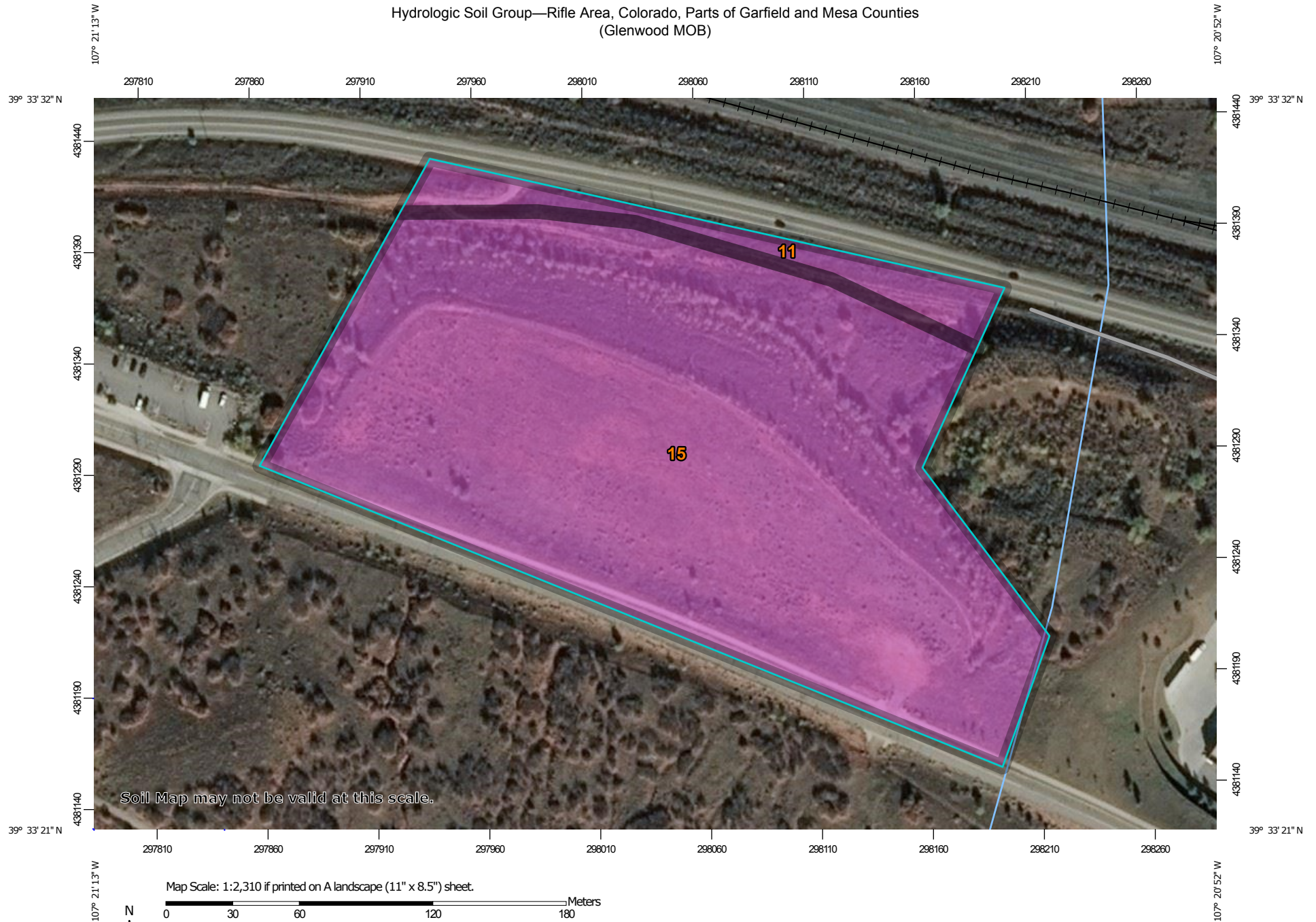
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APPENDIX A

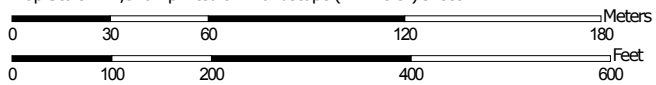
NRCS Web Soil Survey

Hydrologic Soil Group—Rifle Area, Colorado, Parts of Garfield and Mesa Counties (Glenwood MOB)



Soil Map may not be valid at this scale.

Map Scale: 1:2,310 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey
Packet Page 387

12/17/2018
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rifle Area, Colorado, Parts of Garfield and Mesa Counties
 Survey Area Data: Version 11, Sep 10, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 24, 2015—Nov 2, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
11	Begay sandy loam, 6 to 12 percent slopes	A	1.0	7.5%
15	Chilton channery loam, 12 to 25 percent slopes	A	12.6	92.5%
Totals for Area of Interest			13.6	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B

Rational Coefficient and Water Quality Capture Volume Calculations

Glenwood MOB
Rational Coefficient Calculations

 **RIVERCITY**
CONSULTANTS
744 Horizon Ct
Grand Junction, CO 81506

COMPOSITE RUNOFF COEFFICIENTS (whole site)

USING December 31, 2007 SWMM MANUAL (issued April 2008) (SECTION 700)

(Note the SWMM Manual uses the Urban Drainage and Flood Control formulas and methods, but the constants in the formulas have been adjusted to more closely match western slope rainfall and runoff)

$$C_{CD} = K_{CD} + (0.858 * i^3 - 0.786 * i^2 + 0.774 * i + 0.04)$$

$$C_A = K_A + (1.31 * i^3 - 1.44 * i^2 + 1.135 * i - 0.12)$$

$$C_B = (C_A + C_{CD}) / 2$$

Where:

C_{CD} = Runoff coefficient for C and D soils
 C_A = Runoff coefficients for A soils
 C_B = Runoff coefficients for B soils
 i = % impervious (asphalt, concrete, etc.) as a decimal
 K_{CD} = Coefficient adjustment for C and D soils
 K_A = Coefficient adjustment for A soils)

ADJUSTMENT FACTORS FOR RUNOFF EQUATIONS
(FROM TABLE 707)

	2 YEAR	5 YEAR	10 YEAR	100 YEAR
K_{CD}	0	-0.10*i+0.11	-0.18*i+0.21	-0.39*i+0.46
K_A	0	-0.08*i+0.09	-0.14*i+0.17	-0.25*i+0.32

Historical Conditions	Developed Conditions
Impervious Area Area Description 0.00 Impervious (asphalt, concrete, etc.) 6.45 Total area 0.00 Impervious (i) as decimal	Impervious Area Area Description 5.48 Impervious (asphalt, concrete, etc.) 6.45 Total area 0.85 Impervious (i) as decimal
2 Year Runoff Coefficients C_{CD} = 0.04 C_A = 0.00 C_B = 0.02	2 Year Runoff Coefficients C_{CD} = 0.66 C_A = 0.61 C_B = 0.63
5 Year Runoff Coefficients C_{CD} = 0.15 C_A = 0.00 C_B = 0.08	5 Year Runoff Coefficients C_{CD} = 0.68 C_A = 0.63 C_B = 0.66
100 Year Runoff Coefficients C_{CD} = 0.50 C_A = 0.20 C_B = 0.35	100 Year Runoff Coefficients C_{CD} = 0.79 C_A = 0.72 C_B = 0.75

Soil Type for project = TYPE **A**

<u>HISTORICAL</u>			
$C_{2 \text{ YEAR}}$	$C_{5 \text{ YEAR}}$	$C_{10 \text{ YEAR}}$	$C_{100 \text{ YEAR}}$
0.00	0.00	0.05	0.20
<u>DEVELOPED</u>			
$C_{2 \text{ YEAR}}$	$C_{5 \text{ YEAR}}$	$C_{10 \text{ YEAR}}$	$C_{100 \text{ YEAR}}$
0.61	0.63	0.66	0.72

Glenwood MOB

Estimated Detention Volume and Release Rate



744 Horizon Ct
Grand Junction, CO 81506

Minimum Detention Volume

SWMM Table 1401:	Ultimate % Impervious	X_{100}	X_{10}
	< 50%	0.42	0.26
	≥ 50%	0.48	0.38

$X_{100} = 0.48$ Developed Basin Imperviousness (%) $P = 85$
 $X_{10} = 0.38$ Tributary Area (Acres) $A = 6.45$

$$K_{100} = (1.78P - 0.002P^2 - 3.56)(X_{100}/900) = 0.07$$

$$K_{10} = (0.95P - 1.90)(X_{10}/1000) = 0.03$$

Assumed Depth = 5 ft

For 100-Year:

$V_{100} = K_{100} * A =$	0.46 acre-feet	19,973.03 ft ³	3994.605 ft ²
---------------------------	----------------	---------------------------	--------------------------

For 10-Year:

$V_{10} = K_{10} * A =$	0.19 acre-feet	8,418.46 ft ³
-------------------------	----------------	--------------------------

Estimated Allowable Release Rate:

SWMM Table 1402

FREQUENCY	SOIL GROUP			
	A	B	C	D
10-Year	0.05	0.09	0.12	0.12
100-Year	0.25	0.43	0.50	0.50

cfs/Acre
 per Table 1402 SWMM Release Rate
 10-Year 0.05 **0.32 cfs**
 100-Year 0.25 **1.61 cfs**

Glenwood MOB

WATER QUALITY CAPTURE VOLUME (WQCV)



744 Horizon Drive
Grand Junction, CO 81506

WQCV CALCULATIONS

Calculate WQCV:

$$WQCV = k[a(0.91*i^3 - 1.19*i^2 + 0.78i)]$$

$$k = d_6/0.43 \quad \text{where } d_6 = 0.28$$

$$= 0.28/0.43$$

$$= 0.65$$

$$a = \text{BMP Drain Time Coefficient (Assumed it is based on 40 hrs)}$$

$$= 1.00$$

$$i = \text{Watershed Imperviousness as a decimal}$$

<u>Description</u>	<u>Area (acres)</u>	<u>Imperviousness (decimal)</u>	<u>A*I</u>
Basin D1	6.45	0.85	5.48
<u>Total</u>	<u>6.45</u>		

$$= [\text{sum}(\text{area} * \text{imperviousness})] / \text{total area}$$

$$= 0.85$$

$$WQCV = 0.65[1.0(0.91*0.80^3 - 1.19*0.80^2 + 0.78*0.80)]$$

$$= 0.2358 \quad \text{in}$$

$$0.49$$

Calculate 120% WQCV:

$$120 \% WQCV = 1.2 * WQCV$$

$$= 0.2829 \quad \text{in}$$

Calculate Required Storage Volume, SV:

$$SV = (120\% WQCV/12) * \text{Tributary Area}$$

$$= 0.1521 \quad \text{acre-ft}$$

$$\rightarrow \text{Multiply by } 43,560 \text{ ft}^2/\text{acre}$$

$$6,624 \text{ ft}^3$$

APPENDIX C

Existing Model Input & Output

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Information will be included at Final

APPENDIX D

Developed Model Input & Output

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Information will be included at Final

APPENDIX E

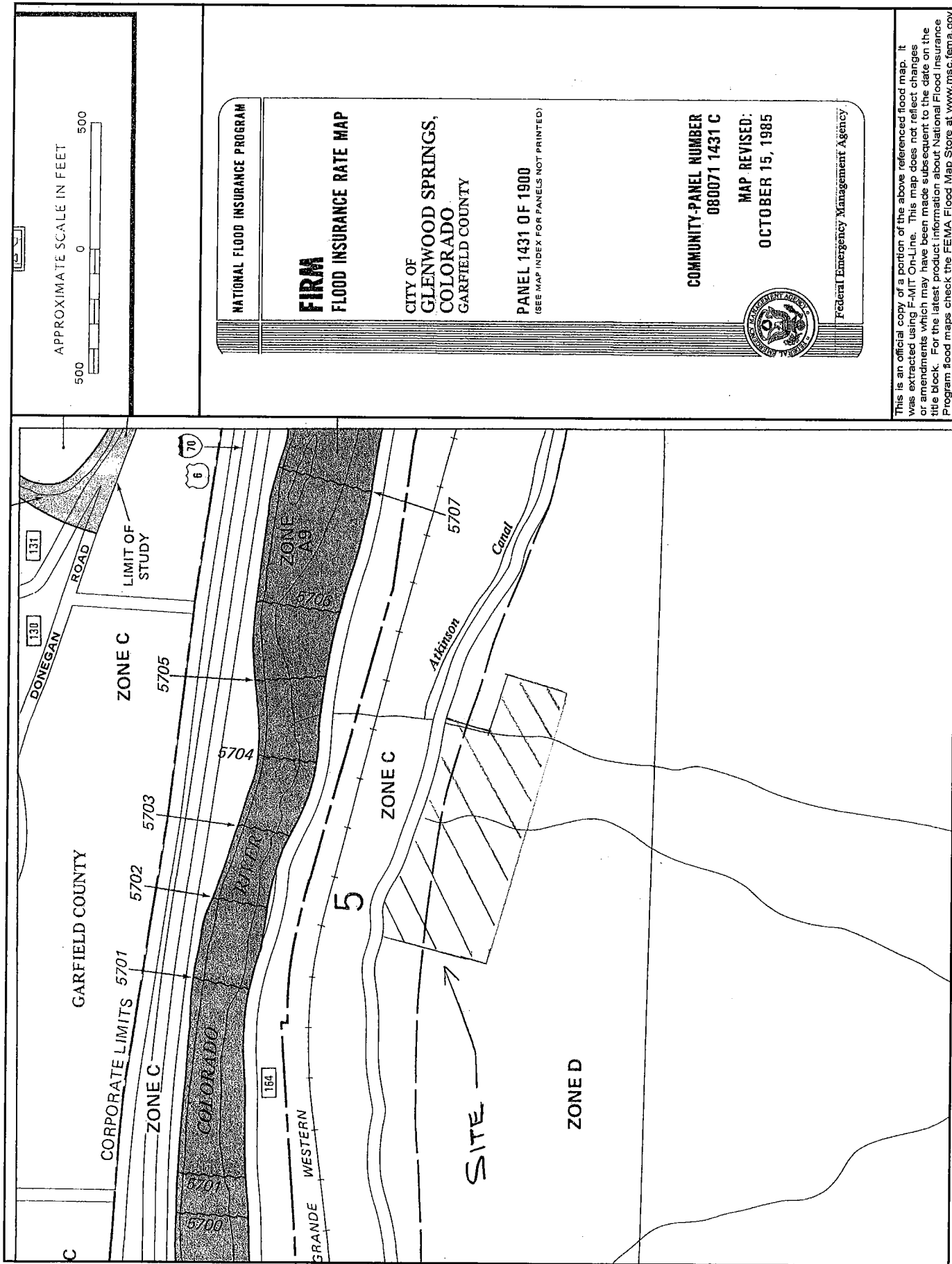
Miscellaneous Calculations

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Information will be included at Final

APPENDIX F

FEMA Firm Map



APPENDIX G

NOAA Point Precipitation Frequency Data



NOAA Atlas 14, Volume 8, Version 2
Location name: Glenwood Springs, Colorado,
USA*

Latitude: 39.5455°, Longitude: -107.326°

Elevation: 5788.02 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

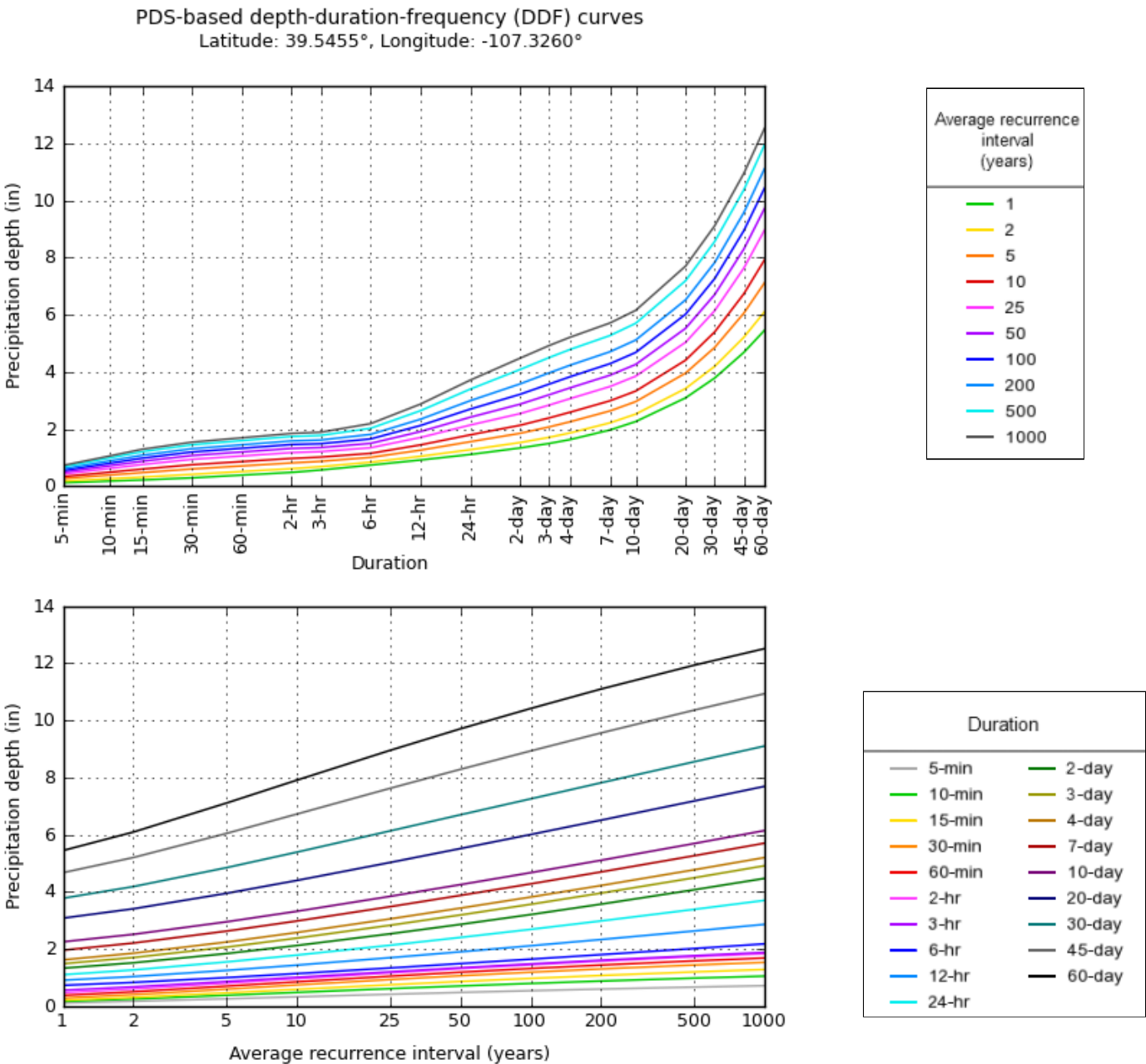
PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.120 (0.095-0.155)	0.176 (0.139-0.228)	0.264 (0.208-0.343)	0.333 (0.261-0.435)	0.422 (0.314-0.565)	0.487 (0.355-0.664)	0.547 (0.385-0.768)	0.605 (0.407-0.876)	0.674 (0.435-1.01)	0.722 (0.457-1.11)
10-min	0.176 (0.139-0.227)	0.258 (0.204-0.334)	0.387 (0.304-0.502)	0.488 (0.382-0.637)	0.619 (0.460-0.828)	0.713 (0.519-0.972)	0.801 (0.563-1.13)	0.885 (0.595-1.28)	0.987 (0.637-1.48)	1.06 (0.669-1.63)
15-min	0.214 (0.169-0.277)	0.315 (0.249-0.407)	0.472 (0.371-0.612)	0.595 (0.465-0.777)	0.754 (0.561-1.01)	0.869 (0.633-1.19)	0.977 (0.687-1.37)	1.08 (0.726-1.56)	1.20 (0.777-1.80)	1.29 (0.816-1.98)
30-min	0.289 (0.229-0.374)	0.411 (0.325-0.532)	0.600 (0.473-0.780)	0.748 (0.585-0.976)	0.936 (0.695-1.25)	1.07 (0.779-1.46)	1.19 (0.839-1.67)	1.31 (0.880-1.89)	1.45 (0.933-2.16)	1.54 (0.973-2.37)
60-min	0.385 (0.304-0.498)	0.510 (0.403-0.661)	0.706 (0.556-0.917)	0.858 (0.672-1.12)	1.05 (0.785-1.41)	1.19 (0.871-1.63)	1.32 (0.931-1.86)	1.45 (0.973-2.09)	1.59 (1.03-2.38)	1.69 (1.07-2.60)
2-hr	0.480 (0.385-0.613)	0.610 (0.488-0.778)	0.811 (0.646-1.04)	0.969 (0.767-1.25)	1.17 (0.885-1.55)	1.32 (0.973-1.77)	1.45 (1.03-2.01)	1.58 (1.08-2.26)	1.74 (1.13-2.56)	1.84 (1.18-2.79)
3-hr	0.563 (0.454-0.712)	0.681 (0.549-0.862)	0.867 (0.696-1.10)	1.01 (0.809-1.29)	1.21 (0.921-1.58)	1.35 (1.01-1.80)	1.48 (1.07-2.04)	1.61 (1.11-2.29)	1.77 (1.17-2.60)	1.89 (1.21-2.83)
6-hr	0.735 (0.601-0.916)	0.837 (0.683-1.04)	1.00 (0.816-1.26)	1.15 (0.925-1.44)	1.34 (1.04-1.75)	1.50 (1.14-1.98)	1.65 (1.21-2.25)	1.81 (1.26-2.54)	2.02 (1.35-2.94)	2.19 (1.42-3.23)
12-hr	0.913 (0.755-1.12)	1.04 (0.861-1.28)	1.26 (1.03-1.55)	1.44 (1.18-1.78)	1.70 (1.34-2.19)	1.91 (1.47-2.49)	2.12 (1.57-2.85)	2.34 (1.65-3.24)	2.64 (1.78-3.77)	2.87 (1.88-4.18)
24-hr	1.11 (0.927-1.34)	1.27 (1.07-1.54)	1.55 (1.29-1.88)	1.79 (1.49-2.19)	2.14 (1.71-2.71)	2.41 (1.88-3.11)	2.69 (2.02-3.57)	2.99 (2.13-4.09)	3.39 (2.32-4.79)	3.71 (2.46-5.31)
2-day	1.33 (1.13-1.59)	1.52 (1.29-1.81)	1.85 (1.56-2.20)	2.13 (1.78-2.55)	2.54 (2.06-3.17)	2.87 (2.26-3.64)	3.21 (2.44-4.20)	3.58 (2.59-4.82)	4.08 (2.82-5.67)	4.47 (3.00-6.31)
3-day	1.49 (1.28-1.76)	1.71 (1.46-2.01)	2.07 (1.76-2.45)	2.38 (2.02-2.84)	2.84 (2.31-3.51)	3.20 (2.54-4.02)	3.57 (2.72-4.62)	3.96 (2.88-5.28)	4.50 (3.13-6.19)	4.92 (3.32-6.87)
4-day	1.63 (1.40-1.90)	1.86 (1.60-2.18)	2.25 (1.92-2.64)	2.58 (2.19-3.05)	3.06 (2.51-3.75)	3.44 (2.74-4.29)	3.82 (2.93-4.90)	4.23 (3.09-5.59)	4.78 (3.34-6.52)	5.21 (3.53-7.23)
7-day	1.96 (1.71-2.27)	2.21 (1.92-2.56)	2.63 (2.27-3.05)	2.99 (2.56-3.48)	3.49 (2.88-4.22)	3.88 (3.13-4.77)	4.28 (3.32-5.42)	4.70 (3.47-6.13)	5.27 (3.72-7.09)	5.71 (3.91-7.82)
10-day	2.26 (1.98-2.59)	2.52 (2.20-2.89)	2.96 (2.57-3.40)	3.33 (2.88-3.85)	3.85 (3.20-4.61)	4.26 (3.45-5.19)	4.68 (3.64-5.86)	5.11 (3.79-6.61)	5.70 (4.04-7.60)	6.15 (4.23-8.35)
20-day	3.09 (2.74-3.48)	3.41 (3.02-3.85)	3.95 (3.49-4.47)	4.40 (3.86-5.01)	5.03 (4.24-5.92)	5.52 (4.53-6.60)	6.01 (4.74-7.39)	6.51 (4.89-8.27)	7.18 (5.16-9.41)	7.70 (5.36-10.3)
30-day	3.78 (3.38-4.22)	4.19 (3.74-4.68)	4.85 (4.31-5.44)	5.39 (4.76-6.08)	6.14 (5.20-7.13)	6.70 (5.54-7.92)	7.26 (5.76-8.82)	7.82 (5.91-9.81)	8.56 (6.18-11.1)	9.11 (6.38-12.0)
45-day	4.68 (4.21-5.17)	5.21 (4.68-5.76)	6.05 (5.42-6.72)	6.73 (5.99-7.50)	7.63 (6.50-8.74)	8.29 (6.89-9.68)	8.94 (7.13-10.7)	9.57 (7.26-11.8)	10.4 (7.52-13.3)	10.9 (7.71-14.3)
60-day	5.45 (4.94-5.98)	6.10 (5.52-6.70)	7.11 (6.41-7.84)	7.91 (7.08-8.77)	8.95 (7.66-10.2)	9.71 (8.10-11.2)	10.4 (8.35-12.4)	11.1 (8.46-13.6)	11.9 (8.69-15.1)	12.5 (8.87-16.3)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
Please refer to NOAA Atlas 14 document for more information.

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PF graphical



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Wed Dec 26 15:59:19 2018

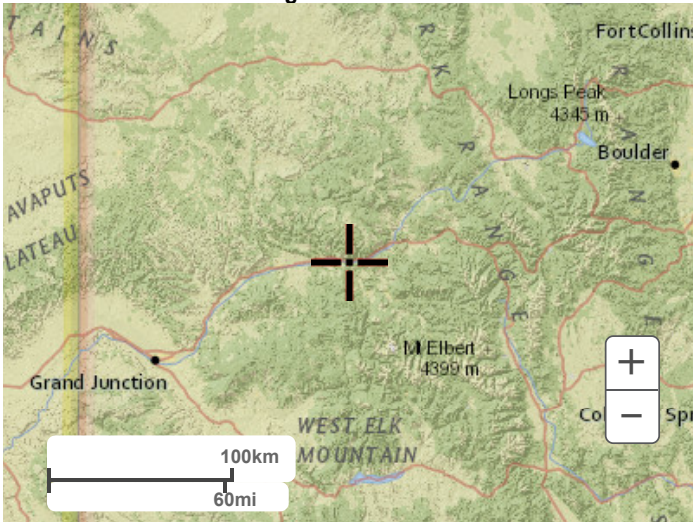
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Maps & aerials

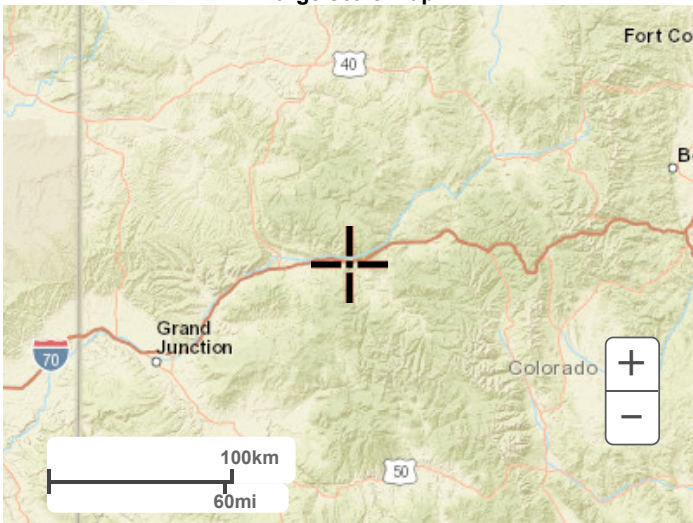
Small scale terrain



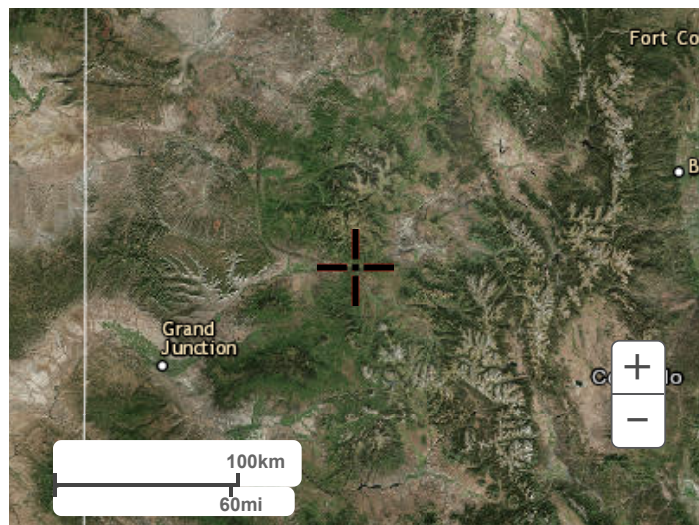
Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

APPENDIX H

Agri-Drain Manufacturer's Specification Sheet

Inline Water Level Control Structure™

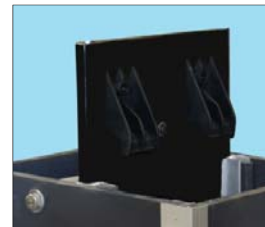
- Available in manual or automatic.
- Constructed of rugged ½" PVC with lockable plastic lid.
- Stainless steel screws and custom anodized aluminum corner extrusions used for strength and durability.*
- Flexible couplers allow PVC, plastic pipe, or other materials to be easily attached. *(Please specify type of pipe when ordering.)*
- Stoplogs made of PVC in 5" and 7" heights for adjustability. (Maintenance recommended: Remove stoplogs and grease seal with included Lubriplate Grease. Ensure there is no debris in the tracks or along the bottom of the structure. Replace stoplogs after greasing.)
- **Important!** To minimize seepage, align stoplogs firmly against one side of the stoplog track.
- Stoplogs must remain in track during structure installation.
- Structures are not pressure rated.
- Structures are intended for gravity flow: Low pressure and some seepage may occur.
- 5-year warranty on all standard structures.
- Customized or special orders will carry a 1-year warranty on workmanship and material and are nonreturnable.

**For water that is caustic, acid, corrosive, salt, or pH below 5 pH or above 9 pH, please notify us of your requirements to ensure structures are built with compatible hardware. For these applications, Agri Drain recommends stainless steel.*



Comes with a handle to install and remove stoplogs.

Stoplog seal ensures a tight fit to prevent leakage.



Inline Water Level Control Structure™			
Pipe Size	Available Heights	Width	Depth
4"	2' - 12'	8"	10"
6"	2' - 12'	8"	10"
8"	2' - 12'	11 5/8"	12"
10"	2' - 12'	14"	16"
12"	2' - 12'	16"	20"
15"	2' - 12'	20"	24"
18"	2' - 12'	24"	28"
24"	3' - 10'	31"	39"

Lubriplate Grease

- Recommended for lubricating the seal on the stoplogs in our Water Level Control Structures. (One 10-oz. tube is included with each structure purchased.)
- Available in a 10-oz. tube.



Rugged injection molded stoplogs used in structures with 4", 6", 8", 10", and 12" pipe sizes.



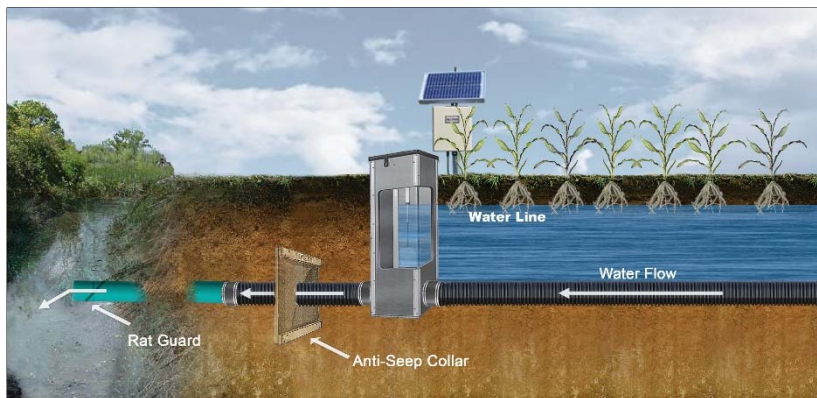
Stoplog Retainer

Hold extra stoplogs up & out of the way!

- Stainless steel retainer hooks to lowest stoplog that you want to hold up within your Inline Water Level Control Structure™.
- 10' of 3/16" nylon rope (included) attaches to the retainer and secures to the inner brace bar near the top of the structure.



PVC stoplogs with stainless steel lifting hooks used in structures with 15", 18", and 24" pipe sizes.



Water Level Control Structures

The **Water Level Control Structures** manufactured by *Agri Drain Corp.* are constructed of rugged $\frac{1}{2}$ "-thick PVC sheets, connected at the corners by means of specially extruded anodized aluminum profiles sealed with waterproof caulking and secured with stainless steel screws.* The bottom of the structure is sealed with either a $\frac{1}{2}$ "- or 1"-thick PVC sheet (dependent upon structure size) and also utilizes waterproof caulking for sealant and stainless steel screws to hold it in place. *For water that is caustic, acid, corrosive, salt, or pH below 5 pH or above 9 pH, please notify us of your requirements to ensure structures are built with compatible hardware. For these applications, Agri Drain recommends stainless steel.

The stoplogs* are constructed of PVC and utilize a seal that mates against the downstream surface of the extruded aluminum track and the top of the stoplog that it rests upon. The stoplogs are equipped with hooks to facilitate their removal by means of a special handle/hook assembly. ***Important!** To minimize seepage, align stoplogs firmly against one side of the stoplog track. Stoplogs must remain in track during structure installation.

In order to obtain inch-by-inch water level adjustment capabilities, the stoplogs are built in two heights: 5" and 7" tall. This allows for various combinations and nearly infinite adjustability. An additional, 7"-tall stoplog is specified with a sticker stating "Bottom Board", and this stoplog must be placed in the bottom of the structure. Examples: 7"+7"=14", 5"+5"+5"=15", 5"+5"+7"=17", 5"+7"+7"=19", 5"+5"+5"+5"=20", etc.

The means of connecting to the downstream and upstream pipe is a flexible rubber sewer coupler. It will accommodate corrugated plastic tubing, PVC pipe, corrugated metal pipe or virtually any other conduit material.

The units are available in two different types. The first type (Inlet) is designed to be installed on the upstream end of the conduit so the water must enter the structure before it enters the pipe. The Inlet must be anchored down when installed or it may have the tendency to float. The second type (Inline) is designed to be installed in the pipe line, so the water enters the pipe, then flows into the box, over the stoplogs, then out the downstream side of the structure. The Inline structure is equipped with a lockable plastic lid and is available in manual or automatic. Both structures come with a handle to remove, install, or adjust the stoplogs.

The structures are manufactured in various sizes based on diameter of the conduit and engineered to provide a minimum of 30% greater capacity than the conduit it is connected to. They are available in heights to suit the specific installation.

INLINE WATER LEVEL CONTROL STRUCTURE™ SHIPPING WEIGHTS								
Pipe Size	HEIGHT							
	2'	3'	4'	5'	6'	8'	10'	12'
4"	50U	64U	81U	102U	121T	216T	244T	278T
6"	52U	66U	83U	103U	164T	222T	272T	320T
8"	64U	84U	105U	176T	198T	264T	320T	392T
10"	79U	107U	168T	210T	238T	300T	375T	458T
12"	99U	157T	190T	242T	294T	366T	480T	542T
15"	154T	222T	270T	322T	382T	502T	614T	722T
18"	191T	236T	340T	402T	450T	592T	710T	834T
24"	N/A	348T	454T	524T	600T	766T	946T	N/A

INLET WATER LEVEL CONTROL STRUCTURE™ SHIPPING WEIGHTS					
Pipe Size	HEIGHT				
	2'	3'	4'	5'	6'
4"	26U	38U	51U	64U	76U
6"	35U	41U	52U	67U	78U
8"	37U	51U	67U	86U	132T
10"	49U	62U	85U	130T	150T
12"	55U	76U	125T	164T	152T
15"	82U	126T	158T	196T	216T
18"	110T	150T	186T	224T	250T
24"	178T	192T	248T	310T	336T

UPS=U
TRUCK LINE=T

Larger CMP structures also available. Call for details on custom sizes and pricing.

INLINE WATER LEVEL CONTROL STRUCTURE™ INSTALLATION INSTRUCTIONS

- Important!** —To minimize seepage, align stoplogs firmly against one side of the stoplog track.
—Stoplogs must remain in track during structure installation.
—Structures are intended for gravity flow: Low pressure and some seepage may occur.

1.) EXCAVATION AND GRADING

Structure base, inlet pipe, & outlet pipe must be set on compacted soil or fill sand to provide a solid, stable base. This will reduce settling and reduce stress or misalignment of pipe connections.

2.) PIPE CONNECTION

Remove stainless steel clamps from inside structure. Place pipe inside flex couplers and tighten SS clamps.

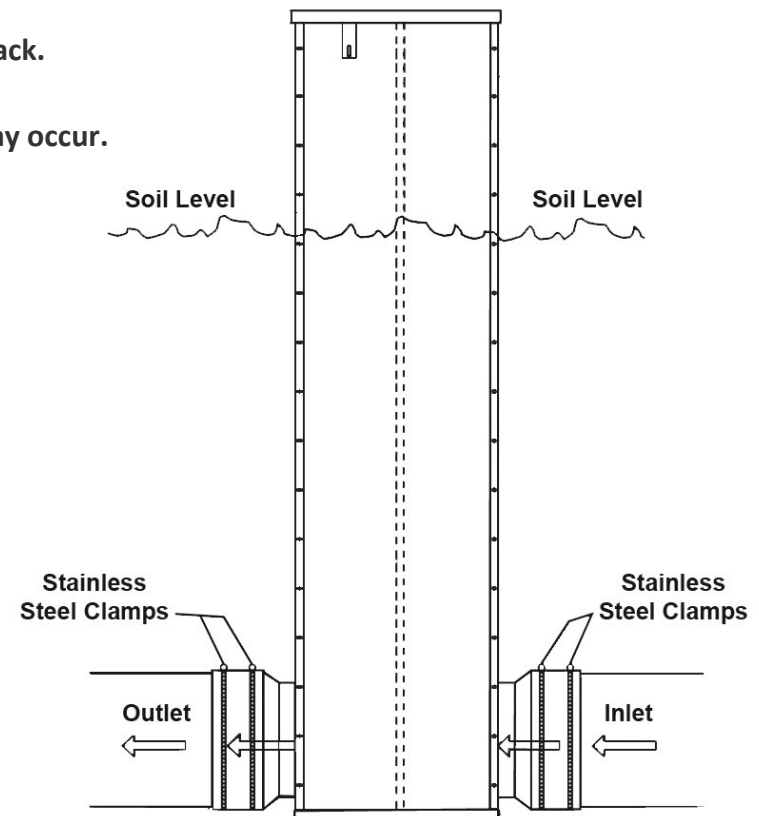
3.) BACKFILL AND COMPACTION

Level structure vertically before placing backfill. Backfill around control structure by hand in 6" lifts. Hand tamp only - **do not** mechanically compact. **Do not** use a backhoe or blade to place backfill directly against the water control structure.

- Seal on stoplog faces downstream/outlet side of structure.

Excessive compaction may cause structural damage or failure.

- ◆ Either the inlet or inline structure may be used for primary or secondary outlet, with larger pipe or emergency spillway as primary.
- ◆ Inline structure removes subsurface water.
- ◆ On the inline installation, the inlet end of the pipe should be held off the bottom of the impoundment to allow for siltation, and be protected with an inlet guard. The outlet end of the structure should be protected with a rodent guard.
- ◆ In a controlled drainage or subsurface irrigation application, the structure nearest the outlet should be installed with a minimum of 20' of non-perforated pipe on the downstream end. Anti-Seep Collars are recommended.



Agri Drain
CORPORATION

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Adair, Iowa 50002

P: 800-232-4742

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www.agridrain.com

info@agridrain.com

— Since 1976 —



The Boldt Company
1110 N. Old World Third Street
Suite 610
Milwaukee, WI 53203

414-276-4666 phone
www.boldt.com

December 26, 2018

Gretchen Ricehill
Glenwood Springs Community Development Department
101 West 8th Street
Glenwood Springs, CO 81601

Dear Ms. Ricehill,

Please find enclosed Boldt's application for a Major Site Development Plan and Architectural Review. As part of this application, we have included a brief narrative describing the project below.

Project Narrative

Boldt intends to develop an approximately 45,000 gross square foot project and associated parking for a strictly commercial, multi-tenant use. The users of the building are contemplated to be commercial, retail, dental or medical in nature, and Boldt is in the preliminary stages of identifying community partners that are interested in becoming a part of our development.

We are looking forward to meeting with the City of Glenwood Springs and taking the next steps for developing this project.

Best Regards,

A handwritten signature in blue ink, appearing to read "Jake Garro".

Jake Garro
414-276-4635

TRAFFIC IMPACT STUDY

Wulfsohn Road Commercial Building
Glenwood Springs, Colorado

Prepared for:

Glenwood Springs Properties, LLC
1110 N. Old World Third Street, Suite 610
Milwaukee, WI 53203

Prepared by:

Felsburg Holt & Ullevig
6300 South Syracuse Way, Suite 600
Centennial, CO 80111
303.721.1440

I

Project Manager: Charles M. Buck, PE, PTOE
Principal: Lyle E. DeVries, PE, PTOE



FHU Reference No. 118467-01

December 21, 2018

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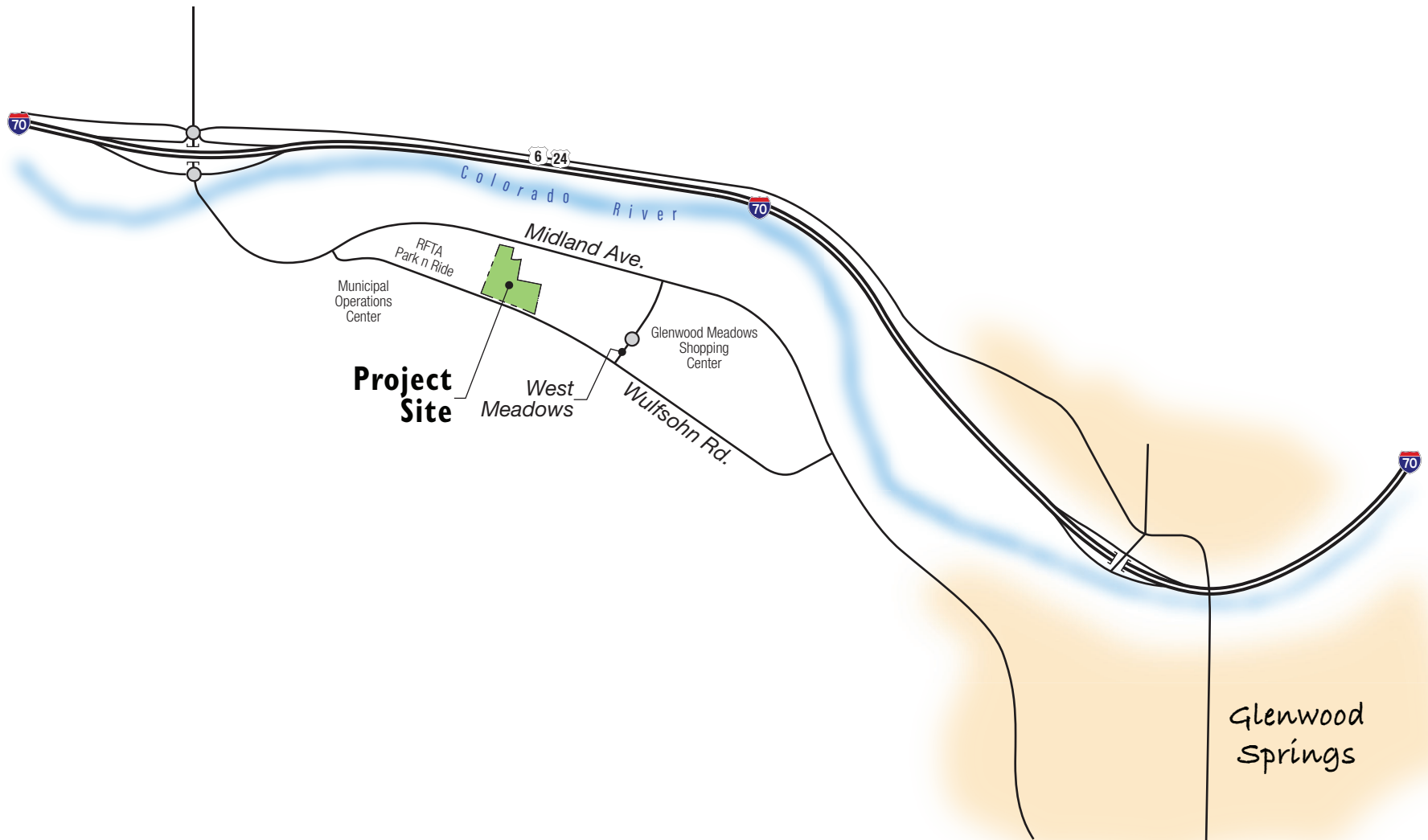
I. INTRODUCTION

Glenwood Springs Properties LLC is proposing a new commercial building to be located between Midland Avenue and Wulfsohn Road in Glenwood Springs, Colorado. The currently vacant site is generally southeast of the I-70/Midland Avenue (Exit 114) interchange. **Figure 1** depicts the study area and primary roadway system.

The proposed development would consist of approximately 45,000 square feet of commercial space. While specific uses are yet to be determined, this analysis has assumed 15,000 square feet of retail, 15,000 square feet of general office, and 15,000 square feet of medical office uses. Vehicular access to the site would be via two driveways on Wulfsohn Road. **Figure 2** depicts the current site plan concept.

The purpose of this report is to assess the traffic impacts specific to the proposed commercial development and to identify any potential roadway or traffic control requirements. Two future planning horizons are evaluated:

- **Short Range Future.** This scenario estimates traffic conditions based on a near-term project build-out.
- **Long Range Future.** This scenario evaluates a projected 20-year planning horizon, consistent with the City of Glenwood Spring's Long Range Comprehensive Plan.





II. EXISTING CONDITIONS

II.A. Land Use

As mentioned previously, the site is currently vacant and is identified for commercial uses per the City's Comprehensive Plan. The existing Glenwood Meadows Shopping Center is located to the east of the site. To the west, existing development includes the City of Glenwood Spring's Municipal Operations Center and Roaring Fork Transit Authority (RFTA) Park-N-Ride facility. The Midland Center, a commercial development, is located farther west, in the northwest quadrant of the Midland Avenue/Wulfsohn Road intersection. Lands along the south side of Wulfsohn Road directly opposite the site are now vacant, but are identified for multi-family residential uses in the future, per the Comprehensive Plan.

II.B. Existing Roadway Network

Midland Avenue

Midland Avenue is an arterial roadway extending east from I-70, then trending south along the Roaring Fork River through Glenwood Springs. Within the study area, the cross section is two-lane, with auxiliary turn lanes provided as needed at key intersections. The speed limit is 45 miles per hour (MPH). The intersection with West Meadows Drive is a full movement "T" intersection and is signal controlled. The intersection with Wulfsohn Road is currently STOP sign controlled on the Wulfsohn Road approach. A paved, non-motorized, multi-use trail runs parallel to Midland Avenue along the south side.

Wulfsohn Road

Wulfsohn Road is a two-lane collector that extends east from the intersection at Midland Avenue near the RFTA Park-N-Ride, along the south side of the Glenwood Meadows center, and tying back into Midland Avenue about 3,600 feet east of the site. Near the site, the cross section is two-lane, with a posted speed limit of 25 MPH. Existing intersections along Wulfsohn Road are unsignalized, with STOP sign control on the minor approaches. A continuous concrete sidewalk is provided along the north side of Wulfsohn Road for the entire length of the roadway.

West Meadows Drive

West Meadows Drive bisects the Glenwood Meadows center, providing retail traffic access to Midland Avenue and Wulfsohn Road. The cross section is two-lane, divided, with a raised center median. The speed limit is not posted; speeds are controlled by a roundabout within the shopping center.

II.C. Traffic Volumes

Per discussions with City staff, turning movement traffic counts were recently conducted at the Midland Avenue/Wulfsohn Road, Midland Avenue/West Meadows Drive, and Wulfsohn Road/West Meadows Drive intersections. These traffic counts were collected in 15-minute intervals from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM to encompass the morning and afternoon peak periods of commuter activity; the peak hours were then extracted from these data. Existing turning movements at the RFTA Park-N-Ride and Municipal Center access intersection on Wulfsohn Road were estimated based on the adjacent intersection counts data. Twenty-four-hour roadway counts were also conducted on all three roadways, with adjacent segments estimated based on the ratio of peak hour to daily ratios exhibited in the counts. **Appendix A** includes the traffic count data collected for this report.

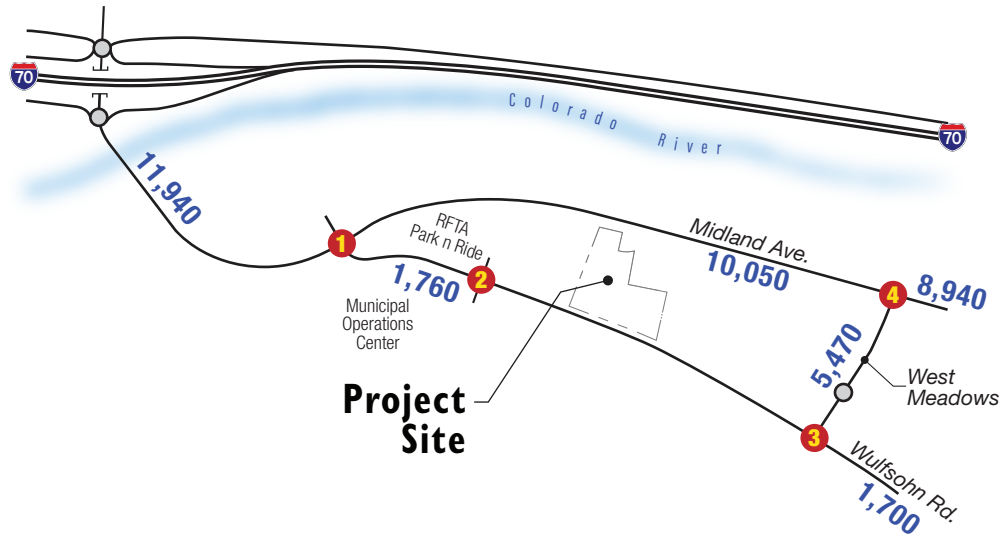
Figure 3 graphically depicts the existing traffic conditions. As shown, two-way daily volumes along Midland Avenue west of the site are approximately 11,940 vehicles per day (VPD), and about 10,050 VPD adjacent to the site. The daily traffic volumes along Wulfsohn Road range between about 1,700 and 1,760 VPD. West Meadows Drive currently experiences about 5,470 VPD.

II.D. Traffic Operations

Existing traffic operations were analyzed at the study area intersections based on procedures documented in the *Highway Capacity Manual*, 6th Edition (Transportation Research Board, 2017). Level of Service (LOS) is a qualitative measure of traffic operations and is based on roadway capacity and motorist delay. LOS ranges from A to F, with LOS A representing the best possible operating conditions, and LOS F representing over-capacity or congested conditions. LOS D is considered to be acceptable for peak hour traffic operations per City standards. For signalized traffic control, LOS represents an average of the delays for all movements at the intersection. At unsignalized intersections, LOS is reported for each movement that yields the right-of-way.

Figure 3 summarizes the existing LOS results (**Appendix B** includes worksheets for the existing conditions analysis). As indicated, exiting traffic operations are generally acceptable, with the exception of STOP-sign controlled movements at Midland Avenue/Wulfsohn Road. During peak times, motorists experience excessive delays, particularly making left-turns. This intersection was evaluated relative to signal warrants, per the *Manual on Uniform Traffic Control Devices*, FHWA, 2009 (MUTCD). It was determined that current conditions at this intersection approach, but do not meet, threshold criteria for signal installation. Signal warrants are discussed in greater detail in subsequent sections of this report.

Key Map



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

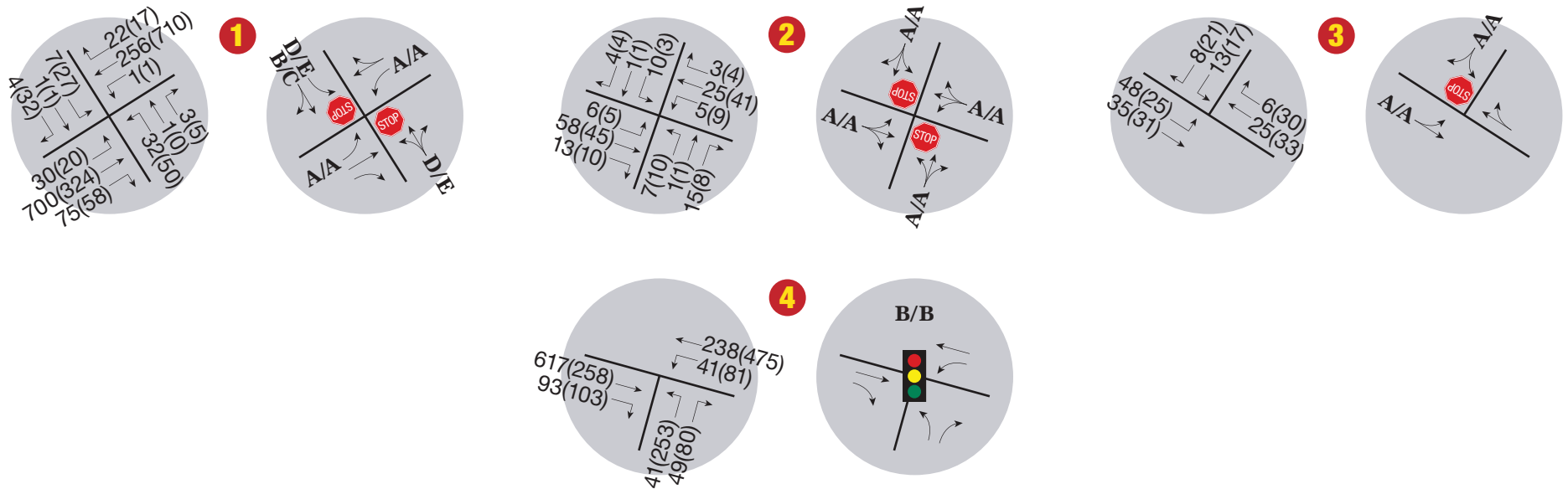
XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Intersection Level of Service



= Stop Sign

= Traffic Signal



III. FUTURE CONDITIONS

III.A. Background Traffic Volumes

Background traffic is the component of traffic volumes on the adjacent street network that would be present regardless of the proposed commercial building. Because the commercial building is expected to be developed in the near future, the existing traffic volumes, previously presented, were used for the short-range background traffic volumes.

To estimate background increases in traffic volumes for the long-range future, growth rates were extracted from the *SH 82 Corridor Optimization Plan*, December 2010, which projects an average annual growth rate of 2.0 percent. This growth rate was used to project the 20-year planning horizon.

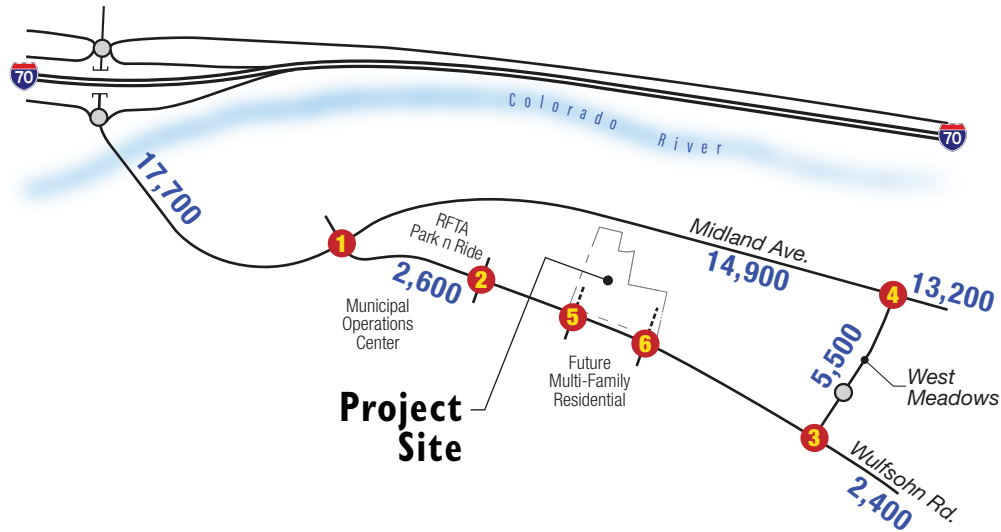
Currently vacant lands along the south side of Wulfsohn Road opposite the site are identified for multi-family residential uses in the future, per the City's Comprehensive Plan. Therefore, for the purposes of this analysis, it was assumed that about 20 acres could be developed at a density of 15 dwelling units per acre, for a total of approximately 335 dwelling units. Trips were generated using *Trip Generation*, 10th Edition, Institute of Transportation Engineers, 2017 (ITE), Land Use Code 221, Multi-Family Housing, Mid-Rise). These trips were assigned to two access points, which are assumed to align opposite the proposed commercial site driveways. Traffic volumes along Wulfsohn Road were then balanced for continuity.

Figure 4 depicts the resultant long-range background projections. As shown, daily volumes along Midland Avenue would range from approximately 13,200 to 17,700 VPD within the study area. The daily traffic volumes along Wulfsohn Road would range between about 2,400 and 2,600 VPD. As West Meadows Drive serves a built-out shopping center, the existing volumes are not anticipated to grow significantly; the 20-year projection on this roadway is 5,500 VPD.

LOS calculations based on the long-range future background conditions indicate that traffic operations would remain acceptable, at LOS C or better during peak times. Of note: the projected traffic volumes along Midland Avenue would exceed the typical daily capacity for a two-lane arterial roadway (generally about 12,000 to 16,000 VPD).

Traffic operations at the intersection of Midland Avenue/Wulfsohn Road would experience unacceptable delays and congestion under the existing STOP sign control; therefore, this intersection was assumed to be signalized to maintain acceptable traffic operations. **Appendix C** provides LOS worksheets.

Key Map



LEGEND

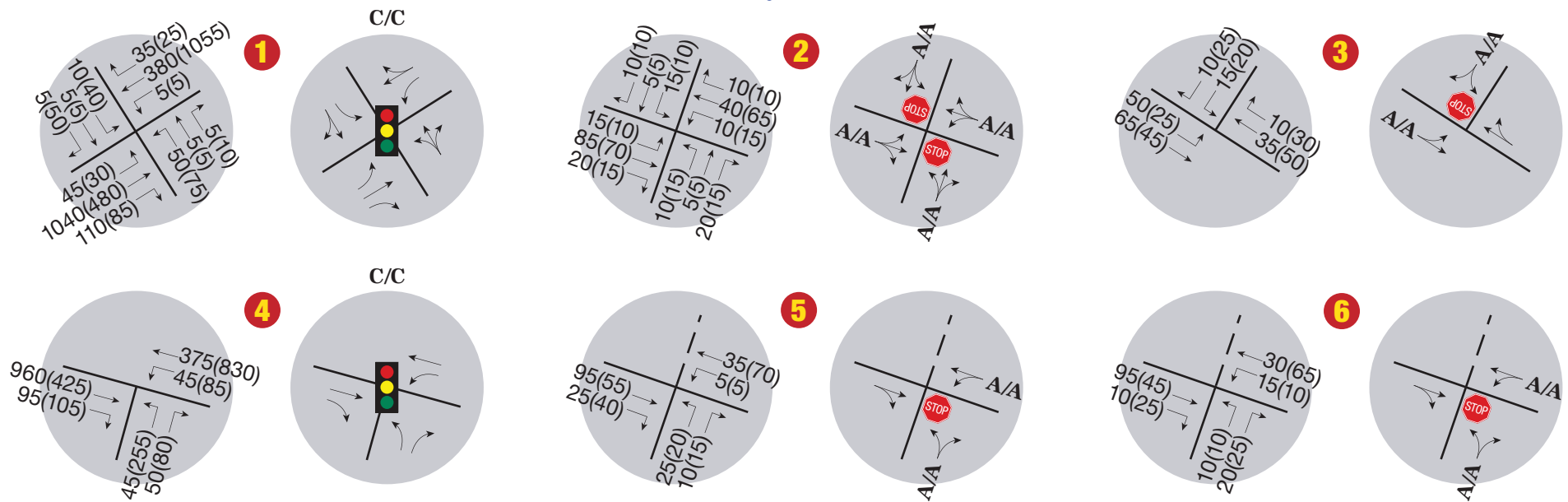
XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Intersection Level of Service

= Stop Sign

= Traffic Signal



III.B. Site Trip Generation

As previously mentioned, the commercial concept for this site consists of an approximate 45,000 square feet of commercial space. While specific uses are yet to be determined, this analysis has assumed 15,000 square feet of retail, 15,000 square feet of general office, and 15,000 square feet of medical office uses. A trip generation analysis was conducted using standard rates documented in *Trip Generation*, 10th Edition, Institute of Transportation Engineers, 2017 (ITE). **Table I** summarizes the trip generation potential of the site.

Table I. Trip Generation Analysis

Land Use	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Retail (1)	15,000 sf	570	10	5	15	25	35	60
General Office (2)	15,000 sf	150	15	5	20	5	15	20
Medical Office (3)	15,000 sf	520	35	5	40	15	35	50
Total	45,000 sf	1,240	60	15	75	45	85	130
1. ITE Code 820 Shopping Center. Equations and average rates applied. 2. ITE Code 710 General Office Building. Average rates applied. 3. ITE Code 720 Medical Office Building Average rates applied.								

As **Table I** indicates, the commercial site would generate about 1,240 trips daily, with peak hour trip generation estimates ranging from approximately 75 vehicle trips per hour (VPH) to 130 VPH.

Typically, retail uses attract a percentage of trips from background traffic passing by the site on the way to other destinations. Some site-internal trips could also be expected, based on the mix of uses. However, to be conservative, no pass-by or internal reductions have been applied in this analysis.

The proximity of the RFTA transit facility could also be expected to reduce the vehicle trip generation of the site. This transit facility is within easy walking distance of the site and would likely be attractive to employees and customers. The nearby regional trail would also provide bicycle access for the site. To ensure a conservative estimate of vehicular impacts, however, no mode-split reductions have been applied.

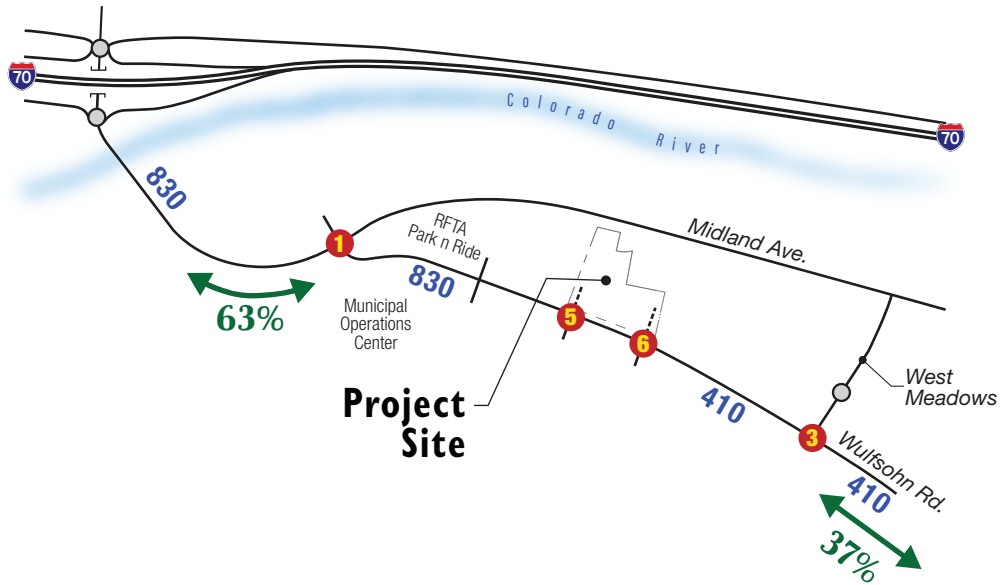
III.C. Trip Distribution and Site Generated Traffic Assignment

The site generated traffic volumes identified in **Table I** were distributed and assigned to the adjacent street network based on the following trip distribution percentages:

- 63 percent to/from the west via Wulfsohn Road and Midland Avenue
- 37 percent to/from the east via Wulfsohn Road

This trip distribution is based on the existing travel patterns extracted from the traffic counts. **Figure 5** depicts the resultant site generated traffic assignment. As shown, the site is projected to contribute approximately 830 VPD to Wulfsohn Road to the west of the site and to Midland Avenue farther west. The site generated daily traffic volumes along Wulfsohn Road to the east would be about 410 VPD. Note that the site is not expected to contribute significantly to traffic volumes along West Meadows Drive.

Key Map

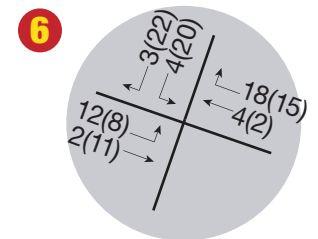
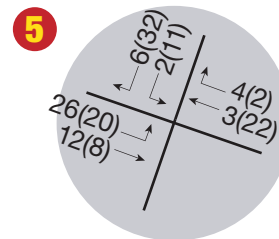
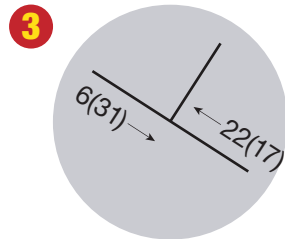
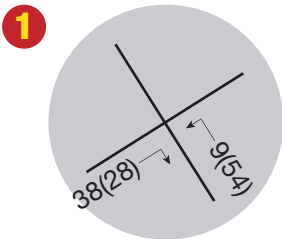


LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

XX% = Site Trip Distribution



III.D. Short Range Future Total Traffic Conditions

The site generated traffic volumes (**Figure 5**) were added to the existing traffic volumes (**Figure 3**) to produce the short range future total traffic volumes illustrated on **Figure 6**. As depicted, daily volumes along Midland Avenue are projected to range from approximately 8,940 to 12,700 VPD within the study area. The daily traffic volumes along Wulfsohn Road would range between about 2,110 and 2,590 VPD.

Figure 6 also shows the peak hour traffic volumes, intersection geometrics, and traffic control used as the basis for LOS analyses (**Appendix D** includes LOS worksheets). As indicated, traffic operations at the study area intersections would remain generally acceptable, at LOS C or better, during peak times under short range future total traffic conditions. Relative to this, the intersection at Midland Avenue/Wulfsohn Road would require signalization to maintain acceptable traffic operations. An evaluation of the peak hour volumes indicates the potential to warrant a traffic signal with the addition of site generated traffic. Note that the site generated component of traffic volumes through this intersection would be less than seven percent. Signal warrants are discussed in greater detail in a subsequent section of this report.

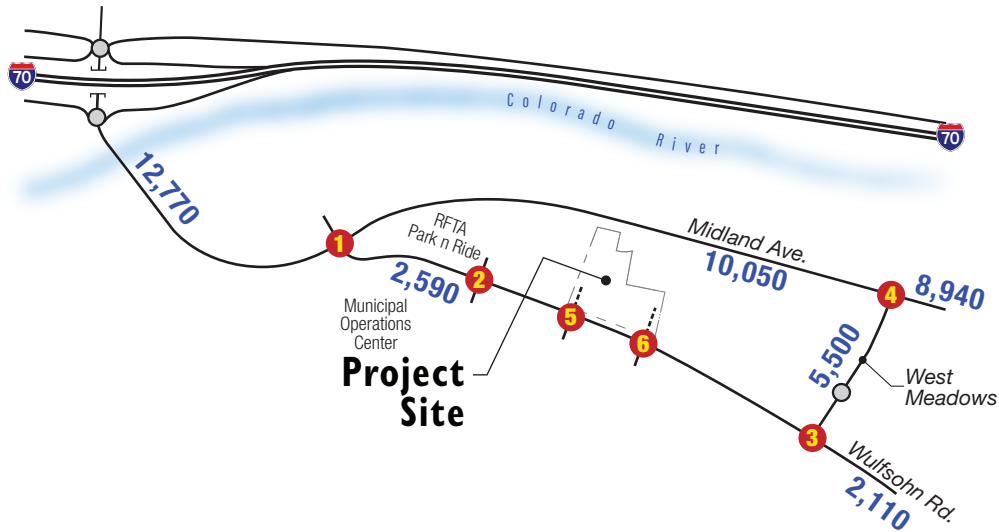
III.E. Long Range Future Total Traffic Conditions

The site generated traffic volumes were added to the 2040 background traffic volumes (**Figure 4**) to produce the long-range future total traffic volumes shown on **Figure 7**. At the 20-year horizon, Midland Avenue would experience approximately 13,200 to 18,530 VPD within the study area. The total daily traffic volumes along Wulfsohn Road would range between about 2,810 and 3,430 VPD. Traffic volumes along West Meadows Drive would remain at about 5,500 VPD.

Figure 7 depicts LOS analysis results for the long-range future total traffic projections (**Appendix E** includes LOS worksheets). As indicated, traffic operations near the commercial site would remain acceptable, at LOS C or better during peak times. The site accesses would function acceptably, at LOS A or B, under STOP-sign control.

Traffic signals at the two intersections along Midland Avenue would be at LOS C during peak times. At Midland Avenue/Wulfsohn Road, the site generated component of traffic volumes through this intersection would be only three to four percent in the long-range future.

Key Map



LEGEND

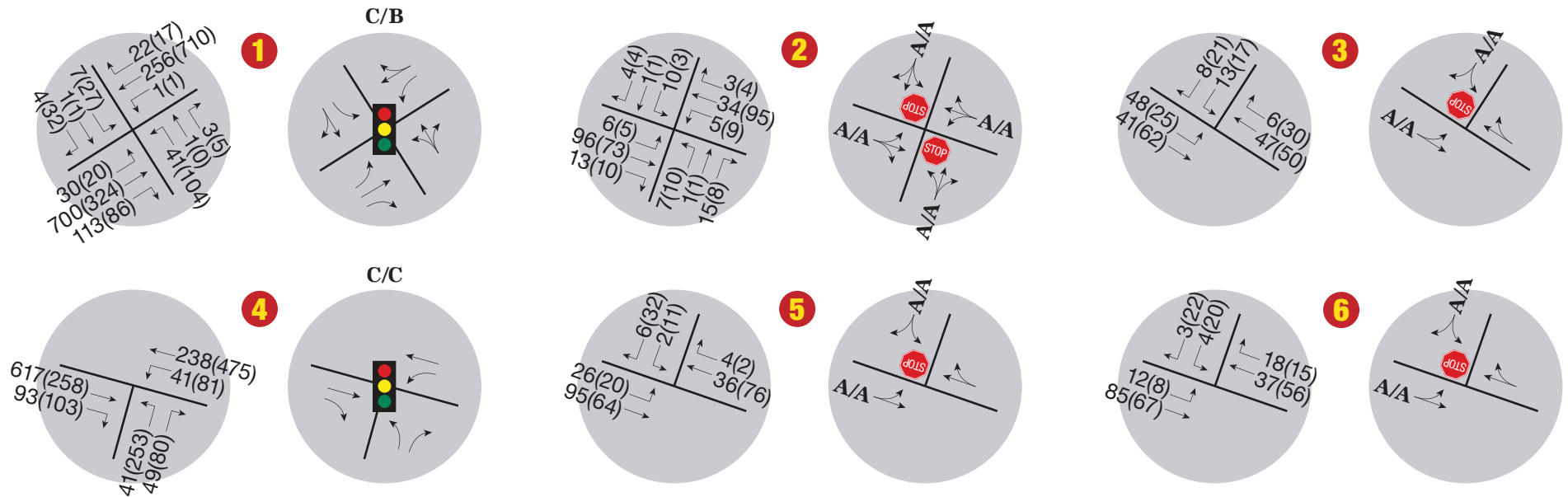
XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

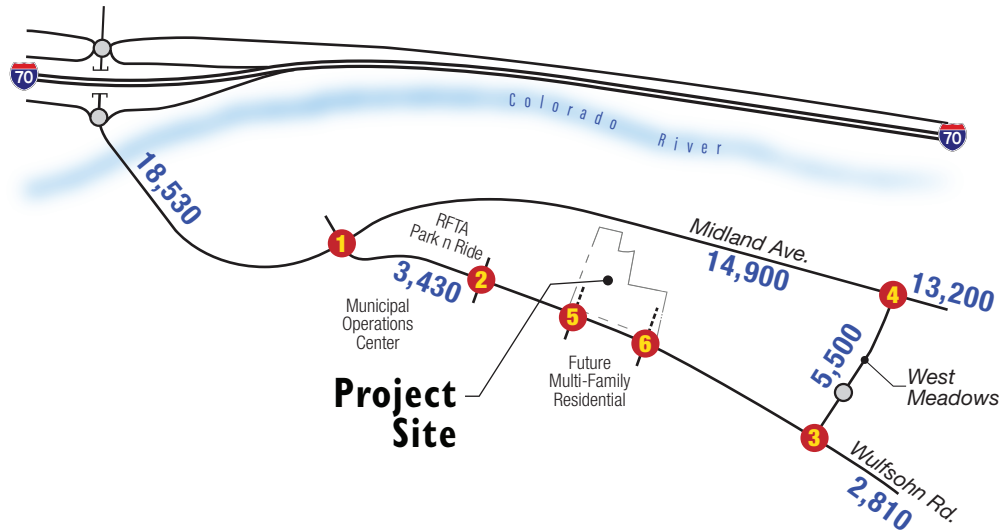
X/X = AM/PM Peak Hour Intersection Level of Service

 = Stop Sign

 = Traffic Signal



Key Map



LEGEND

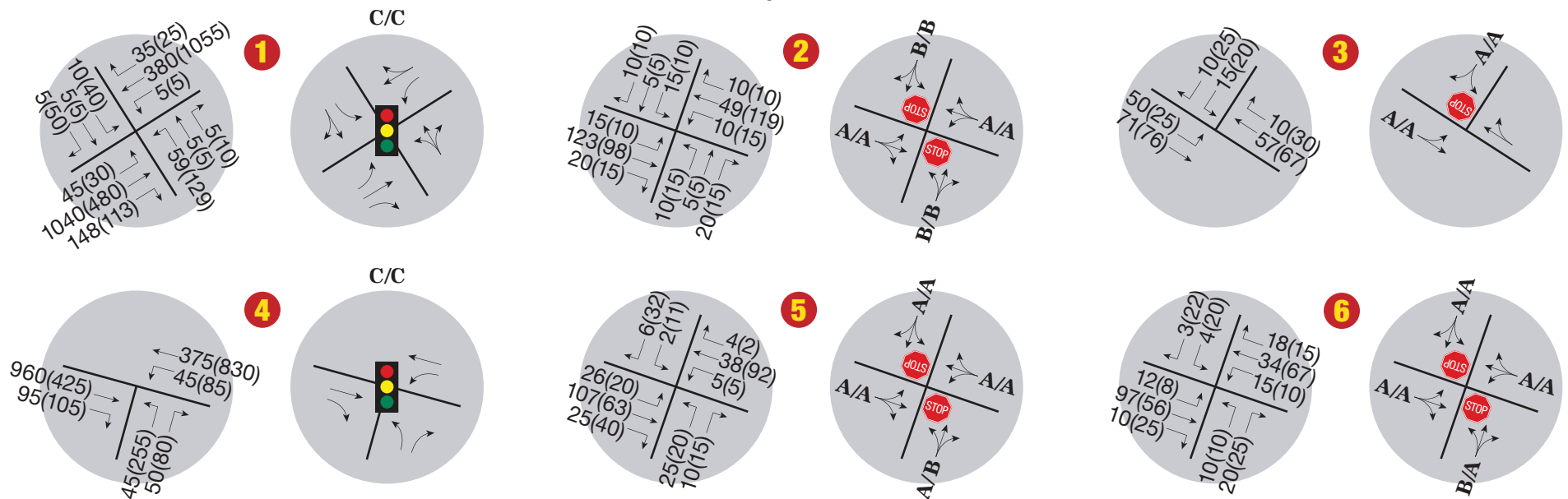
XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Intersection Level of Service

STOP = Stop Sign

Traffic Signal = Traffic Signal



IV. IMPROVEMENT EVALUATION

IV.A. Signal Warrants

As previously mentioned, existing unsignalized operations at the intersection of Midland Avenue/Wulfsohn Road create delays for STOP sign controlled movements. During peak times, motorists waiting to enter Midland Avenue experience LOS E, indicating near-capacity conditions. This is due to the heavy through-traffic on Midland Avenue. This intersection was evaluated relative to MUTCD Signal Warrants 1 (Eight Hour Volume), 2 (Four Hour Volume), and 3 (Peak Hour). As previously noted, current conditions at this intersection approach, but do not meet, threshold criteria for signal installation under Warrants 2 and 3. Two of the four hours are nearly met under Warrant 2, and the PM peak hour volumes are just below the threshold for Warrant 3. **Appendix F** contains data plots of the signal warrant analysis.

The short-range future total traffic volumes would be sufficient to indicate a signal per Warrant 3 (PM peak hour), as would the long-range future background and total conditions. If signalized, this intersection would provide acceptable traffic operations through the projected long-range future.

As indicated previously, the projected traffic volumes along Midland Avenue would exceed the typical daily capacity of 12,000 to 16,000 VPD for a two-lane arterial roadway. Signal timing changes should be expected at the existing traffic signal at Midland Avenue/West Meadows Drive. One measure of traffic operations along a signalized corridor is progression: the ability for mainline traffic to proceed along the corridor without having to stop for a red signal indication. Time-space diagrams indicate good potential for progressive movement along Midland Avenue, with calculated green band efficiencies of 61 to 63 percent (time-space diagrams are included in **Appendix F**).

IV.B. Queue Analysis

Auxiliary lane storage requirements at the signalized intersections were evaluated based on the long-range future total traffic conditions using the 95th percentile maximum probable queue lengths extracted from the LOS worksheets (assuming 25 feet per vehicle in storage). **Table 2** summarizes the results.

Table 2. Queue Analysis

Intersection	Movement	Queue Length (ft) AM (PM)	Existing Storage (ft)
Midland Avenue/ Wulfsohn Road	NB Left-Through-Right	75 (200)	N/A
	SB Left	25 (50)	75
	SB Through-Right	25 (75)	75
	EB Left	25 (25)	100
	EB Through	850(175)	N/A
	EB Right	50 (50)	60
	WB Left	25 (25)	100
	WB Through	175 (725)	N/A
	WB Right	25 (25)	30 (Taper)
Midland Avenue/ West Meadows Drive	NB Left	50 (225)	80
	NB Right	50 (75)	80
	EB Through	625 (275)	N/A
	EB Right	50 (75)	120
	WB Left	50 (50)	200
	WB Through	125 (625)	N/A

As indicated, the existing storage lengths provided for the above movements are generally adequate to accommodate the projected queues. Northbound left-turn queues exiting the Glenwood Meadows shopping center would exceed the available storage during the PM peak hour, which would impact outbound right-turns and could cause some congestion inside the shopping center. Note that the proposed commercial site is not projected to contribute to this movement. Also of note are the through-movement queues on Midland Avenue, which are due to the high projected volumes, which are above the typical capacity of this two-lane arterial.

The current laneage on Wulfsohn Road adjacent to the site would be sufficient for the future total traffic volumes. The need for auxiliary lanes (right-turn or left-turn lanes) is not envisioned for either the commercial site or the future multi-family residential accesses.

IV.C. Pedestrians and Bicycles

As mentioned previously, transit use by site employees and customers is likely to reduce the vehicular impacts of this development. Pedestrian access between the site and the RFTA facility is already provided via the existing concrete sidewalk along Wulfsohn Road. The nearby regional multi-use trail just north of the site will enhance the potential for commuter bicycle access by employees. Site planning should incorporate bike racks and potentially lockers, to accommodate bicyclists and encourage alternate modes.

IV.D. Travel Demand Management (TDM)

Other enhancements to promote multi-modal trip choices would include making informational materials available to site employees and visitors. Such information could include bus schedules, bike route maps, and car-pool information. These materials could be located in a kiosk or central display within the public area of the building. Employers could offer flexible schedules to smooth out the peak hour traffic load, and could establish car pool programs and/or offer bus passes.

V. CONCLUSIONS AND RECOMMENDATIONS

Glenwood Springs Properties LLC is planning to develop a new commercial building along Wulfsohn Road in Glenwood Springs, Colorado. The currently vacant site is located generally southeast of the I-70/Midland Avenue (Exit 114) interchange. The proposed development would consist of an approximate 45,000 square-foot of commercial building. This analysis has considered 15,000 square feet of retail, 15,000 square feet of general office, and 15,000 square feet of medical office uses. Vehicular access to the site would be via two driveways on Wulfsohn Road.

The commercial site would generate about 1,240 trips daily, with approximately 75 to 130 vehicle trips per hour. In general, the existing study area roadway system would remain sufficient to accommodate this development through the projected long-range future. Relative to this, the following summarize the findings and recommendations of this report:

- The two site accesses along Wulfsohn Road will function acceptably with STOP-sign control exiting the site. These accesses should align with, or be sufficiently separated from, any potential future accesses serving south side multi-family residential development. This analysis has assumed four-way intersections in the long-range future; traffic operations would remain at LOS B or better for all movements.
- The current laneage on Wulfsohn Road adjacent to the site would be sufficient for the future total traffic volumes. Auxiliary lanes are not envisioned for either the commercial site or the future multi-family residential accesses.
- The intersection at Midland Avenue/Wulfsohn Road (currently STOP sign controlled) is approaching threshold values for warranting a signal. Existing traffic operations include long delays (LOS E) for side-street movements. It is estimated that the proposed commercial site could generate sufficient traffic to meet signal warrant criteria. Therefore, traffic conditions should be periodically monitored, and a traffic signal be installed when warrants are met. The site generated component of traffic volumes through this intersection would be only three to four percent in the long-range future.
- Projected long-range future traffic volumes along Midland Avenue could exceed the capacity of a two-lane arterial. To adequately serve through-volumes on Midland Avenue, signal timing and cycle length modifications may be necessary over time. The potential to provide good signal progression along this corridor is anticipated through the 20-year design horizon.
- The proximity of transit, along with existing pedestrian and bicycle facilities, will help to reduce the traffic impacts of this proposed development. Additional Travel Demand Management (TDM) measures could help encourage multi-modal choices.

APPENDIX A TRAFFIC COUNTS

Site Code: 4
Station ID: 4
MIDLAND AVE W/O MEADOWS DR

Start Time	05-Dec-18 Wed	EB	WB							Total
12:00 AM		8	6							14
01:00		6	3							9
02:00		9	7							16
03:00		10	4							14
04:00		27	11							38
05:00		160	28							188
06:00		241	58							299
07:00		589	197							786
08:00		498	254							752
09:00		304	166							470
10:00		320	244							564
11:00		323	290							613
12:00 PM		382	299							681
01:00		360	349							709
02:00		320	412							732
03:00		346	475							821
04:00		326	553							879
05:00		335	715							1050
06:00		218	356							574
07:00		145	205							350
08:00		78	145							223
09:00		50	87							137
10:00		36	55							91
11:00		11	15							26
Total		5102	4934							10036
Percent		50.8%	49.2%							
AM Peak	-	07:00	11:00	-	-	-	-	-	-	07:00
Vol.	-	589	290	-	-	-	-	-	-	786
PM Peak	-	12:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	382	715	-	-	-	-	-	-	1050
Grand Total		5102	4934							10036
Percent		50.8%	49.2%							
ADT		ADT 10,036	AADT 10,036							

All Traffic Data Seviles
www.alltrafficdata.net

Page 1

Site Code: 5
Station ID: 5
WULFSOHN RD N/O MEADOWS DR

Start Time	05-Dec-18 Wed	NB	SB	Total
12:00 AM		6	2	8
01:00		2	0	2
02:00		5	2	7
03:00		5	7	12
04:00		7	12	19
05:00		15	44	59
06:00		8	53	61
07:00		32	63	95
08:00		26	61	87
09:00		31	74	105
10:00		38	58	96
11:00		37	68	105
12:00 PM		64	86	150
01:00		57	75	132
02:00		58	75	133
03:00		78	78	156
04:00		55	62	117
05:00		51	61	112
06:00		69	50	119
07:00		43	34	77
08:00		24	17	41
09:00		19	12	31
10:00		20	8	28
11:00		5	3	8
Total		755	1005	1760
Percent		42.9%	57.1%	
AM Peak	-	10:00	09:00	- - - - - 09:00
Vol.	-	38	74	- - - - - 105
PM Peak	-	15:00	12:00	- - - - - 15:00
Vol.	-	78	86	- - - - - 156
Grand Total		755	1005	1760
Percent		42.9%	57.1%	
ADT		ADT 1,760	AADT 1,760	

All Traffic Data Services
www.alltrafficdata.net

Site Code: 6
Station ID: 6
W MEADOWS DR S/O MIDLAND AVE

Start Time	05-Dec-18 Wed	NB	SB	Total
12:00 AM		1	0	1
01:00		1	0	1
02:00		0	0	0
03:00		0	3	3
04:00		2	7	9
05:00		7	31	38
06:00		26	51	77
07:00		58	93	151
08:00		110	134	244
09:00		132	157	289
10:00		194	218	412
11:00		216	204	420
12:00 PM		246	227	473
01:00		286	236	522
02:00		295	208	503
03:00		270	220	490
04:00		311	210	521
05:00		317	173	490
06:00		175	132	307
07:00		142	78	220
08:00		113	51	164
09:00		66	17	83
10:00		37	7	44
11:00		7	0	7
Total		3012	2457	5469
Percent		55.1%	44.9%	
AM Peak	-	11:00	10:00	- - - - - 11:00
Vol.	-	216	218	- - - - - 420
PM Peak	-	17:00	13:00	- - - - - 13:00
Vol.	-	317	236	- - - - - 522
Grand Total		3012	2457	5469
Percent		55.1%	44.9%	
ADT		ADT 5,469	AADT 5,469	



(303) 216-2439
www.alltrafficdata.net

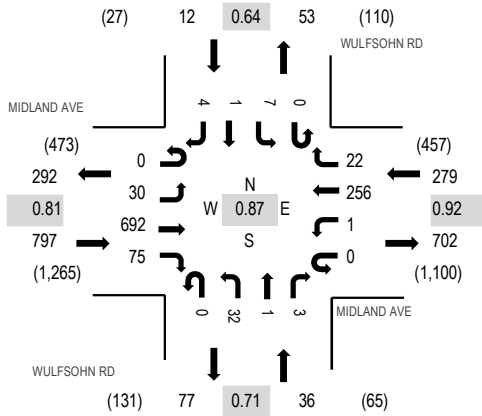
Location: 1 WULFSOHN RD & MIDLAND AVE AM

Date: Wednesday, December 5, 2018

Peak Hour: 07:30 AM - 08:30 AM

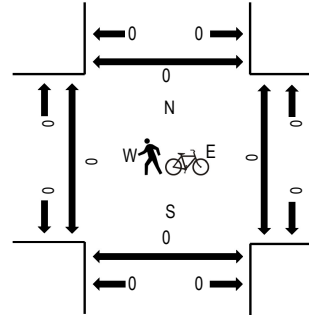
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	MIDLAND AVE Eastbound				MIDLAND AVE Westbound				WULFSOHN RD Northbound				WULFSOHN RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	9	74	17	0	1	33	0	0	5	0	0	0	1	0	0	140	934	0	0	0	0
7:15 AM	0	10	112	10	0	0	29	3	0	10	0	0	0	1	0	0	175	1,062	0	0	0	0
7:30 AM	0	8	185	18	0	0	67	4	0	6	1	1	0	3	0	2	295	1,124	0	0	0	0
7:45 AM	0	9	216	21	0	1	54	7	0	12	0	2	0	1	0	1	324	1,001	0	0	0	0
8:00 AM	0	7	158	16	0	0	72	4	0	8	0	0	0	1	1	1	268	880	0	0	0	0
8:15 AM	0	6	133	20	0	0	63	7	0	6	0	0	0	2	0	0	237		0	0	0	0
8:30 AM	0	5	98	7	0	2	45	3	0	5	0	1	0	4	0	2	172		0	0	0	0
8:45 AM	0	9	101	16	0	1	43	18	0	6	0	2	0	4	0	3	203		2	0	2	0
Count Total	0	63	1,077	125	0	5	406	46	0	58	1	6	0	17	1	9	1,814		2	0	2	0
Peak Hour	0	30	692	75	0	1	256	22	0	32	1	3	0	7	1	4	1,124		0	0	0	0



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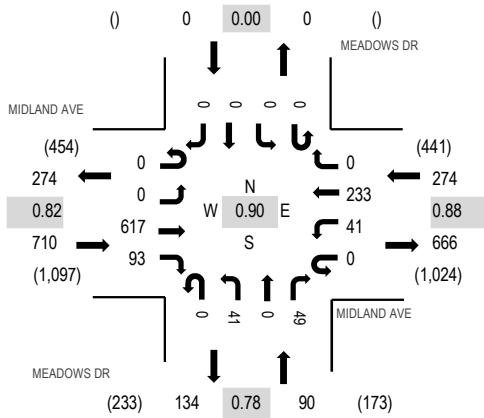
Location: 2 MEADOWS DR & MIDLAND AVE AM

Date: Wednesday, December 5, 2018

Peak Hour: 07:30 AM - 08:30 AM

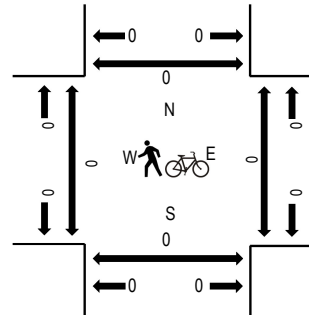
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	MIDLAND AVE Eastbound				MIDLAND AVE Westbound				MEADOWS DR Northbound				MEADOWS DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	62	16	0	2	29	0	0	6	0	4	0	0	0	0	119	836	0	0	0	0
7:15 AM	0	0	88	11	0	4	32	0	0	5	0	6	0	0	0	0	146	979	0	0	0	0
7:30 AM	0	0	169	21	0	6	57	0	0	9	0	9	0	0	0	0	271	1,074	0	0	0	0
7:45 AM	0	0	192	24	0	13	50	0	0	10	0	11	0	0	0	0	300	986	0	0	0	0
8:00 AM	0	0	144	25	0	10	68	0	0	7	0	8	0	0	0	0	262	875	0	0	0	0
8:15 AM	0	0	112	23	0	12	58	0	0	15	0	21	0	0	0	0	241		0	0	0	0
8:30 AM	0	0	83	21	0	15	32	0	0	16	0	16	0	0	0	0	183		0	0	0	0
8:45 AM	0	0	86	20	0	10	43	0	0	17	0	13	0	0	0	0	189		0	0	0	0
Count Total	0	0	936	161	0	72	369	0	0	85	0	88	0	0	0	0	1,711		0	0	0	0
Peak Hour	0	0	617	93	0	41	233	0	0	41	0	49	0	0	0	0	1,074		0	0	0	0



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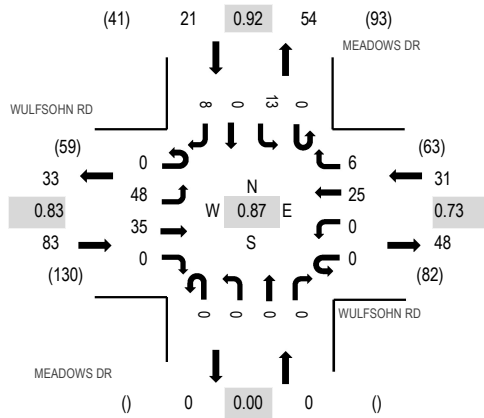
Location: 3 MEADOWS DR & WULFSOHN RD AM

Date: Wednesday, December 5, 2018

Peak Hour: 07:30 AM - 08:30 AM

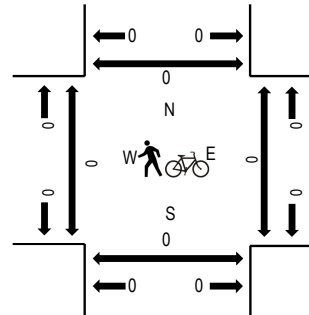
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	WULFSOHN RD Eastbound				WULFSOHN RD Westbound				MEADOWS DR Northbound				MEADOWS DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	5	10	0	0	0	6	4	0	0	0	0	0	2	0	2	29	116	0	0	0	0
7:15 AM	0	6	1	0	1	0	3	2	0	0	0	0	0	3	0	2	18	120	0	0	0	0
7:30 AM	0	10	8	0	0	0	2	3	0	0	0	0	0	5	0	2	30	135	0	0	0	0
7:45 AM	0	11	14	0	0	0	11	0	0	0	0	0	0	2	0	1	39	126	0	0	0	0
8:00 AM	0	14	7	0	0	0	5	2	0	0	0	0	0	3	0	2	33	118	0	0	0	0
8:15 AM	0	13	6	0	0	0	7	1	0	0	0	0	0	3	0	3	33		0	0	0	0
8:30 AM	0	4	6	0	0	0	2	3	0	0	0	0	0	5	0	1	21		0	0	0	0
8:45 AM	0	10	5	0	0	0	6	5	0	0	0	0	0	1	0	4	31		0	0	0	0
Count Total	0	73	57	0	1	0	42	20	0	0	0	0	0	24	0	17	234		0	0	0	0
Peak Hour	0	48	35	0	0	0	25	6	0	0	0	0	0	13	0	8	135		0	0	0	0



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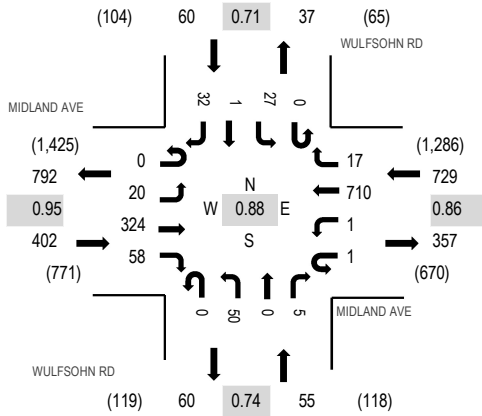
Location: 1 WULFSOHN RD & MIDLAND AVE PM

Date: Wednesday, December 5, 2018

Peak Hour: 04:45 PM - 05:45 PM

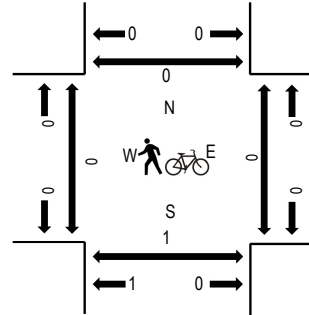
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	MIDLAND AVE Eastbound				MIDLAND AVE Westbound				WULFSOHN RD Northbound				WULFSOHN RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	6	69	20	0	0	113	6	0	13	0	2	0	4	1	12	246	1,059	0	0	0	0
4:15 PM	0	4	66	16	0	0	136	3	0	13	0	1	0	3	0	7	249	1,168	0	0	0	0
4:30 PM	0	4	94	6	0	1	150	3	0	15	0	0	0	1	2	5	281	1,218	0	0	0	0
4:45 PM	0	8	81	13	0	1	141	7	0	14	0	1	0	8	0	9	283	1,246	0	0	0	0
5:00 PM	0	9	87	14	0	0	208	5	0	10	0	1	0	9	0	12	355	1,220	0	0	0	0
5:15 PM	0	2	88	11	0	0	172	4	0	9	0	0	0	5	0	8	299		0	0	0	0
5:30 PM	0	1	68	20	1	0	189	1	0	17	0	3	0	5	1	3	309		0	0	0	0
5:45 PM	0	1	71	12	0	0	144	1	0	19	0	0	0	2	1	6	257		0	0	0	0
Count Total	0	35	624	112	1	2	1,253	30	0	110	0	8	0	37	5	62	2,279		0	0	0	0
Peak Hour	0	20	324	58	1	1	710	17	0	50	0	5	0	27	1	32	1,246		0	0	0	0



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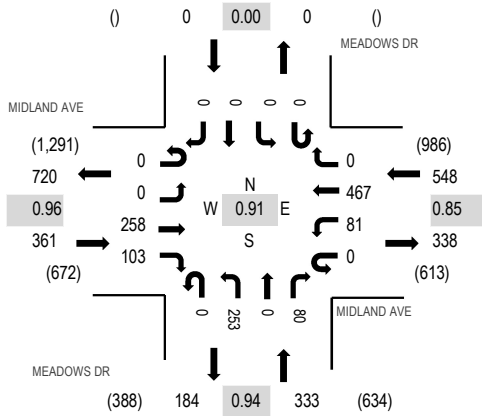
Location: 2 MEADOWS DR & MIDLAND AVE PM

Date: Wednesday, December 5, 2018

Peak Hour: 04:45 PM - 05:45 PM

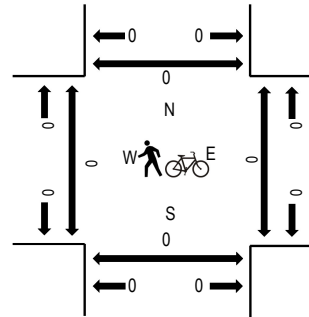
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	MIDLAND AVE Eastbound				MIDLAND AVE Westbound				MEADOWS DR Northbound				MEADOWS DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	56	25	0	31	63	0	0	58	0	17	0	0	0	0	250	1,083	0	0	0	0
4:15 PM	0	0	55	16	0	24	87	0	0	51	0	23	0	0	0	0	256	1,173	0	0	0	0
4:30 PM	0	0	47	41	0	24	95	0	0	66	0	23	0	0	0	0	296	1,241	0	0	0	0
4:45 PM	0	0	59	31	0	20	95	0	0	54	0	22	0	0	0	0	281	1,242	0	0	0	0
5:00 PM	0	0	70	25	0	18	143	0	0	70	0	14	0	0	0	0	340	1,209	0	0	0	0
5:15 PM	0	0	74	22	0	21	117	0	0	66	0	24	0	0	0	0	324		0	0	0	0
5:30 PM	0	0	55	25	0	22	112	0	0	63	0	20	0	0	0	0	297		0	0	0	0
5:45 PM	0	0	45	26	0	17	97	0	0	54	0	9	0	0	0	0	248		0	0	0	0
Count Total	0	0	461	211	0	177	809	0	0	482	0	152	0	0	0	0	2,292		0	0	0	0
Peak Hour	0	0	258	103	0	81	467	0	0	253	0	80	0	0	0	0	1,242		0	0	0	0



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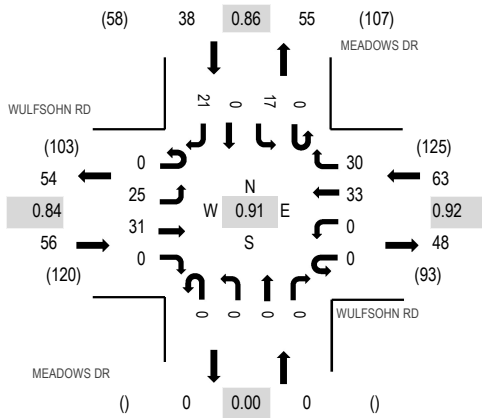
Location: 3 MEADOWS DR & WULFSOHN RD PM

Date: Wednesday, December 5, 2018

Peak Hour: 04:00 PM - 05:00 PM

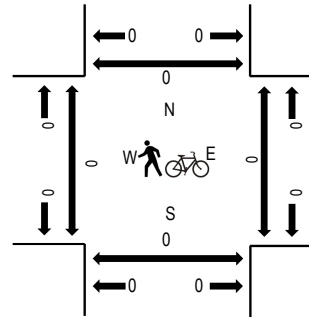
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	WULFSOHN RD Eastbound				WULFSOHN RD Westbound				MEADOWS DR Northbound				MEADOWS DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	7	13	0	0	0	6	6	0	0	0	0	0	4	0	7	43	157	0	0	0	0
4:15 PM	0	10	7	0	0	0	9	9	0	0	0	0	0	4	0	3	42	154	0	0	0	0
4:30 PM	0	5	5	0	0	0	10	7	0	0	0	0	0	5	0	4	36	145	0	0	0	0
4:45 PM	0	3	6	0	0	0	8	8	0	0	0	0	0	4	0	7	36	146	0	0	0	0
5:00 PM	0	5	14	0	0	0	5	10	0	0	0	0	0	2	0	4	40	146	0	0	0	0
5:15 PM	0	6	6	0	0	0	8	9	0	0	0	0	0	3	0	1	33		0	0	0	0
5:30 PM	0	10	6	0	0	0	13	3	0	0	0	0	0	1	0	4	37		0	0	0	0
5:45 PM	0	6	11	0	1	0	10	3	0	0	0	0	0	1	0	4	36		0	0	0	0
Count Total	0	52	68	0	1	0	69	55	0	0	0	0	0	24	0	34	303		0	0	0	0
Peak Hour	0	25	31	0	0	0	33	30	0	0	0	0	0	17	0	21	157		0	0	0	0

APPENDIX B EXISTING CONDITIONS LEVEL OF SERVICE WORKSHEETS

HCM 6th Signalized Intersection Summary
8: W Meadows Dr & Midland Ave

Existing Conditions AM Peak Hour

12/11/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	617	93	41	238	41	49
Future Volume (veh/h)	617	93	41	238	41	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	701	106	47	270	47	56
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	820	695	261	1035	544	484
Arrive On Green	0.44	0.44	0.04	0.55	0.31	0.31
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	701	106	47	270	47	56
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	21.5	2.6	0.8	4.8	1.2	1.6
Cycle Q Clear(g_c), s	21.5	2.6	0.8	4.8	1.2	1.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	820	695	261	1035	544	484
V/C Ratio(X)	0.85	0.15	0.18	0.26	0.09	0.12
Avail Cap(c_a), veh/h	1216	1031	335	1509	544	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	10.8	12.4	7.4	15.8	16.0
Incr Delay (d2), s/veh	4.1	0.1	0.3	0.1	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.8	1.3	0.5	2.5	0.9	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.2	10.9	12.7	7.6	16.1	16.4
LnGrp LOS	C	B	B	A	B	B
Approach Vol, veh/h	807			317	103	
Approach Delay, s/veh	18.9			8.3	16.3	
Approach LOS	B			A	B	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		24.0	7.3	32.5		39.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		19.5	5.5	41.5		51.5
Max Q Clear Time (g_c+I1), s		3.6	2.8	23.5		6.8
Green Ext Time (p_c), s		0.2	0.0	4.5		1.5
Intersection Summary						
HCM 6th Ctrl Delay			16.0			
HCM 6th LOS			B			

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	700	75	1	256	22	32	1	3	7	1	4
Future Vol, veh/h	30	700	75	1	256	22	32	1	3	7	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	50	100	-	-	-	-	-	70	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	795	85	1	291	25	36	1	3	8	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	880	0	0	1172	1181	795	1214	1254	304
Stage 1	-	-	-	-	-	-	863	863	-	306	306	-
Stage 2	-	-	-	-	-	-	309	318	-	908	948	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1244	-	-	768	-	-	169	190	388	158	172	736
Stage 1	-	-	-	-	-	-	349	372	-	704	662	-
Stage 2	-	-	-	-	-	-	701	654	-	330	339	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	768	-	-	163	185	388	152	167	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	185	-	152	167	-
Stage 1	-	-	-	-	-	-	340	362	-	685	661	-
Stage 2	-	-	-	-	-	-	695	653	-	317	330	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	32.3	23
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	172	1244	-	-	768	-	-	152	438
HCM Lane V/C Ratio	0.238	0.027	-	-	0.001	-	-	0.052	0.013
HCM Control Delay (s)	32.3	8	-	-	9.7	-	-	30	13.3
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.2	0

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	58	13	5	25	3	7	1	15	10	1	4
Future Vol, veh/h	6	58	13	5	25	3	7	1	15	10	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	66	15	6	28	3	8	1	17	11	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	31	0	0	81	0	0	133	131	74	139	137	30
Stage 1	-	-	-	-	-	-	88	88	-	42	42	-
Stage 2	-	-	-	-	-	-	45	43	-	97	95	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1582	-	-	1517	-	-	839	760	988	831	754	1044
Stage 1	-	-	-	-	-	-	920	822	-	972	860	-
Stage 2	-	-	-	-	-	-	969	859	-	910	816	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1582	-	-	1517	-	-	829	753	988	810	747	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	829	753	-	810	747	-
Stage 1	-	-	-	-	-	-	915	818	-	967	857	-
Stage 2	-	-	-	-	-	-	960	856	-	889	812	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.1			9			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	922	1582	-	-	1517	-	-	856				
HCM Lane V/C Ratio	0.028	0.004	-	-	0.004	-	-	0.02				
HCM Control Delay (s)	9	7.3	0	-	7.4	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	35	25	6	13	8
Future Vol, veh/h	48	35	25	6	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	40	28	7	15	9

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	35	0	0 182 32
Stage 1	-	-	- 32 -
Stage 2	-	-	- 150 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1576	-	- 807 1042
Stage 1	-	-	- 991 -
Stage 2	-	-	- 878 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1576	-	- 778 1042
Mov Cap-2 Maneuver	-	-	- 778 -
Stage 1	-	-	- 955 -
Stage 2	-	-	- 878 -

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1576	-	-	-	861
HCM Lane V/C Ratio	0.035	-	-	-	0.028
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM 6th Signalized Intersection Summary
8: W Meadows Dr & Midland Ave

Existing Conditions PM Peak Hour
12/11/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	258	103	81	475	253	80
Future Volume (veh/h)	258	103	81	475	253	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	117	92	540	288	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	426	361	367	743	735	654
Arrive On Green	0.23	0.23	0.07	0.40	0.41	0.41
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	293	117	92	540	288	91
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	6.8	2.9	1.7	11.6	5.4	1.7
Cycle Q Clear(g_c), s	6.8	2.9	1.7	11.6	5.4	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	426	361	367	743	735	654
V/C Ratio(X)	0.69	0.32	0.25	0.73	0.39	0.14
Avail Cap(c_a), veh/h	1642	1392	442	2038	735	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	15.2	11.6	12.1	9.7	8.7
Incr Delay (d2), s/veh	2.0	0.5	0.4	1.4	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	1.6	0.9	6.5	3.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	15.7	12.0	13.5	11.3	9.1
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	410			632	379	
Approach Delay, s/veh	17.9			13.2	10.8	
Approach LOS	B			B	B	
Timer - Assigned Phs	2	3	4		8	
Phs Duration (G+Y+Rc), s	24.0	8.0	15.3		23.3	
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	
Max Green Setting (Gmax), s	19.5	5.5	41.5		51.5	
Max Q Clear Time (g_c+I1), s	7.4	3.7	8.8		13.6	
Green Ext Time (p_c), s	1.0	0.0	2.0		3.4	
Intersection Summary						
HCM 6th Ctrl Delay			13.9			
HCM 6th LOS			B			

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	324	58	1	710	17	50	1	5	27	1	32
Future Vol, veh/h	20	324	58	1	710	17	50	1	5	27	1	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	50	100	-	-	-	-	-	70	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	368	66	1	807	19	57	1	6	31	1	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	826	0	0	434	0	0	1251	1242	368	1270	1299	817
Stage 1	-	-	-	-	-	-	414	414	-	819	819	-
Stage 2	-	-	-	-	-	-	837	828	-	451	480	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	805	-	-	1126	-	-	149	175	677	145	161	376
Stage 1	-	-	-	-	-	-	616	593	-	369	389	-
Stage 2	-	-	-	-	-	-	361	386	-	588	554	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	805	-	-	1126	-	-	131	170	677	140	156	376
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	170	-	140	156	-
Stage 1	-	-	-	-	-	-	598	576	-	358	389	-
Stage 2	-	-	-	-	-	-	325	386	-	565	538	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	49.5	25.9
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	142	805	-	-	1126	-	-	140	361
HCM Lane V/C Ratio	0.448	0.028	-	-	0.001	-	-	0.219	0.104
HCM Control Delay (s)	49.5	9.6	-	-	8.2	-	-	37.8	16.1
HCM Lane LOS	E	A	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	2	0.1	-	-	0	-	-	0.8	0.3

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	45	10	9	41	4	10	1	8	3	1	4
Future Vol, veh/h	5	45	10	9	41	4	10	1	8	3	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	51	11	10	47	5	11	1	9	3	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	62	0	0	142	141	57	144	144	50
Stage 1	-	-	-	-	-	-	69	69	-	70	70	-
Stage 2	-	-	-	-	-	-	73	72	-	74	74	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1554	-	-	1541	-	-	828	750	1009	825	747	1018
Stage 1	-	-	-	-	-	-	941	837	-	940	837	-
Stage 2	-	-	-	-	-	-	937	835	-	935	833	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1541	-	-	816	742	1009	810	739	1018
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	742	-	810	739	-
Stage 1	-	-	-	-	-	-	937	834	-	936	831	-
Stage 2	-	-	-	-	-	-	925	829	-	922	830	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.2			9.2			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	882	1554	-	-	1541	-	-	890				
HCM Lane V/C Ratio	0.024	0.004	-	-	0.007	-	-	0.01				
HCM Control Delay (s)	9.2	7.3	0	-	7.4	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	31	33	30	17	21
Future Vol, veh/h	24	31	33	30	17	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	35	38	34	19	24
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	72	0	-	0	144	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1528	-	-	-	849	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1528	-	-	-	834	1012
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	934	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.2	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1528	-	-	-	924	
HCM Lane V/C Ratio	0.018	-	-	-	0.047	
HCM Control Delay (s)	7.4	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

APPENDIX C BACKGROUND TRAFFIC LEVEL OF SERVICE WORKSHEETS

HCM 6th Signalized Intersection Summary

2: Wulfsohn Rd/Midland Center & Midland Ave

Long Range Background AM Peak Hour

12/19/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1040	110	5	380	35	50	5	5	10	5	5
Future Volume (veh/h)	45	1040	110	5	380	35	50	5	5	10	5	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	1182	125	6	432	40	57	6	6	11	6	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	592	1195	1013	98	1153	977	312	33	26	383	176	176
Arrive On Green	0.03	0.64	0.64	0.01	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1164	161	126	1402	858	858
Grp Volume(v), veh/h	51	1182	125	6	432	40	69	0	0	11	0	12
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1451	0	0	1402	0	1716
Q Serve(g_s), s	0.9	55.8	2.8	0.1	10.4	0.9	3.0	0.0	0.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.9	55.8	2.8	0.1	10.4	0.9	3.5	0.0	0.0	0.4	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.83		0.09	1.00		0.50
Lane Grp Cap(c), veh/h	592	1195	1013	98	1153	977	371	0	0	383	0	353
V/C Ratio(X)	0.09	0.99	0.12	0.06	0.37	0.04	0.19	0.00	0.00	0.03	0.00	0.03
Avail Cap(c_a), veh/h	611	1195	1013	157	1195	1013	371	0	0	383	0	353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.5	15.9	6.4	22.8	8.6	6.8	29.8	0.0	0.0	28.6	0.0	28.6
Incr Delay (d2), s/veh	0.1	23.3	0.1	0.3	0.2	0.0	1.1	0.0	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	33.5	1.4	0.1	6.2	0.5	2.4	0.0	0.0	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	39.3	6.4	23.0	8.8	6.8	30.9	0.0	0.0	28.7	0.0	28.8
LnGrp LOS	A	D	A	C	A	A	C	A	A	C	A	C
Approach Vol, veh/h	1358				478				69			
Approach Delay, s/veh	35.0				8.8				30.9			
Approach LOS	D				A				C			
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.0		5.0	62.0		23.0		7.0	60.0			
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5		4.5	4.5			
Max Green Setting (Gmax), s	15.5		3.5	57.5		15.5		3.5	57.5			
Max Q Clear Time (g_c+I1), s	5.5		2.1	57.8		2.5		2.9	12.4			
Green Ext Time (p_c), s	0.2		0.0	0.0		0.0		0.0	2.7			
Intersection Summary												
HCM 6th Ctrl Delay	28.3											
HCM 6th LOS	C											
Notes												

HCM 6th Signalized Intersection Summary
8: W Meadows Dr & Midland Ave

Long Range Background AM Peak Hour

12/19/2018

											
Movement	EBT	EBR	WBL	WBT	NBL	NBR					
Lane Configurations											
Traffic Volume (veh/h)	960	95	45	375	45	50					
Future Volume (veh/h)	960	95	45	375	45	50					
Initial Q (Qb), veh	0	0	0	0	0	0					
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00					
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00					
Work Zone On Approach	No			No	No						
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870					
Adj Flow Rate, veh/h	1091	108	51	426	51	57					
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88					
Percent Heavy Veh, %	2	2	2	2	2	2					
Cap, veh/h	1110	941	163	1279	385	343					
Arrive On Green	0.59	0.59	0.04	0.68	0.22	0.22					
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585					
Grp Volume(v), veh/h	1091	108	51	426	51	57					
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585					
Q Serve(g_s), s	51.2	2.7	0.9	8.4	2.1	2.6					
Cycle Q Clear(g_c), s	51.2	2.7	0.9	8.4	2.1	2.6					
Prop In Lane		1.00	1.00		1.00	1.00					
Lane Grp Cap(c), veh/h	1110	941	163	1279	385	343					
V/C Ratio(X)	0.98	0.11	0.31	0.33	0.13	0.17					
Avail Cap(c_a), veh/h	1112	942	191	1309	385	343					
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00					
Upstream Filter(I)	0.25	0.25	1.00	1.00	1.00	1.00					
Uniform Delay (d), s/veh	17.8	8.0	22.3	5.8	28.5	28.7					
Incr Delay (d2), s/veh	9.8	0.0	1.1	0.2	0.7	1.0					
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0					
%ile BackOfQ(95%),veh/ln	24.0	1.4	1.2	4.4	1.7	1.9					
Unsig. Movement Delay, s/veh											
LnGrp Delay(d),s/veh	27.7	8.0	23.4	6.0	29.2	29.7					
LnGrp LOS	C	A	C	A	C	C					
Approach Vol, veh/h	1199			477	108						
Approach Delay, s/veh	25.9			7.8	29.5						
Approach LOS	C			A	C						
Timer - Assigned Phs	2		3	4	8						
Phs Duration (G+Y+Rc), s	24.0		8.1	57.9	66.0						
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5						
Max Green Setting (Gmax), s	18.0		5.0	53.5	63.0						
Max Q Clear Time (g_c+I1), s	4.6		2.9	53.2	10.4						
Green Ext Time (p_c), s	0.2		0.0	0.2	2.6						
Intersection Summary											
HCM 6th Ctrl Delay			21.3								
HCM 6th LOS			C								
Notes											
User approved pedestrian interval to be less than phase max green.											

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	85	20	10	40	10	10	5	20	15	5	10
Future Vol, veh/h	15	85	20	10	40	10	10	5	20	15	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	97	23	11	45	11	11	6	23	17	6	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	120	0	0	224	221	109	230	227	51
Stage 1	-	-	-	-	-	-	143	143	-	73	73	-
Stage 2	-	-	-	-	-	-	81	78	-	157	154	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1549	-	-	1468	-	-	732	678	945	725	672	1017
Stage 1	-	-	-	-	-	-	860	779	-	937	834	-
Stage 2	-	-	-	-	-	-	927	830	-	845	770	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1549	-	-	1468	-	-	708	664	945	692	659	1017
Mov Cap-2 Maneuver	-	-	-	-	-	-	708	664	-	692	659	-
Stage 1	-	-	-	-	-	-	850	770	-	926	827	-
Stage 2	-	-	-	-	-	-	903	823	-	809	761	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.2			9.6			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	817	1549	-	-	1468	-	-	767				
HCM Lane V/C Ratio	0.049	0.011	-	-	0.008	-	-	0.044				
HCM Control Delay (s)	9.6	7.4	0	-	7.5	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	65	35	10	15	10
Future Vol, veh/h	50	65	35	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	74	40	11	17	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	51	0	0 234 46
Stage 1	-	-	- 46 -
Stage 2	-	-	- 188 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1555	-	- 754 1023
Stage 1	-	-	- 976 -
Stage 2	-	-	- 844 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1555	-	- 725 1023
Mov Cap-2 Maneuver	-	-	- 725 -
Stage 1	-	-	- 939 -
Stage 2	-	-	- 844 -

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	821
HCM Lane V/C Ratio	0.037	-	-	-	0.035
HCM Control Delay (s)	7.4	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection

Int Delay, s/veh 2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	10	15	30	10	20
Future Vol, veh/h	95	10	15	30	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	11	17	34	11	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	119
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1469
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1469
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	886	-	-	1469	-
HCM Lane V/C Ratio	0.038	-	-	0.012	-
HCM Control Delay (s)	9.2	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	25	5	35	25	10
Future Vol, veh/h	95	25	5	35	25	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	28	6	40	28	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	136
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1448
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1448
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	843	-	-	1448	-
HCM Lane V/C Ratio	0.047	-	-	0.004	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th Signalized Intersection Summary

2: Wulfsohn Rd/Midland Center & Midland Ave

Long Range Background PM Peak Hour

12/19/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	480	85	5	1055	25	75	5	10	40	5	50
Future Volume (veh/h)	30	480	85	5	1055	25	75	5	10	40	5	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	545	97	6	1199	28	85	6	11	45	6	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	1258	1066	513	1226	1039	233	19	22	338	26	251
Arrive On Green	0.02	0.67	0.67	0.01	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	928	108	125	1396	153	1455
Grp Volume(v), veh/h	34	545	97	6	1199	28	102	0	0	45	0	63
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1161	0	0	1396	0	1608
Q Serve(g_s), s	0.6	12.1	1.9	0.1	55.4	0.6	5.6	0.0	0.0	0.0	0.0	3.0
Cycle Q Clear(g_c), s	0.6	12.1	1.9	0.1	55.4	0.6	8.6	0.0	0.0	2.2	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	0.83		0.11	1.00		0.90
Lane Grp Cap(c), veh/h	138	1258	1066	513	1226	1039	273	0	0	338	0	277
V/C Ratio(X)	0.25	0.43	0.09	0.01	0.98	0.03	0.37	0.00	0.00	0.13	0.00	0.23
Avail Cap(c_a), veh/h	168	1258	1066	573	1237	1048	273	0	0	338	0	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.1	6.8	5.1	5.8	14.9	5.4	35.4	0.0	0.0	31.7	0.0	32.1
Incr Delay (d2), s/veh	0.9	0.2	0.0	0.0	14.1	0.0	3.9	0.0	0.0	0.8	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	6.5	0.9	0.1	27.4	0.3	4.2	0.0	0.0	1.6	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	7.1	5.2	5.8	29.0	5.4	39.2	0.0	0.0	32.6	0.0	34.0
LnGrp LOS	C	A	A	A	C	A	D	A	A	C	A	C
Approach Vol, veh/h		676			1233			102			108	
Approach Delay, s/veh		7.6			28.3			39.2			33.4	
Approach LOS		A			C			D			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.0	5.0	65.0		20.0	6.5	63.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		13.5	3.5	59.5		13.5	3.5	59.5				
Max Q Clear Time (g_c+I1), s		10.6	2.1	14.1		5.0	2.6	57.4				
Green Ext Time (p_c), s		0.1	0.0	3.8		0.2	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary

8: W Meadows Dr & Midland Ave

Long Range Background PM Peak Hour

12/19/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	425	105	85	830	255	80
Future Volume (veh/h)	425	105	85	830	255	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	483	119	97	943	290	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	836	709	378	1024	628	558
Arrive On Green	0.45	0.45	0.05	0.55	0.35	0.35
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	483	119	97	943	290	91
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	17.3	4.0	2.5	41.4	11.3	3.6
Cycle Q Clear(g_c), s	17.3	4.0	2.5	41.4	11.3	3.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	836	709	378	1024	628	558
V/C Ratio(X)	0.58	0.17	0.26	0.92	0.46	0.16
Avail Cap(c_a), veh/h	1010	856	395	1216	628	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	14.9	13.3	18.6	22.5	20.0
Incr Delay (d2), s/veh	0.6	0.1	0.4	10.3	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	2.4	1.6	24.6	8.8	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	15.0	13.7	28.8	25.0	20.7
LnGrp LOS	B	B	B	C	C	C
Approach Vol, veh/h	602			1040	381	
Approach Delay, s/veh	18.3			27.4	24.0	
Approach LOS	B			C	C	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		36.2	9.1	44.7		53.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		22.5	5.4	48.6		58.5
Max Q Clear Time (g_c+I1), s		13.3	4.5	19.3		43.4
Green Ext Time (p_c), s		0.9	0.0	3.3		5.9
Intersection Summary						
HCM 6th Ctrl Delay			24.1			
HCM 6th LOS			C			

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	70	15	15	65	10	15	5	15	10	5	10
Future Vol, veh/h	10	70	15	15	65	10	15	5	15	10	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	80	17	17	74	11	17	6	17	11	6	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	85	0	0	97	0	0	233	230	89	236	233	80
Stage 1	-	-	-	-	-	-	111	111	-	114	114	-
Stage 2	-	-	-	-	-	-	122	119	-	122	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1512	-	-	1496	-	-	722	670	969	718	667	980
Stage 1	-	-	-	-	-	-	894	804	-	891	801	-
Stage 2	-	-	-	-	-	-	882	797	-	882	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1512	-	-	1496	-	-	698	657	969	690	654	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	698	657	-	690	654	-
Stage 1	-	-	-	-	-	-	887	798	-	884	791	-
Stage 2	-	-	-	-	-	-	855	787	-	853	791	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.2			9.8			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	785	1512	-	-	1496	-	-	773				
HCM Lane V/C Ratio	0.051	0.008	-	-	0.011	-	-	0.037				
HCM Control Delay (s)	9.8	7.4	0	-	7.4	0	-	9.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	45	50	30	20	25
Future Vol, veh/h	25	45	50	30	20	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	51	57	34	23	28

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	91	0	0 181 74
Stage 1	-	-	- 74 -
Stage 2	-	-	- 107 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1504	-	- 808 988
Stage 1	-	-	- 949 -
Stage 2	-	-	- 917 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1504	-	- 793 988
Mov Cap-2 Maneuver	-	-	- 793 -
Stage 1	-	-	- 931 -
Stage 2	-	-	- 917 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1504	-	-	-	891
HCM Lane V/C Ratio	0.019	-	-	-	0.057
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	45	25	10	25	10	25
Future Vol, veh/h	45	25	10	25	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	28	11	28	11	28

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	79	0	115	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1519	-	881	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1519	-	875	999
Mov Cap-2 Maneuver	-	-	-	-	875	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	972	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	960	-	-	1519	-
HCM Lane V/C Ratio	0.041	-	-	0.007	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	40	5	70	20	15
Future Vol, veh/h	55	40	5	70	20	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	45	6	80	23	17

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	108
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1483
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1483
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	1483	-
HCM Lane V/C Ratio	0.046	-	-	0.004	-
HCM Control Delay (s)	9.3	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX D SHORT RANGE FUTURE TOTAL TRAFFIC LEVEL OF SERVICE WORKSHEETS

HCM 6th Signalized Intersection Summary
2: Wulfsohn Rd/Midland Center & Midland Ave

Short Range Total Traffic AM Peak Hour

12/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	700	113	1	256	22	41	1	3	7	1	4
Future Volume (veh/h)	30	700	113	1	256	22	41	1	3	7	1	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	795	128	1	291	25	47	1	3	8	1	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	898	761	148	898	761	619	15	34	673	110	552
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1064	1870	1585	606	1870	1585	1307	37	84	1412	271	1355
Grp Volume(v), veh/h	34	795	128	1	291	25	51	0	0	8	0	6
Grp Sat Flow(s),veh/h/ln	1064	1870	1585	606	1870	1585	1428	0	0	1412	0	1626
Q Serve(g_s), s	1.6	30.8	3.7	0.1	7.7	0.7	1.5	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	9.3	30.8	3.7	30.9	7.7	0.7	1.7	0.0	0.0	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	0.92		0.06	1.00		0.83
Lane Grp Cap(c), veh/h	499	898	761	148	898	761	668	0	0	673	0	663
V/C Ratio(X)	0.07	0.89	0.17	0.01	0.32	0.03	0.08	0.00	0.00	0.01	0.00	0.01
Avail Cap(c_a), veh/h	673	1204	1020	247	1204	1020	668	0	0	673	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	18.8	11.8	32.8	12.8	11.0	14.5	0.0	0.0	14.1	0.0	14.1
Incr Delay (d2), s/veh	0.1	6.4	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	18.5	2.0	0.0	5.1	0.4	1.1	0.0	0.0	0.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	25.3	11.9	32.8	13.0	11.0	14.8	0.0	0.0	14.1	0.0	14.1
LnGrp LOS	B	C	B	C	B	B	B	A	A	B	A	B
Approach Vol, veh/h		957			317			51			14	
Approach Delay, s/veh		23.1			12.9			14.8			14.1	
Approach LOS		C			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.1		42.9		37.1		42.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		51.5		19.5		51.5				
Max Q Clear Time (g_c+I1), s		3.7		32.8		2.2		32.9				
Green Ext Time (p_c), s		0.2		5.6		0.0		1.5				
Intersection Summary												
HCM 6th Ctrl Delay				20.3								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
8: W Meadows Dr & Midland Ave

Short Range Total Traffic AM Peak Hour
12/20/2018

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	617	93	41	238	41	49
Future Volume (veh/h)	617	93	41	238	41	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	701	106	47	270	47	56
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	784	665	210	965	662	589
Arrive On Green	0.42	0.42	0.04	0.52	0.37	0.37
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	701	106	47	270	47	56
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	27.9	3.3	1.1	6.5	1.4	1.8
Cycle Q Clear(g_c), s	27.9	3.3	1.1	6.5	1.4	1.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	784	665	210	965	662	589
V/C Ratio(X)	0.89	0.16	0.22	0.28	0.07	0.10
Avail Cap(c_a), veh/h	970	822	261	1204	662	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	14.5	16.9	10.9	16.2	16.4
Incr Delay (d2), s/veh	5.5	0.1	0.5	0.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.9	1.9	0.7	4.2	1.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.1	14.5	17.4	11.1	16.4	16.7
LnGrp LOS	C	B	B	B	B	B
Approach Vol, veh/h	807			317	103	
Approach Delay, s/veh	25.4			12.0	16.6	
Approach LOS	C			B	B	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		34.2	7.7	38.0		45.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		19.5	5.5	41.5		51.5
Max Q Clear Time (g_c+I1), s		3.8	3.1	29.9		8.5
Green Ext Time (p_c), s		0.2	0.0	3.7		1.5
Intersection Summary						
HCM 6th Ctrl Delay			21.2			
HCM 6th LOS			C			

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	96	13	5	34	3	7	1	15	10	1	4
Future Vol, veh/h	6	96	13	5	34	3	7	1	15	10	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	109	15	6	39	3	8	1	17	11	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	124	0	0	187	185	117	193	191	41
Stage 1	-	-	-	-	-	-	131	131	-	53	53	-
Stage 2	-	-	-	-	-	-	56	54	-	140	138	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1567	-	-	1463	-	-	774	709	935	767	704	1030
Stage 1	-	-	-	-	-	-	873	788	-	960	851	-
Stage 2	-	-	-	-	-	-	956	850	-	863	782	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1463	-	-	765	703	935	747	698	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	765	703	-	747	698	-
Stage 1	-	-	-	-	-	-	869	784	-	955	848	-
Stage 2	-	-	-	-	-	-	947	847	-	842	778	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.9			9.3			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	864	1567	-	-	1463	-	-	802				
HCM Lane V/C Ratio	0.03	0.004	-	-	0.004	-	-	0.021				
HCM Control Delay (s)	9.3	7.3	0	-	7.5	0	-	9.6				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	41	47	6	13	8
Future Vol, veh/h	48	41	47	6	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	47	53	7	15	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	60	0	-	0	214	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	157	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1544	-	-	-	774	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	745	1009
Mov Cap-2 Maneuver	-	-	-	-	745	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	871	-
Approach	EB	WB		SB		
HCM Control Delay, s	4	0		9.5		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1544	-	-	-	827	
HCM Lane V/C Ratio	0.035	-	-	-	0.029	
HCM Control Delay (s)	7.4	0	-	-	9.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	95	36	4	2	6
Future Vol, veh/h	26	95	36	4	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	108	41	5	2	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	46	0	0 212 44
Stage 1	-	-	- 44 -
Stage 2	-	-	- 168 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1562	-	- 776 1026
Stage 1	-	-	- 978 -
Stage 2	-	-	- 862 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1562	-	- 760 1026
Mov Cap-2 Maneuver	-	-	- 760 -
Stage 1	-	-	- 958 -
Stage 2	-	-	- 862 -

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1562	-	-	-	943
HCM Lane V/C Ratio	0.019	-	-	-	0.01
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	85	37	18	4	3
Future Vol, veh/h	12	85	37	18	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	97	42	20	5	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	62	0	-	0	177	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1541	-	-	-	813	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	901	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	805	1016
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	901	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1541	-	-	-	884	
HCM Lane V/C Ratio	0.009	-	-	-	0.009	
HCM Control Delay (s)	7.4	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th Signalized Intersection Summary

2: Wulfsohn Rd/Midland Center & Midland Ave

Short Range Total Traffic PM Peak Hour

12/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	324	86	1	710	17	104	1	5	27	1	32
Future Volume (veh/h)	20	324	86	1	710	17	104	1	5	27	1	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	368	98	1	807	19	118	1	6	31	1	36
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	902	765	420	902	765	598	7	26	688	17	627
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	663	1870	1585	927	1870	1585	1260	17	64	1409	43	1549
Grp Volume(v), veh/h	23	368	98	1	807	19	125	0	0	31	0	37
Grp Sat Flow(s),veh/h/ln	663	1870	1585	927	1870	1585	1341	0	0	1409	0	1592
Q Serve(g_s), s	2.6	10.1	2.7	0.1	31.4	0.5	4.7	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	34.0	10.1	2.7	10.2	31.4	0.5	5.8	0.0	0.0	0.8	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	0.94		0.05	1.00		0.97
Lane Grp Cap(c), veh/h	149	902	765	420	902	765	631	0	0	688	0	645
V/C Ratio(X)	0.15	0.41	0.13	0.00	0.89	0.02	0.20	0.00	0.00	0.05	0.00	0.06
Avail Cap(c_a), veh/h	256	1204	1020	569	1204	1020	631	0	0	688	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	13.3	11.4	16.6	18.8	10.8	16.2	0.0	0.0	14.4	0.0	14.5
Incr Delay (d2), s/veh	0.5	0.3	0.1	0.0	5.6	0.0	0.7	0.0	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	6.7	1.5	0.0	17.8	0.3	2.9	0.0	0.0	0.6	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	13.6	11.5	16.6	24.4	10.9	16.9	0.0	0.0	14.5	0.0	14.7
LnGrp LOS	C	B	B	B	C	B	B	A	A	B	A	B
Approach Vol, veh/h		489			827			125			68	
Approach Delay, s/veh		14.2			24.1			16.9			14.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.9		43.1		36.9		43.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		51.5		19.5		51.5				
Max Q Clear Time (g_c+I1), s		7.8		36.0		3.1		33.4				
Green Ext Time (p_c), s		0.5		2.2		0.2		5.2				
Intersection Summary												
HCM 6th Ctrl Delay				19.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

8: W Meadows Dr & Midland Ave

Short Range Total Traffic PM Peak Hour

12/20/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	258	103	81	475	253	80
Future Volume (veh/h)	258	103	81	475	253	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	117	92	540	288	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	420	356	266	628	983	874
Arrive On Green	0.22	0.22	0.05	0.34	0.55	0.55
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	293	117	92	540	288	91
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	11.5	4.9	3.0	21.6	6.9	2.2
Cycle Q Clear(g_c), s	11.5	4.9	3.0	21.6	6.9	2.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	420	356	266	628	983	874
V/C Ratio(X)	0.70	0.33	0.35	0.86	0.29	0.10
Avail Cap(c_a), veh/h	970	822	291	1204	983	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	26.0	21.7	24.8	9.6	8.5
Incr Delay (d2), s/veh	2.0	0.5	0.8	3.6	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	3.2	2.2	14.1	4.9	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.5	26.5	22.4	28.4	10.3	8.8
LnGrp LOS	C	C	C	C	B	A
Approach Vol, veh/h	410			632	379	
Approach Delay, s/veh	29.3			27.5	10.0	
Approach LOS	C			C	A	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		48.6	8.9	22.5		31.4
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		19.5	5.5	41.5		51.5
Max Q Clear Time (g_c+I1), s		8.9	5.0	13.5		23.6
Green Ext Time (p_c), s		0.9	0.0	1.9		3.3
Intersection Summary						
HCM 6th Ctrl Delay			23.4			
HCM 6th LOS			C			

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	73	10	9	95	4	10	1	8	3	1	4
Future Vol, veh/h	5	73	10	9	95	4	10	1	8	3	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	83	11	10	108	5	11	1	9	3	1	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	94	0	0	235	234	89	237	237	111
Stage 1	-	-	-	-	-	-	101	101	-	131	131	-
Stage 2	-	-	-	-	-	-	134	133	-	106	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1476	-	-	1500	-	-	720	666	969	717	664	942
Stage 1	-	-	-	-	-	-	905	811	-	873	788	-
Stage 2	-	-	-	-	-	-	869	786	-	900	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1500	-	-	710	659	969	703	657	942
Mov Cap-2 Maneuver	-	-	-	-	-	-	710	659	-	703	657	-
Stage 1	-	-	-	-	-	-	901	808	-	870	782	-
Stage 2	-	-	-	-	-	-	858	780	-	887	804	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.6			9.6			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	796	1476	-	-	1500	-	-	797				
HCM Lane V/C Ratio	0.027	0.004	-	-	0.007	-	-	0.011				
HCM Control Delay (s)	9.6	7.4	0	-	7.4	0	-	9.6				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	62	50	30	17	21
Future Vol, veh/h	25	62	50	30	17	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	70	57	34	19	24
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	91	0	-	0	200	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1504	-	-	-	789	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	900	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1504	-	-	-	774	988
Mov Cap-2 Maneuver	-	-	-	-	774	-
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	900	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.1	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1504	-	-	-	879	
HCM Lane V/C Ratio	0.019	-	-	-	0.049	
HCM Control Delay (s)	7.4	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	64	76	2	11	32
Future Vol, veh/h	20	64	76	2	11	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	73	86	2	13	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	88	0	-	0	206	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	119	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1508	-	-	-	782	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1508	-	-	-	769	971
Mov Cap-2 Maneuver	-	-	-	-	769	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	906	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1508	-	-	-	910	
HCM Lane V/C Ratio	0.015	-	-	-	0.054	
HCM Control Delay (s)	7.4	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	67	56	15	20	22
Future Vol, veh/h	8	67	56	15	20	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	76	64	17	23	25
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	81	0	-	0	167	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	94	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1517	-	-	-	823	989
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1517	-	-	-	818	989
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	930	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1517	-	-	-	899	
HCM Lane V/C Ratio	0.006	-	-	-	0.053	
HCM Control Delay (s)	7.4	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

APPENDIX E LONG RANGE FUTURE TOTAL TRAFFIC LEVEL OF SERVICE WORKSHEETS

HCM 6th Signalized Intersection Summary

2: Wulfsohn Rd/Midland Center & Midland Ave

Long Range Total Traffic AM Peak Hour

12/19/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1040	148	5	380	35	59	5	5	10	5	5
Future Volume (veh/h)	45	1040	148	5	380	35	59	5	5	10	5	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	1182	168	6	432	40	67	6	6	11	6	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	592	1195	1013	97	1153	977	319	29	22	386	176	176
Arrive On Green	0.03	0.64	0.64	0.01	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1190	140	109	1402	858	858
Grp Volume(v), veh/h	51	1182	168	6	432	40	79	0	0	11	0	12
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1439	0	0	1402	0	1716
Q Serve(g_s), s	0.9	55.8	3.9	0.1	10.4	0.9	3.7	0.0	0.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.9	55.8	3.9	0.1	10.4	0.9	4.2	0.0	0.0	0.4	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.85		0.08	1.00		0.50
Lane Grp Cap(c), veh/h	592	1195	1013	97	1153	977	370	0	0	386	0	353
V/C Ratio(X)	0.09	0.99	0.17	0.06	0.37	0.04	0.21	0.00	0.00	0.03	0.00	0.03
Avail Cap(c_a), veh/h	611	1195	1013	157	1195	1013	370	0	0	386	0	353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.5	15.9	6.6	22.8	8.6	6.8	30.1	0.0	0.0	28.6	0.0	28.6
Incr Delay (d2), s/veh	0.1	23.3	0.1	0.3	0.2	0.0	1.3	0.0	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	33.5	1.9	0.1	6.2	0.5	2.8	0.0	0.0	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	39.3	6.6	23.0	8.8	6.8	31.4	0.0	0.0	28.7	0.0	28.8
LnGrp LOS	A	D	A	C	A	A	C	A	A	C	A	C
Approach Vol, veh/h		1401			478			79			23	
Approach Delay, s/veh		34.2			8.8			31.4			28.7	
Approach LOS		C			A			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	5.0	62.0		23.0	7.0	60.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		15.5	3.5	57.5		15.5	3.5	57.5				
Max Q Clear Time (g_c+I1), s		6.2	2.1	57.8		2.5	2.9	12.4				
Green Ext Time (p_c), s		0.2	0.0	0.0		0.0	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			27.9									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary

8: W Meadows Dr & Midland Ave

Long Range Total Traffic AM Peak Hour

12/19/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	960	95	45	375	45	50
Future Volume (veh/h)	960	95	45	375	45	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1091	108	51	426	51	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1110	941	163	1279	385	343
Arrive On Green	0.59	0.59	0.04	0.68	0.22	0.22
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	1091	108	51	426	51	57
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	51.2	2.7	0.9	8.4	2.1	2.6
Cycle Q Clear(g_c), s	51.2	2.7	0.9	8.4	2.1	2.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1110	941	163	1279	385	343
V/C Ratio(X)	0.98	0.11	0.31	0.33	0.13	0.17
Avail Cap(c_a), veh/h	1112	942	191	1309	385	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	8.0	22.3	5.8	28.5	28.7
Incr Delay (d2), s/veh	10.3	0.0	1.1	0.2	0.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.4	1.4	1.2	4.4	1.7	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.2	8.0	23.4	6.0	29.2	29.7
LnGrp LOS	C	A	C	A	C	C
Approach Vol, veh/h	1199			477	108	
Approach Delay, s/veh	26.4			7.8	29.5	
Approach LOS	C			A	C	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		24.0	8.1	57.9		66.0
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		18.0	5.0	53.5		63.0
Max Q Clear Time (g_c+I1), s		4.6	2.9	53.2		10.4
Green Ext Time (p_c), s		0.2	0.0	0.2		2.6
Intersection Summary						
HCM 6th Ctrl Delay			21.6			
HCM 6th LOS			C			

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	123	20	10	49	10	10	5	20	15	5	10
Future Vol, veh/h	15	123	20	10	49	10	10	5	20	15	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	140	23	11	56	11	11	6	23	17	6	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	163	0	0	278	275	152	284	281	62
Stage 1	-	-	-	-	-	-	186	186	-	84	84	-
Stage 2	-	-	-	-	-	-	92	89	-	200	197	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1535	-	-	1416	-	-	674	632	894	668	627	1003
Stage 1	-	-	-	-	-	-	816	746	-	924	825	-
Stage 2	-	-	-	-	-	-	915	821	-	802	738	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1535	-	-	1416	-	-	652	619	894	637	614	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	619	-	637	614	-
Stage 1	-	-	-	-	-	-	806	737	-	913	818	-
Stage 2	-	-	-	-	-	-	891	814	-	766	729	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1.1			10			10.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	764	1535	-	-	1416	-	-	720				
HCM Lane V/C Ratio	0.052	0.011	-	-	0.008	-	-	0.047				
HCM Control Delay (s)	10	7.4	0	-	7.6	0	-	10.2				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	71	57	10	15	10
Future Vol, veh/h	50	71	57	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	81	65	11	17	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	76	0	-	0	266	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1523	-	-	-	723	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1523	-	-	-	695	991
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	838	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.1	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1523	-	-	-	789	
HCM Lane V/C Ratio	0.037	-	-	-	0.036	
HCM Control Delay (s)	7.5	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	97	10	15	34	18	10	1	20	4	1	3
Future Vol, veh/h	12	97	10	15	34	18	10	1	20	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	110	11	17	39	20	11	1	23	5	1	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	121	0	0	229	237	116	239	232	49
Stage 1	-	-	-	-	-	-	144	144	-	83	83	-
Stage 2	-	-	-	-	-	-	85	93	-	156	149	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1545	-	-	1467	-	-	726	664	936	715	668	1020
Stage 1	-	-	-	-	-	-	859	778	-	925	826	-
Stage 2	-	-	-	-	-	-	923	818	-	846	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1545	-	-	1467	-	-	711	649	936	685	653	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	649	-	685	653	-
Stage 1	-	-	-	-	-	-	850	770	-	916	816	-
Stage 2	-	-	-	-	-	-	908	808	-	816	766	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1.7			9.5			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	838	1545	-	-	1467	-	-	776				
HCM Lane V/C Ratio	0.042	0.009	-	-	0.012	-	-	0.012				
HCM Control Delay (s)	9.5	7.4	0	-	7.5	0	-	9.7				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	107	25	5	38	4	25	1	10	2	1	6
Future Vol, veh/h	26	107	25	5	38	4	25	1	10	2	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	122	28	6	43	5	28	1	11	2	1	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	150	0	0	258	256	136	260	268	46
Stage 1	-	-	-	-	-	-	196	196	-	58	58	-
Stage 2	-	-	-	-	-	-	62	60	-	202	210	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1559	-	-	1431	-	-	695	648	913	693	638	1023
Stage 1	-	-	-	-	-	-	806	739	-	954	847	-
Stage 2	-	-	-	-	-	-	949	845	-	800	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1431	-	-	676	632	913	670	622	1023
Mov Cap-2 Maneuver	-	-	-	-	-	-	676	632	-	670	622	-
Stage 1	-	-	-	-	-	-	789	723	-	934	844	-
Stage 2	-	-	-	-	-	-	938	842	-	772	713	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.8			10.2			9.2		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	727	1559	-	-	1431	-	-	861				
HCM Lane V/C Ratio	0.056	0.019	-	-	0.004	-	-	0.012				
HCM Control Delay (s)	10.2	7.4	0	-	7.5	0	-	9.2				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0				

HCM 6th Signalized Intersection Summary
2: Wulfsohn Rd/Midland Center & Midland Ave

Long Range Total Traffic PM Peak Hour

12/19/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	480	113	5	1055	25	129	5	10	40	5	50
Future Volume (veh/h)	30	480	113	5	1055	25	129	5	10	40	5	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	545	128	6	1199	28	147	6	11	45	6	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1247	1056	495	1215	1030	253	12	14	370	27	259
Arrive On Green	0.02	0.67	0.67	0.01	0.65	0.65	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	995	65	76	1396	153	1455
Grp Volume(v), veh/h	34	545	128	6	1199	28	164	0	0	45	0	63
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1137	0	0	1396	0	1608
Q Serve(g_s), s	0.6	12.3	2.6	0.1	56.3	0.6	10.1	0.0	0.0	0.0	0.0	3.0
Cycle Q Clear(g_c), s	0.6	12.3	2.6	0.1	56.3	0.6	13.2	0.0	0.0	2.0	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	0.90		0.07	1.00		0.90
Lane Grp Cap(c), veh/h	130	1247	1056	495	1215	1030	278	0	0	370	0	287
V/C Ratio(X)	0.26	0.44	0.12	0.01	0.99	0.03	0.59	0.00	0.00	0.12	0.00	0.22
Avail Cap(c_a), veh/h	180	1247	1056	574	1216	1030	278	0	0	370	0	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	7.1	5.4	6.0	15.4	5.6	37.0	0.0	0.0	31.2	0.0	31.6
Incr Delay (d2), s/veh	1.0	0.2	0.1	0.0	16.1	0.0	8.8	0.0	0.0	0.7	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	6.8	1.2	0.1	28.7	0.3	7.5	0.0	0.0	1.6	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	7.3	5.5	6.0	31.5	5.6	45.9	0.0	0.0	31.9	0.0	33.4
LnGrp LOS	C	A	A	A	C	A	D	A	A	C	A	C
Approach Vol, veh/h		707			1233			164			108	
Approach Delay, s/veh		7.8			30.8			45.9			32.8	
Approach LOS		A			C			D			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.5	5.0	64.5		20.5	6.5	63.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		13.5	4.5	58.5		13.5	4.5	58.5				
Max Q Clear Time (g_c+I1), s		15.2	2.1	14.3		5.0	2.6	58.3				
Green Ext Time (p_c), s		0.0	0.0	4.0		0.2	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary

8: W Meadows Dr & Midland Ave

Long Range Total Traffic PM Peak Hour

12/19/2018

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	425	105	85	830	255	80
Future Volume (veh/h)	425	105	85	830	255	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	483	119	97	943	290	91
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	836	709	378	1024	628	558
Arrive On Green	0.45	0.45	0.05	0.55	0.35	0.35
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	483	119	97	943	290	91
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	17.3	4.0	2.5	41.4	11.3	3.6
Cycle Q Clear(g_c), s	17.3	4.0	2.5	41.4	11.3	3.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	836	709	378	1024	628	558
V/C Ratio(X)	0.58	0.17	0.26	0.92	0.46	0.16
Avail Cap(c_a), veh/h	1010	856	395	1216	628	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	14.9	13.3	18.6	22.5	20.0
Incr Delay (d2), s/veh	0.6	0.1	0.4	10.3	2.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	2.4	1.6	24.6	8.8	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	15.0	13.7	28.8	25.0	20.7
LnGrp LOS	B	B	B	C	C	C
Approach Vol, veh/h	602			1040	381	
Approach Delay, s/veh	18.3			27.4	24.0	
Approach LOS	B			C	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	36.2		9.1	44.7	53.8	
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s	22.5		5.4	48.6	58.5	
Max Q Clear Time (g_c+I1), s	13.3		4.5	19.3	43.4	
Green Ext Time (p_c), s	0.9		0.0	3.3	5.9	
Intersection Summary						
HCM 6th Ctrl Delay			24.1			
HCM 6th LOS			C			
Notes						

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	98	15	15	119	10	15	5	15	10	5	10
Future Vol, veh/h	10	98	15	15	119	10	15	5	15	10	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	111	17	17	135	11	17	6	17	11	6	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	146	0	0	128	0	0	325	322	120	328	325	141
Stage 1	-	-	-	-	-	-	142	142	-	175	175	-
Stage 2	-	-	-	-	-	-	183	180	-	153	150	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1436	-	-	1458	-	-	628	595	931	625	593	907
Stage 1	-	-	-	-	-	-	861	779	-	827	754	-
Stage 2	-	-	-	-	-	-	819	750	-	849	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1458	-	-	606	583	931	599	581	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	606	583	-	599	581	-
Stage 1	-	-	-	-	-	-	854	773	-	820	744	-
Stage 2	-	-	-	-	-	-	792	740	-	821	767	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.8			10.4			10.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	708	1436	-	-	1458	-	-	688				
HCM Lane V/C Ratio	0.056	0.008	-	-	0.012	-	-	0.041				
HCM Control Delay (s)	10.4	7.5	0	-	7.5	0	-	10.5				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	76	67	30	20	25
Future Vol, veh/h	25	76	67	30	20	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	86	76	34	23	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	110	0	-	0	235	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1480	-	-	-	753	964
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1480	-	-	-	738	964
Mov Cap-2 Maneuver	-	-	-	-	738	-
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	885	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1480	-	-	-	849	
HCM Lane V/C Ratio	0.019	-	-	-	0.06	
HCM Control Delay (s)	7.5	0	-	-	9.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	56	25	10	67	15	10	1	25	20	1	22
Future Vol, veh/h	8	56	25	10	67	15	10	1	25	20	1	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	64	28	11	76	17	11	1	28	23	1	25
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	92	0	0	216	211	78	218	217	85
Stage 1	-	-	-	-	-	-	96	96	-	107	107	-
Stage 2	-	-	-	-	-	-	120	115	-	111	110	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1503	-	-	740	686	983	738	681	974
Stage 1	-	-	-	-	-	-	911	815	-	898	807	-
Stage 2	-	-	-	-	-	-	884	800	-	894	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1503	-	-	713	676	983	708	671	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	713	676	-	708	671	-
Stage 1	-	-	-	-	-	-	906	810	-	893	801	-
Stage 2	-	-	-	-	-	-	853	794	-	862	799	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.8			9.3			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	879	1501	-	-	1503	-	-	822				
HCM Lane V/C Ratio	0.047	0.006	-	-	0.008	-	-	0.059				
HCM Control Delay (s)	9.3	7.4	0	-	7.4	0	-	9.7				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2				

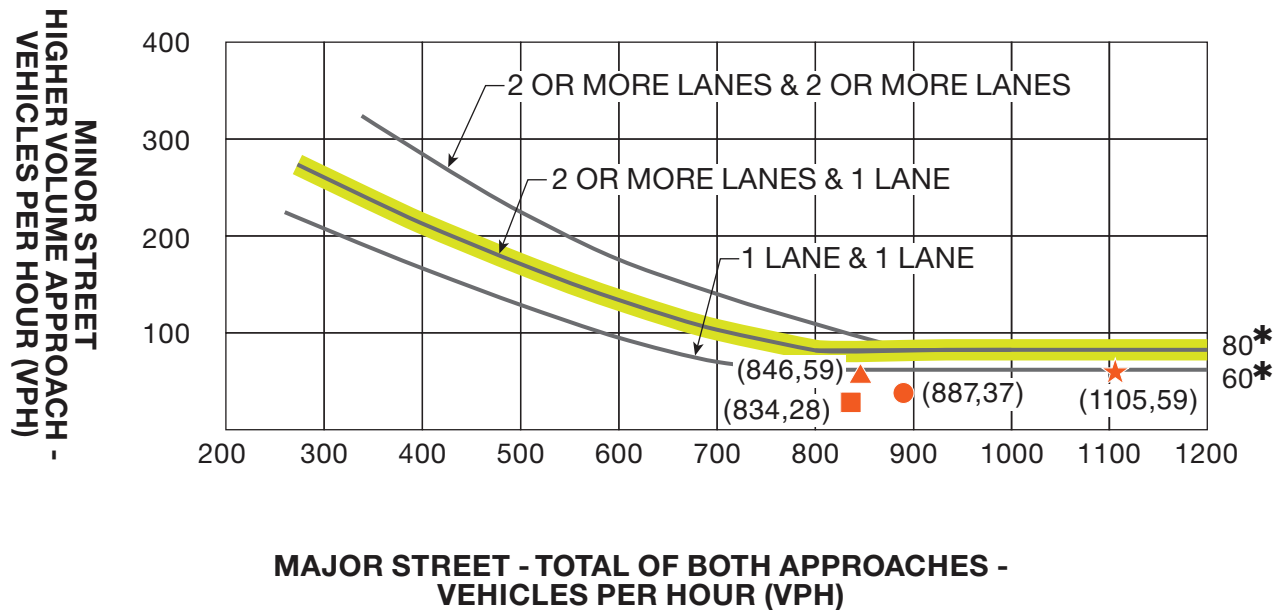
Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	63	40	5	92	2	20	1	15	11	1	32
Future Vol, veh/h	20	63	40	5	92	2	20	1	15	11	1	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	72	45	6	105	2	23	1	17	13	1	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	117	0	0	278	260	95	268	281	106
Stage 1	-	-	-	-	-	-	141	141	-	118	118	-
Stage 2	-	-	-	-	-	-	137	119	-	150	163	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1484	-	-	1471	-	-	674	645	962	685	627	948
Stage 1	-	-	-	-	-	-	862	780	-	887	798	-
Stage 2	-	-	-	-	-	-	866	797	-	853	763	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1484	-	-	1471	-	-	637	631	962	661	614	948
Mov Cap-2 Maneuver	-	-	-	-	-	-	637	631	-	661	614	-
Stage 1	-	-	-	-	-	-	847	767	-	872	795	-
Stage 2	-	-	-	-	-	-	828	794	-	822	750	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.4			10.1			9.5		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	741	1484	-	-	1471	-	-	846
HCM Lane V/C Ratio	0.055	0.015	-	-	0.004	-	-	0.059
HCM Control Delay (s)	10.1	7.5	0	-	7.5	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

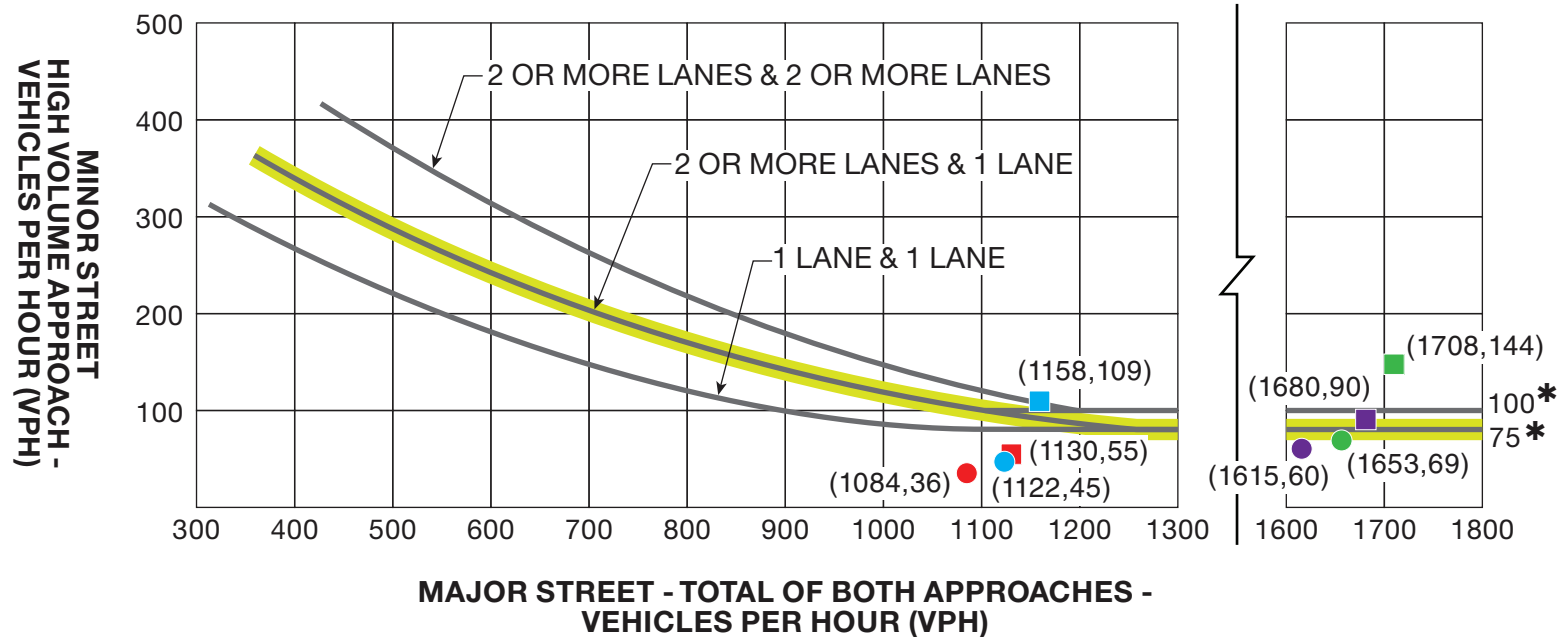
APPENDIX F SIGNAL WARRANT ANALYSIS



* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

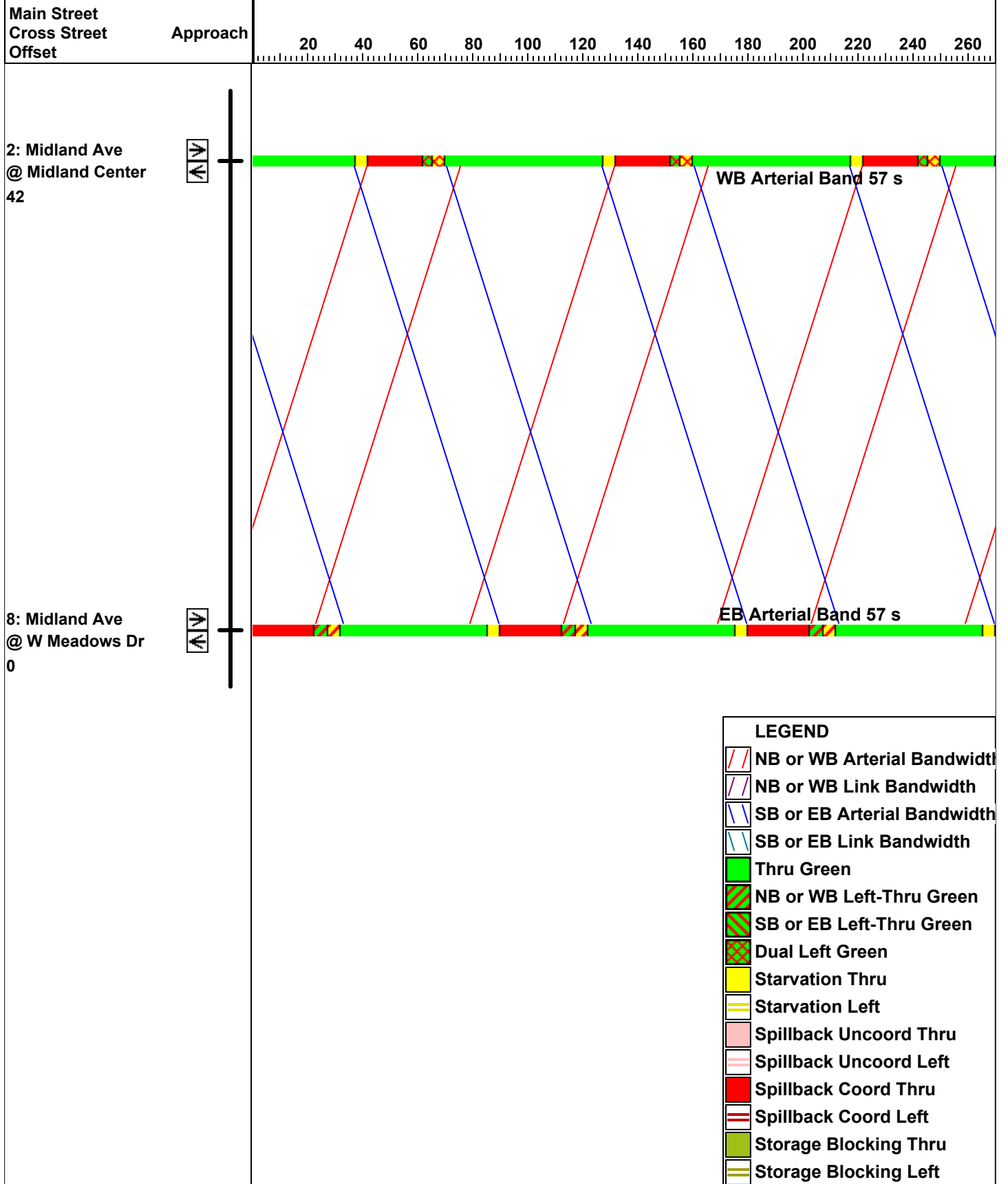
- = 7:00am - 8:00am
- = 8:00am - 9:00am
- ▲ = 4:00pm - 5:00pm
- ★ = 5:00pm - 6:00pm



* Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

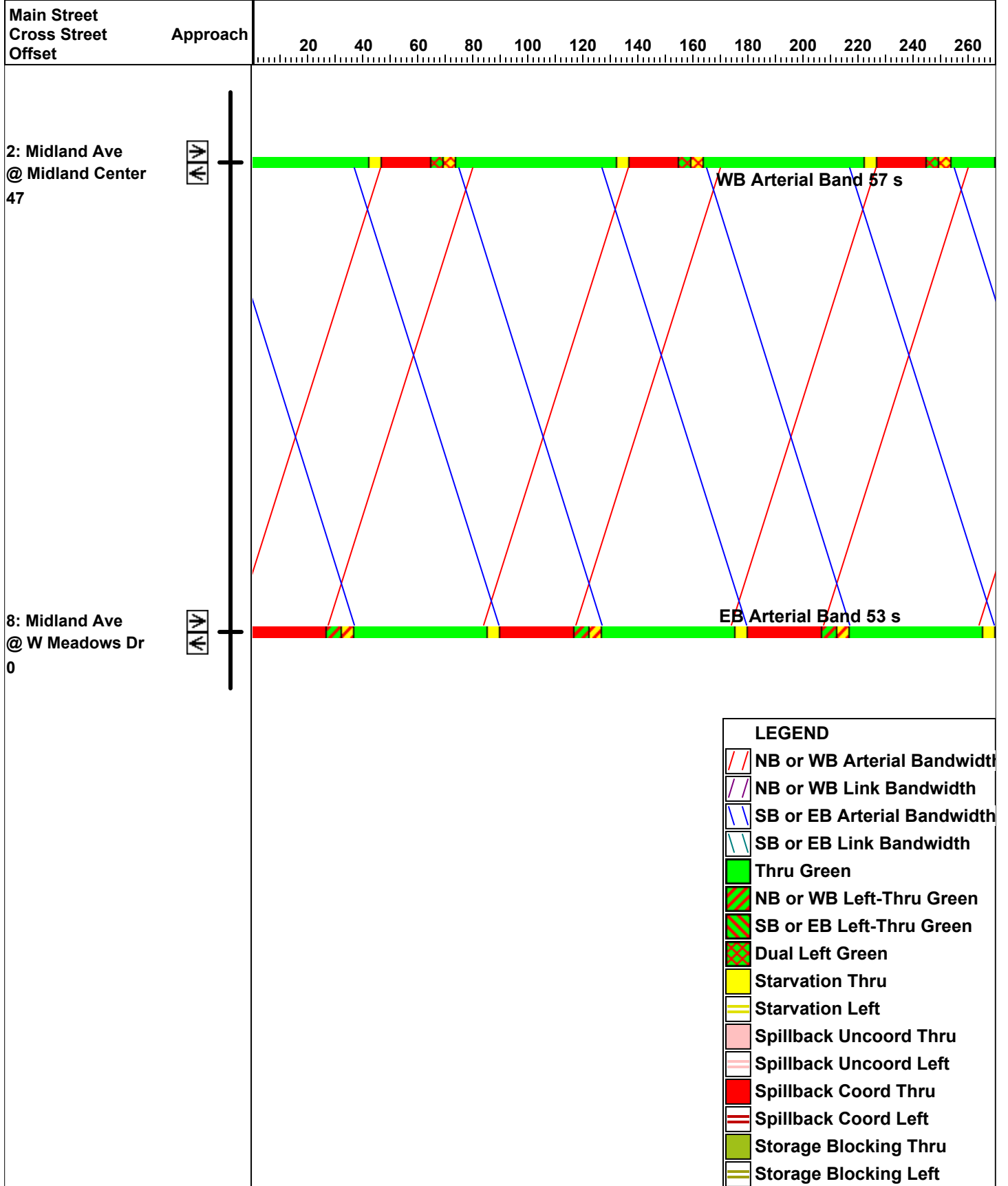
LEGEND

- = AM Peak Hour Existing
- = PM Peak Hour Existing
- = AM Peak Hour Short Range Total
- = PM Peak Hour Short Range Total
- = AM Peak Hour Long Range Background
- = PM Peak Hour Long Range Background
- = AM Peak Hour Long Range Total
- = PM Peak Hour Long Range Total



Baseline

I:\118467-01 Glenwood Commercial Site\Synchro\LR\TOTAM.syn



Baseline

I:\118467-01 Glenwood Commercial Site\Synchro\LR\TOTPM.syn



Name

Title
email@blackhillscorp.com

Street Address
City, State Zip Code
P: 999.999.9999
F: 999.999.9999

December 7, 2018

Ben Ganther
Boldt
1110 N. Old World Third St.
Ste. 610
Milwaukee, WI 53203

Re: Proposed Development, Wulfsohn Road, Glenwood Springs, CO Parcel #2185-053-38-014

Dear Mr. Ben Ganther:

The above mentioned development is within the certificated service area of Black Hills Energy

Black Hills Energy has existing natural gas facilities located on or near the above mentioned project. At this time it appears that these existing facilities have adequate capacity to provide natural gas service to your project, subject to the tariffs, rules and regulations on file. Any upgrading of our facilities necessary to deliver adequate service to and within the development will be undertaken by Black Hills Energy upon completion of appropriate contractual agreements and subject to necessary governmental approvals.

Please contact us with any questions regarding this project, and with a timeline of when you would like to proceed with your project.

Sincerely,

Todd Ellsworth
Supervisor
Black Hills Energy



12/07/2018

Attn: Ben Ganther
Boldt Development
1110 N. Old World Third St.
Suite 610
Milwaukee, WI 53203
414.276.4637 | Direct Dial
414.405.6685 | Cell/Text

RE: Glenwood Meadows Lot 14

To whom it may concern:

Your request for facilities to the Glenwood Meadows Lot 14 is within CenturyLink's serving area and will be provided in accordance with all the rates and tariffs set forth by the Colorado Public Utilities Commission.

Connections to CenturyLink facilities are contingent upon the customer meeting all the requirements of the Utilities tariffs that are in effect for each requested utility service at the time the application for service is made by the customer and formally accepted by CenturyLink. Connection requirements may include provisions for necessary line extensions and/or other system improvements, and payment of all applicable system development charges, recovery agreement charges and other fees or charges applicable to the requested service.

Although CenturyLink diligently seeks to expand its facilities as necessary to meet anticipated growth, CenturyLink services are provided to eligible customers at the time of connection to the facilities on a "first come, first served" basis after acceptance of the customer's application as described above. In certain instances, our facilities and capacities may be limited. Accordingly, no specific allocations or amounts of CenturyLink facilities or supplies are reserved for service to the subject property, and no commitments are made as to the availability of CenturyLink service at future times.

Sincerely,

Jason Sharpe
Senior Field Engineer
970-328-8290



City of Glenwood Springs
101 West 8th Street
Glenwood Springs, CO 81601

December 19, 2018

Centura Ventures
Attn: Real Estate Department
9100 E. Mineral Circle
Englewood, CO 80112

RE: Can and Will Serve Letter for City of Glenwood Parcel # 218505338014

To Whom it May Concern:

The purpose of this letter is to provide confirmation that the City of Glenwood Springs can-and-will serve parcel #218505338014 (also identified as Lot 14 in Glenwood Meadows Subdivision Filing #2) with domestic water, sanitary sewer, community broadband network (CBN), and electrical services.

The new utility services are governed by, and shall conform to, the Glenwood Springs Municipal Code, the City of Glenwood Springs Engineering Design Standards, and the Rules and Regulations of the Water, Wastewater, CBN, and Electric Departments and their respective Line Extension Policies. Please note that this property is required by the City's Municipal Code to utilize the City's raw (untreated) water system for all outdoor irrigation.

The request for this letter was made by Mr. Ben Ganther, Glenwood Springs Properties, LLC / The Boldt Company, acting as an authorized representative on behalf of the parcel owner.

Sincerely,

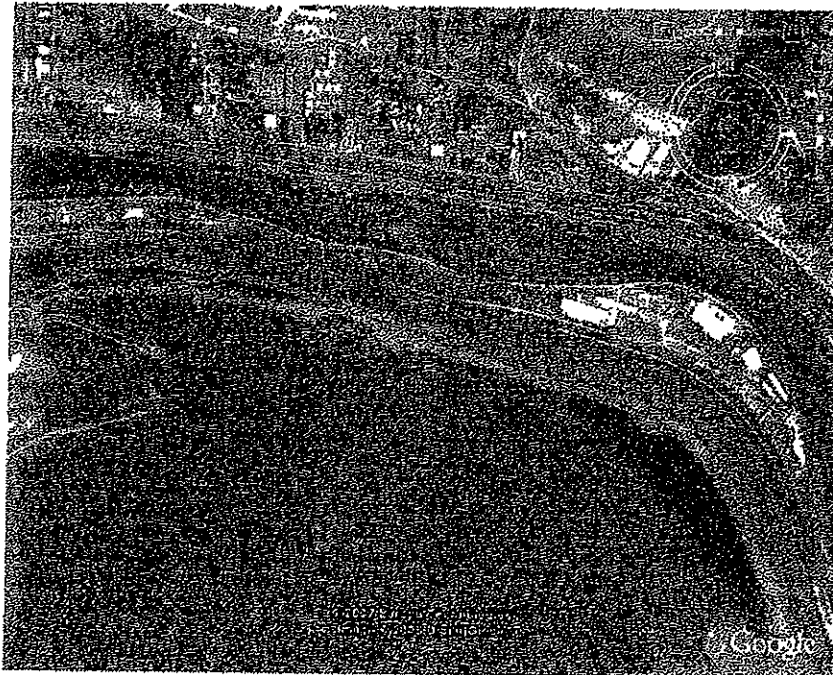
Brad Zachman
Water & Wastewater Superintendent
970-384-6388

CC:

Glenwood Springs Properties, LLC
1110 N. Old World Third St.
Suite 610
Milwaukee, WI 53203
Attn: Jacob Garro

City of Glenwood Springs:
Debra Figueroa, City Manager
Matt Langhorst, Public Works Director
Eric Arnette, Information Services Director
Doug Hazzard, Electric Superintendent

**Subsurface Exploration Program
Geotechnical and Pavement Section
Recommendations
Glenwood Meadows Lot 14
Glenwood Springs, Colorado**



Prepared for:

**Total Merchant Services
c/o: The JHM Group of Companies
76 Progress Drive
Stamford, CT 06902**

Attention: Mr. John McClutchy, Jr.

Job Number: 07-6051

January 15, 2008

GROUND

ENGINEERING CONSULTANTS, INC

41 Inverness Drive East, Englewood, CO 80112-5412 Phone (303) 289-1989 Fax (303) 289-1686 www.groundeng.com
Office Locations: Englewood • Commerce City • Loveland • Granby • Gypsum

23-08

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PURPOSE AND SCOPE OF STUDY

This report presents the results of a subsurface exploration program performed by Ground Engineering Consultants, Inc., (GROUND) to develop geotechnical recommendations for design and construction of Lot 14 of the Glenwood Meadows retail development north of Wulfsohn Road and south of Midland Avenue in western Glenwood Springs, Colorado. The study was conducted in general accordance with GROUND's Proposal No. 0711-1906, dated November 29, 2007.

Field and office investigations provided information regarding surface and subsurface conditions, including existing improvements, the lateral and vertical distribution of earth materials, and depths to bedrock and groundwater. Material samples retrieved during subsurface exploration were tested in our laboratory to assess the engineering characteristics of site earth materials and assist development of our geotechnical recommendations. Results of the field, office and laboratory studies are presented below.

This report has been prepared to summarize the data obtained and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to the construction of the proposed facilities are included.

PROPOSED CONSTRUCTION

Present plans call for construction of approximately 70,000 total square feet office building on the western portion of the site. The two-story office building is anticipated to have 1 or 2 levels of below-grade parking. There will be 7 three-story multi-family residential buildings comprising approximately 135,000 total square feet, each with a single below-grade parking level. Additionally, there will be 5 two-story commercial buildings totalling approximately 23,500 total square feet in the northern portion of the site. No below-grade levels planned at this time for the commercial buildings.

The buildings will enclose several small parking areas served by two access driveways off of Wulfsohn Road. We anticipate that landscaping is planned for areas around the individual buildings and at several locations within the parking area. Development also will include installation of underground utilities to service the proposed buildings.

Information concerning the finished floor and finished grade elevations was not available at the time this report was prepared. Given the relatively flat existing grades, it appears that only minor cuts and fills, likely of less than 5 feet in depth, will be required to construct the building pads. Excavations on the order of 15 to 20 feet are anticipated to construct the below-grade levels. Deeper excavations and replacement of the material as fill will be required if the shallow foundation and slab-on-grade floor systems are selected.

If the proposed construction differs significantly from that described above, GROUND should be notified to re-evaluate the recommendations contained herein.

SITE CONDITIONS

Surface Conditions Lot 14 was a previously rough graded parcel west of the existing Glenwood Meadows retail center. Site grading was completed at the site to obtain its current grade in 2005. The site exhibits a gentle slope to the north at approximately 2 to 3 percent and the northern margin of the site is marked by an approximately 30-foot, 2:1 (horizontal : vertical) fill slope descending northward. The ground surface supported grasses and weeds. The surficial soils consisted largely of silty sands with gravel, and numerous scattered cobbles and boulders.

The property is bounded to the south by Wulfsohn Road and to the north by Midland Avenue. The remainder of the Glenwood Meadows development is to the east, and the Roaring Fork Transit Park-n-Ride facility and the City of Glenwood Springs' maintenance facility are to the west. Uphill to the south, several ridges ascend to the cliffs overlooking the area. Below the toes of the cliffs but above the development, a series of debris flow material retention basins and berm have been constructed.

Geologic Setting The site comprised a portion of the lower slopes of a relatively recent alluvial fan complex descending from gullies in the steep, elevated terrain to the south. The alluvial fan deposits consist of debris flow deposits with subordinate fluvial (stream laid) deposits of materials derived from the Maroon Formation supporting the cliffs. Clasts of basalt derived from a lava flow overlying the Maroon Formation locally also have been identified in the alluvial fan deposits.

The alluvial fan deposits and recently placed fills are underlain by sands, gravels and cobbles interpreted to be Pleistocene river terrace deposits associated with the

Colorado River. These deposits contain a significant proportion of clasts of crystalline rock types such as granite and gneiss.

Bedrock deposits of the Middle Pennsylvanian to Lower Permian Eagle Valley Evaporite, Eagle Valley Formation and Maroon Formation underlie the surficial deposits at the site and adjacent areas. The Maroon Formation consists largely of interbedded sandstones, siltstones and claystones as exposed in the cliffs above the project. Materials of the Eagle Valley Formation are exposed on the lowest slopes south of the site, above the alluvial fan deposits. This unit is broadly similar to the Maroon Formation with a greater percentage of limestone and gypsum. The Eagle Valley Evaporite, underlying the Eagle Valley Formation consists primarily of beds of gypsum, anhydrite and halite, with interbedded sandstones, siltstones, limestones and shales.

Geologic Hazards The project site lies within an area including much of the City of Glenwood Springs and its vicinity subject to geologic hazards including landslides, debris flows and subsidence related to hydro-consolidation. Maps depicting the general distribution of these hazards are public record such as the Colorado Geological Survey (CGS) *Open-File Report 78-10*. Geologic and geotechnical hazards at the site were assessed by CTL/Thompson, Inc., in the report, *Geologic and Preliminary Geotechnical Investigation, Glenwood Meadows, Glenwood Springs, Colorado*, Job No. GS-2871, prepared for Glenwood Meadows, LLC, dated February 1, 2000. A draft review of that study and others was provided by the CGS titled, *Geologic Hazards Review for the Glenwood Meadows Development Application*, prepared for the City of Glenwood Springs Planning Office, dated October 23, 2001. The Glenwood Meadows Annexation and Development Agreement (ADA) between the City and the Developer reflected these conditions. GROUND recommends that these documents be reviewed for additional information regarding development at the site.

The recognized potential for concentrated surface run-off and debris flows to damage improvements on the subject site as well as the retail and nearby City facilities has been addressed by the debris flow retention basins and berm constructed above the subject site. Design of the debris flow retention basins and berm was provided by others.

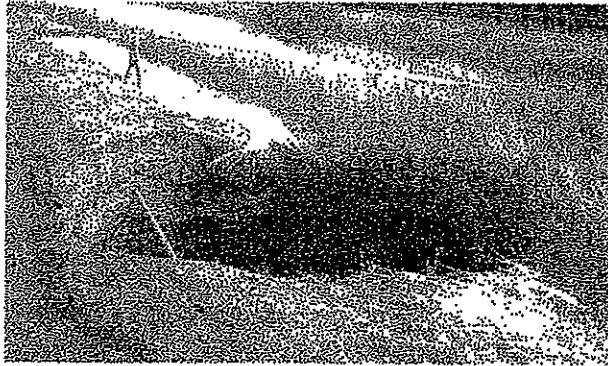
GROUND considers the potential for hydro-consolidation or "collapse" of the local soils comprising the alluvial fan complex upon wetting under a load to be the geologic hazard of principal concern at the site. Hydro-consolidation consists of a significant volume loss due to rearrangement of the constituent grains of the soil to a more compact

assemblage upon wetting under a load. Geotechnical recommendations to address hydro-consolidation are provided in this report.

(The potential for rock-fall hazard also was addressed by the February 1, 2000, CLT/Thompson report. Based on that report and as incorporated into the ADA, the subject site is not significantly exposed to potential rockfalls.)

In GROUND's opinion, with appropriate geotechnical and civil design, properly implemented during construction and effectively maintained after construction, Glenwood Meadows Lot 14 site is feasible for the proposed office building, commercial buildings and multi-family residences with regard to hydro-consolidation, flooding and debris flows.

The site also is vulnerable to the development of sinkholes from dissolution of water-soluble minerals in the bedrock underlying the site at depth. In August, 2003, for example, a sinkhole developed along the northern margin of Midland Avenue, east of the subject site, approximately downslope the Target



store. The sinkhole, which was backfilled promptly by the City of Glenwood Springs, was approximately 13 feet by 16 feet at the surface, about 11 feet in depth and about 130 cubic yards in volume. Additional information about the sinkhole can be found in an evaluation prepared for the City by Hepworth – Pawlak Geotechnical, *Subsurface Study for Evaluation of Sinkhole for Remedial Repair, Midland Avenue, North of the Community Center, Glenwood Springs, Colorado*, Job No. 103 522, dated September 8, 2003.

The geologic conditions giving rise to sinkholes, and the associated risks, are common in the Glenwood Springs area and generally greater along the Roaring Fork River to the south. Compilations of published map data suggest an average sinkhole density in the region on the order of 0.8 sinkholes per square mile. Therefore, the risk of sinkhole development at any given location such as the subject site appears relatively low. Most typically, sinkholes develop where stream terrace deposits or similar materials overlie the evaporitic bedrock. Subsurface exploration for this project included several test

holes advanced to depths of approximately 75 feet. None of the test holes encountered conditions suggesting the presence of voids beneath the site to the depths explored.

Nevertheless, the risk of sinkhole development, although apparently low, cannot be eliminated entirely. The potential for sinkholes must be accepted for development at the site, as well as for residence there. Effective surface drainage appears to reduce the risk of sinkhole development, but cannot eliminate it.

Annexation and Development Agreement We understand that the ADA for the overall Glenwood Meadows site is applicable to Lot 14. In that Agreement were established a number of geotechnical criteria for the development, based in part on recommendations from CGS regarding geologic hazards, including foundation types, measures for grading, surface drainage, and pavements, and underdrains for below-grade construction. We believe that the requirements therein have been met or exceeded by the recommendations herein.

The City also has expressed concerns that proposed improvements, particularly wet utility lines, could contribute to subsidence after project construction is completed. We understand that based on CGS comments, the City is requiring ground-penetrating radar (GPR) surveys to be performed along all utility alignments under public streets to further explore for the possible presence of sinkholes in the shallow subsurface. Therefore, GROUND recommends that the GPR surveys will be performed in general accordance with the City's requirements.

SUBSURFACE EXPLORATION

Subsurface exploration for the project was conducted in December, 2007 and January 2008. A total of 21 test holes were drilled with a truck/track-mounted, continuous flight, power auger rig to evaluate subsurface conditions, including depths to groundwater and bedrock, as well as to retrieve samples for laboratory testing and analysis. Of these, 14 test holes were drilled in the approximate building footprints, generally to depths of about 25 to 40 feet; several test holes, however were advanced to depths of approximately 75 feet. An additional 7 shallower test holes were advanced in the areas proposed for parking and driveways. A GROUND engineer directed subsurface exploration, logged the test holes in the field and prepared the samples for transport to our laboratory.

Relatively undisturbed samples of the subsurface materials were taken with a 2-inch I.D. "California" -type liner sampler. The sampler was driven into the substrata with blows from a 140-pound hammer falling 30 inches. This procedure is similar to the Standard Penetration Test described by ASTM Method D1586. Penetration resistance values (blows per distance driven, typically 12 inches), when properly evaluated, indicate the relative density or consistency of soils and bedrock. A composite, disturbed (bulk) sample of the shallow soils in the pavement areas was collected from the auger returns. Depths at which the driven samples were taken, and associated penetration resistance values are shown on the test hole logs.

The approximate locations of the test holes are shown in Figure 1. Logs of the exploratory test holes are presented on Figures 2 through 6. Explanatory notes and a legend are provided on Figure 7.

LABORATORY TESTING

Samples retrieved from our test holes were examined and visually classified in the laboratory by the project engineer. Laboratory testing of soil samples obtained from the subject site included standard property tests, such as natural moisture contents, dry unit weights, grain size analyses and liquid and plastic limits. Swell-consolidation, water-soluble sulfate content, pH and resistivity tests were performed on selected samples, as well. A resilient modulus test was performed on the composite sample of materials from the areas to be paved.

Laboratory tests were performed in general accordance with applicable ASTM and AASHTO protocols. Data from the laboratory testing program are summarized in Table 1. Results of the swell-consolidation testing are plotted on Figures 9 through 17.

SUBSURFACE CONDITIONS

The earth materials encountered in the test holes, in general, of sandy fill soils extending to depths of a few feet to approximately 35 feet. (Delineating the complete lateral and vertical extents of existing fills on the project site was beyond our present scope of services for this project.) The fills were underlain by interbedded native silty to clayey sands and sandy silts with gravel, boulders and cobbles, and local lenses of clays. These soils are interpreted to be alluvial fan deposits. The native and fill soils contained significant fractions of cobbles and boulders. Based on other drilling by GROUND within the overall Glenwood Meadows site, it is anticipated that dense beds of

cobbles and boulders underlay the alluvial fan materials below about 80 to 95 feet, interpreted to be Quaternary alluvial (fluvial) materials deposited by Colorado River prior to burial beneath the alluvial fan deposits.

Bedrock was not encountered to the depths explored. Neither was groundwater encountered in the test holes at the time of subsurface exploration. However, groundwater levels can fluctuate, in response to annual and longer-term cycles of precipitation, irrigation, surface drainage and land use, the development and drainage of transient, perched water conditions, and other factors.

Fill consisted of silty to clayey sands to sandy silts. Gravel, boulders and cobbles were encountered. They were moist, low plastic, medium dense to dense and red in color.

Native Sands were clean to silty or clayey to gravelly. Cobbles and boulders were encountered, as well as lenses of sandy clays, sandy silts and relatively clean sands and gravels. They were fine to medium grained, dry to slightly moist, non-plastic to low plastic, loose to medium dense, and red in color.

Swell-Consolidation Testing Consolidations ranging from about 0.3 to 6.1 percent were measured in samples of the alluvial fan soils upon wetting under a 1,000 psf surcharge load. (See Table 1.)

SEISMIC CLASSIFICATION

No known active faults are in the immediate project vicinity. The closest documented potentially active (seismogenic) fault to the site is an unnamed series of relatively short, northwest-trending faults approximately 2½ to 3 miles to the southwest of the site (Kirkham, R.M., and W. P. Rogers, *Earthquake Potential in Colorado, A Preliminary Evaluation*, Colorado Geological Survey, Bulletin 43, dated 1981; *Preliminary Quaternary Fault and Fold Database, and Map Server*, Colorado Geological Survey, <http://geosurvey.state.co.us/Default.aspx?tabid=453>). These faults are shown as late Quaternary in age (demonstrable timing of last offset across the fault), but not Holocene (movement during the last 11,000 years ±). The risk of these faults giving rise to damaging, earthquake-induced ground motions at the site is considered to be low given their short length and the moderate, previously recorded, seismic magnitudes in the area.

Compared with other regions of Colorado, recorded earthquake frequency in the project area is relatively low; Kirkham and Rogers (1981) depict 2 historical earthquake epicenters of moderate magnitude in the Glenwood Springs area. The project area falls within Seismic Performance Category A based on AASHTO guidelines, and is considered to have a low probability for large, damaging earthquakes.

GROUND considers the site to fall within the parameters of a Seismic Site Class D site, in accordance with 2006 IBC. It should be noted that this classification is an estimate, based on the conditions encountered during drilling, our laboratory test data, and GROUND's experience in similar soils. If a quantitative assessment of the classification is needed, GROUND can perform down-hole shear wave velocity testing. A proposal for this work can be provided upon request.

GEOTECHNICAL CONSIDERATIONS FOR DESIGN

Geotechnical Risk Our data indicate that the native soils underlying the site are vulnerable to hydro-consolidation or "collapse." Hydro-consolidation consists of a significant volume loss due to rearrangement of the constituent grains of the soil to a more compact structure upon wetting under a surcharge load. The data obtained for this study suggested moderate potentials for post-construction settlement of structures constructed on the soils encountered at this site. Soils subject to "collapse" are generally stable with regard to their moisture-volume relationships so long as their moisture contents are kept unchanged. Post-construction wetting of "collapsible" soils gives rise to settlement and resultant damages. Pavements, utilities, and sidewalks, etc., all can be affected, in addition to the buildings. The actual extent and distribution of post-construction settlement realized at a given location (and the nature and degree of resultant damages) will depend on a variety of factors. These factors include the spatial distribution of the hydro-consolidation potentials in the underlying soils, the type and design of the structure supported on them, structural loads, and the depth and lateral extent to which the soils become wetted after construction, etc. Because of the number and variability of these factors, the necessarily limited data set by which the geotechnical factors can be estimated, the variety of means by which estimates of post-construction settlement can be made, and the inherent assumptions involved, estimates of future settlement will tend to range widely in magnitude.

Various quantitative and semi-quantitative methods are used by geotechnical engineers in Colorado to estimate post-construction settlements of structures, pavements, etc.,

constructed on "collapsible" soils as a step toward development of recommendations for foundations, remedial earthworks, etc. Those typically used are based on practical engineering experience and judgment using combinations of measured values of soil moisture content, density and plasticity, one-dimensional swell/consolidation, and/or soil suction. The recommendations and criteria provided in this report were based on the data presented herein, and our experience in the general project area with similar structures, and our engineering judgment with regard to the applicability of the data and methods of forecasting future performance. A variety of engineering parameters were considered as indicators of potential future soil movements. Our recommendations were based on our judgment of "likely movement potentials," (i.e., the amount of movement likely to be realized if site drainage is generally effective, estimated to a reasonable degree of engineering certainty) as well as our assumptions about the Owner's willingness to accept geotechnical risk. "Maximum possible" movement estimates necessarily will be larger than those presented herein. They also have a significantly lower likelihood of being realized in our opinion, and generally require more expensive measures to address. We encourage the Owner or prospective future owners, upon receipt of this report, however, to discuss these risks and the geotechnical alternatives with us.

Anticipated 'Depth of Wetting' At any point in the design life of a structure, the vertical and lateral extents of future wetting of the underlying "collapsible" soils will exert a significant influence on the extent and distribution of future settlement. Professional experience and opinions differ with regard to depths to which significant, post-construction, soil moisture changes take place. Differing assumptions for this future "depth of wetting" at a site will give rise to differing estimates of potential, post-construction heave. Movement estimates based on much deeper than typically estimated depths of wetting will be larger than those based on more typically observed depths.

Engineering consulting and design practice necessarily involves weighing the risks inherent in a given design approach against the construction and maintenance costs associated with reducing those risks. The Owner (and subsequent prospective future owners) must, therefore, understand the risks and remedial approaches presented in this report and the risk-cost trade-offs addressed by the Civil Engineer and Structural Engineer in order to direct his design team to the portion of the Higher Cost / Lower Risk – Lower Cost / Higher Risk spectrum in which this project should be (or was) designed. If the Owner or a prospective future owner does not understand these risks, it is critical

that he request additional information or clarification so that his expectations reasonably can be met.

As noted above, the "depth of wetting" forecast for a given site strongly affects the anticipated performance of structures placed there. At this site, GROUND estimated a depth of wetting of 18 feet, a depth that is equal to or greater than the "depth of wetting" found at about 62 percent of the sites studied by Walsh and others (2006)¹ in the Denver metropolitan area and appears reasonable for this site based on our experience in on the Colorado Western Slope. A "depth of wetting" of 18 feet is appropriately conservative in our opinion for this project. Clearly, however, there is a potential for this "depth of wetting" to be exceeded. And, if a greater depth of wetting were considered – other parameters being equal – then a greater estimate of post-construction movement would result. "Depths of wetting" of 30, 40 or 70 feet or more have been considered (e.g., Chao and others, 2006)² and have been encountered locally in the field. These cases, however, generally are in unusual geologic conditions such as the "Designated Dipping Bedrock Area" as recognized by Jefferson County, Colorado, or identified forensically in unusual circumstances such as a pipe leak that has remained un-repaired for an extended period. In more typical geologic settings, such deep "depths of wetting" are considered only rarely in engineering consulting practice in this area, however. If the Owner prefers a more conservative (or less conservative) "depth of wetting" to be used to develop geotechnical recommendations, GROUND should be contacted to revise geotechnical criteria herein.

Likely Post-Construction Movements Utilizing the above assumptions, data obtained for this study, and our experience on other projects in the vicinity, our estimates indicate potential likely post-construction movements on the order of 6 to 8 inches where building elements are supported directly on native earth materials that become wetted following construction to the depth described. Movements of this magnitude can cause severe cosmetic and/or structural distress to the proposed buildings. (These same general potentials for post-construction movement and damage also apply to project pavements, hardscaping, piping, and all other improvements in contact with the site soils where subject to post-construction wetting.)

¹ Walsh, K.D., C.A. Colby, W.N. Houston and S.A. Houston, 2006, *Evaluation of Changes to Soil Suction Resulting from Residential Development, Unsaturated Soils 2006*, American Society of Civil Engineers, Special Publication No. 147, pp. 203 – 212.

² Chao, K-C, D.D. Overton, and J.D. Nelson, 2006, *The Effects of Site Conditions on the Predicted Time Rate of Heave, Unsaturated Soils 2006*, American Society of Civil Engineers, Special Publication No. 147, pp. 2086 – 2097.

General Foundation Types At the subject site, several types of foundation systems, in conjunction with differing extents of remedial earthworks, etc., can be employed to support the proposed buildings on the soils and bedrock encountered in the test holes. Each combination entails a different degree of risk of post-construction building movements. These range from utilizing shallow spread footings and slab-on-grade concrete floors bearing directly on the native soils (entailing the greatest risk) to supporting the structures, including floors, on deep, driven pile foundations bearing in the underlying alluvial cobbles and boulders at depths of on the order of 80 feet or more (entailing the least risk).

Lower movement tolerances are typically associated with residential buildings and if placed on spread footings and slab-on-grade the allowable movement tolerance would likely be exceeded. Therefore, GROUND recommends that the proposed residential buildings be supported on driven pile foundation systems and providing it with structural floors similarly supported as the most positive way to minimize post-construction settlements. We also recommend use of a driven pile foundation system and a structural floor for the office building where a below grade levels planned. We anticipate that construction of the deep fill section recommended for use of shallow foundations and floor system on deep fill section may not be feasible, economically.

We assume, however, that 80+ -foot pile foundations and a structural floor may not be practical economically for the other commercial buildings at the subject project. Therefore, in the absence of direction otherwise from Total Merchant Services or the Owner, we have assumed that the Owner prefers to use conventional, shallow foundations and a slab-on-grade concrete floor for the commercial buildings on this project. The geotechnical criteria provided in the *Foundation Systems and Floor Systems* section of this report were developed accordingly to reduce damage resulting from movement of the foundation soils. If this approach is selected, the Owner must understand that foundation and/or floor slab movements will result, with associated damages. Shallow foundations and slab-on-grade floors together with excavation of the underlying soils and replacement with backfill with less potential for settlement have been used in the Denver metropolitan area with varying degrees of success. If the alternative criteria are implemented effectively in design and construction, and site drainage is maintained effectively, likely settlements in the soils supporting the footings and slab will be on the order of 1½ inches, with similar differential movements over a span of about 50 feet. GROUND is available to meet, however, to discuss the risks

and remedial approaches presented in this report, as well as other possible design approaches, upon request.

Irrespective of the foundation system and floor system selected by the Owner, some risk of post-construction building and floor movements will remain, even after effective implementation of the recommendations in this report. The Owner and prospective future owners should understand these risks, as well as the site maintenance measures that are necessary to manage them. Other elements of the proposed improvements on this site (hardscaping, pavements, etc.) will be underlain by expansive earth materials, and likely will be damaged. Owner tolerances for movement and distress to these appurtenant improvements typically is greater than for buildings. Nevertheless, periodic maintenance will be required. To achieve performance similar to that of the building floors, similar foundation measures will be required. We recommend that the Owner and prospective future owners familiarize themselves with the measures presented in Noe and others (1997)³ and implement them at this site. This booklet is available from the Colorado Geological Survey in Denver, Colorado, and can be purchased from their website. (www.geosurvey.state.co.us). Although written for residential construction on expansive soils, the site drainage concepts and recommendations outlined therein are generally applicable to building sites on collapsible soils, as well.

GROUND recommends consideration of a supplemental drilling program for structures not supported on deep foundations in order to provide additional information regarding the potential for severe settlements. We suggest advancing test holes on approximately 30-foot centers with an air percussion rig or other, rapid-drilling equipment, to a depth on the order of 50 to 60 feet beneath each building supported on shallow foundations. Such a drilling program would provide direct evidence of voids beneath those support locations, if present, and allow those voids to be collapsed or filled prior to building construction.

On-Going Maintenance Some risk of post-construction building and floor slab movements will remain, however, even after effective implementation of the recommendations in this report. The Owner and prospective tenants / residents should understand these risks, as well as the site maintenance measures that should be performed to manage them. Geotechnical parameters for design and construction of shallow, spread footing foundations for the proposed buildings, as well as

³ Noe, D.C., C.L. Jochim and W.P. Rogers, 1997, *A Guide to Swelling Soils for Colorado Homebuyers and Homeowners*, Colorado Geological Survey, Special Publication 43.

recommendations for remedial earthworks, drainage, etc., are provided in subsequent sections of this report. These measures also will be beneficial with regard to potential heave of clayey soils encountered locally in the test holes. GROUND can provide geotechnical recommendations and parameters for other types of foundation systems upon request.

FOUNDATION SYSTEMS

Shallow Foundation Systems for Commercial Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, it is GROUND's opinion that the proposed commercial buildings, if determined to be feasible, can be supported on conventional, shallow foundation systems bearing on a section of properly moisture-conditioned and compacted fill provided that the Owner is aware of the risks inherent in construction on collapsible soils, and that the buildings are designed accordingly.

The criteria presented below may be observed for spread footing foundation systems. The construction details should be considered when preparing project documents.

- 1) Footings should bear on 10 or more feet of properly compacted fill.
- 2) The thickness of the fill section should be taken from the lowest foundation element or the bottom of the slab + gravel layer system, respectively. (If the gravel layer is not installed, the fill section should be correspondingly thickened.)

The existing soils and fill soils should be removed to a sufficient depth beneath footing (and slab) bearing elevations to accommodate placement of a new fill section uniformly beneath the building, in addition to scarification and re-compaction of the underlying 8 to 12 inches of material.

Excavation and replacement to the full, recommended depth should extend at least 12 feet beyond the building perimeter.

Based on the data obtained from our test holes, varying depths of existing fill were encountered, however a uniform fill thickness of at least 10 feet should be placed below the footing bearing elevations. Therefore, the existing fill should not be considered as part of the fill recommended fill section below the footings.

Recommendations for placement and compaction of fill soils are provided in the *Project Earthworks* section of this report. As discussed in that section, site soils free of debris are suitable, in general, for use as compacted fill.

The Contractor should provide surveyed elevations of the bottoms of the excavations beneath the building verifying that the remedial excavation was advanced to a sufficient depth.

- 3) Footing excavation bottoms may expose debris, loose or wet materials, organic or otherwise deleterious materials. Firm materials may be disturbed by the excavation process. All such unsuitable materials should be excavated and replaced with properly compacted fill.
- 4) Footings bearing on 10 or more feet of properly compacted fill may be designed for an allowable soil bearing pressure (Q) of 2,500 psf under drained conditions. This value may be increased by $\frac{1}{3}$ for transient loads such as wind or seismic loading.

Based on this allowable bearing capacity, we anticipate direct compression of the foundation soils on the order of 1 inch. For other estimated settlements, allowable bearing pressure values can be obtained from Figure 8.

The allowable bearing capacity provided above is based on the assumption of well-drained conditions. If foundation soils become wet, the effective bearing capacity could be reduced and larger post-construction settlements than those estimated herein may result. In addition, the risk of hydro-consolidation of the underlying native soils underlying the fill prism will be increased.

- 5) In order to reduce differential settlements between footings or along continuous footings, footing loads should be as uniform as possible. Differentially loaded footings will settle differentially.

The Contractor should take care to construct fill section beneath the building of uniform depth and composition to reduce differential post-construction building, slab and flatwork movements. A differential fill beneath the building will tend to increase differential settlements.

- 6) Spread footings should have a minimum footing lateral dimension of 16 or more inches for linear strip footings and a minimum lateral dimension of 24 or more

inches for isolated pad footings. Actual footing dimensions, however, should be determined by the Structural Engineer, based on the design loads.

- 7) Footings should be provided with adequate soil cover above their bearing elevation for frost protection. Footings should be placed at a bearing elevation 3.5 or more feet below the lowest adjacent exterior finish grades in un-heated areas. In heated interior areas, footings should bear at least 1.5 feet below lowest adjacent finish grades.
- 8) Continuous foundation walls should be reinforced top and bottom to span an unsupported length of at least 10 feet.
- 9) The lateral resistance of spread footings will be developed as sliding resistance of the footing bottoms on the foundation materials. Sliding friction at the bottom of footings may be taken as 0.35 times the vertical dead load.
- 10) Compacted fill placed against the sides of the footings should be compacted to at least **96 percent** relative compaction in accordance with the recommendations in the *Project Earthworks* section of this report.
- 11) Care should be taken when excavating the foundation to avoid disturbing the supporting materials. Hand excavation or careful backhoe soil removal may be required in excavating the last few inches.
- 12) Foundation soils may be disturbed or deform excessively under the wheel loads of heavy construction vehicles as the excavations approach footing levels. Construction equipment should be as light as possible to limit development of this condition. The use of track-mounted vehicles is recommended since they exert lower contact pressures. The movement of vehicles over proposed foundation areas should be restricted.
- 13) All footing areas should be compacted with a vibratory plate compactor prior to placement of concrete.

The Geotechnical Engineer should be retained to observe and test all footing excavations prior to placement of reinforcing steel or concrete.

Deep Foundation Systems for the Residential and Office Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, it is GROUND's opinion that the proposed residential building should be supported on deep foundation systems bearing in the river terrace gravels, cobbles and boulders underlying the site at depths of 75 or more feet below existing grades. Although driven pile foundation systems will not eliminate the risk of post-construction building movement, if the recommendations below are followed, the likelihood of acceptable building performance will be well within the local industry standards for construction of a driven pile foundation system on soils and bedrock of this nature.

The design criteria below should be followed for design and construction of driven, steel, H-pile foundations for the residential buildings. We assume that HP 12 x 74 or 14 x 89 piles will be used for driven pile foundations. The construction details should be considered when preparing project documents.

- 1) The pile should consist of a heavy steel H-section. The pile tip should be reinforced with a commercial, heavy duty, pile tip.
- 2) The maximum pile load should not exceed a maximum service stress of 12,000 psi based on the pile cross-sectional area.
- 3) We anticipate that piles will be driven to depths of about 80 to 95 feet below existing grades at the time of preparation of this report. Locally, lower tip depths may be necessary.
- 4) Based on the dominantly granular nature of the site alluvial fan soils, we anticipate that post-installation down-drag on the piles will be negligible due to the densification of the soils surrounding each pile from the driving efforts. We anticipate that subsequent soil adjustments will be realized rapidly. Nevertheless, GROUND recommends re-striking of the piles to evaluate their capacity at least 24 hours after (initial) driving has been completed.
- 5) Closely spaced groups of piles required to support concentrated loads will require an appropriate reduction of the estimated bearing capacity based on the effective envelope area of the pile group. This reduction can be avoided by spacing piles apart a distance of at least 3 diameters, center to center. Pile groups with spacings less than 3 diameters center to center should be studied

on an individual basis to determine the appropriate reduction for both lateral and axial capacities.

- 6) Piles may be designed to resist lateral loads taking a modulus of horizontal subgrade reaction of 140 pci to be characteristic of the native alluvial fan and fill soils below a depth of 6 feet, based on adjacent finished grade. A modulus of horizontal subgrade reaction of 225 pci may be assumed in the alluvial river terrace deposits. Resistance to lateral loads should be neglected in fill and/or native soils shallower than 6 feet.

We understand that the building pads will be wide enough so that any loads from relaxation of the shallow soils or downslope creep will not affect the piles. Should the buildings be constructed in a "walk-out" configuration, however, these loads should be evaluated and accounted for in the wall and foundation designs.

- 7) Lateral resistance to horizontal forces also may be resisted by battered piles. It is normal to assume a battered pile can resist the same axial load as a vertical pile of the same type and size driven to the same depth. The vertical and horizontal components of the load will depend on the batter inclinations. Batters should not exceed 1:4 (horizontal : vertical).
- 8) Uplift capacity of piles should be limited to 25 percent of the indicated vertical load capacities
- 9) We recommend that the pile driving hammer should develop a minimum of 42,000 foot-pounds of energy per blow for HP 12 x 74 piles, and a minimum of 52,000 foot pounds of energy per blow for the HP 14 x 89's.

After the actual pile type and proposed hammer have been selected, the Geotechnical Engineer should perform a Wave analysis to determine if the driving hammer is sized adequately for the type of pile selected and the soils and bedrock materials into which the piles are driven.

A Geotechnical Engineer should be retained to evaluate necessary minimum embedment depths based on the structural loadings for the piles. The Geotechnical Engineer should observe all pile driving operations. We recommend that at the start of pile installation for each building, the Geotechnical Engineer perform pile dynamic

testing. This testing should be performed in order to a) assess whether piles are being over-stressed relative to the maximum service stress of 12,000 psi recommended above, and b) develop virtual refusal criteria for bedrock penetration based on the design capacity of the piles. Dynamic pile testing should be performed by means of a Pile Driving Analyzer (PDA) to determine the virtual refusal criteria. Lateral loading tests also should be performed at the start of pile installation.

The test holes drilled for this evaluation were advanced to the depths indicated on the test hole logs by means of a conventional, truck-mounted, drilling rig using 4-inch diameter, solid-stem, flight auger equipment. Nevertheless, because of the cobbles and boulders in the site soils, the Contractor should anticipate some difficulties in advancing the piles, and be prepared to work in these conditions. We anticipate the need for local pre-drilling of pile locations and/or splitting of boulders to advance the piles to the anticipated depths.

Additional pile footage should be included in project planning to allow for additional piles locally where offsets were required due to potential obstructions to pile driving in the landfill materials or damage to piles.

Where a pile cannot be advanced to at least the approximate, anticipated tip depths, it should be evaluated with regard to its capacity by the Geotechnical Engineer and the Structural Engineer.

PARTIAL BASEMENTS / BELOW GRADE LEVELS

Partial basements or any otherwise below grade levels (loading docks, garden-levels, etc.) can result in differential settlement between the portion of the building that is founded near the final surface grade (no basement level) and that which is founded below grade, specifically if the portion of the building directly adjacent to the below grade level is founded on backfill material. The backfill material may exhibit settlement due to compression of the foundation that exceeds the magnitudes provided in Figure 8.

Therefore, the Structural Engineer and the Contractor must carefully schedule the construction of the building such that the footing bearing soils are not disturbed or vulnerable to movement associated with settlement of the below grade wall backfill. This most often occurs when the below grade walls are backfilled to lower compaction standards because of structural concerns regarding wall deformation (i.e. the walls are not braced with the first floor beams, girders, decking, etc.).

In addition, foundation elements supporting the portion of the building not located above a below grade level are sometimes designed for less bearing capacity than those located under the below grade level. As shown in Figure 8, different loads may result in differential settlement.

In no case should the subgrade for future foundations or existing foundation elements be undermined.

FLOOR SYSTEMS

Slab-on-Grade Floors for the Commercial Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, there is a potential for post-construction movements of slab-on-grade floor systems even where placed on a relatively deep fill section. Therefore, if the Owner understands and accepts the risk of post-construction slab movements, the remedial earthworks and other parameters provided below will tend to reduce slab movements, make them more uniform and reduce potential distress that can result from settlement of foundation materials.

Post-construction slab movements are directly related to changes in moisture contents to the underlying soils after construction is completed. If slab-on-grade construction is used in accordance with the following criteria, potential for slab movement will not be eliminated, but may tend to make movements more uniform and will reduce damages where movements do occur.

- 1) Floor slabs should bear on 12 or more feet of properly moisture-conditioned and compacted fill soils.

The existing soils should be removed to a sufficient depth beneath slab bearing elevation to accommodate construction of the above fill section, in addition to scarification and re-compaction of the underlying 8 to 12 inches of material. The thickness of the fill section should be taken from the bottom of the slab + gravel layer system. (Taking the slab+gravel system to be approximately 1 foot in thickness and assuming the footings will bear at 3 feet below existing grades, a 12-foot fill section beneath the floor system and 10-foot fill section beneath the footings should yield a nearly uniform excavation bottom elevation. If the gravel layer is not installed, the fill section should be correspondingly thickened.)

Excavation and replacement to the full recommended depth should extend laterally at least 12 feet beyond each building perimeter.

Recommendations for placement and compaction of fill soils are provided in the *Project Earthworks* section of this report. As discussed in that section, site soils free of debris are suitable, in general, for use as compacted fill.

The Contractor should provide surveyed elevations of the bottoms of the excavations beneath the building verifying that the remedial excavation was advanced to a sufficient depth.

The Contractor should take care to construct a fill section of uniform depth and composition to reduce differential post-construction building, slab and flatwork movements. A differential fill beneath the building will tend to increase differential settlements.

Based on the data obtained from our test holes, varying depths of existing fill were encountered, however a uniform fill thickness of at least 12 feet should be placed below the floor slabs. Therefore, the existing fill should not be considered as part of the recommended fill section below the floor slabs.

- 2) An allowable vertical soil modulus (K_v) of 45 pci may be used for design of concrete slabs bearing on a properly prepared subgrade.
- 3) A Geotechnical Engineer should be retained to observe the prepared surface on which the floor slab will be cast prior to placement of reinforcement. Exposed loose, soft or otherwise unsuitable materials should be excavated and replaced with properly compacted fill, placed in accordance with the recommendations in the *Project Earthworks* section of this report.
- 4) The floor slab should be separated from all bearing walls and columns with slip joints that allow unrestrained vertical movement.

Joints should be observed periodically, particularly during the first several years after construction. Slab movement can cause previously free-slipping joints to bind. Measures should be taken to assure that slab isolation is maintained in order to reduce the likelihood of damage to walls and other interior improvements

- 5) Interior partitions resting on the floor slab should be provided with slip joints so that if the slabs move, the movement cannot be transmitted to the upper structure. This detail is also important for wallboards and door frames. A slip joint that will allow 2 or more inches of vertical movement is recommended. If slip joints are placed at the tops of walls, in the event that the floor slabs move, it is likely that the wall will show signs of distress, especially where the floors meet the exterior wall.
- 6) A concrete slab-on-grade should be constructed and cured in accordance with applicable industry standards and provided with properly designed and constructed control joints. ACI, AASHTO and other industry groups provide guidelines for proper design and construction of concrete slabs-on-grade, and associated jointing. The design and construction of such joints should account for cracking resulting from concrete shrinkage, curling, tension and applied loads, as well as other factors related to the proposed slab use. Joint layout based on slab design may require more frequent, additional or deeper joints than typical industry minimums, and should reflect the configuration and proposed use of the slab. Particular attention in slab joint design should be given to areas where slabs exhibit interior corners or curves, e.g., at column block-outs or reentrant corners, and slabs with high length to width ratios, significant slopes, thickness transitions, high traffic loads, or other unique features. The improper placement or construction of control joints will increase the potential for slab cracking.
- 7) Floor slabs should be adequately reinforced. Recommendations based on structural considerations for slab thickness, jointing, and steel reinforcement in floor slabs should be developed by the Structural Engineer.
- 8) All plumbing lines should be carefully tested before operation. Where plumbing lines enter through the floor, a positive bond break should be provided. Flexible connections allowing 2 or more inches of vertical movement or more should be provided for slab-bearing mechanical equipment and the connection should be adjustable and observed periodically.
- 9) Moisture can be introduced into a slab subgrade during construction and additional moisture will be released from the slab concrete as it cures. GROUND recommends placement of a properly compacted layer of free-draining gravel, 4

or more inches in thickness, beneath the slabs. This layer will help distribute floor slab loadings, ease construction, reduce capillary moisture rise and aid in drainage. The free-draining gravel should contain less than 5 percent material passing the No. 200 Sieve, more than 50 percent retained on the No. 4 Sieve, and a maximum particle size of 2 inches.

The capillary break and the drainage space provided by the gravel layer also may reduce the potential for excessive water vapor fluxes from the slab after construction as mix water is released from the concrete. We understand, however, that professional experience and opinion differ with regard to inclusion of a free-draining gravel layer beneath slab-on-grade floors. If these issues are understood by the Owner and appropriate measures are implemented to address potential concerns including slab curling and moisture fluxes, then the gravel layer may be deleted.

- 10) A vapor barrier beneath a building floor slab can be beneficial with regard to reducing exterior moisture moving into the building, but can retard downward drainage of construction moisture. Uneven moisture release can result in slab curling. Elevated vapor fluxes can be detrimental to the adhesion and performance of many floor coverings and may exceed various flooring manufacturers' usage criteria.

Therefore, in light of the several, potentially conflicting effects of the use vapor-barriers, the Owner and the Architect and/or Flooring Contractor should weigh the performance of the slab and appropriate flooring products in light of the intended building use, etc., during the floor system design process and the selection of flooring materials. Use of a plastic vapor-barrier membrane may be appropriate for some buildings or building areas and not for others.

Structural Floors for the Residential and Office Buildings The residential and office buildings should be provided with structural floors should be supported on grade beams and H-piles in the same manner as the building structure. Requirements for the number and position of additional H-piles to support the floors will depend upon the span, design load, and structural design, and should be developed by the Structural Engineer. Geotechnical recommendations for design and installation of the driven H-piles are provided in the *Building Foundations* section of this report.

Structural floors should be constructed to span above a well-ventilated crawl space. The crawl space should be adequate to allow access and maintenance to utility piping. Piping connections through the floor should allow for differential movement between the piping and the floor system. If a wooden structural floor system is used, particular care should be taken to design and maintain the under-floor ventilation systems in order to reduce potential deterioration of the wooden structural members. A minimum 10-mil unreinforced polyethylene vapor-retarder (a plastic sheet material) should be considered for installation below all structurally supported below-grade floors and should be properly attached/sealed to foundation walls. The plastic sheeting should not be attached to horizontal surfaces such that condensate might drain to wood or corrodible metal surfaces.

New buildings generally lack ventilation due primarily to systematic efforts to construct airtight, energy-efficient structures. Therefore, areas such as crawl spaces beneath structural floors are typically areas of elevated humidity which never completely dry. This condition can be aggravated in some locations by shallow groundwater or a perched groundwater condition, which can result in, saturated soils within close proximity of finished building pad grades. Persistently warm, humid conditions in the presence of cellulose, which is the base material found in many typical construction products, creates an ideal environment for the growth of fungi, molds, and mildew. Published data suggest links between molds and negative health affects. Therefore, GROUND recommends that crawl spaces beneath structural floors be provided with adequate, positive active ventilation systems or other active mechanisms such as specially designed HVAC systems (as well as properly constructed and maintained underdrains) to reduce the potential for mold, fungus and mildew growth. Crawl spaces should be inspected periodically so that remedial measures can be taken in a timely manner, should mold, fungus or mildew be present and require removal.

The Owner must be willing to accept the risks of potential mold, fungus, and mildew growth when electing to utilize a structural floor system. Additionally, the Contractor is solely responsible for the construction means and methods, and any observation or testing performed by a representative of a Geotechnical Engineer during construction does not relieve the Contractor of that responsibility.

Mold Growth Areas/Conditions for Growth for Structural Floors:

1. Water damaged building materials or high moisture/humidity areas where cellulose-containing materials are used:
 - Wallboard/sheetrock
 - MDF/OSB/Plywood
 - Fibrous Ceiling Tiles
 - Paper-backed Insulation
 - Jute-backed carpet
 - Hardwood Flooring
2. Condensation inside buildings from pipes, baths, heaters, and dryer vents
3. Relative humidity greater than 55%
4. Temperatures of 36 to 104 °F.
5. "Wet" areas that do not dry out after 24 hours.

Mold does not require a light source in order to grow and can grow inside walls, behind tubs/showers, under carpet and flooring undetected.

All plumbing lines should be carefully tested before operation. Where utility lines enter through the floor, positive bond breaks should be provided. Utility lines can be displaced by soils movements which are not reflected in the building. Design and installation of associated fixtures should accommodate this potential differential movement, which could be on the order of 4 inches or more.

Crawl spaces typically are vulnerable to moisture accumulation. Proper installation and maintenance of the underdrains as recommended in the *Underdrain System* section of this report will assist drainage of free water and assist the ventilation system reduce crawl space moisture.

FOUNDATION WALLS

Foundation walls that are laterally supported and can be expected to undergo only a limited amount of deflection, i.e., an "at-rest" condition, should be designed to resist lateral earth pressures computed taking an equivalent fluid unit weight of 55 pcf to be

characteristic of the backfill soils for a horizontal backfill surface if imported, select, granular, backfill is placed the walls and compacted properly. The at-rest lateral earth pressures should be computed taking an at-rest equivalent fluid pressure of 67 pcf to be characteristic of the backfill soils where on-site materials are used as backfill, again for a horizontal backfill surface.

Select, granular materials imported for use as wall backfill should meet the criteria for CDOT Class 1 Structure Backfill as tabulated below. All imported soils should be tested and approved by the Geotechnical Engineer prior to transport to the site.

CDOT CLASS 1 STRUCTURE BACKFILL

Sieve Size or Parameter	Acceptable Range
2-inch	100% passing
No. 4	30% to 100% passing
No. 50	10% to 60% passing
No. 200	5% to 20% passing
Liquid Limit	≤ 35
Plasticity Index	≤ 6

GROUND suggests use of select, granular, backfill behind the walls to achieve lower lateral earth pressures. To realize the lower equivalent fluid unit weight, structural fill should be placed behind the wall to a minimum distance equal or greater than half of the wall height. Where select, granular, backfill is used, the upper 1-foot of the wall backfill should be a relatively low permeability soil or otherwise protected to reduce surface water infiltration into the backfill.

The 'at rest' loads recommended above are for well-drained conditions. The additional loading of hydrostatic loads if sufficient drainage is not provided, and loads from traffic, stockpiled materials, etc., should be included in foundation wall design.

Backfill soils should be properly moisture-conditioned and compacted in accordance with the recommendations in the *Project Earthworks* section of this report. The Contractor should take care not to over-compact the backfills, which could result in excessive lateral pressures on the walls.

A Geotechnical Engineer should be retained to observe the exposed excavation prior to placement of backfill, observe earthwork operations, and test the soils.

Some settlement of wall backfills will occur even where the material was placed correctly. This settlement likely will be differential, increasing with depth of fill. Where shallowly founded structures and pavements must be placed on backfilled zones, the associated risks should be understood by the Owner. Structural design, pipe connections, etc., should take into account backfill settlement, including differential movements from settlements and/or heave of the foundation wall backfill soils. A Geotechnical Engineer should be retained to provide recommendations for founding improvements in such areas.

Passive pressure against the sides of wall footings bearing against firm native soils or properly compacted backfill can be computed taking an at-rest equivalent fluid pressure of 275 pcf to be characteristic of the site soils, up to a maximum of 2,750 psf. The upper 1-foot of embedment should not be relied upon for passive resistance, however.

WATER-SOLUBLE SULFATES

The concentrations of water-soluble sulfates measured in samples obtained from the test holes were less than 0.01 percent by weight. (See Table 1). Such concentrations of water-soluble sulfates represent a negligible degree of sulfate attack on concrete exposed to these materials. Degrees of attack are based on the scale of 'negligible,' 'moderate,' 'severe' and 'very severe' as described in the "Design and Control of Concrete Mixtures," published by the Portland Cement Association (PCA).

Based on these data GROUND, makes no recommendation for use of a special, sulfate-resistant cement in project concrete. However, based on other studies in the area, and the presence of gypsum in the local bedrock, we recommend that after overlot grading has been completed, samples of site soils be tested for water soluble sulfates to assess the potential for locally elevated sulfate concentrations.

SOIL CORROSIVITY

Measurements of soil acidity (pH) and electrical resistivity were made to provide a general assessment of the potential for corrosion of ferrous metals installed in contact with earth materials. Test results are summarized in Table 1.

Values of pH below 7 (neutral) indicate acidic conditions; values greater than 7 indicate basic conditions, on a logarithmic scale. Testing indicated pH values from about 8.6 to

9.2, which indicate that the materials tested are basic. These characteristics will not contribute greatly to corrosion.

Electrical resistivity is related both to a material's moisture content and to the concentrations of dissolved salts and other conductive constituents in the soil pore water. Measurements of electrical resistivity indicated values from about 13,000 to more than 30,000 ohm-centimeters in selected samples of the local soils.

Resistivities greater than 6,000 ohm-centimeters are classified as representing an 'excellent' corrosive environment for ferrous metals in contact with site soils, on a scale of 'bad,' 'fair,' 'good' and 'excellent' as presented in the "Handbook of Steel Drainage and Highway Construction Products" published by the American Iron and Steel Institute. Therefore, the site alluvial fan soils appeared to represent an excellent (low risk) environment with regard to metallic corrosion.

Corrosive conditions can be mitigated by use of materials not vulnerable to corrosion, heavier gauge materials with longer design lives, or cathodic protection systems. If additional information or recommendations are needed regarding soil corrosivity, GROUND recommends contacting a Corrosion Engineer. It should be noted, however, that changes to the site conditions during construction, such as the import of other soils, or the intended or unintended introduction of off-site water, can alter the corrosion potentials significantly.

RADON

Radon is a naturally occurring, colorless, odorless, radioactive gas that can cause lung cancer, according to the U.S. Environmental Protection Agency (EPA). The occurrence of radon is difficult to predict, and structures with all types of foundations can be affected by radon build up. Where radon is allowed to concentrate in an enclosed structure represents a potential hazard. It is not a hazard that can be mitigated by geotechnical measures, however.

Testing for the possible presence of radon gas prior to project development does not yield useful results regarding the potential accumulation of radon in completed structures. Radon accumulations most typically are found in basements, crawl spaces or other enclosed portions of buildings built in areas underlain at relatively shallow depths by granitic crystalline rock. The likelihood of encountering radon in concentrations exceeding applicable health standards on the subject site, underlain by

relatively deep soils and sedimentary bedrock, is significantly lower, but cannot be excluded. Additional information regarding radon and radon-resistant building design can be obtained from the EPA (e.g., www.epa.gov/radon) as well as from many local building and/or health departments.

GROUND recommends that radon testing be performed in the building after construction is completed. However, we understand that incorporating sufficient ventilation and other measures into a structure to address radon accumulation during construction is significantly less costly than installing them after construction has been completed. We recommend that the Architect consider radon mitigative measures for the proposed structure and incorporate appropriate systems into the design.

SURFACE DRAINAGE

The following drainage precautions should be observed during construction and maintained at all times after the facilities have been completed. Establishment and maintenance of surface drainage is critical to the proper performance of the proposed structures and pavements. If the drainage measures below are not implemented and maintained effectively, the movement estimates provided in this report could be exceeded.

- 1) Excessive wetting or drying of the foundation excavations and underslab areas should be avoided during construction.
- 2) Care should be taken during and after construction to identify local, concentrated water sources such as leaking hose bibs or pipes, downspouts from which water is not positively controlled, construction water tanks, etc., and repair the damage or make positive provision to capture the water or convey it off-site. On-going, localized wetting of the site soils will result in piping of the silty materials and potentially severe localized settlements.
- 3) Positive surface drainage measures should be provided and maintained to reduce water infiltration into foundation soils. The ground surface surrounding the exterior of each building should be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 12 inches in the first 10 feet in landscaped areas and 3 inches in the first 10 feet in areas where hardscaping covers the ground adjacent to the building. (It may be necessary to incorporate ramps or other measures into project design to implement this

recommendation while complying with access requirements.) In no case should water be allowed to pond near or adjacent to foundation elements.

Drainage measures also should be included in project design to direct water away from sidewalks and other hardscaping as well as utility trench alignments that are likely to be adversely affected by moisture-volume changes in the underlying soils or flow of infiltrating water. Routine maintenance of site drainage, including sealing of cracks and joints, should be undertaken throughout the design life of the project.

- 4) In sloping terrain, it is common to have slopes descending toward buildings. Such slopes can be created during grading even on comparatively flat sites. In such cases, even where the recommendation above regarding slopes adjacent to the building is followed, water will flow to and beneath the building with resultant additional post-construction movements. Where the final site configuration includes graded or retained slopes descending toward the building, and the toe-of-slope (-wall) is less than 3 times the total slope (wall) height from the building, then an interceptor drain should be installed between the building and the slope. Ideally, the interceptor drain should be installed either about 10 feet from the building or along the axis of a swale between the building and the toe-of-slope (-wall). An interceptor drain system should be generally like the underdrain system described in the *Interceptor Drain System* section of this report. The actual layout, outlets, etc., of an interceptor should be designed by the Civil Engineer. GROUND can provide more specific geotechnical recommendations for an interceptor drain system upon request.

In addition, where irrigation is applied on or above graded slopes, drainage structures commonly are needed near the toe-of-slope to prevent on-going or recurrent wet conditions there.

- 5) The ground surface near foundation elements should be able to convey water away readily. Ground coverings that direct water downward rather than away from the building should not be used to cover the ground surface near the foundations or other improvements sensitive to post-construction soil movements. Cobbles or other materials that tend to act as baffles and restrict surface flow should not be used.

Correspondingly, near other project improvements, such as hardscaping, where the ground surface does not convey water away readily, additional post-construction movements and distress should be anticipated. Shallow underdrain systems or flatwork edge drains can be beneficial in reducing movements and distress.

- 6) The buildings should be provided with roof drains/gutters and downspouts. Roof drainage feature design should accommodate the potential for ice accumulation.

Roof downspouts and drains should discharge well beyond the perimeters of the structure foundations, or be provided with positive conveyance off-site for collected waters. Providing piped discharge to the project storm sewer system is the most effective means of reducing infiltration into the site soils. Where collected waters are allowed to flow across the ground surface (whether paved or landscaped), the potential for post-construction movements are increased, particularly where joints, cracks, adverse local surface gradients, etc., are not well maintained.

Roof drains should not be routed inside the buildings. Roof downspouts and other surface water collectors should not discharge into the building underdrain or interceptor drain systems.

- 7) Landscaping that requires watering should be located 10 or more feet from building perimeters. Irrigation sprinkler heads should be deployed so that applied water is not introduced into foundation soils. Landscape irrigation should be limited to the minimum quantities necessary to sustain healthy plant growth.

Use of drip irrigation systems can be beneficial for reducing the amount of water introduced to building foundation soils, but only if the total volumes of applied water are controlled with regard to limiting that introduction. Controlling rates of moisture increase beneath the foundations and floors should take higher priority than minimizing landscape plant losses.

We understand that municipal ordinances commonly require plantings in close proximity to buildings. Where plantings are desired within 10 feet of a building, GROUND recommends that the plants be placed in water-tight planters, constructed either in-ground or above-grade, to reduce moisture infiltration in the surrounding subgrade soils. Planters should be provided with positive drainage

and landscape underdrains. Where water-tight planters cannot be used, project design measures and post-construction maintenance routines should be developed to prevent infiltration.

- 8) We do not recommend the use of plastic membranes to cover the ground surface near the building without careful consideration of other components of project drainage. Plastic membranes can be beneficial to directing surface waters away from the building and toward drainage structures. However, they effectively preclude evaporation or transpiration of shallow soil moisture. Therefore, soil moisture tends to increase beneath a continuous membrane. Where plastic membranes are used, additional shallow, subsurface drains should be installed. Perforated "weed barrier" membranes, which allow ready evaporation from the underlying soils may be used.
- 9) GROUND recommends that snow storage should be restricted to paved areas where effective surface drainage is maintained. Snowmelt has the potential to introduce additional water into the soils supporting the slope, with consequent potentials for increased post-construction settlements.

If it is necessary to use unpaved areas of the project for snow storage, only designated slopes should be used that have been provided with shallow, underdrain systems. General recommendations for underdrains are provided in the *Subsurface Moisture Infiltration and Drainage* and *Interceptor Drain Systems* sections of this report. The drains should be installed at depths of about 2 to 3 feet below finished grades aligned generally parallel to slope. Individual drain lines should be installed no more than 30 feet apart throughout the areas designated for snow storage. The pipes for the drain system should be graded at a sufficient slope to move water effectively to one or more non-perforated discharge lines to carry water off-site or into the storm sewer system.

GROUND recommends that a regular program of site monitoring and maintenance by a qualified maintenance Contractor or similar agent for the Owner be established for the proposed facility, and implemented throughout the design life of the project. The site should be observed for indications of ineffective drainage, settlement, ponding, erosion, damaged irrigation lines, etc., so that repairs can be effected. Necessary repairs/restoration should be implemented as soon as possible. Where localized

infiltration is allowed to continue, the risk of local subsidence or the development of sinkholes will be significantly increased.

In addition to design, construction and maintenance of effective, permanent surface drainage measures, effective surface drainage must be established and regularly maintained throughout construction. In GROUND's experience, it is common in areas of partially completed paving or hardscaping, bare soil surrounding buildings and behind curbs and gutters, and open utility trenches, etc., that water from irrigation or rain and snow melt events is allowed to pond. Because of the numerous trades that can be working on a site at various stages of construction, maintenance of effective surface drainage can require weekly or more frequent restoration. As has been discussed elsewhere in this report, wetting of the subgrade can result in loss of support and increased settlements. By the time that final grading has been accomplished, and permanent surface and subsurface drainage measures completed, significant volumes of water can already have entered the subgrade, with consequent increased risks of movements, etc. GROUND recommends that the Contractor be directed to maintain the site regularly during the entire construction process so that water is directed into appropriate drainage structures during construction.

We understand that local, state and/or federal regulations regarding erosion control may require use of silt fencing, straw bundles or other erosion-control devices that can significantly impede surface drainage during construction, preventing effective implementation of the recommendations above. GROUND recommends that the various measures that could be implemented to comply with applicable regulations be assessed carefully with regard to minimizing interference with effective surface drainage. Use of local, lined sumps that can be pumped regularly, for example, may be necessary to prevent uncontrolled ponding and infiltration prior to completion of fine grading.

INTERCEPTOR DRAIN SYSTEM

Because of the debris flow retention ponds upslope from the proposed buildings that commonly will act as water detention basins, development of the site should include construction of a project-wide interceptor drain system.

The interceptor drains should consist of perforated PVC collection pipe at least 6 inches in diameter, non-perforated PVC discharge pipe at least 6 inches in diameter, free-draining gravel, and filter fabric. The free-draining gravel should contain less than 5

percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each collection pipe should be surrounded on the sides and top only with 6 or more inches of free-draining gravel. Above the pipe, the gravel should form a vertical curtain extending to within at least 3 feet of the ground surface. The gravel surrounding the collection pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. 'Clean out' access points should be provided at intervals along the system to facilitate maintenance. A typical, cross-section detail of an underdrain as described above is provided on Figure 20.

The interceptor drains should be laid out generally as depicted on Figure 1. The actual layout, outlets, and locations of the interceptor drain should be designed by the Civil Engineer. The system should be designed so that the flow lines of the pipes are at least 7 feet below finished grades. The pipe(s) for the interceptor drain system should be graded at a sufficient slope to enable efficient discharge of collected waters to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge. Design slopes should consider potential post-construction soil movements, as discussed herein, which could affect the pipes, as well.

The interceptor drain systems should be tested by the Contractor after installation and after placement and compaction of the overlying backfill to verify that the systems function properly.

SUBSURFACE MOISTURE INFILTRATION AND DRAINAGE

Common practice for residential construction as proposed for this project includes the installation of building perimeter underdrains. If properly constructed, a perimeter underdrain system can result in a reduction of moisture infiltration of the subsurface soils. However, an underdrain not properly functioning can collect or introduce water, induce settlement of the subsurface soils, and may result in structure/floor slab distress. If deep foundation systems to support the proposed building frames and floor systems are used as recommended herein, the need for perimeter drain systems is reduced. They can be beneficial as a component of project drainage design, however.

For each building supported on shallow foundations, GROUND recommends installation of perimeter underdrain systems around each building. The perimeter drains should be located approximately 10 feet out-board of the building perimeters, corresponding to the lateral limit of the recommended zone of excavation and re-placement beneath each

building. In accordance with the ADA, GROUND also recommends installation of a perimeter underdrain system around any structure with a below-grade (basement) level.

Based on the site surface and subsurface conditions encountered in this study, we do not anticipate a rise in the local water table sufficient to cause adverse wetting of the foundation soils. Therefore, wetting of the soils likely will result from infiltrating surface waters (precipitation, irrigation, etc.), and flow along constructed pathways such as bedding in utility pipe trenches. Project design should incorporate measures to prevent water from wetting the project soils. Surface drainage gradients, pavements, flatwork, piping, drainage structures, etc., should be maintained during and after construction to prevent infiltration.

It is the responsibility of the design team and Ownership as well as the construction and maintenance Contractor(s) within their respective disciplines and in accordance with their familiarity with the site conditions to evaluate the possible sources of water that could affect the project area and provide design and/or construction measures that address the conditions so that moisture is directed away from the foundations and supporting materials prior to being allowed to infiltrate the subsurface, both during and after construction. Wetting or drying of the foundation excavations and under-slab areas should be avoided during and after construction as well as throughout the life of the facility. Permitting increases/variations in moisture to the supporting soils may result in a decrease in bearing capacity and an increase in total and/or differential movements.

Where underdrains are incorporated into project design, the system should consist of perforated PVC collection pipe at least 4 inches in diameter, non-perforated PVC discharge pipe at least 4 inches in diameter, free-draining gravel, and filter fabric. The free-draining gravel should contain less than 5 percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each collection pipe should be surrounded on the sides and top only with 6 or more inches of free-draining gravel. The gravel surrounding the collection pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. 'Clean out' access points should be provided at intervals along the system to facilitate maintenance. A typical cross-section detail of an underdrain of this type is provided on Figure 19.

The actual layout, outlets, and locations of underdrains should be designed by the Civil Engineer. The pipe(s) for underdrain systems should be graded at a sufficient slope to

enable efficient discharge of collected waters to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge. Design slopes should consider potential post-construction soil movements, as discussed herein, which could affect the pipes, as well. Where collection segments of the underdrain system (with gravel and perforated pipe) transition to discharge segments with solid pipe, clay or concrete cut-off walls should be installed to reduce migration of water along the discharge line trenches outside of the pipes.

All subsurface drain systems should be tested by the Contractor after installation, and after placement and compaction of the overlying backfill, to verify that the systems function properly.

PROJECT EARTHWORKS

General Considerations Based on the site topography and the extent of previous overlot grading, we anticipate only nominal cuts and fills on the order of 5 feet or less in nominal depth to complete the earthworks for the building pads and parking areas, etc.. Site grading should be reviewed and improved as necessary to provide positive surface drainage away from the buildings, and all pavements, utility alignments, and flatwork. Surface diversion features should be provided around paved areas to prevent surface runoff from flowing across the paved surfaces.

Care should be taken with regard to achieving and maintaining proper moisture contents during placement and compaction. We anticipate that the majority of on-site soils may exhibit significant pumping, rutting, and deflection at moisture contents above optimum. In addition to local plastic soils, laboratory testing indicated that the site soils generally are classified as slightly plastic silts and silty to clayey sands. In our experience, achieving and maintaining compaction in such soils can be very difficult, particularly if water contents are not monitored closely. We understand that earthwork construction on nearby areas such as Glenwood Meadows Retail Development to the east of the project experienced difficulties of this type. Locally, during subgrade preparation for pavements achieving a stable subgrade was difficult, as well. The Contractor should be prepared to handle soils of this type, including the use of chemical stabilization, if necessary.

Prior to earthwork construction, vegetation and other deleterious materials should be removed and disposed of off-site. Relic underground utilities should be abandoned in

accordance with applicable regulations, removed as necessary, and capped at the margins of the property.

Permanent site slopes supported by on-site soils up to 10 feet in height should be constructed no steeper than 3:1 (horizontal : vertical). Minor raveling or surficial sloughing should be anticipated on slopes cut at this angle until vegetation is well re-established. Surface drainage should be designed to direct water away from slope faces. Where adequate compaction is not achieved and maintained in the soils supporting a slope, the soils will tend to relax and displace downward and outward. This can result in loss of bearing and lateral support for improvements in proximity to the slope.

Because of the potential loss of foundation bearing or lateral support due to slope relaxation or "slope creep," where building foundations or other improvements are placed within 30 feet of the principal slope face descending northward from Lot 14, a Geotechnical Engineer should be retained to evaluate the conditions on an individual case basis.

On-Site Soils The existing soils including both fill and native materials, free of landfill materials, organic materials, large cobbles and other deleterious materials are, in general, suitable for placement as compacted fill. Cobbles and rock fragments larger than 6 inches in maximum dimension will require special handling and/or placement to be incorporated into project fills. In general, such materials should be placed as deeply as possible in the proposed fills. The geotechnical engineer should be consulted regarding appropriate recommendations for usage of such materials on a case-by-case basis when such materials have been identified during earthworks. Standard recommendations that likely will be generally applicable can be found in Section 203 of the CDOT Standard Specifications for Road and Bridge Construction (2005).

Imported Fill Materials If it is necessary to import material to the site as fill, the imported soils should contain no boulders, cobbles or rock fragments coarser than 6 inches in maximum dimension, be free of claystone, organic material, and other deleterious materials. Imported material should have less than 60 percent passing the No. 200 Sieve and should have a plasticity index of less than 10.

Bulk/Shrinkage Based on comparison of measured, in-place soil densities with compaction test (Proctor) data for the project, and contractors' experience reported for

nearby projects, the existing native site soils likely will shrink during grading by approximately 10 to 16 percent. Given that more shallow soils likely will be re-worked than those at depth, GROUND suggests that a shrinkage factor of about 12 to 17 percent be used for preliminary earthwork volume calculations. We understand, however, that higher shrinkage factors have been reported in the project area, on the order of 15 to 20 percent. All such values necessarily are highly dependent upon the average depth of earthworking and the average degree of compaction achieved.

Bulking or shrinkage of existing fill soils should be limited, likely within a few percentage points of 0.

Fill Platform Preparation Prior to filling, the top 8 to 12 inches of in-place materials on which fill soils will be placed should be scarified, moisture conditioned and properly compacted in accordance with the recommendations below to provide a uniform base for fill placement.

If surfaces to receive fill expose loose, wet, soft or otherwise deleterious material, additional material should be excavated, or other measures taken, to establish a firm platform for filling. The surfaces to receive fill must be effectively stable prior to placement of fill.

Fill Placement Fill materials should be thoroughly mixed to achieve a uniform moisture content, placed in uniform lifts not exceeding 8 inches in loose thickness, and properly compacted. Soils that classify as GP, GW, GM, GC, SP, SW, SM, or SC in accordance with the USCS classification system (granular materials) should be compacted to **96 or more percent** of the maximum modified Proctor dry density at moisture contents within 2 percentage points of optimum moisture content as determined by ASTM D1557, the "modified Proctor." Soils that classify as ML, MH, CL or CH should be compacted to **at least 96 percent** of the maximum standard Proctor density at moisture contents from optimum to 3 percent above the optimum moisture content as determined by ASTM D698, the "standard Proctor."

It should be noted, however, that due to the low- to non-expansive nature of the great majority of site soils, the recommendations for moisture-conditioning the soils to within the specified ranges are intended primarily to facilitate achievement of adequate compaction. Achievement of sufficient compaction to reduce subsequent settlements is more important than the actual soil moisture increase. Therefore, although addition of significant volumes of water to the native soils and possibly some existing fill materials

will be necessary for compaction, achievement of the recommended compaction levels (and stable paving platforms) should be the Contractor's principal goal in this regard. Adjustments of acceptable ranges of moisture contents may be made in the field by the Geotechnical Engineer.

See the recommendations below, however, regarding deep fill sections, as well as those below.

No fill materials should be placed, worked, rolled while they are frozen, thawing, or during poor/inclement weather conditions.

Compaction areas should be kept separate, and no lift should be covered by another until the recommended relative compaction and moisture content are obtained.

To achieve adequate compaction near the outer faces of fill slopes, it may be beneficial to over-build the slopes and trim them back.

Because of the presence of coarse cobbles and boulders, much of the excavated site soils will require sorting or separation of the large clasts to enable the remaining material to be placed as compacted fill. (Crushing of the coarse materials to fall within the recommended size limit is acceptable, as well.) The Contractor should mobilize appropriate equipment of sufficient capability to excavate, move, process and compact the on-site soils. Because of the high percentage of coarse materials commonly present in the soils (even after removal/breakdown of boulders and coarse cobbles), the Contractor should anticipate greater than usual wear on his equipment, as well as the need to handle, stockpile and remove large boulders.

Deep Fills All fill materials placed 10 feet or more below the finished ground elevation including those portions of the recommended fill section beneath building foundations more than 10 feet below the post-tensioned slab should be compacted to the following higher relative compaction levels. (Except as modified below, the recommendations herein regarding fill placement, etc., are applicable to these deep fill sections, as well.)

- Soils that classify as GP, GW, GM, GC, SP, SW, SM or SC should be compacted to **97 or more percent** of the maximum dry density at moisture contents within 2 percent of optimum moisture content as determined by ASTM D1557.

- Soils that classify as CL, CH, ML and MH should be compacted to **at least 100 percent** of the maximum density at moisture contents within 2 percent of the optimum as determined by ASTM D698.

Settlements Settlements will occur in filled ground, typically on the order of 1 to 2 percent of the fill depth. For a 6-foot fill, this corresponds to settlements on the order of 1 inch, without imposition of foundation loads. If fill placement is performed properly and is tightly controlled, in GROUND's experience the majority of that settlement will take place during earthwork construction. The remaining potential settlements likely will take several months or longer, to be realized.

Use of Squeegee Relatively uniformly graded fine gravel or coarse sand, i.e., "squeegee," or similar materials commonly are proposed for backfilling foundation excavations, portions of utility trenches and other areas where employing compaction equipment is difficult. In general, GROUND does not recommend this procedure for the following reasons:

Although commonly considered "self compacting," uniformly graded granular materials require densification after placement, typically by vibration. The equipment to densify these materials is not available on many job-sites.

Even when properly densified, uniformly graded granular materials are permeable and allow water to reach and collect in the lower portions of the excavations backfilled with those materials. This leads to wetting of the underlying soils and resultant potential loss of bearing support as well as increased local heave or settlement.

GROUND recommends that wherever possible, excavations be backfilled with approved, on-site soils placed as properly compacted fill. Where this is not feasible, use of "Controlled Low Strength Material" (CLSM), i.e., a lean, sand-cement slurry ("flowable fill") or a similar material for backfilling should be considered.

Where "squeegee" or similar materials are proposed for use by the Contractor, the design team should be notified by means of a Request for Information (RFI), so that the proposed use can be considered on a case-by-case basis.

Quality Assurance A Geotechnical Engineer should be retained to observe project excavations prior to placement of fill. The Geotechnical Engineer also should observe earthwork operations and test the soils.

It should be noted that in the later stages of large projects such as construction of the proposed mixed use buildings, multiple sub-contractors commonly are installing or adjusting/replacing components of the project simultaneously. These can range from electrical boxes to sidewalk access ramps to lighting fixtures. In order to facilitate proper observation and testing of the associated earthworks, GROUND recommends that the Contractor verify that his sub-contractors mobilize the necessary equipment and personnel to moisture-condition and compact disturbed or excavated soils quickly and effectively. The Contractor also should coordinate with his sub-contractors to ensure that these local earthwork operations are observed with sufficient frequency by the retained Geotechnical Engineer and the soils tested.

Additional Earthworks and Building Pad Caps Native soils and bedrock prepared for subsequent construction, as well as properly compacted fills, that are allowed to stand for extended periods prior to construction of buildings, pavements, etc., will degrade over time. Moisture will be lost and the soils can become eroded or loosened, or shrink back to a denser and more expansive condition. The extent of degradation will increase with time. Therefore, where these conditions arise, the Geotechnical Engineer should test the soils and provide recommendations regarding an appropriate depth of moisture-conditioning and re-compaction prior to construction. In the case of subgrade soils beneath a slab-on-grade floor, this re-compaction can be accomplished with significantly less effort prior to construction of the building shell.

Remedial earthworks by the Contractor, such as excavation and re-compaction of 1 to 3 feet of soil, may be necessary at that time to restore the prepared soils to an acceptable condition. Because the building pads are the most critical portions of the site, the following measures are recommended as an alternative to reduce the depth of re-working necessary on the pads prior to transfer of ownership and/or construction:

- 1) Additional fill should be placed on the pad to raise the grades and form a crowned cap to protect the compacted pad soils from desiccation and erosion. This cap could be removed shortly before transfer of the pad. We anticipate that only limited earthworks then would be needed to restore the pad to an acceptable state.

- 2) The cap should extend across the entire building footprint as well as the 10+ feet of re-worked ground beyond the lateral limits of the building.
- 3) At least 12 inches of material should be placed to form the cap above the compacted pad soils. In addition, the cap should be sloped to drain with a gradient of at least 2 percent.
- 4) Cap soils should be compacted to 90 or more percent of the maximum standard or modified Proctor dry density (for cohesive and granular soils, respectively) at moisture contents within 3 percent of optimum moisture content as determined by ASTM D698 / D1557.

EXCAVATION CONSIDERATIONS

Test holes for subsurface exploration were advanced to the depths indicated on the test hole logs by means of conventional, truck/track-mounted, flight auger equipment. We anticipate no unusual excavation difficulties, in general, for the proposed construction in these materials with conventional, heavy-duty excavating equipment in good working condition.

Coarse cobbles and boulders were observed on the site surface and encountered commonly in the test holes. Individual clasts up to 2½ feet in maximum dimension are common at the site. Larger boulders have been observed. The Contractor should anticipate encountering numerous cobbles and boulders in project excavations, commonly comprising at least 20 percent of the soil volume and be prepared to excavate, handle, sort and/or crush these materials. In addition, specialized breaking equipment, or limited, local blasting may be cost effective to facilitate project excavations, particularly in trenches, and to break local masses of nested cobbles and boulders. Many of the excavated clasts will be too coarse for inclusion in project fills without crushing.

As noted above, groundwater was not encountered during subsurface exploration, which reached depths as great as approximately 75 feet. Therefore, groundwater is not anticipated to be a major factor during construction of most aspects this project. However, if seepage or groundwater is encountered in project excavations, the Geotechnical Engineer should evaluate the conditions and provide additional recommendations, as appropriate

We recommend that temporary, un-shored excavation slopes up to 20 feet in height be cut no steeper than 2:1 (horizontal : vertical) in the native soils in the absence of seepage. Some surface sloughing may occur on the slope faces at this angle. Local conditions encountered during construction, such as groundwater seepage, loose, dry sand, or soft, wet materials, will require flatter slopes. Stockpiling of materials should not be permitted closer to the tops of temporary slopes than 5 feet or a distance equal to the depth of the excavation, whichever is greater.

Should site constraints prohibit the use of the recommended slope angles, then temporary shoring should be used. Shoring designed to allow the soils to deflect sufficiently to utilize the full active strength of the soils may be designed for lateral earth pressures computed on the basis of an equivalent fluid unit weight of 45 pounds per cubic foot (pcf) for a level adjacent ground condition. In addition to this lateral earth pressure, shoring design should include surcharge loads exerted by equipment, traffic, material stockpiles, etc. Actual shoring system(s) should be designed for the Contractor by a registered engineer.

Effective surface drainage should be provided around temporary excavation slopes to direct surface runoff away from the slope faces. A properly designed drainage swale should be provided at the top of the excavations. Temporary slopes will erode readily if water is allowed to flow over the slope faces. Erosion along the slopes will result in sloughing and could lead to a slope failure. In no case should water be allowed to pond at the site.

Excavations in which personnel will be working must comply with all OSHA Standards and Regulations particularly CFR 29 Part 1926, OSHA Standards-Excavations, adopted March 5, 1990. The Contractor's "responsible person" should evaluate the soil exposed in the excavations as part of the Contractor's safety procedures. GROUND has provided the information above solely as a service to Total Merchant Services, and is not assuming responsibility for construction site safety or the Contractor's activities.

UTILITY INSTALLATION

Recommendations regarding utility trench excavation are provided in the *Excavation Considerations* section of this report. On-site soils excavated from trenches are suitable, in general, for use as trench backfill. Backfill soils should be free of boulders, vegetation, debris and other deleterious materials. Cobbles coarser than 6 inches in maximum dimension should not be incorporated into trench backfills.

Trench backfill materials should be properly moisture-conditioned and compacted in accordance with the recommendations in the *Project Earthworks* section of this report. Some settlement of trench backfill materials should be anticipated, even where materials are placed and compacted correctly.

The Contractor should take adequate measures to achieve adequate compaction in the utility trench backfills, particularly in the lower portions of the excavations. Some settlement of trench backfill materials should be anticipated, even where materials are placed and compacted correctly. The Contractor should take particular care to achieve and maintain adequate compaction of the backfill soils around manholes, valve risers and other vertical pipeline elements where greater settlements commonly are observed. Use of "Controlled Low Strength Material" (CLSM), i.e., a lean, sand-cement slurry ("flowable fill") or a similar material should be considered in lieu of compacted soil backfill for areas with low tolerances for surface settlements. Placement of CLSM in the lower portions of the excavations and around risers, etc., likely will yield a superior backfill, although at an increased cost.

Pipe bedding materials, placement and compaction should meet the specifications of the pipe manufacturer and applicable municipal standards. The Contractor should not anticipate that significant volumes of excavated site soils will be suitable for use where free-draining materials are called for as pipe bedding. Materials proposed for use as pipe bedding should be tested for suitability prior to use. Imported materials should be tested and approved by the Geotechnical Engineer prior to transport to the site.

We assume that surface drainage will direct water away from trench alignments. Nevertheless, non-woven filter fabric (e.g., Mirafi® 140N or the equivalent) should be placed around granular bedding materials to reduce migration of fines into the bedding.

Sandy pipe bedding materials can function as efficient conduits for re-distribution of natural and applied waters in the subsurface. Clay or concrete cut-off walls or, as necessary, drains should be installed in utility trenches to reduce the rates and volumes of water transmitted to the building foundation soils. Cut-off walls should be spaced no more than 200 feet apart on generally east – west -oriented alignments (parallel to elevation contours) and no more than 100 feet apart on north – south (uphill – downhill) -oriented alignments. These measures also will reduce the risk of loss of fine-grained backfill soils into the bedding material with resultant surface settlement.

Utility lines should be sealed and the seals checked prior to backfilling. Checks for leakage and appropriate maintenance should be performed regularly. Utilities other than drains should enter the building interior as immediately as possible, and no more than 5 feet from the building perimeter. Longer utility runs increase the risk of settlements related to trench backfills, can facilitate distribution of water beneath the building, and increase repair difficulties.

Ground-Penetrating Radar The City of Glenwood Springs required ground-penetrating radar (GPR) surveys along the public wet utility alignments below the public streets at the Glenwood Meadows retail development to assess the potential presence of voids in the subsurface. GROUND provided those surveys during construction of that project. Based on conversations with the City, we anticipate that similar surveys may be required along public streets serving the Glenwood Meadows Lot 14. In order to maximize effectiveness of the GPR, we suggest that to the extent possible, required surveys be performed after cuts along the alignments are made, but prior to significant filling (i.e., when alignments are at the lowest elevations).

EXTERIOR FLATWORK

Proper design, drainage, construction and maintenance of the areas between individual buildings and hardscape areas are critical to the satisfactory performance of the project. Sidewalks, entranceway slabs and roofs, fountains, raised planters and other highly visible improvements commonly are installed within these zones, and distress in or near these improvements is common. Commonly, proper soil preparation in these areas receives little attention during overlot construction because they fall between the building and pavement areas, which typically are built with heavy equipment. Multiple subcontractors, with light or hand equipment, often perform subsequent landscaping and hardscape installation. This results in necessary over-excavation and soil processing and compaction not being performed. Consequently, subgrade soil conditions commonly deviate significantly from recommended ranges. Therefore, GROUND recommends that the Contractor take particular care with regard to proper subgrade preparation in the immediate building exteriors.

As recommended in the Project Earthworks and Surface Drainage sections of this report, positive surface drainage away from all pavements and flatwork should be

included in project design. Proper drainage also should be maintained after completion of the project, and re-established as necessary.

Exterior flatwork and other hardscaping placed on the clayey soils encountered on-site likely will experience post-construction movements due to the expansive nature of those soils and the relatively light loads that they impose. Both vertical and lateral soil movements can be anticipated as clay mineral particles swell and shrink as the soils are wetted and dried. Distress to rigid hardscaping likely will result.

The most positive means to reduce distress to these elements is to support them on foundations in the same manner as the building. Other mitigative measures could include casting flatwork over a 12-inch or thicker void form and pinning the flatwork to the building grade beams, or development of an accelerated maintenance and replacement schedule, anticipating post-construction movements and distress.

Where deep foundations are not utilized to support exterior improvements, the following measures will help to reduce damages to these improvements.

- 1) Shortly before installation, the subgrade soils beneath project sidewalks, paved entryways and patios, masonry planters and short, decorative walls, and other flatwork should be excavated and/or scarified to a depth of 36 or more inches. The excavated soil should be replaced as properly moisture-conditioned and compacted fill as outlined in the *Project Earthworks* section of this report, in order to reduce the magnitude of potential movements. Greater depths of moisture-density conditioning of the subgrade soils beyond the above minimum, as indicated for the pavements, will improve hardscape performance.
- 2) Prior to placement of flatwork, a proof roll should be performed to identify areas that exhibit instability and deflection. The deleterious soils in these areas should be removed and replaced with properly compacted fill. The Contractor should take care to achieve and maintain compaction behind curbs to reduce differential sidewalk settlements. As in the case of pavements, passing a proof roll is an additional requirement to placing and compacting the subgrade fill soils within the recommended ranges of moisture content and relative compaction presented in the *Project Earthworks* section of this report.

- 3) Flatwork should be provided with control joints extending to an effective depth and spaced no more than 10 feet apart, both ways. Narrow flatwork, such as sidewalks, likely will require more closely spaced joints.
- 4) In no case should exterior flatwork extend to under any portion of the building where there is less than 2 inches of clearance between the flatwork and any element of the building. Exterior flatwork in contact with brick, rock facades, or any other element of the building can cause damage to the structure if the flatwork experiences movements.

Frost and Ice Considerations Nearly all soils other than relatively coarse, clean, granular materials are susceptible to loss of density if allowed to become saturated and exposed to freezing temperatures and repeated freeze – thaw cycling. The formation of ice in the underlying soils can result in heaving of pavements, flatwork and other hardscaping (“frost heave”) in sustained cold weather up to 2 inches or more. This heaving can develop relatively rapidly. Much of this movement typically is recovered when the soils thaw, but due to loss of soil density, some degree of displacement commonly will remain. This can result even where the subgrade soils were prepared properly.

Where hardscape movements are a design concern, e.g., at doorways, replacement of the subgrade soils with 3 or more feet of clean, coarse sand or gravel should be considered or supporting the element on foundations similar to the building and spanning over a void. Detailed recommendations in this regard can be provided upon request. It should be noted that where such open graded granular soils are placed, water can infiltrate and accumulate in the subsurface relatively easily, which can lead to increased settlement or heave from factors unrelated to ice formation. The relative risks from these soil conditions should be taken into consideration where frost heave is a concern. GROUND will be available to discuss these concerns upon request.

Where soils supporting foundations or on which foundation will be placed are exposed to these conditions during construction – commonly due to water ponding in foundation excavations – bearing capacity typically is reduced and/or settlements increased due to the loss of density in the supporting soils. After periods of freezing conditions, the Contractor should re-work areas affected by the formation of ice to re-establish adequate bearing support.

The site soils include low plasticity silts as well as some clays and fine sands that due to their capillarity appear vulnerable to frost heave where an underlying source of water is present. Groundwater was not encountered to the depths explored, however. Therefore, if surface drainage is effective, the likelihood of movement of pavements, flatwork and other hardscaping is relatively low. However, if other source(s) of water develop and are not drained effectively, frost heave may develop.

Effects of Slope Creep In addition, the potential effects of gradual, incremental downward and outward movements of the embankment soils ("slope creep") on all improvements near the top-of-slope should be considered in project maintenance plans. Pavements, curbs-and-gutters, fences, screen walls, pilasters, light poles, etc., all will tend to be affected by these on-going soil movements, even where slopes are supported by firm native soils or properly compacted fill soils. Effective surface drainage, erosion control and timely maintenance of both the slope and the improvements above the slope will reduce the damages resulting from slope creep, but cannot eliminate them.

PAVEMENT SECTIONS

A pavement section is a layered system designed to distribute concentrated traffic loads to the subgrade. Performance of the pavement structure is directly related to the physical properties of the subgrade soils and traffic loadings. Pavement sections for private parking and driveways, as well as public streets comprising a part of the project, were developed in general accordance with the design guidelines and procedures of the American Association of State Highway and Transportation Officials (AASHTO), the Colorado Department of Transportation (CDOT) as well as local road construction practices. For public streets, the recommended pavement sections also reflected general accordance with the design guidelines and procedures of the City of Glenwood Springs.

Subgrade Materials Based on the results of our field and laboratory studies, the shallow subgrade materials in the proposed pavement areas consisted predominantly of fill material that was silty to clayey sands, with gravel commonly. These materials were classified typically as A-2-4 and A-4 soils in accordance with the AASHTO classification system, with Group Index values of 0. Resilient Modulus (M_R) testing (AASHTO T-307) was performed on a representative composite sample of the subgrade materials encountered at the site. The material was compacted to 95 percent of maximum dry density at moisture contents of optimum, two percent above optimum, and four percent

above optimum moisture content based on AASHTO T-99 (the "standard Proctor") for cohesive soils, or AASHTO T-180 (the "modified Proctor") for granular soils. For the sandy site soils, a resilient modulus of 7,806 psi obtained at the optimum moisture content was taken as characteristic of the subgrade materials and used for development of the pavement sections. It is important to note that significant decreases in soil support as quantified by the resilient modulus have been observed as the moisture content increases above the optimum.

Anticipated Traffic Specific traffic loadings were not available at the time of this report preparation. Therefore, an 18-kip equivalent daily load application (EDLA) value of 3 was assumed for development of the pavement structure for automobile parking stall areas. An EDLA of 10 was assumed for project driveways and 30 for any public streets within the project. The EDLA values of 3, 10 and 30 were converted to 18-kip equivalent single axle (ESAL) values of 21,900, 73,000 and 219,000, respectively, for 20-year design lives. An EDLA of 30 also was assumed for trash collection zones and other areas subject to heavy truck traffic. If design traffic loadings differ significantly from these assumed values, GROUND should be notified to re-evaluate the pavement recommendations below.

Pavement Sections The soil resilient modulus and the assumed ESAL values were used to determine the required structural number for the project pavements. The required structural number was then used to develop recommended pavement sections. Pavement sections were based on the DARWin™ computer program that solves the 1993 AASHTO pavement section equation. Pavement parameters and calculations are summarized in Appendix A. Structural coefficients of 0.40 and 0.12 were used for high quality asphalt and aggregate base course, respectively. A Reliability Level of 75 percent was utilized for design of the private pavement sections; a Reliability Level of 90 percent was used for public streets.

The minimum pavement sections recommended by GROUND for the project are tabulated below. As indicated, trash collection areas as well as other pavement areas subjected to high turning stresses or heavy truck traffic should be provided with rigid (portland cement concrete) pavements.

Recommended Minimum Pavement Sections

Location	Full Depth Asphalt (inches Asphalt)	Composite Section (inches Asphalt / inches
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Glenwood Meadows Lot 14
Glenwood Springs, Colorado

		<i>Aggregate Base)</i>
Driveways	5	4 / 6
Automobile-Only Parking	4	-
High Turning Stresses & Heavy Vehicle Traffic	6 inches of portland cement concrete	
Public Streets	6½	4 / 8

For superior performance, concrete sections should be underlain by 6 inches of properly compacted aggregate base.

Private concrete pavements should contain sawed or formed joints. CDOT and various industry groups provide guidelines for proper design and concrete construction and associated jointing. In areas of repeated turning stresses we recommend that the concrete pavement joints be fully tied and doweled. We suggest that civil design consider joint layout in accordance with CDOT's M standards, found at the CDOT website: <http://www.dot.state.co.us/DesignSupport/>.

Materials Asphalt pavement should consist of a bituminous plant mix composed of a mixture of aggregate and bituminous material. Asphalt mixture(s) should meet the requirements of a job-mix formula established by a qualified engineer as well as applicable design requirements of the City of Glenwood Springs.

Concrete pavements should consist of a plant mix composed of a mixture of aggregate, portland cement and appropriate admixtures meeting the requirements of a job-mix formula established by a qualified engineer as well as applicable design requirements of the City of Glenwood Springs. Concrete should have a minimum modulus of rupture of third point loading of 650 psi. Normally, concrete with a 28-day compressive strength of 4,000 psi should develop this modulus of rupture value. The concrete should be air-entrained with approximately 6 percent air and should have a minimum cement content of 6 sacks per cubic yard. Maximum allowable slump should be 4 inches.

If composite flexible sections are placed, the aggregate base material should meet the criteria of CDOT Class 6 aggregate base course. Base course should be placed in uniform lifts not exceeding 8 inches in loose thickness and compacted to at least 95

percent of the maximum dry density a uniform moisture contents within 3 percent of the optimum as determined by ASTM D1557 / AASHTO T-180, the "modified Proctor."

Subgrade Preparation The pavement subgrade soils should be excavated and replaced with properly moisture-conditioned and compacted fill. To reduce the potential for consolidation and settlements somewhat, as well as any local potentials for heave, excavation and replacement should be undertaken to a depth of 36 inches beneath the pavement sections. Subgrade preparation should extend the full width of the pavement from back-of-curb to back-of-curb. As recommended in the *Exterior Flatwork* section of this report, sidewalks and other hardscaping should be underlain by at least 36 inches of properly moisture conditioned and compacted fill. If a significant time lag ensues between overlot grading and paving, e.g., several months or more, some re-working of the shallow soils may be necessary shortly prior to paving. In such cases, scarification, moisture conditioning and re-compaction to a depth of 8 to 12 inches likely will be appropriate. Performing GPR surveys along public street alignments as discussed in the *Site Conditions* section of this report should be coordinated with street subgrade preparation to accomplish both efficiently.

Some post-construction movements of the pavements should be anticipated. Grades should be restored in areas of local settlement to re-establish surface drainage. A greater depth of excavation and replacement will result in improved pavement performance over its design life. Recommendations in this regard can be provided upon request.

Soils that classify as A-1 through A-5 (granular soils) should be compacted to 95 or more percent of the maximum modified Proctor dry density within 2 percent of the optimum moisture content as determined by ASTM D1557 / AASHTO T-180. Soils that classify as A-6 and A-7 (cohesive materials) should be compacted to 95 or more percent of the maximum standard Proctor density at moisture contents from 1 percent below the optimum to 3 percent above optimum moisture content as determined by ASTM D-698 / AASHTO T-99.

The Contractor should be prepared either to dry the subgrade materials or moisten them, as needed, prior to compaction. Some site soils likely will "pump" or deflect during compaction if moisture levels are not carefully controlled, particularly the silts and silty sands. The Contractor should be prepared to process and compact such soils to

establish a stable platform for paving, including use of chemical stabilization, if necessary.

Where adequate drainage cannot be achieved or maintained, a greater depth of excavation and replacement is recommended, in addition to the edge drains recommended below.

Proof Rolling Immediately prior to paving, the subgrade should be proof rolled with a heavily loaded, pneumatic tired vehicle. Areas that show excessive deflection during proof rolling should be excavated and replaced and stabilized. Areas allowed to pond prior to paving will require significant re-working prior to proof-rolling. Passing proof-rolling is an additional requirement for pavement subgrade soils; it may be possible for soils to be compacted within the limits indicated in the *Project Earthworks* section of this report and fail proof-rolling, particularly in the upper range of recommended moisture contents.

Planter Drains We understand that the parking areas may have "islands" planted with, flowers, shrubs and trees. Infiltration of irrigation water in planters adjacent to pavements and in islands within paved areas should be carefully controlled or differential heave and/or rutting of the nearby pavements will result. Drip irrigation systems are recommended for such planters to reduce over-spray and water infiltration beyond the planters. GROUND recommends enclosing the soil in the planters with plastic liners and providing them with positive drainage or providing the planters with underdrains.

The planter drains should consist of perforated PVC drain pipe at least 3 inches in diameter, free-draining gravel, and filter fabric. We recommend use of rigid drain piping rather than flexible piping to better insure that proper drainage gradients are maintained. The free-draining gravel should contain less than 5 percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each drain pipe should be surrounded with 4 or more inches of free-draining gravel. The gravel surrounding the drain pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. The underdrains should be located at sufficient depth to accommodate the anticipated plantings. The pipes for the planter drain systems should be graded at a minimum slope of 1 percent to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge.

The island / planter drain systems should be tested by the Contractor after installation and after placement and compaction of the overlying backfill to verify that the systems function properly.

We understand, however, that provision of such an extensive drainage system may not be not feasible for this project. Therefore, GROUND suggests where these measures cannot be implemented, the plantings should be selected to minimize the necessary irrigation and a program of maintenance be implemented to repair the resultant distress.

Where islands and other planters near pavements are not provided with underdrains, we suggest that they and the plantings in them be underlain with a layer of relatively densely compacted fill at least 2 feet in thickness beneath the root balls to reduce water infiltration. The more densely compacted fill soils should extend at least 2 feet laterally beyond the limits of the islands. General recommendations for fill placement and compaction are provided in the *Project Earthworks* section of this report. Granular fill soils (classified as GP, GW, GM, GC, SP, SW, SM or SC) for this purpose should be compacted to 97 or more percent of the maximum 'modified Proctor' dry density at moisture contents within 2 percent of optimum moisture content as determined by ASTM D1557. Soils that classify as ML, MH, CL or CH (cohesive soils) should be compacted to 100 percent of the maximum standard Proctor density at moisture contents from optimum to 3 percent above the optimum moisture content as determined by ASTM D698.

Additional Observations The collection and diversion of surface drainage away from paved areas is extremely important to satisfactory performance of the pavement. The subsurface and surface drainage systems should be carefully designed to ensure removal of the water from paved areas and subgrade soils. Where topography, site constraints or other factors limit or preclude adequate surface drainage, pavements should be provided with edge drains to reduce loss of subgrade support. The long-term performance of the pavement also can be improved greatly by proper backfilling and compaction behind curb, gutter, and sidewalk. Unless the interceptor drain and edge drains (where included) are installed properly and maintained, and site drainage in general is well maintained, there is an increased risk of poor pavement performance at this site due to the expansive subgrade materials and the local introduction of off-site irrigation water.

Landscape irrigation in planters adjacent to pavements and in "island" planters within paved areas should be carefully controlled or differential heave and/or rutting of the nearby pavements will result. Drip irrigation systems are recommended for such planters to reduce over-spray and water infiltration beyond the planters. Enclosing the soil in the planters with plastic liners and providing them with positive drainage also will reduce differential moisture increases in the surrounding subgrade soils. In our experience, infiltration from planters adjacent to pavements is a principal source of moisture increase beneath those pavements. This wetting of the subgrade soils from infiltrating irrigation commonly leads to loss of subgrade support for the pavement with resultant accelerating distress, loss of pavement life and increased maintenance costs. This is particularly the case in the later stages of project construction after landscaping has been emplaced but heavy construction traffic has not ended. Heavy vehicle traffic over wetted subgrade commonly results in rutting and pushing of flexible pavements, and cracking of rigid pavements. Where the subgrade soils are expansive, wetting also typically results in increased pavement heave. In relatively flat areas where design drainage gradients necessarily are small, subgrade settlement or heave can obstruct proper drainage and yield increased infiltration, exaggerated distress, etc. (These considerations apply to project flatwork, as well.)

Also, GROUND's experience indicates that longitudinal cracking is common in asphalt-pavements generally parallel to the interface between the asphalt and concrete structures such as curbs, gutters or drain pans. This of this type is likely to occur even where the subgrade has been prepared properly and the asphalt has been compacted properly.

The anticipated traffic loading does not include excess loading conditions imposed by heavy construction vehicles. Consequently, heavily loaded concrete, lumber, and building material trucks can have a detrimental effect on the pavement. In areas where the maintenance traffic is turning, concrete pavement is recommended.

As noted above, the standard care of practice in pavement design describes the recommended flexible pavement section as a "20-year" design pavement; however, most pavements will not remain in satisfactory condition without regular maintenance and rehabilitation procedures performed throughout the life of the pavement. Maintenance and rehabilitation measures preserve, rather than improve, the structural capacity of the pavement structure. Therefore, GROUND recommends that an effective program of regular maintenance be developed and implemented to seal cracks, repair

distressed areas, and perform thin overlays throughout the lives of the pavements. The greatest benefit of pavement overlaying will be achieved by overlaying sound pavements that exhibit little or no distress.

A crack sealing and fog seal/chip seal program should be performed on the pavements every 3 to 4 years. After approximately 8 to 10 years after construction, patching, additional crack sealing, and asphalt overlay may be required. Prior to overlays, it is important that all cracks be sealed with a flexible, rubberized crack sealant in order to reduce the potential for propagation of the crack through the overlay. If actual traffic loadings exceed the values used for development of the pavement sections, however, pavement maintenance measures will be needed on an accelerated schedule.

CLOSURE

Geotechnical Review The poor performance of many pavements, foundations and subsurface structures has been directly attributed to inadequate geotechnical review and earthwork quality control. Therefore, project plans and specifications should be reviewed by the Geotechnical Engineer to evaluate whether they comply with the intent of the recommendations in this report. This review should be reported in writing.

Project earthwork construction operations should be observed by the Geotechnical Engineer. All excavations should be observed by the Geotechnical Engineer prior to placement of fill or backfill soils, installation of shoring, or foundation construction. Placement of fill/backfill soils should be observed by the Geotechnical Engineer, and the soils tested.

The geotechnical recommendations presented in this report are highly contingent upon observation and testing of project earthworks by representatives of GROUND. If another geotechnical consultant is selected to provide construction observation and quality control, then that consultant must assume all responsibility for the geotechnical aspects of the project by concurring in writing with the recommendations in this report, or by providing alternative recommendations.

Limitations This report has been prepared for Total Merchant Services, as it pertains to design and construction of the subject mixed use project as described herein. It may not contain sufficient information for other parties or other purposes. In addition, GROUND has assumed that project construction will commence by Autumn, 2008. Changes in project plans or schedule should be brought to the attention of the

Geotechnical Engineer, in order that the geotechnical recommendations may be re-evaluated and, as necessary, modified.

The geotechnical conclusions and recommendations in this report relied upon subsurface exploration at a limited number of exploration points, as shown on Figure 1. Subsurface conditions were interpolated between and extrapolated beyond these locations. Findings were dependent on the limited amount of direct evidence obtained at the time of this geotechnical evaluation. Our recommendations were developed for site conditions as described above. Actual conditions exposed during construction may be anticipated to differ, somewhat, from those encountered during site exploration. If during construction, surface, soil, bedrock, or groundwater conditions appear to be at variance with those described herein, the Geotechnical Engineer should be advised at once, so that re-evaluation of the recommendations may be made in a timely manner. In addition, a Contractor who relies upon this report for development of his scope of work or cost estimates may consider the geotechnical information in this report to be inadequate for his purposes or find the geotechnical conditions described herein to be at variance with his experience in the greater project area. In such cases, the Contractor should obtain the additional geotechnical information that he considers necessary to develop his workscope and cost estimates with sufficient precision.

Collapsible earth materials are present on the project site. These materials can shrink significantly if their moisture content is increased. The collapse potential of site soils can vary significantly, both laterally and vertically. Changes in moisture can occur irregularly, as well, resulting in conditions that cannot always be predicted.

The recommendations presented in this report are based on the current state-of-the-art for improvements placed on collapsible earth materials. The Owner should be aware that there are risks in construction on these types of soils. Performance of the proposed structures and pavements will depend on implementation of the recommendations in this report and on proper maintenance after construction is completed. Because water is the principal cause of volume change in expansive soils and rock, it is necessary that the changes in moisture content be kept to a minimum. Any indications of distress to project installations should be brought to the attention of the Geotechnical Engineer.

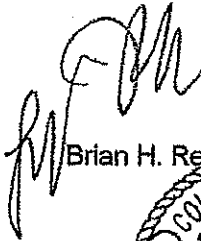
This report was prepared in accordance with generally accepted soil and foundation engineering practice in the Garfield County, Colorado, area, at the date of preparation.

Glenwood Meadows Lot 14
Glenwood Springs, Colorado

GROUND makes no other warranties, either express or implied, as to the professional data, opinions or recommendations contained herein.

Sincerely,

Ground Engineering Consultants, Inc.


Brian H. Reck, G.E.G.


Reviewed by James B. Kowalsky, P.E.

December 27, 2018

Subject: Preliminary Geotechnical Information and Discussion, **Glenwood Meadows Office Building**, Glenwood Springs, Colorado

Job No. 18-3069

Mr. Ben Ganther
Boldt Development
1110 North Old World Third Street
Milwaukee, Wisconsin 53203

Dear Mr. Ganther:

At this time, GROUND Engineering Consultants, Inc. (GROUND) is completing a geotechnical evaluation to provide geotechnical parameters for design of the proposed office building to be located east of the intersection of Midland Avenue and Wulfsohn Road in Glenwood Springs, Colorado. The results will be fully summarized in a report to be released once our evaluation has been completed. However, we understand that a preliminary summary of the information obtained and preliminary, geotechnical parameters are being requested. This information is provided below.

It should be noted, however, that not all of the planned laboratory testing has been completed at this time. Therefore, the information provided below is preliminary and may be revised, once our laboratory testing along with other aspects of our evaluation have been completed.

SUBSURFACE CONDITIONS

Our subsurface exploration was performed in November and December 2018. A total of 10 test holes were drilling using a truck-mounted drilling rig advancing 4 inch diameter, continuous flight augers and ODEX (air percussion) drilling equipment. Six (6) test holes drilled within the approximate, proposed foundation footprint and 4 test holes were drilled within the areas proposed pavements. The test holes advanced to depths up to 124 feet below existing grade

Before penetrating the underlying soils, the test holes encountered a relatively thin layer of topsoil approximately 3 to 5 inches in thickness. Underlying the topsoil, fill soils were recognized to depths of about 19 to 32 feet. Beneath the fill soils, similar native sands and gravels were encountered and extended to the depths explored. Groundwater and bedrock were not encountered in the test holes at the time of drilling.

We interpret the fill soils to be soils to materials placed during the construction of the existing Glenwood Meadows development to the east of the site during the mid-2000s. We interpret the native sands and gravels to be alluvial fan materials generated from the hillside to the southwest of the site.

GEOTECHNICAL RISK

The primary sources of geotechnical risk at this site are the presence of undocumented fill soils and the presence of alluvial fan materials. Both materials present a significant risk of post-construction movement upon wetting. As indicated by our lab testing (note that not all of our laboratory testing had been completed at the time of this lettered), consolidations up to about 12 percent were measured under surcharge loads approximating overburden loads. Consolidations of this magnitude are severe and can cause damaging post-construction movements. Such movements have been experienced structures in the project area.

Another source of geotechnical risk at this site includes the presence of the Eagle Valley Evaporite beneath the site. This formation includes evaporite deposits (salt, gypsum, etc.), limestones, and other materials vulnerable to subsurface dissolution. Therefore, the likelihood of sinkhole development and or other hazards related to subsurface dissolution appears to be relatively high in the project area as a whole, compared to other regions of Colorado. Such features have been observed in the project area, as well. This risk at the subject site, however, does not appear to be greater than most other locations in Glenwood Springs.

Additionally, development of the project site address the presence of the relatedly tall, steep slope to the south of the project site and the associated risks of debris flows, landslides, other mass wasting events. However, debris flow catch basins have been constructed upslope of the site to protect prior development to the east and west of the site which likely will protect the proposed project as well

The soils in the project area generally have elevated levels of water soluble sulfates and project concrete likely will need protections from water soluble sulfates in addition to the relatively harsh climate. Similarly, corrosivity protection for ductile iron pipes likely also will be necessary at the subject site

FOUNDATION AND FLOOR SYSTEMS

Improvements that bear directly on the existing materials could experience post-construction movements on the order of 8 to 12 inches. Given the nature of the underlying soils and bedrock, greater movements than those estimated could occur. However, other development in the greater project area, subject to similar geotechnical risk have performed in relatively satisfactory manner where appropriate mitigation efforts have been used. Project pavements and flatwork also will be subject to significant post-construction movements, were they bear directly on the existing site soils.

For the lowest risk of post-construction movements, a deep foundation system and structural floor system should be utilized. A driven pile foundation system appears to be geotechnically feasible, but given the subsurface profile and nature of the debris flow materials, installing deep foundations likely will be deep and difficult to install.

Shallow foundation systems and slab-on-grade floors, also appear to be geotechnically feasible, provide they bear on improved soils. Soil could be improved through the removal and replacement of the existing soils to a depth of about 15 to 20 feet below existing grades. Such a fill section could reduce estimates of post-construction movements to about 1 inch. Specialty soil improvement techniques, such as rammed aggregate piers and compaction grouting, also appear to be geotechnical feasible. Post-construction movements for shallow foundations and slab-on-grade could reduce estimates of post-construction movements to about 1 inch. An allowable bearing pressure of about 1,500 psf to 2,000 psf likely will be appropriate.

Regardless of the foundation system or soil improvement technique, the effective surface and subsurface drainage, including proper drainage of storm water, snowmelt, irrigation water, etc., will be critical to the performance of the proposed construction. Serious problems have occurred during and after construction of nearby development, where effective surface and subsurface drainage was not maintained.

Once our final evaluation has been completed, a report providing a more through discussion of the subsurface conditions, geotechnical hazards, sources of geotechnical risk, and associated remedial methods as well as geotechnical parameters for design, and construction considerations will be provided. Until that report is issued, please let us know if there are any questions or comments regarding the preliminary information provided above.

Sincerely,

GROUND Engineering Consultants, Inc.

A handwritten signature in black ink, appearing to read 'Ben Fellbaum', with a long horizontal stroke extending to the right.

Ben Fellbaum, P.G.

A handwritten signature in blue ink, appearing to read 'Brian H. Reck', with a long horizontal stroke extending to the right.

Reviewed by Brian H. Reck, P.G., C.E.G., P.E.

**Subsurface Exploration Program
Geotechnical and Pavement Section
Recommendations
Glenwood Meadows Lot 14
Glenwood Springs, Colorado**



Prepared for:

**Total Merchant Services
c/o: The JHM Group of Companies
76 Progress Drive
Stamford, CT 06902**

Attention: Mr. John McClutchy, Jr.

Job Number: 07-6051

January 15, 2008

GROUND

ENGINEERING CONSULTANTS, INC

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PURPOSE AND SCOPE OF STUDY

This report presents the results of a subsurface exploration program performed by Ground Engineering Consultants, Inc., (GROUND) to develop geotechnical recommendations for design and construction of Lot 14 of the Glenwood Meadows retail development north of Wulfsohn Road and south of Midland Avenue in western Glenwood Springs, Colorado. The study was conducted in general accordance with GROUND's Proposal No. 0711-1906, dated November 29, 2007.

Field and office investigations provided information regarding surface and subsurface conditions, including existing improvements, the lateral and vertical distribution of earth materials, and depths to bedrock and groundwater. Material samples retrieved during subsurface exploration were tested in our laboratory to assess the engineering characteristics of site earth materials and assist development of our geotechnical recommendations. Results of the field, office and laboratory studies are presented below.

This report has been prepared to summarize the data obtained and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to the construction of the proposed facilities are included.

PROPOSED CONSTRUCTION

Present plans call for construction of approximately 70,000 total square feet office building on the western portion of the site. The two-story office building is anticipated to have 1 or 2 levels of below-grade parking. There will be 7 three-story multi-family residential buildings comprising approximately 135,000 total square feet, each with a single below-grade parking level. Additionally, there will be 5 two-story commercial buildings totalling approximately 23,500 total square feet in the northern portion of the site. No below-grade levels planned at this time for the commercial buildings.

The buildings will enclose several small parking areas served by two access driveways off of Wulfsohn Road. We anticipate that landscaping is planned for areas around the individual buildings and at several locations within the parking area. Development also will include installation of underground utilities to service the proposed buildings.

Information concerning the finished floor and finished grade elevations was not available at the time this report was prepared. Given the relatively flat existing grades, it appears that only minor cuts and fills, likely of less than 5 feet in depth, will be required to construct the building pads. Excavations on the order of 15 to 20 feet are anticipated to construct the below-grade levels. Deeper excavations and replacement of the material as fill will be required if the shallow foundation and slab-on-grade floor systems are selected.

If the proposed construction differs significantly from that described above, GROUND should be notified to re-evaluate the recommendations contained herein.

SITE CONDITIONS

Surface Conditions Lot 14 was a previously rough graded parcel west of the existing Glenwood Meadows retail center. Site grading was completed at the site to obtain its current grade in 2005. The site exhibits a gentle slope to the north at approximately 2 to 3 percent and the northern margin of the site is marked by an approximately 30-foot, 2:1 (horizontal : vertical) fill slope descending northward. The ground surface supported grasses and weeds. The surficial soils consisted largely of silty sands with gravel, and numerous scattered cobbles and boulders.

The property is bounded to the south by Wulfsohn Road and to the north by Midland Avenue. The remainder of the Glenwood Meadows development is to the east, and the Roaring Fork Transit Park-n-Ride facility and the City of Glenwood Springs' maintenance facility are to the west. Uphill to the south, several ridges ascend to the cliffs overlooking the area. Below the toes of the cliffs but above the development, a series of debris flow material retention basins and berm have been constructed.

Geologic Setting The site comprised a portion of the lower slopes of a relatively recent alluvial fan complex descending from gullies in the steep, elevated terrain to the south. The alluvial fan deposits consist of debris flow deposits with subordinate fluvial (stream laid) deposits of materials derived from the Maroon Formation supporting the cliffs. Clasts of basalt derived from a lava flow overlying the Maroon Formation locally also have been identified in the alluvial fan deposits.

The alluvial fan deposits and recently placed fills are underlain by sands, gravels and cobbles interpreted to be Pleistocene river terrace deposits associated with the

Colorado River. These deposits contain a significant proportion of clasts of crystalline rock types such as granite and gneiss.

Bedrock deposits of the Middle Pennsylvanian to Lower Permian Eagle Valley Evaporite, Eagle Valley Formation and Maroon Formation underlie the surficial deposits at the site and adjacent areas. The Maroon Formation consists largely of interbedded sandstones, siltstones and claystones as exposed in the cliffs above the project. Materials of the Eagle Valley Formation are exposed on the lowest slopes south of the site, above the alluvial fan deposits. This unit is broadly similar to the Maroon Formation with a greater percentage of limestone and gypsum. The Eagle Valley Evaporite, underlying the Eagle Valley Formation consists primarily of beds of gypsum, anhydrite and halite, with interbedded sandstones, siltstones, limestones and shales.

Geologic Hazards The project site lies within an area including much of the City of Glenwood Springs and its vicinity subject to geologic hazards including landslides, debris flows and subsidence related to hydro-consolidation. Maps depicting the general distribution of these hazards are public record such as the Colorado Geological Survey (CGS) *Open-File Report 78-10*. Geologic and geotechnical hazards at the site were assessed by CTL/Thompson, Inc., in the report, *Geologic and Preliminary Geotechnical Investigation, Glenwood Meadows, Glenwood Springs, Colorado*, Job No. GS-2871, prepared for Glenwood Meadows, LLC, dated February 1, 2000. A draft review of that study and others was provided by the CGS titled, *Geologic Hazards Review for the Glenwood Meadows Development Application*, prepared for the City of Glenwood Springs Planning Office, dated October 23, 2001. The Glenwood Meadows Annexation and Development Agreement (ADA) between the City and the Developer reflected these conditions. GROUND recommends that these documents be reviewed for additional information regarding development at the site.

The recognized potential for concentrated surface run-off and debris flows to damage improvements on the subject site as well as the retail and nearby City facilities has been addressed by the debris flow retention basins and berm constructed above the subject site. Design of the debris flow retention basins and berm was provided by others.

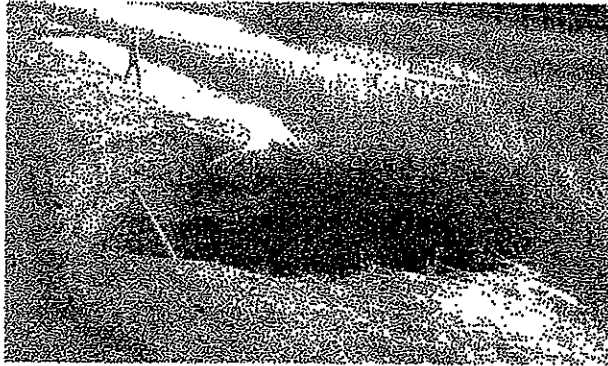
GROUND considers the potential for hydro-consolidation or "collapse" of the local soils comprising the alluvial fan complex upon wetting under a load to be the geologic hazard of principal concern at the site. Hydro-consolidation consists of a significant volume loss due to rearrangement of the constituent grains of the soil to a more compact

assemblage upon wetting under a load. Geotechnical recommendations to address hydro-consolidation are provided in this report.

(The potential for rock-fall hazard also was addressed by the February 1, 2000, CLT/Thompson report. Based on that report and as incorporated into the ADA, the subject site is not significantly exposed to potential rockfalls.)

In GROUND's opinion, with appropriate geotechnical and civil design, properly implemented during construction and effectively maintained after construction, Glenwood Meadows Lot 14 site is feasible for the proposed office building, commercial buildings and multi-family residences with regard to hydro-consolidation, flooding and debris flows.

The site also is vulnerable to the development of sinkholes from dissolution of water-soluble minerals in the bedrock underlying the site at depth. In August, 2003, for example, a sinkhole developed along the northern margin of Midland Avenue, east of the subject site, approximately downslope the Target



store. The sinkhole, which was backfilled promptly by the City of Glenwood Springs, was approximately 13 feet by 16 feet at the surface, about 11 feet in depth and about 130 cubic yards in volume. Additional information about the sinkhole can be found in an evaluation prepared for the City by Hepworth – Pawlak Geotechnical, *Subsurface Study for Evaluation of Sinkhole for Remedial Repair, Midland Avenue, North of the Community Center, Glenwood Springs, Colorado*, Job No. 103 522, dated September 8, 2003.

The geologic conditions giving rise to sinkholes, and the associated risks, are common in the Glenwood Springs area and generally greater along the Roaring Fork River to the south. Compilations of published map data suggest an average sinkhole density in the region on the order of 0.8 sinkholes per square mile. Therefore, the risk of sinkhole development at any given location such as the subject site appears relatively low. Most typically, sinkholes develop where stream terrace deposits or similar materials overlie the evaporitic bedrock. Subsurface exploration for this project included several test

holes advanced to depths of approximately 75 feet. None of the test holes encountered conditions suggesting the presence of voids beneath the site to the depths explored.

Nevertheless, the risk of sinkhole development, although apparently low, cannot be eliminated entirely. The potential for sinkholes must be accepted for development at the site, as well as for residence there. Effective surface drainage appears to reduce the risk of sinkhole development, but cannot eliminate it.

Annexation and Development Agreement We understand that the ADA for the overall Glenwood Meadows site is applicable to Lot 14. In that Agreement were established a number of geotechnical criteria for the development, based in part on recommendations from CGS regarding geologic hazards, including foundation types, measures for grading, surface drainage, and pavements, and underdrains for below-grade construction. We believe that the requirements therein have been met or exceeded by the recommendations herein.

The City also has expressed concerns that proposed improvements, particularly wet utility lines, could contribute to subsidence after project construction is completed. We understand that based on CGS comments, the City is requiring ground-penetrating radar (GPR) surveys to be performed along all utility alignments under public streets to further explore for the possible presence of sinkholes in the shallow subsurface. Therefore, GROUND recommends that the GPR surveys will be performed in general accordance with the City's requirements.

SUBSURFACE EXPLORATION

Subsurface exploration for the project was conducted in December, 2007 and January 2008. A total of 21 test holes were drilled with a truck/track-mounted, continuous flight, power auger rig to evaluate subsurface conditions, including depths to groundwater and bedrock, as well as to retrieve samples for laboratory testing and analysis. Of these, 14 test holes were drilled in the approximate building footprints, generally to depths of about 25 to 40 feet; several test holes, however were advanced to depths of approximately 75 feet. An additional 7 shallower test holes were advanced in the areas proposed for parking and driveways. A GROUND engineer directed subsurface exploration, logged the test holes in the field and prepared the samples for transport to our laboratory.

Relatively undisturbed samples of the subsurface materials were taken with a 2-inch I.D. "California" -type liner sampler. The sampler was driven into the substrata with blows from a 140-pound hammer falling 30 inches. This procedure is similar to the Standard Penetration Test described by ASTM Method D1586. Penetration resistance values (blows per distance driven, typically 12 inches), when properly evaluated, indicate the relative density or consistency of soils and bedrock. A composite, disturbed (bulk) sample of the shallow soils in the pavement areas was collected from the auger returns. Depths at which the driven samples were taken, and associated penetration resistance values are shown on the test hole logs.

The approximate locations of the test holes are shown in Figure 1. Logs of the exploratory test holes are presented on Figures 2 through 6. Explanatory notes and a legend are provided on Figure 7.

LABORATORY TESTING

Samples retrieved from our test holes were examined and visually classified in the laboratory by the project engineer. Laboratory testing of soil samples obtained from the subject site included standard property tests, such as natural moisture contents, dry unit weights, grain size analyses and liquid and plastic limits. Swell-consolidation, water-soluble sulfate content, pH and resistivity tests were performed on selected samples, as well. A resilient modulus test was performed on the composite sample of materials from the areas to be paved.

Laboratory tests were performed in general accordance with applicable ASTM and AASHTO protocols. Data from the laboratory testing program are summarized in Table 1. Results of the swell-consolidation testing are plotted on Figures 9 through 17.

SUBSURFACE CONDITIONS

The earth materials encountered in the test holes, in general, of sandy fill soils extending to depths of a few feet to approximately 35 feet. (Delineating the complete lateral and vertical extents of existing fills on the project site was beyond our present scope of services for this project.) The fills were underlain by interbedded native silty to clayey sands and sandy silts with gravel, boulders and cobbles, and local lenses of clays. These soils are interpreted to be alluvial fan deposits. The native and fill soils contained significant fractions of cobbles and boulders. Based on other drilling by GROUND within the overall Glenwood Meadows site, it is anticipated that dense beds of

cobbles and boulders underlay the alluvial fan materials below about 80 to 95 feet, interpreted to be Quaternary alluvial (fluvial) materials deposited by Colorado River prior to burial beneath the alluvial fan deposits.

Bedrock was not encountered to the depths explored. Neither was groundwater encountered in the test holes at the time of subsurface exploration. However, groundwater levels can fluctuate, in response to annual and longer-term cycles of precipitation, irrigation, surface drainage and land use, the development and drainage of transient, perched water conditions, and other factors.

Fill consisted of silty to clayey sands to sandy silts. Gravel, boulders and cobbles were encountered. They were moist, low plastic, medium dense to dense and red in color.

Native Sands were clean to silty or clayey to gravelly. Cobbles and boulders were encountered, as well as lenses of sandy clays, sandy silts and relatively clean sands and gravels. They were fine to medium grained, dry to slightly moist, non-plastic to low plastic, loose to medium dense, and red in color.

Swell-Consolidation Testing Consolidations ranging from about 0.3 to 6.1 percent were measured in samples of the alluvial fan soils upon wetting under a 1,000 psf surcharge load. (See Table 1.)

SEISMIC CLASSIFICATION

No known active faults are in the immediate project vicinity. The closest documented potentially active (seismogenic) fault to the site is an unnamed series of relatively short, northwest-trending faults approximately 2½ to 3 miles to the southwest of the site (Kirkham, R.M., and W. P. Rogers, *Earthquake Potential in Colorado, A Preliminary Evaluation*, Colorado Geological Survey, Bulletin 43, dated 1981; *Preliminary Quaternary Fault and Fold Database, and Map Server*, Colorado Geological Survey, <http://geosurvey.state.co.us/Default.aspx?tabid=453>). These faults are shown as late Quaternary in age (demonstrable timing of last offset across the fault), but not Holocene (movement during the last 11,000 years ±). The risk of these faults giving rise to damaging, earthquake-induced ground motions at the site is considered to be low given their short length and the moderate, previously recorded, seismic magnitudes in the area.

Compared with other regions of Colorado, recorded earthquake frequency in the project area is relatively low; Kirkham and Rogers (1981) depict 2 historical earthquake epicenters of moderate magnitude in the Glenwood Springs area. The project area falls within Seismic Performance Category A based on AASHTO guidelines, and is considered to have a low probability for large, damaging earthquakes.

GROUND considers the site to fall within the parameters of a Seismic Site Class D site, in accordance with 2006 IBC. It should be noted that this classification is an estimate, based on the conditions encountered during drilling, our laboratory test data, and GROUND's experience in similar soils. If a quantitative assessment of the classification is needed, GROUND can perform down-hole shear wave velocity testing. A proposal for this work can be provided upon request.

GEOTECHNICAL CONSIDERATIONS FOR DESIGN

Geotechnical Risk Our data indicate that the native soils underlying the site are vulnerable to hydro-consolidation or "collapse." Hydro-consolidation consists of a significant volume loss due to rearrangement of the constituent grains of the soil to a more compact structure upon wetting under a surcharge load. The data obtained for this study suggested moderate potentials for post-construction settlement of structures constructed on the soils encountered at this site. Soils subject to "collapse" are generally stable with regard to their moisture-volume relationships so long as their moisture contents are kept unchanged. Post-construction wetting of "collapsible" soils gives rise to settlement and resultant damages. Pavements, utilities, and sidewalks, etc., all can be affected, in addition to the buildings. The actual extent and distribution of post-construction settlement realized at a given location (and the nature and degree of resultant damages) will depend on a variety of factors. These factors include the spatial distribution of the hydro-consolidation potentials in the underlying soils, the type and design of the structure supported on them, structural loads, and the depth and lateral extent to which the soils become wetted after construction, etc. Because of the number and variability of these factors, the necessarily limited data set by which the geotechnical factors can be estimated, the variety of means by which estimates of post-construction settlement can be made, and the inherent assumptions involved, estimates of future settlement will tend to range widely in magnitude.

Various quantitative and semi-quantitative methods are used by geotechnical engineers in Colorado to estimate post-construction settlements of structures, pavements, etc.,

constructed on "collapsible" soils as a step toward development of recommendations for foundations, remedial earthworks, etc. Those typically used are based on practical engineering experience and judgment using combinations of measured values of soil moisture content, density and plasticity, one-dimensional swell/consolidation, and/or soil suction. The recommendations and criteria provided in this report were based on the data presented herein, and our experience in the general project area with similar structures, and our engineering judgment with regard to the applicability of the data and methods of forecasting future performance. A variety of engineering parameters were considered as indicators of potential future soil movements. Our recommendations were based on our judgment of "likely movement potentials," (i.e., the amount of movement likely to be realized if site drainage is generally effective, estimated to a reasonable degree of engineering certainty) as well as our assumptions about the Owner's willingness to accept geotechnical risk. "Maximum possible" movement estimates necessarily will be larger than those presented herein. They also have a significantly lower likelihood of being realized in our opinion, and generally require more expensive measures to address. We encourage the Owner or prospective future owners, upon receipt of this report, however, to discuss these risks and the geotechnical alternatives with us.

Anticipated 'Depth of Wetting' At any point in the design life of a structure, the vertical and lateral extents of future wetting of the underlying "collapsible" soils will exert a significant influence on the extent and distribution of future settlement. Professional experience and opinions differ with regard to depths to which significant, post-construction, soil moisture changes take place. Differing assumptions for this future "depth of wetting" at a site will give rise to differing estimates of potential, post-construction heave. Movement estimates based on much deeper than typically estimated depths of wetting will be larger than those based on more typically observed depths.

Engineering consulting and design practice necessarily involves weighing the risks inherent in a given design approach against the construction and maintenance costs associated with reducing those risks. The Owner (and subsequent prospective future owners) must, therefore, understand the risks and remedial approaches presented in this report and the risk-cost trade-offs addressed by the Civil Engineer and Structural Engineer in order to direct his design team to the portion of the Higher Cost / Lower Risk – Lower Cost / Higher Risk spectrum in which this project should be (or was) designed. If the Owner or a prospective future owner does not understand these risks, it is critical

that he request additional information or clarification so that his expectations reasonably can be met.

As noted above, the "depth of wetting" forecast for a given site strongly affects the anticipated performance of structures placed there. At this site, GROUND estimated a depth of wetting of 18 feet, a depth that is equal to or greater than the "depth of wetting" found at about 62 percent of the sites studied by Walsh and others (2006)¹ in the Denver metropolitan area and appears reasonable for this site based on our experience in on the Colorado Western Slope. A "depth of wetting" of 18 feet is appropriately conservative in our opinion for this project. Clearly, however, there is a potential for this "depth of wetting" to be exceeded. And, if a greater depth of wetting were considered – other parameters being equal – then a greater estimate of post-construction movement would result. "Depths of wetting" of 30, 40 or 70 feet or more have been considered (e.g., Chao and others, 2006)² and have been encountered locally in the field. These cases, however, generally are in unusual geologic conditions such as the "Designated Dipping Bedrock Area" as recognized by Jefferson County, Colorado, or identified forensically in unusual circumstances such as a pipe leak that has remained un-repaired for an extended period. In more typical geologic settings, such deep "depths of wetting" are considered only rarely in engineering consulting practice in this area, however. If the Owner prefers a more conservative (or less conservative) "depth of wetting" to be used to develop geotechnical recommendations, GROUND should be contacted to revise geotechnical criteria herein.

Likely Post-Construction Movements Utilizing the above assumptions, data obtained for this study, and our experience on other projects in the vicinity, our estimates indicate potential likely post-construction movements on the order of 6 to 8 inches where building elements are supported directly on native earth materials that become wetted following construction to the depth described. Movements of this magnitude can cause severe cosmetic and/or structural distress to the proposed buildings. (These same general potentials for post-construction movement and damage also apply to project pavements, hardscaping, piping, and all other improvements in contact with the site soils where subject to post-construction wetting.)

¹ Walsh, K.D., C.A. Colby, W.N. Houston and S.A. Houston, 2006, *Evaluation of Changes to Soil Suction Resulting from Residential Development, Unsaturated Soils 2006*, American Society of Civil Engineers, Special Publication No. 147, pp. 203 – 212.

² Chao, K-C, D.D. Overton, and J.D. Nelson, 2006, *The Effects of Site Conditions on the Predicted Time Rate of Heave, Unsaturated Soils 2006*, American Society of Civil Engineers, Special Publication No. 147, pp. 2086 – 2097.

General Foundation Types At the subject site, several types of foundation systems, in conjunction with differing extents of remedial earthworks, etc., can be employed to support the proposed buildings on the soils and bedrock encountered in the test holes. Each combination entails a different degree of risk of post-construction building movements. These range from utilizing shallow spread footings and slab-on-grade concrete floors bearing directly on the native soils (entailing the greatest risk) to supporting the structures, including floors, on deep, driven pile foundations bearing in the underlying alluvial cobbles and boulders at depths of on the order of 80 feet or more (entailing the least risk).

Lower movement tolerances are typically associated with residential buildings and if placed on spread footings and slab-on-grade the allowable movement tolerance would likely be exceeded. Therefore, GROUND recommends that the proposed residential buildings be supported on driven pile foundation systems and providing it with structural floors similarly supported as the most positive way to minimize post-construction settlements. We also recommend use of a driven pile foundation system and a structural floor for the office building where a below grade levels planned. We anticipate that construction of the deep fill section recommended for use of shallow foundations and floor system on deep fill section may not be feasible, economically.

We assume, however, that 80+ -foot pile foundations and a structural floor may not be practical economically for the other commercial buildings at the subject project. Therefore, in the absence of direction otherwise from Total Merchant Services or the Owner, we have assumed that the Owner prefers to use conventional, shallow foundations and a slab-on-grade concrete floor for the commercial buildings on this project. The geotechnical criteria provided in the *Foundation Systems and Floor Systems* section of this report were developed accordingly to reduce damage resulting from movement of the foundation soils. If this approach is selected, the Owner must understand that foundation and/or floor slab movements will result, with associated damages. Shallow foundations and slab-on-grade floors together with excavation of the underlying soils and replacement with backfill with less potential for settlement have been used in the Denver metropolitan area with varying degrees of success. If the alternative criteria are implemented effectively in design and construction, and site drainage is maintained effectively, likely settlements in the soils supporting the footings and slab will be on the order of 1½ inches, with similar differential movements over a span of about 50 feet. GROUND is available to meet, however, to discuss the risks

and remedial approaches presented in this report, as well as other possible design approaches, upon request.

Irrespective of the foundation system and floor system selected by the Owner, some risk of post-construction building and floor movements will remain, even after effective implementation of the recommendations in this report. The Owner and prospective future owners should understand these risks, as well as the site maintenance measures that are necessary to manage them. Other elements of the proposed improvements on this site (hardscaping, pavements, etc.) will be underlain by expansive earth materials, and likely will be damaged. Owner tolerances for movement and distress to these appurtenant improvements typically is greater than for buildings. Nevertheless, periodic maintenance will be required. To achieve performance similar to that of the building floors, similar foundation measures will be required. We recommend that the Owner and prospective future owners familiarize themselves with the measures presented in Noe and others (1997)³ and implement them at this site. This booklet is available from the Colorado Geological Survey in Denver, Colorado, and can be purchased from their website. (www.geosurvey.state.co.us). Although written for residential construction on expansive soils, the site drainage concepts and recommendations outlined therein are generally applicable to building sites on collapsible soils, as well.

GROUND recommends consideration of a supplemental drilling program for structures not supported on deep foundations in order to provide additional information regarding the potential for severe settlements. We suggest advancing test holes on approximately 30-foot centers with an air percussion rig or other, rapid-drilling equipment, to a depth on the order of 50 to 60 feet beneath each building supported on shallow foundations. Such a drilling program would provide direct evidence of voids beneath those support locations, if present, and allow those voids to be collapsed or filled prior to building construction.

On-Going Maintenance Some risk of post-construction building and floor slab movements will remain, however, even after effective implementation of the recommendations in this report. The Owner and prospective tenants / residents should understand these risks, as well as the site maintenance measures that should be performed to manage them. Geotechnical parameters for design and construction of shallow, spread footing foundations for the proposed buildings, as well as

³ Noe, D.C., C.L. Jochim and W.P. Rogers, 1997, *A Guide to Swelling Soils for Colorado Homebuyers and Homeowners*, Colorado Geological Survey, Special Publication 43.

recommendations for remedial earthworks, drainage, etc., are provided in subsequent sections of this report. These measures also will be beneficial with regard to potential heave of clayey soils encountered locally in the test holes. GROUND can provide geotechnical recommendations and parameters for other types of foundation systems upon request.

FOUNDATION SYSTEMS

Shallow Foundation Systems for Commercial Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, it is GROUND's opinion that the proposed commercial buildings, if determined to be feasible, can be supported on conventional, shallow foundation systems bearing on a section of properly moisture-conditioned and compacted fill provided that the Owner is aware of the risks inherent in construction on collapsible soils, and that the buildings are designed accordingly.

The criteria presented below may be observed for spread footing foundation systems. The construction details should be considered when preparing project documents.

- 1) Footings should bear on 10 or more feet of properly compacted fill.
- 2) The thickness of the fill section should be taken from the lowest foundation element or the bottom of the slab + gravel layer system, respectively. (If the gravel layer is not installed, the fill section should be correspondingly thickened.)

The existing soils and fill soils should be removed to a sufficient depth beneath footing (and slab) bearing elevations to accommodate placement of a new fill section uniformly beneath the building, in addition to scarification and re-compaction of the underlying 8 to 12 inches of material.

Excavation and replacement to the full, recommended depth should extend at least 12 feet beyond the building perimeter.

Based on the data obtained from our test holes, varying depths of existing fill were encountered, however a uniform fill thickness of at least 10 feet should be placed below the footing bearing elevations. Therefore, the existing fill should not be considered as part of the fill recommended fill section below the footings.

Recommendations for placement and compaction of fill soils are provided in the *Project Earthworks* section of this report. As discussed in that section, site soils free of debris are suitable, in general, for use as compacted fill.

The Contractor should provide surveyed elevations of the bottoms of the excavations beneath the building verifying that the remedial excavation was advanced to a sufficient depth.

- 3) Footing excavation bottoms may expose debris, loose or wet materials, organic or otherwise deleterious materials. Firm materials may be disturbed by the excavation process. All such unsuitable materials should be excavated and replaced with properly compacted fill.
- 4) Footings bearing on 10 or more feet of properly compacted fill may be designed for an allowable soil bearing pressure (Q) of 2,500 psf under drained conditions. This value may be increased by $\frac{1}{3}$ for transient loads such as wind or seismic loading.

Based on this allowable bearing capacity, we anticipate direct compression of the foundation soils on the order of 1 inch. For other estimated settlements, allowable bearing pressure values can be obtained from Figure 8.

The allowable bearing capacity provided above is based on the assumption of well-drained conditions. If foundation soils become wet, the effective bearing capacity could be reduced and larger post-construction settlements than those estimated herein may result. In addition, the risk of hydro-consolidation of the underlying native soils underlying the fill prism will be increased.

- 5) In order to reduce differential settlements between footings or along continuous footings, footing loads should be as uniform as possible. Differentially loaded footings will settle differentially.

The Contractor should take care to construct fill section beneath the building of uniform depth and composition to reduce differential post-construction building, slab and flatwork movements. A differential fill beneath the building will tend to increase differential settlements.

- 6) Spread footings should have a minimum footing lateral dimension of 16 or more inches for linear strip footings and a minimum lateral dimension of 24 or more

inches for isolated pad footings. Actual footing dimensions, however, should be determined by the Structural Engineer, based on the design loads.

- 7) Footings should be provided with adequate soil cover above their bearing elevation for frost protection. Footings should be placed at a bearing elevation 3.5 or more feet below the lowest adjacent exterior finish grades in un-heated areas. In heated interior areas, footings should bear at least 1.5 feet below lowest adjacent finish grades.
- 8) Continuous foundation walls should be reinforced top and bottom to span an unsupported length of at least 10 feet.
- 9) The lateral resistance of spread footings will be developed as sliding resistance of the footing bottoms on the foundation materials. Sliding friction at the bottom of footings may be taken as 0.35 times the vertical dead load.
- 10) Compacted fill placed against the sides of the footings should be compacted to at least **96 percent** relative compaction in accordance with the recommendations in the *Project Earthworks* section of this report.
- 11) Care should be taken when excavating the foundation to avoid disturbing the supporting materials. Hand excavation or careful backhoe soil removal may be required in excavating the last few inches.
- 12) Foundation soils may be disturbed or deform excessively under the wheel loads of heavy construction vehicles as the excavations approach footing levels. Construction equipment should be as light as possible to limit development of this condition. The use of track-mounted vehicles is recommended since they exert lower contact pressures. The movement of vehicles over proposed foundation areas should be restricted.
- 13) All footing areas should be compacted with a vibratory plate compactor prior to placement of concrete.

The Geotechnical Engineer should be retained to observe and test all footing excavations prior to placement of reinforcing steel or concrete.

Deep Foundation Systems for the Residential and Office Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, it is GROUND's opinion that the proposed residential building should be supported on deep foundation systems bearing in the river terrace gravels, cobbles and boulders underlying the site at depths of 75 or more feet below existing grades. Although driven pile foundation systems will not eliminate the risk of post-construction building movement, if the recommendations below are followed, the likelihood of acceptable building performance will be well within the local industry standards for construction of a driven pile foundation system on soils and bedrock of this nature.

The design criteria below should be followed for design and construction of driven, steel, H-pile foundations for the residential buildings. We assume that HP 12 x 74 or 14 x 89 piles will be used for driven pile foundations. The construction details should be considered when preparing project documents.

- 1) The pile should consist of a heavy steel H-section. The pile tip should be reinforced with a commercial, heavy duty, pile tip.
- 2) The maximum pile load should not exceed a maximum service stress of 12,000 psi based on the pile cross-sectional area.
- 3) We anticipate that piles will be driven to depths of about 80 to 95 feet below existing grades at the time of preparation of this report. Locally, lower tip depths may be necessary.
- 4) Based on the dominantly granular nature of the site alluvial fan soils, we anticipate that post-installation down-drag on the piles will be negligible due to the densification of the soils surrounding each pile from the driving efforts. We anticipate that subsequent soil adjustments will be realized rapidly. Nevertheless, GROUND recommends re-striking of the piles to evaluate their capacity at least 24 hours after (initial) driving has been completed.
- 5) Closely spaced groups of piles required to support concentrated loads will require an appropriate reduction of the estimated bearing capacity based on the effective envelope area of the pile group. This reduction can be avoided by spacing piles apart a distance of at least 3 diameters, center to center. Pile groups with spacings less than 3 diameters center to center should be studied

on an individual basis to determine the appropriate reduction for both lateral and axial capacities.

- 6) Piles may be designed to resist lateral loads taking a modulus of horizontal subgrade reaction of 140 pci to be characteristic of the native alluvial fan and fill soils below a depth of 6 feet, based on adjacent finished grade. A modulus of horizontal subgrade reaction of 225 pci may be assumed in the alluvial river terrace deposits. Resistance to lateral loads should be neglected in fill and/or native soils shallower than 6 feet.

We understand that the building pads will be wide enough so that any loads from relaxation of the shallow soils or downslope creep will not affect the piles. Should the buildings be constructed in a "walk-out" configuration, however, these loads should be evaluated and accounted for in the wall and foundation designs.

- 7) Lateral resistance to horizontal forces also may be resisted by battered piles. It is normal to assume a battered pile can resist the same axial load as a vertical pile of the same type and size driven to the same depth. The vertical and horizontal components of the load will depend on the batter inclinations. Batters should not exceed 1:4 (horizontal : vertical).
- 8) Uplift capacity of piles should be limited to 25 percent of the indicated vertical load capacities
- 9) We recommend that the pile driving hammer should develop a minimum of 42,000 foot-pounds of energy per blow for HP 12 x 74 piles, and a minimum of 52,000 foot pounds of energy per blow for the HP 14 x 89's.

After the actual pile type and proposed hammer have been selected, the Geotechnical Engineer should perform a Wave analysis to determine if the driving hammer is sized adequately for the type of pile selected and the soils and bedrock materials into which the piles are driven.

A Geotechnical Engineer should be retained to evaluate necessary minimum embedment depths based on the structural loadings for the piles. The Geotechnical Engineer should observe all pile driving operations. We recommend that at the start of pile installation for each building, the Geotechnical Engineer perform pile dynamic

testing. This testing should be performed in order to a) assess whether piles are being over-stressed relative to the maximum service stress of 12,000 psi recommended above, and b) develop virtual refusal criteria for bedrock penetration based on the design capacity of the piles. Dynamic pile testing should be performed by means of a Pile Driving Analyzer (PDA) to determine the virtual refusal criteria. Lateral loading tests also should be performed at the start of pile installation.

The test holes drilled for this evaluation were advanced to the depths indicated on the test hole logs by means of a conventional, truck-mounted, drilling rig using 4-inch diameter, solid-stem, flight auger equipment. Nevertheless, because of the cobbles and boulders in the site soils, the Contractor should anticipate some difficulties in advancing the piles, and be prepared to work in these conditions. We anticipate the need for local pre-drilling of pile locations and/or splitting of boulders to advance the piles to the anticipated depths.

Additional pile footage should be included in project planning to allow for additional piles locally where offsets were required due to potential obstructions to pile driving in the landfill materials or damage to piles.

Where a pile cannot be advanced to at least the approximate, anticipated tip depths, it should be evaluated with regard to its capacity by the Geotechnical Engineer and the Structural Engineer.

PARTIAL BASEMENTS / BELOW GRADE LEVELS

Partial basements or any otherwise below grade levels (loading docks, garden-levels, etc.) can result in differential settlement between the portion of the building that is founded near the final surface grade (no basement level) and that which is founded below grade, specifically if the portion of the building directly adjacent to the below grade level is founded on backfill material. The backfill material may exhibit settlement due to compression of the foundation that exceeds the magnitudes provided in Figure 8.

Therefore, the Structural Engineer and the Contractor must carefully schedule the construction of the building such that the footing bearing soils are not disturbed or vulnerable to movement associated with settlement of the below grade wall backfill. This most often occurs when the below grade walls are backfilled to lower compaction standards because of structural concerns regarding wall deformation (i.e. the walls are not braced with the first floor beams, girders, decking, etc.).

In addition, foundation elements supporting the portion of the building not located above a below grade level are sometimes designed for less bearing capacity than those located under the below grade level. As shown in Figure 8, different loads may result in differential settlement.

In no case should the subgrade for future foundations or existing foundation elements be undermined.

FLOOR SYSTEMS

Slab-on-Grade Floors for the Commercial Buildings As discussed in the *Geotechnical Considerations for Design* section of this report, there is a potential for post-construction movements of slab-on-grade floor systems even where placed on a relatively deep fill section. Therefore, if the Owner understands and accepts the risk of post-construction slab movements, the remedial earthworks and other parameters provided below will tend to reduce slab movements, make them more uniform and reduce potential distress that can result from settlement of foundation materials.

Post-construction slab movements are directly related to changes in moisture contents to the underlying soils after construction is completed. If slab-on-grade construction is used in accordance with the following criteria, potential for slab movement will not be eliminated, but may tend to make movements more uniform and will reduce damages where movements do occur.

- 1) Floor slabs should bear on 12 or more feet of properly moisture-conditioned and compacted fill soils.

The existing soils should be removed to a sufficient depth beneath slab bearing elevation to accommodate construction of the above fill section, in addition to scarification and re-compaction of the underlying 8 to 12 inches of material. The thickness of the fill section should be taken from the bottom of the slab + gravel layer system. (Taking the slab+gravel system to be approximately 1 foot in thickness and assuming the footings will bear at 3 feet below existing grades, a 12-foot fill section beneath the floor system and 10-foot fill section beneath the footings should yield a nearly uniform excavation bottom elevation. If the gravel layer is not installed, the fill section should be correspondingly thickened.)

Excavation and replacement to the full recommended depth should extend laterally at least 12 feet beyond each building perimeter.

Recommendations for placement and compaction of fill soils are provided in the *Project Earthworks* section of this report. As discussed in that section, site soils free of debris are suitable, in general, for use as compacted fill.

The Contractor should provide surveyed elevations of the bottoms of the excavations beneath the building verifying that the remedial excavation was advanced to a sufficient depth.

The Contractor should take care to construct a fill section of uniform depth and composition to reduce differential post-construction building, slab and flatwork movements. A differential fill beneath the building will tend to increase differential settlements.

Based on the data obtained from our test holes, varying depths of existing fill were encountered, however a uniform fill thickness of at least 12 feet should be placed below the floor slabs. Therefore, the existing fill should not be considered as part of the recommended fill section below the floor slabs.

- 2) An allowable vertical soil modulus (K_v) of 45 pci may be used for design of concrete slabs bearing on a properly prepared subgrade.
- 3) A Geotechnical Engineer should be retained to observe the prepared surface on which the floor slab will be cast prior to placement of reinforcement. Exposed loose, soft or otherwise unsuitable materials should be excavated and replaced with properly compacted fill, placed in accordance with the recommendations in the *Project Earthworks* section of this report.
- 4) The floor slab should be separated from all bearing walls and columns with slip joints that allow unrestrained vertical movement.

Joints should be observed periodically, particularly during the first several years after construction. Slab movement can cause previously free-slipping joints to bind. Measures should be taken to assure that slab isolation is maintained in order to reduce the likelihood of damage to walls and other interior improvements

- 5) Interior partitions resting on the floor slab should be provided with slip joints so that if the slabs move, the movement cannot be transmitted to the upper structure. This detail is also important for wallboards and door frames. A slip joint that will allow 2 or more inches of vertical movement is recommended. If slip joints are placed at the tops of walls, in the event that the floor slabs move, it is likely that the wall will show signs of distress, especially where the floors meet the exterior wall.
- 6) A concrete slab-on-grade should be constructed and cured in accordance with applicable industry standards and provided with properly designed and constructed control joints. ACI, AASHTO and other industry groups provide guidelines for proper design and construction of concrete slabs-on-grade, and associated jointing. The design and construction of such joints should account for cracking resulting from concrete shrinkage, curling, tension and applied loads, as well as other factors related to the proposed slab use. Joint layout based on slab design may require more frequent, additional or deeper joints than typical industry minimums, and should reflect the configuration and proposed use of the slab. Particular attention in slab joint design should be given to areas where slabs exhibit interior corners or curves, e.g., at column block-outs or reentrant corners, and slabs with high length to width ratios, significant slopes, thickness transitions, high traffic loads, or other unique features. The improper placement or construction of control joints will increase the potential for slab cracking.
- 7) Floor slabs should be adequately reinforced. Recommendations based on structural considerations for slab thickness, jointing, and steel reinforcement in floor slabs should be developed by the Structural Engineer.
- 8) All plumbing lines should be carefully tested before operation. Where plumbing lines enter through the floor, a positive bond break should be provided. Flexible connections allowing 2 or more inches of vertical movement or more should be provided for slab-bearing mechanical equipment and the connection should be adjustable and observed periodically.
- 9) Moisture can be introduced into a slab subgrade during construction and additional moisture will be released from the slab concrete as it cures. GROUND recommends placement of a properly compacted layer of free-draining gravel, 4

or more inches in thickness, beneath the slabs. This layer will help distribute floor slab loadings, ease construction, reduce capillary moisture rise and aid in drainage. The free-draining gravel should contain less than 5 percent material passing the No. 200 Sieve, more than 50 percent retained on the No. 4 Sieve, and a maximum particle size of 2 inches.

The capillary break and the drainage space provided by the gravel layer also may reduce the potential for excessive water vapor fluxes from the slab after construction as mix water is released from the concrete. We understand, however, that professional experience and opinion differ with regard to inclusion of a free-draining gravel layer beneath slab-on-grade floors. If these issues are understood by the Owner and appropriate measures are implemented to address potential concerns including slab curling and moisture fluxes, then the gravel layer may be deleted.

- 10) A vapor barrier beneath a building floor slab can be beneficial with regard to reducing exterior moisture moving into the building, but can retard downward drainage of construction moisture. Uneven moisture release can result in slab curling. Elevated vapor fluxes can be detrimental to the adhesion and performance of many floor coverings and may exceed various flooring manufacturers' usage criteria.

Therefore, in light of the several, potentially conflicting effects of the use vapor-barriers, the Owner and the Architect and/or Flooring Contractor should weigh the performance of the slab and appropriate flooring products in light of the intended building use, etc., during the floor system design process and the selection of flooring materials. Use of a plastic vapor-barrier membrane may be appropriate for some buildings or building areas and not for others.

Structural Floors for the Residential and Office Buildings The residential and office buildings should be provided with structural floors should be supported on grade beams and H-piles in the same manner as the building structure. Requirements for the number and position of additional H-piles to support the floors will depend upon the span, design load, and structural design, and should be developed by the Structural Engineer. Geotechnical recommendations for design and installation of the driven H-piles are provided in the *Building Foundations* section of this report.

Structural floors should be constructed to span above a well-ventilated crawl space. The crawl space should be adequate to allow access and maintenance to utility piping. Piping connections through the floor should allow for differential movement between the piping and the floor system. If a wooden structural floor system is used, particular care should be taken to design and maintain the under-floor ventilation systems in order to reduce potential deterioration of the wooden structural members. A minimum 10-mil unreinforced polyethylene vapor-retarder (a plastic sheet material) should be considered for installation below all structurally supported below-grade floors and should be properly attached/sealed to foundation walls. The plastic sheeting should not be attached to horizontal surfaces such that condensate might drain to wood or corrodible metal surfaces.

New buildings generally lack ventilation due primarily to systematic efforts to construct airtight, energy-efficient structures. Therefore, areas such as crawl spaces beneath structural floors are typically areas of elevated humidity which never completely dry. This condition can be aggravated in some locations by shallow groundwater or a perched groundwater condition, which can result in, saturated soils within close proximity of finished building pad grades. Persistently warm, humid conditions in the presence of cellulose, which is the base material found in many typical construction products, creates an ideal environment for the growth of fungi, molds, and mildew. Published data suggest links between molds and negative health affects. Therefore, GROUND recommends that crawl spaces beneath structural floors be provided with adequate, positive active ventilation systems or other active mechanisms such as specially designed HVAC systems (as well as properly constructed and maintained underdrains) to reduce the potential for mold, fungus and mildew growth. Crawl spaces should be inspected periodically so that remedial measures can be taken in a timely manner, should mold, fungus or mildew be present and require removal.

The Owner must be willing to accept the risks of potential mold, fungus, and mildew growth when electing to utilize a structural floor system. Additionally, the Contractor is solely responsible for the construction means and methods, and any observation or testing performed by a representative of a Geotechnical Engineer during construction does not relieve the Contractor of that responsibility.

Mold Growth Areas/Conditions for Growth for Structural Floors:

1. Water damaged building materials or high moisture/humidity areas where cellulose-containing materials are used:
 - Wallboard/sheetrock
 - MDF/OSB/Plywood
 - Fibrous Ceiling Tiles
 - Paper-backed Insulation
 - Jute-backed carpet
 - Hardwood Flooring
2. Condensation inside buildings from pipes, baths, heaters, and dryer vents
3. Relative humidity greater than 55%
4. Temperatures of 36 to 104 °F.
5. "Wet" areas that do not dry out after 24 hours.

Mold does not require a light source in order to grow and can grow inside walls, behind tubs/showers, under carpet and flooring undetected.

All plumbing lines should be carefully tested before operation. Where utility lines enter through the floor, positive bond breaks should be provided. Utility lines can be displaced by soils movements which are not reflected in the building. Design and installation of associated fixtures should accommodate this potential differential movement, which could be on the order of 4 inches or more.

Crawl spaces typically are vulnerable to moisture accumulation. Proper installation and maintenance of the underdrains as recommended in the *Underdrain System* section of this report will assist drainage of free water and assist the ventilation system reduce crawl space moisture.

FOUNDATION WALLS

Foundation walls that are laterally supported and can be expected to undergo only a limited amount of deflection, i.e., an "at-rest" condition, should be designed to resist lateral earth pressures computed taking an equivalent fluid unit weight of 55 pcf to be

characteristic of the backfill soils for a horizontal backfill surface if imported, select, granular, backfill is placed the walls and compacted properly. The at-rest lateral earth pressures should be computed taking an at-rest equivalent fluid pressure of 67 pcf to be characteristic of the backfill soils where on-site materials are used as backfill, again for a horizontal backfill surface.

Select, granular materials imported for use as wall backfill should meet the criteria for CDOT Class 1 Structure Backfill as tabulated below. All imported soils should be tested and approved by the Geotechnical Engineer prior to transport to the site.

CDOT CLASS 1 STRUCTURE BACKFILL

Sieve Size or Parameter	Acceptable Range
2-inch	100% passing
No. 4	30% to 100% passing
No. 50	10% to 60% passing
No. 200	5% to 20% passing
Liquid Limit	≤ 35
Plasticity Index	≤ 6

GROUND suggests use of select, granular, backfill behind the walls to achieve lower lateral earth pressures. To realize the lower equivalent fluid unit weight, structural fill should be placed behind the wall to a minimum distance equal or greater than half of the wall height. Where select, granular, backfill is used, the upper 1-foot of the wall backfill should be a relatively low permeability soil or otherwise protected to reduce surface water infiltration into the backfill.

The 'at rest' loads recommended above are for well-drained conditions. The additional loading of hydrostatic loads if sufficient drainage is not provided, and loads from traffic, stockpiled materials, etc., should be included in foundation wall design.

Backfill soils should be properly moisture-conditioned and compacted in accordance with the recommendations in the *Project Earthworks* section of this report. The Contractor should take care not to over-compact the backfills, which could result in excessive lateral pressures on the walls.

A Geotechnical Engineer should be retained to observe the exposed excavation prior to placement of backfill, observe earthwork operations, and test the soils.

Some settlement of wall backfills will occur even where the material was placed correctly. This settlement likely will be differential, increasing with depth of fill. Where shallowly founded structures and pavements must be placed on backfilled zones, the associated risks should be understood by the Owner. Structural design, pipe connections, etc., should take into account backfill settlement, including differential movements from settlements and/or heave of the foundation wall backfill soils. A Geotechnical Engineer should be retained to provide recommendations for founding improvements in such areas.

Passive pressure against the sides of wall footings bearing against firm native soils or properly compacted backfill can be computed taking an at-rest equivalent fluid pressure of 275 pcf to be characteristic of the site soils, up to a maximum of 2,750 psf. The upper 1-foot of embedment should not be relied upon for passive resistance, however.

WATER-SOLUBLE SULFATES

The concentrations of water-soluble sulfates measured in samples obtained from the test holes were less than 0.01 percent by weight. (See Table 1). Such concentrations of water-soluble sulfates represent a negligible degree of sulfate attack on concrete exposed to these materials. Degrees of attack are based on the scale of 'negligible,' 'moderate,' 'severe' and 'very severe' as described in the "Design and Control of Concrete Mixtures," published by the Portland Cement Association (PCA).

Based on these data GROUND, makes no recommendation for use of a special, sulfate-resistant cement in project concrete. However, based on other studies in the area, and the presence of gypsum in the local bedrock, we recommend that after overlot grading has been completed, samples of site soils be tested for water soluble sulfates to assess the potential for locally elevated sulfate concentrations.

SOIL CORROSIVITY

Measurements of soil acidity (pH) and electrical resistivity were made to provide a general assessment of the potential for corrosion of ferrous metals installed in contact with earth materials. Test results are summarized in Table 1.

Values of pH below 7 (neutral) indicate acidic conditions; values greater than 7 indicate basic conditions, on a logarithmic scale. Testing indicated pH values from about 8.6 to

9.2, which indicate that the materials tested are basic. These characteristics will not contribute greatly to corrosion.

Electrical resistivity is related both to a material's moisture content and to the concentrations of dissolved salts and other conductive constituents in the soil pore water. Measurements of electrical resistivity indicated values from about 13,000 to more than 30,000 ohm-centimeters in selected samples of the local soils.

Resistivities greater than 6,000 ohm-centimeters are classified as representing an 'excellent' corrosive environment for ferrous metals in contact with site soils, on a scale of 'bad,' 'fair,' 'good' and 'excellent' as presented in the "Handbook of Steel Drainage and Highway Construction Products" published by the American Iron and Steel Institute. Therefore, the site alluvial fan soils appeared to represent an excellent (low risk) environment with regard to metallic corrosion.

Corrosive conditions can be mitigated by use of materials not vulnerable to corrosion, heavier gauge materials with longer design lives, or cathodic protection systems. If additional information or recommendations are needed regarding soil corrosivity, GROUND recommends contacting a Corrosion Engineer. It should be noted, however, that changes to the site conditions during construction, such as the import of other soils, or the intended or unintended introduction of off-site water, can alter the corrosion potentials significantly.

RADON

Radon is a naturally occurring, colorless, odorless, radioactive gas that can cause lung cancer, according to the U.S. Environmental Protection Agency (EPA). The occurrence of radon is difficult to predict, and structures with all types of foundations can be affected by radon build up. Where radon is allowed to concentrate in an enclosed structure represents a potential hazard. It is not a hazard that can be mitigated by geotechnical measures, however.

Testing for the possible presence of radon gas prior to project development does not yield useful results regarding the potential accumulation of radon in completed structures. Radon accumulations most typically are found in basements, crawl spaces or other enclosed portions of buildings built in areas underlain at relatively shallow depths by granitic crystalline rock. The likelihood of encountering radon in concentrations exceeding applicable health standards on the subject site, underlain by

relatively deep soils and sedimentary bedrock, is significantly lower, but cannot be excluded. Additional information regarding radon and radon-resistant building design can be obtained from the EPA (e.g., www.epa.gov/radon) as well as from many local building and/or health departments.

GROUND recommends that radon testing be performed in the building after construction is completed. However, we understand that incorporating sufficient ventilation and other measures into a structure to address radon accumulation during construction is significantly less costly than installing them after construction has been completed. We recommend that the Architect consider radon mitigative measures for the proposed structure and incorporate appropriate systems into the design.

SURFACE DRAINAGE

The following drainage precautions should be observed during construction and maintained at all times after the facilities have been completed. Establishment and maintenance of surface drainage is critical to the proper performance of the proposed structures and pavements. If the drainage measures below are not implemented and maintained effectively, the movement estimates provided in this report could be exceeded.

- 1) Excessive wetting or drying of the foundation excavations and underslab areas should be avoided during construction.
- 2) Care should be taken during and after construction to identify local, concentrated water sources such as leaking hose bibs or pipes, downspouts from which water is not positively controlled, construction water tanks, etc., and repair the damage or make positive provision to capture the water or convey it off-site. On-going, localized wetting of the site soils will result in piping of the silty materials and potentially severe localized settlements.
- 3) Positive surface drainage measures should be provided and maintained to reduce water infiltration into foundation soils. The ground surface surrounding the exterior of each building should be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 12 inches in the first 10 feet in landscaped areas and 3 inches in the first 10 feet in areas where hardscaping covers the ground adjacent to the building. (It may be necessary to incorporate ramps or other measures into project design to implement this

recommendation while complying with access requirements.) In no case should water be allowed to pond near or adjacent to foundation elements.

Drainage measures also should be included in project design to direct water away from sidewalks and other hardscaping as well as utility trench alignments that are likely to be adversely affected by moisture-volume changes in the underlying soils or flow of infiltrating water. Routine maintenance of site drainage, including sealing of cracks and joints, should be undertaken throughout the design life of the project.

- 4) In sloping terrain, it is common to have slopes descending toward buildings. Such slopes can be created during grading even on comparatively flat sites. In such cases, even where the recommendation above regarding slopes adjacent to the building is followed, water will flow to and beneath the building with resultant additional post-construction movements. Where the final site configuration includes graded or retained slopes descending toward the building, and the toe-of-slope (-wall) is less than 3 times the total slope (wall) height from the building, then an interceptor drain should be installed between the building and the slope. Ideally, the interceptor drain should be installed either about 10 feet from the building or along the axis of a swale between the building and the toe-of-slope (-wall). An interceptor drain system should be generally like the underdrain system described in the *Interceptor Drain System* section of this report. The actual layout, outlets, etc., of an interceptor should be designed by the Civil Engineer. GROUND can provide more specific geotechnical recommendations for an interceptor drain system upon request.

In addition, where irrigation is applied on or above graded slopes, drainage structures commonly are needed near the toe-of-slope to prevent on-going or recurrent wet conditions there.

- 5) The ground surface near foundation elements should be able to convey water away readily. Ground coverings that direct water downward rather than away from the building should not be used to cover the ground surface near the foundations or other improvements sensitive to post-construction soil movements. Cobbles or other materials that tend to act as baffles and restrict surface flow should not be used.

Correspondingly, near other project improvements, such as hardscaping, where the ground surface does not convey water away readily, additional post-construction movements and distress should be anticipated. Shallow underdrain systems or flatwork edge drains can be beneficial in reducing movements and distress.

- 6) The buildings should be provided with roof drains/gutters and downspouts. Roof drainage feature design should accommodate the potential for ice accumulation.

Roof downspouts and drains should discharge well beyond the perimeters of the structure foundations, or be provided with positive conveyance off-site for collected waters. Providing piped discharge to the project storm sewer system is the most effective means of reducing infiltration into the site soils. Where collected waters are allowed to flow across the ground surface (whether paved or landscaped), the potential for post-construction movements are increased, particularly where joints, cracks, adverse local surface gradients, etc., are not well maintained.

Roof drains should not be routed inside the buildings. Roof downspouts and other surface water collectors should not discharge into the building underdrain or interceptor drain systems.

- 7) Landscaping that requires watering should be located 10 or more feet from building perimeters. Irrigation sprinkler heads should be deployed so that applied water is not introduced into foundation soils. Landscape irrigation should be limited to the minimum quantities necessary to sustain healthy plant growth.

Use of drip irrigation systems can be beneficial for reducing the amount of water introduced to building foundation soils, but only if the total volumes of applied water are controlled with regard to limiting that introduction. Controlling rates of moisture increase beneath the foundations and floors should take higher priority than minimizing landscape plant losses.

We understand that municipal ordinances commonly require plantings in close proximity to buildings. Where plantings are desired within 10 feet of a building, GROUND recommends that the plants be placed in water-tight planters, constructed either in-ground or above-grade, to reduce moisture infiltration in the surrounding subgrade soils. Planters should be provided with positive drainage

and landscape underdrains. Where water-tight planters cannot be used, project design measures and post-construction maintenance routines should be developed to prevent infiltration.

- 8) We do not recommend the use of plastic membranes to cover the ground surface near the building without careful consideration of other components of project drainage. Plastic membranes can be beneficial to directing surface waters away from the building and toward drainage structures. However, they effectively preclude evaporation or transpiration of shallow soil moisture. Therefore, soil moisture tends to increase beneath a continuous membrane. Where plastic membranes are used, additional shallow, subsurface drains should be installed. Perforated "weed barrier" membranes, which allow ready evaporation from the underlying soils may be used.
- 9) GROUND recommends that snow storage should be restricted to paved areas where effective surface drainage is maintained. Snowmelt has the potential to introduce additional water into the soils supporting the slope, with consequent potentials for increased post-construction settlements.

If it is necessary to use unpaved areas of the project for snow storage, only designated slopes should be used that have been provided with shallow, underdrain systems. General recommendations for underdrains are provided in the *Subsurface Moisture Infiltration and Drainage* and *Interceptor Drain Systems* sections of this report. The drains should be installed at depths of about 2 to 3 feet below finished grades aligned generally parallel to slope. Individual drain lines should be installed no more than 30 feet apart throughout the areas designated for snow storage. The pipes for the drain system should be graded at a sufficient slope to move water effectively to one or more non-perforated discharge lines to carry water off-site or into the storm sewer system.

GROUND recommends that a regular program of site monitoring and maintenance by a qualified maintenance Contractor or similar agent for the Owner be established for the proposed facility, and implemented throughout the design life of the project. The site should be observed for indications of ineffective drainage, settlement, ponding, erosion, damaged irrigation lines, etc., so that repairs can be effected. Necessary repairs/restoration should be implemented as soon as possible. Where localized

infiltration is allowed to continue, the risk of local subsidence or the development of sinkholes will be significantly increased.

In addition to design, construction and maintenance of effective, permanent surface drainage measures, effective surface drainage must be established and regularly maintained throughout construction. In GROUND's experience, it is common in areas of partially completed paving or hardscaping, bare soil surrounding buildings and behind curbs and gutters, and open utility trenches, etc., that water from irrigation or rain and snow melt events is allowed to pond. Because of the numerous trades that can be working on a site at various stages of construction, maintenance of effective surface drainage can require weekly or more frequent restoration. As has been discussed elsewhere in this report, wetting of the subgrade can result in loss of support and increased settlements. By the time that final grading has been accomplished, and permanent surface and subsurface drainage measures completed, significant volumes of water can already have entered the subgrade, with consequent increased risks of movements, etc. GROUND recommends that the Contractor be directed to maintain the site regularly during the entire construction process so that water is directed into appropriate drainage structures during construction.

We understand that local, state and/or federal regulations regarding erosion control may require use of silt fencing, straw bundles or other erosion-control devices that can significantly impede surface drainage during construction, preventing effective implementation of the recommendations above. GROUND recommends that the various measures that could be implemented to comply with applicable regulations be assessed carefully with regard to minimizing interference with effective surface drainage. Use of local, lined sumps that can be pumped regularly, for example, may be necessary to prevent uncontrolled ponding and infiltration prior to completion of fine grading.

INTERCEPTOR DRAIN SYSTEM

Because of the debris flow retention ponds upslope from the proposed buildings that commonly will act as water detention basins, development of the site should include construction of a project-wide interceptor drain system.

The interceptor drains should consist of perforated PVC collection pipe at least 6 inches in diameter, non-perforated PVC discharge pipe at least 6 inches in diameter, free-draining gravel, and filter fabric. The free-draining gravel should contain less than 5

percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each collection pipe should be surrounded on the sides and top only with 6 or more inches of free-draining gravel. Above the pipe, the gravel should form a vertical curtain extending to within at least 3 feet of the ground surface. The gravel surrounding the collection pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. 'Clean out' access points should be provided at intervals along the system to facilitate maintenance. A typical, cross-section detail of an underdrain as described above is provided on Figure 20.

The interceptor drains should be laid out generally as depicted on Figure 1. The actual layout, outlets, and locations of the interceptor drain should be designed by the Civil Engineer. The system should be designed so that the flow lines of the pipes are at least 7 feet below finished grades. The pipe(s) for the interceptor drain system should be graded at a sufficient slope to enable efficient discharge of collected waters to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge. Design slopes should consider potential post-construction soil movements, as discussed herein, which could affect the pipes, as well.

The interceptor drain systems should be tested by the Contractor after installation and after placement and compaction of the overlying backfill to verify that the systems function properly.

SUBSURFACE MOISTURE INFILTRATION AND DRAINAGE

Common practice for residential construction as proposed for this project includes the installation of building perimeter underdrains. If properly constructed, a perimeter underdrain system can result in a reduction of moisture infiltration of the subsurface soils. However, an underdrain not properly functioning can collect or introduce water, induce settlement of the subsurface soils, and may result in structure/floor slab distress. If deep foundation systems to support the proposed building frames and floor systems are used as recommended herein, the need for perimeter drain systems is reduced. They can be beneficial as a component of project drainage design, however.

For each building supported on shallow foundations, GROUND recommends installation of perimeter underdrain systems around each building. The perimeter drains should be located approximately 10 feet out-board of the building perimeters, corresponding to the lateral limit of the recommended zone of excavation and re-placement beneath each

building. In accordance with the ADA, GROUND also recommends installation of a perimeter underdrain system around any structure with a below-grade (basement) level.

Based on the site surface and subsurface conditions encountered in this study, we do not anticipate a rise in the local water table sufficient to cause adverse wetting of the foundation soils. Therefore, wetting of the soils likely will result from infiltrating surface waters (precipitation, irrigation, etc.), and flow along constructed pathways such as bedding in utility pipe trenches. Project design should incorporate measures to prevent water from wetting the project soils. Surface drainage gradients, pavements, flatwork, piping, drainage structures, etc., should be maintained during and after construction to prevent infiltration.

It is the responsibility of the design team and Ownership as well as the construction and maintenance Contractor(s) within their respective disciplines and in accordance with their familiarity with the site conditions to evaluate the possible sources of water that could affect the project area and provide design and/or construction measures that address the conditions so that moisture is directed away from the foundations and supporting materials prior to being allowed to infiltrate the subsurface, both during and after construction. Wetting or drying of the foundation excavations and under-slab areas should be avoided during and after construction as well as throughout the life of the facility. Permitting increases/variations in moisture to the supporting soils may result in a decrease in bearing capacity and an increase in total and/or differential movements.

Where underdrains are incorporated into project design, the system should consist of perforated PVC collection pipe at least 4 inches in diameter, non-perforated PVC discharge pipe at least 4 inches in diameter, free-draining gravel, and filter fabric. The free-draining gravel should contain less than 5 percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each collection pipe should be surrounded on the sides and top only with 6 or more inches of free-draining gravel. The gravel surrounding the collection pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. 'Clean out' access points should be provided at intervals along the system to facilitate maintenance. A typical cross-section detail of an underdrain of this type is provided on Figure 19.

The actual layout, outlets, and locations of underdrains should be designed by the Civil Engineer. The pipe(s) for underdrain systems should be graded at a sufficient slope to

enable efficient discharge of collected waters to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge. Design slopes should consider potential post-construction soil movements, as discussed herein, which could affect the pipes, as well. Where collection segments of the underdrain system (with gravel and perforated pipe) transition to discharge segments with solid pipe, clay or concrete cut-off walls should be installed to reduce migration of water along the discharge line trenches outside of the pipes.

All subsurface drain systems should be tested by the Contractor after installation, and after placement and compaction of the overlying backfill, to verify that the systems function properly.

PROJECT EARTHWORKS

General Considerations Based on the site topography and the extent of previous overlot grading, we anticipate only nominal cuts and fills on the order of 5 feet or less in nominal depth to complete the earthworks for the building pads and parking areas, etc.. Site grading should be reviewed and improved as necessary to provide positive surface drainage away from the buildings, and all pavements, utility alignments, and flatwork. Surface diversion features should be provided around paved areas to prevent surface runoff from flowing across the paved surfaces.

Care should be taken with regard to achieving and maintaining proper moisture contents during placement and compaction. We anticipate that the majority of on-site soils may exhibit significant pumping, rutting, and deflection at moisture contents above optimum. In addition to local plastic soils, laboratory testing indicated that the site soils generally are classified as slightly plastic silts and silty to clayey sands. In our experience, achieving and maintaining compaction in such soils can be very difficult, particularly if water contents are not monitored closely. We understand that earthwork construction on nearby areas such as Glenwood Meadows Retail Development to the east of the project experienced difficulties of this type. Locally, during subgrade preparation for pavements achieving a stable subgrade was difficult, as well. The Contractor should be prepared to handle soils of this type, including the use of chemical stabilization, if necessary.

Prior to earthwork construction, vegetation and other deleterious materials should be removed and disposed of off-site. Relic underground utilities should be abandoned in

accordance with applicable regulations, removed as necessary, and capped at the margins of the property.

Permanent site slopes supported by on-site soils up to 10 feet in height should be constructed no steeper than 3:1 (horizontal : vertical). Minor raveling or surficial sloughing should be anticipated on slopes cut at this angle until vegetation is well re-established. Surface drainage should be designed to direct water away from slope faces. Where adequate compaction is not achieved and maintained in the soils supporting a slope, the soils will tend to relax and displace downward and outward. This can result in loss of bearing and lateral support for improvements in proximity to the slope.

Because of the potential loss of foundation bearing or lateral support due to slope relaxation or "slope creep," where building foundations or other improvements are placed within 30 feet of the principal slope face descending northward from Lot 14, a Geotechnical Engineer should be retained to evaluate the conditions on an individual case basis.

On-Site Soils The existing soils including both fill and native materials, free of landfill materials, organic materials, large cobbles and other deleterious materials are, in general, suitable for placement as compacted fill. Cobbles and rock fragments larger than 6 inches in maximum dimension will require special handling and/or placement to be incorporated into project fills. In general, such materials should be placed as deeply as possible in the proposed fills. The geotechnical engineer should be consulted regarding appropriate recommendations for usage of such materials on a case-by-case basis when such materials have been identified during earthworks. Standard recommendations that likely will be generally applicable can be found in Section 203 of the CDOT Standard Specifications for Road and Bridge Construction (2005).

Imported Fill Materials If it is necessary to import material to the site as fill, the imported soils should contain no boulders, cobbles or rock fragments coarser than 6 inches in maximum dimension, be free of claystone, organic material, and other deleterious materials. Imported material should have less than 60 percent passing the No. 200 Sieve and should have a plasticity index of less than 10.

Bulk/Shrinkage Based on comparison of measured, in-place soil densities with compaction test (Proctor) data for the project, and contractors' experience reported for

nearby projects, the existing native site soils likely will shrink during grading by approximately 10 to 16 percent. Given that more shallow soils likely will be re-worked than those at depth, GROUND suggests that a shrinkage factor of about 12 to 17 percent be used for preliminary earthwork volume calculations. We understand, however, that higher shrinkage factors have been reported in the project area, on the order of 15 to 20 percent. All such values necessarily are highly dependent upon the average depth of earthworking and the average degree of compaction achieved.

Bulking or shrinkage of existing fill soils should be limited, likely within a few percentage points of 0.

Fill Platform Preparation Prior to filling, the top 8 to 12 inches of in-place materials on which fill soils will be placed should be scarified, moisture conditioned and properly compacted in accordance with the recommendations below to provide a uniform base for fill placement.

If surfaces to receive fill expose loose, wet, soft or otherwise deleterious material, additional material should be excavated, or other measures taken, to establish a firm platform for filling. The surfaces to receive fill must be effectively stable prior to placement of fill.

Fill Placement Fill materials should be thoroughly mixed to achieve a uniform moisture content, placed in uniform lifts not exceeding 8 inches in loose thickness, and properly compacted. Soils that classify as GP, GW, GM, GC, SP, SW, SM, or SC in accordance with the USCS classification system (granular materials) should be compacted to **96 or more percent** of the maximum modified Proctor dry density at moisture contents within 2 percentage points of optimum moisture content as determined by ASTM D1557, the "modified Proctor." Soils that classify as ML, MH, CL or CH should be compacted to **at least 96 percent** of the maximum standard Proctor density at moisture contents from optimum to 3 percent above the optimum moisture content as determined by ASTM D698, the "standard Proctor."

It should be noted, however, that due to the low- to non-expansive nature of the great majority of site soils, the recommendations for moisture-conditioning the soils to within the specified ranges are intended primarily to facilitate achievement of adequate compaction. Achievement of sufficient compaction to reduce subsequent settlements is more important than the actual soil moisture increase. Therefore, although addition of significant volumes of water to the native soils and possibly some existing fill materials

will be necessary for compaction, achievement of the recommended compaction levels (and stable paving platforms) should be the Contractor's principal goal in this regard. Adjustments of acceptable ranges of moisture contents may be made in the field by the Geotechnical Engineer.

See the recommendations below, however, regarding deep fill sections, as well as those below.

No fill materials should be placed, worked, rolled while they are frozen, thawing, or during poor/inclement weather conditions.

Compaction areas should be kept separate, and no lift should be covered by another until the recommended relative compaction and moisture content are obtained.

To achieve adequate compaction near the outer faces of fill slopes, it may be beneficial to over-build the slopes and trim them back.

Because of the presence of coarse cobbles and boulders, much of the excavated site soils will require sorting or separation of the large clasts to enable the remaining material to be placed as compacted fill. (Crushing of the coarse materials to fall within the recommended size limit is acceptable, as well.) The Contractor should mobilize appropriate equipment of sufficient capability to excavate, move, process and compact the on-site soils. Because of the high percentage of coarse materials commonly present in the soils (even after removal/breakdown of boulders and coarse cobbles), the Contractor should anticipate greater than usual wear on his equipment, as well as the need to handle, stockpile and remove large boulders.

Deep Fills All fill materials placed 10 feet or more below the finished ground elevation including those portions of the recommended fill section beneath building foundations more than 10 feet below the post-tensioned slab should be compacted to the following higher relative compaction levels. (Except as modified below, the recommendations herein regarding fill placement, etc., are applicable to these deep fill sections, as well.)

- Soils that classify as GP, GW, GM, GC, SP, SW, SM or SC should be compacted to **97 or more percent** of the maximum dry density at moisture contents within 2 percent of optimum moisture content as determined by ASTM D1557.

- Soils that classify as CL, CH, ML and MH should be compacted to **at least 100 percent** of the maximum density at moisture contents within 2 percent of the optimum as determined by ASTM D698.

Settlements Settlements will occur in filled ground, typically on the order of 1 to 2 percent of the fill depth. For a 6-foot fill, this corresponds to settlements on the order of 1 inch, without imposition of foundation loads. If fill placement is performed properly and is tightly controlled, in GROUND's experience the majority of that settlement will take place during earthwork construction. The remaining potential settlements likely will take several months or longer, to be realized.

Use of Squeegee Relatively uniformly graded fine gravel or coarse sand, i.e., "squeegee," or similar materials commonly are proposed for backfilling foundation excavations, portions of utility trenches and other areas where employing compaction equipment is difficult. In general, GROUND does not recommend this procedure for the following reasons:

Although commonly considered "self compacting," uniformly graded granular materials require densification after placement, typically by vibration. The equipment to densify these materials is not available on many job-sites.

Even when properly densified, uniformly graded granular materials are permeable and allow water to reach and collect in the lower portions of the excavations backfilled with those materials. This leads to wetting of the underlying soils and resultant potential loss of bearing support as well as increased local heave or settlement.

GROUND recommends that wherever possible, excavations be backfilled with approved, on-site soils placed as properly compacted fill. Where this is not feasible, use of "Controlled Low Strength Material" (CLSM), i.e., a lean, sand-cement slurry ("flowable fill") or a similar material for backfilling should be considered.

Where "squeegee" or similar materials are proposed for use by the Contractor, the design team should be notified by means of a Request for Information (RFI), so that the proposed use can be considered on a case-by-case basis.

Quality Assurance A Geotechnical Engineer should be retained to observe project excavations prior to placement of fill. The Geotechnical Engineer also should observe earthwork operations and test the soils.

It should be noted that in the later stages of large projects such as construction of the proposed mixed use buildings, multiple sub-contractors commonly are installing or adjusting/replacing components of the project simultaneously. These can range from electrical boxes to sidewalk access ramps to lighting fixtures. In order to facilitate proper observation and testing of the associated earthworks, GROUND recommends that the Contractor verify that his sub-contractors mobilize the necessary equipment and personnel to moisture-condition and compact disturbed or excavated soils quickly and effectively. The Contractor also should coordinate with his sub-contractors to ensure that these local earthwork operations are observed with sufficient frequency by the retained Geotechnical Engineer and the soils tested.

Additional Earthworks and Building Pad Caps Native soils and bedrock prepared for subsequent construction, as well as properly compacted fills, that are allowed to stand for extended periods prior to construction of buildings, pavements, etc., will degrade over time. Moisture will be lost and the soils can become eroded or loosened, or shrink back to a denser and more expansive condition. The extent of degradation will increase with time. Therefore, where these conditions arise, the Geotechnical Engineer should test the soils and provide recommendations regarding an appropriate depth of moisture-conditioning and re-compaction prior to construction. In the case of subgrade soils beneath a slab-on-grade floor, this re-compaction can be accomplished with significantly less effort prior to construction of the building shell.

Remedial earthworks by the Contractor, such as excavation and re-compaction of 1 to 3 feet of soil, may be necessary at that time to restore the prepared soils to an acceptable condition. Because the building pads are the most critical portions of the site, the following measures are recommended as an alternative to reduce the depth of re-working necessary on the pads prior to transfer of ownership and/or construction:

- 1) Additional fill should be placed on the pad to raise the grades and form a crowned cap to protect the compacted pad soils from desiccation and erosion. This cap could be removed shortly before transfer of the pad. We anticipate that only limited earthworks then would be needed to restore the pad to an acceptable state.

- 2) The cap should extend across the entire building footprint as well as the 10+ feet of re-worked ground beyond the lateral limits of the building.
- 3) At least 12 inches of material should be placed to form the cap above the compacted pad soils. In addition, the cap should be sloped to drain with a gradient of at least 2 percent.
- 4) Cap soils should be compacted to 90 or more percent of the maximum standard or modified Proctor dry density (for cohesive and granular soils, respectively) at moisture contents within 3 percent of optimum moisture content as determined by ASTM D698 / D1557.

EXCAVATION CONSIDERATIONS

Test holes for subsurface exploration were advanced to the depths indicated on the test hole logs by means of conventional, truck/track-mounted, flight auger equipment. We anticipate no unusual excavation difficulties, in general, for the proposed construction in these materials with conventional, heavy-duty excavating equipment in good working condition.

Coarse cobbles and boulders were observed on the site surface and encountered commonly in the test holes. Individual clasts up to 2½ feet in maximum dimension are common at the site. Larger boulders have been observed. The Contractor should anticipate encountering numerous cobbles and boulders in project excavations, commonly comprising at least 20 percent of the soil volume and be prepared to excavate, handle, sort and/or crush these materials. In addition, specialized breaking equipment, or limited, local blasting may be cost effective to facilitate project excavations, particularly in trenches, and to break local masses of nested cobbles and boulders. Many of the excavated clasts will be too coarse for inclusion in project fills without crushing.

As noted above, groundwater was not encountered during subsurface exploration, which reached depths as great as approximately 75 feet. Therefore, groundwater is not anticipated to be a major factor during construction of most aspects this project. However, if seepage or groundwater is encountered in project excavations, the Geotechnical Engineer should evaluate the conditions and provide additional recommendations, as appropriate

We recommend that temporary, un-shored excavation slopes up to 20 feet in height be cut no steeper than 2:1 (horizontal : vertical) in the native soils in the absence of seepage. Some surface sloughing may occur on the slope faces at this angle. Local conditions encountered during construction, such as groundwater seepage, loose, dry sand, or soft, wet materials, will require flatter slopes. Stockpiling of materials should not be permitted closer to the tops of temporary slopes than 5 feet or a distance equal to the depth of the excavation, whichever is greater.

Should site constraints prohibit the use of the recommended slope angles, then temporary shoring should be used. Shoring designed to allow the soils to deflect sufficiently to utilize the full active strength of the soils may be designed for lateral earth pressures computed on the basis of an equivalent fluid unit weight of 45 pounds per cubic foot (pcf) for a level adjacent ground condition. In addition to this lateral earth pressure, shoring design should include surcharge loads exerted by equipment, traffic, material stockpiles, etc. Actual shoring system(s) should be designed for the Contractor by a registered engineer.

Effective surface drainage should be provided around temporary excavation slopes to direct surface runoff away from the slope faces. A properly designed drainage swale should be provided at the top of the excavations. Temporary slopes will erode readily if water is allowed to flow over the slope faces. Erosion along the slopes will result in sloughing and could lead to a slope failure. In no case should water be allowed to pond at the site.

Excavations in which personnel will be working must comply with all OSHA Standards and Regulations particularly CFR 29 Part 1926, OSHA Standards-Excavations, adopted March 5, 1990. The Contractor's "responsible person" should evaluate the soil exposed in the excavations as part of the Contractor's safety procedures. GROUND has provided the information above solely as a service to Total Merchant Services, and is not assuming responsibility for construction site safety or the Contractor's activities.

UTILITY INSTALLATION

Recommendations regarding utility trench excavation are provided in the *Excavation Considerations* section of this report. On-site soils excavated from trenches are suitable, in general, for use as trench backfill. Backfill soils should be free of boulders, vegetation, debris and other deleterious materials. Cobbles coarser than 6 inches in maximum dimension should not be incorporated into trench backfills.

Trench backfill materials should be properly moisture-conditioned and compacted in accordance with the recommendations in the *Project Earthworks* section of this report. Some settlement of trench backfill materials should be anticipated, even where materials are placed and compacted correctly.

The Contractor should take adequate measures to achieve adequate compaction in the utility trench backfills, particularly in the lower portions of the excavations. Some settlement of trench backfill materials should be anticipated, even where materials are placed and compacted correctly. The Contractor should take particular care to achieve and maintain adequate compaction of the backfill soils around manholes, valve risers and other vertical pipeline elements where greater settlements commonly are observed. Use of "Controlled Low Strength Material" (CLSM), i.e., a lean, sand-cement slurry ("flowable fill") or a similar material should be considered in lieu of compacted soil backfill for areas with low tolerances for surface settlements. Placement of CLSM in the lower portions of the excavations and around risers, etc., likely will yield a superior backfill, although at an increased cost.

Pipe bedding materials, placement and compaction should meet the specifications of the pipe manufacturer and applicable municipal standards. The Contractor should not anticipate that significant volumes of excavated site soils will be suitable for use where free-draining materials are called for as pipe bedding. Materials proposed for use as pipe bedding should be tested for suitability prior to use. Imported materials should be tested and approved by the Geotechnical Engineer prior to transport to the site.

We assume that surface drainage will direct water away from trench alignments. Nevertheless, non-woven filter fabric (e.g., Mirafi® 140N or the equivalent) should be placed around granular bedding materials to reduce migration of fines into the bedding.

Sandy pipe bedding materials can function as efficient conduits for re-distribution of natural and applied waters in the subsurface. Clay or concrete cut-off walls or, as necessary, drains should be installed in utility trenches to reduce the rates and volumes of water transmitted to the building foundation soils. Cut-off walls should be spaced no more than 200 feet apart on generally east – west -oriented alignments (parallel to elevation contours) and no more than 100 feet apart on north – south (uphill – downhill) -oriented alignments. These measures also will reduce the risk of loss of fine-grained backfill soils into the bedding material with resultant surface settlement.

Utility lines should be sealed and the seals checked prior to backfilling. Checks for leakage and appropriate maintenance should be performed regularly. Utilities other than drains should enter the building interior as immediately as possible, and no more than 5 feet from the building perimeter. Longer utility runs increase the risk of settlements related to trench backfills, can facilitate distribution of water beneath the building, and increase repair difficulties.

Ground-Penetrating Radar The City of Glenwood Springs required ground-penetrating radar (GPR) surveys along the public wet utility alignments below the public streets at the Glenwood Meadows retail development to assess the potential presence of voids in the subsurface. GROUND provided those surveys during construction of that project. Based on conversations with the City, we anticipate that similar surveys may be required along public streets serving the Glenwood Meadows Lot 14. In order to maximize effectiveness of the GPR, we suggest that to the extent possible, required surveys be performed after cuts along the alignments are made, but prior to significant filling (i.e., when alignments are at the lowest elevations).

EXTERIOR FLATWORK

Proper design, drainage, construction and maintenance of the areas between individual buildings and hardscape areas are critical to the satisfactory performance of the project. Sidewalks, entranceway slabs and roofs, fountains, raised planters and other highly visible improvements commonly are installed within these zones, and distress in or near these improvements is common. Commonly, proper soil preparation in these areas receives little attention during overlot construction because they fall between the building and pavement areas, which typically are built with heavy equipment. Multiple sub-contractors, with light or hand equipment, often perform subsequent landscaping and hardscape installation. This results in necessary over-excavation and soil processing and compaction not being performed. Consequently, subgrade soil conditions commonly deviate significantly from recommended ranges. Therefore, GROUND recommends that the Contractor take particular care with regard to proper subgrade preparation in the immediate building exteriors.

As recommended in the Project Earthworks and Surface Drainage sections of this report, positive surface drainage away from all pavements and flatwork should be

included in project design. Proper drainage also should be maintained after completion of the project, and re-established as necessary.

Exterior flatwork and other hardscaping placed on the clayey soils encountered on-site likely will experience post-construction movements due to the expansive nature of those soils and the relatively light loads that they impose. Both vertical and lateral soil movements can be anticipated as clay mineral particles swell and shrink as the soils are wetted and dried. Distress to rigid hardscaping likely will result.

The most positive means to reduce distress to these elements is to support them on foundations in the same manner as the building. Other mitigative measures could include casting flatwork over a 12-inch or thicker void form and pinning the flatwork to the building grade beams, or development of an accelerated maintenance and replacement schedule, anticipating post-construction movements and distress.

Where deep foundations are not utilized to support exterior improvements, the following measures will help to reduce damages to these improvements.

- 1) Shortly before installation, the subgrade soils beneath project sidewalks, paved entryways and patios, masonry planters and short, decorative walls, and other flatwork should be excavated and/or scarified to a depth of 36 or more inches. The excavated soil should be replaced as properly moisture-conditioned and compacted fill as outlined in the *Project Earthworks* section of this report, in order to reduce the magnitude of potential movements. Greater depths of moisture-density conditioning of the subgrade soils beyond the above minimum, as indicated for the pavements, will improve hardscape performance.
- 2) Prior to placement of flatwork, a proof roll should be performed to identify areas that exhibit instability and deflection. The deleterious soils in these areas should be removed and replaced with properly compacted fill. The Contractor should take care to achieve and maintain compaction behind curbs to reduce differential sidewalk settlements. As in the case of pavements, passing a proof roll is an additional requirement to placing and compacting the subgrade fill soils within the recommended ranges of moisture content and relative compaction presented in the *Project Earthworks* section of this report.

- 3) Flatwork should be provided with control joints extending to an effective depth and spaced no more than 10 feet apart, both ways. Narrow flatwork, such as sidewalks, likely will require more closely spaced joints.
- 4) In no case should exterior flatwork extend to under any portion of the building where there is less than 2 inches of clearance between the flatwork and any element of the building. Exterior flatwork in contact with brick, rock facades, or any other element of the building can cause damage to the structure if the flatwork experiences movements.

Frost and Ice Considerations Nearly all soils other than relatively coarse, clean, granular materials are susceptible to loss of density if allowed to become saturated and exposed to freezing temperatures and repeated freeze – thaw cycling. The formation of ice in the underlying soils can result in heaving of pavements, flatwork and other hardscaping (“frost heave”) in sustained cold weather up to 2 inches or more. This heaving can develop relatively rapidly. Much of this movement typically is recovered when the soils thaw, but due to loss of soil density, some degree of displacement commonly will remain. This can result even where the subgrade soils were prepared properly.

Where hardscape movements are a design concern, e.g., at doorways, replacement of the subgrade soils with 3 or more feet of clean, coarse sand or gravel should be considered or supporting the element on foundations similar to the building and spanning over a void. Detailed recommendations in this regard can be provided upon request. It should be noted that where such open graded granular soils are placed, water can infiltrate and accumulate in the subsurface relatively easily, which can lead to increased settlement or heave from factors unrelated to ice formation. The relative risks from these soil conditions should be taken into consideration where frost heave is a concern. GROUND will be available to discuss these concerns upon request.

Where soils supporting foundations or on which foundation will be placed are exposed to these conditions during construction – commonly due to water ponding in foundation excavations – bearing capacity typically is reduced and/or settlements increased due to the loss of density in the supporting soils. After periods of freezing conditions, the Contractor should re-work areas affected by the formation of ice to re-establish adequate bearing support.

The site soils include low plasticity silts as well as some clays and fine sands that due to their capillarity appear vulnerable to frost heave where an underlying source of water is present. Groundwater was not encountered to the depths explored, however. Therefore, if surface drainage is effective, the likelihood of movement of pavements, flatwork and other hardscaping is relatively low. However, if other source(s) of water develop and are not drained effectively, frost heave may develop.

Effects of Slope Creep In addition, the potential effects of gradual, incremental downward and outward movements of the embankment soils ("slope creep") on all improvements near the top-of-slope should be considered in project maintenance plans. Pavements, curbs-and-gutters, fences, screen walls, pilasters, light poles, etc., all will tend to be affected by these on-going soil movements, even where slopes are supported by firm native soils or properly compacted fill soils. Effective surface drainage, erosion control and timely maintenance of both the slope and the improvements above the slope will reduce the damages resulting from slope creep, but cannot eliminate them.

PAVEMENT SECTIONS

A pavement section is a layered system designed to distribute concentrated traffic loads to the subgrade. Performance of the pavement structure is directly related to the physical properties of the subgrade soils and traffic loadings. Pavement sections for private parking and driveways, as well as public streets comprising a part of the project, were developed in general accordance with the design guidelines and procedures of the American Association of State Highway and Transportation Officials (AASHTO), the Colorado Department of Transportation (CDOT) as well as local road construction practices. For public streets, the recommended pavement sections also reflected general accordance with the design guidelines and procedures of the City of Glenwood Springs.

Subgrade Materials Based on the results of our field and laboratory studies, the shallow subgrade materials in the proposed pavement areas consisted predominantly of fill material that was silty to clayey sands, with gravel commonly. These materials were classified typically as A-2-4 and A-4 soils in accordance with the AASHTO classification system, with Group Index values of 0. Resilient Modulus (M_R) testing (AASHTO T-307) was performed on a representative composite sample of the subgrade materials encountered at the site. The material was compacted to 95 percent of maximum dry density at moisture contents of optimum, two percent above optimum, and four percent

above optimum moisture content based on AASHTO T-99 (the "standard Proctor") for cohesive soils, or AASHTO T-180 (the "modified Proctor") for granular soils. For the sandy site soils, a resilient modulus of 7,806 psi obtained at the optimum moisture content was taken as characteristic of the subgrade materials and used for development of the pavement sections. It is important to note that significant decreases in soil support as quantified by the resilient modulus have been observed as the moisture content increases above the optimum.

Anticipated Traffic Specific traffic loadings were not available at the time of this report preparation. Therefore, an 18-kip equivalent daily load application (EDLA) value of 3 was assumed for development of the pavement structure for automobile parking stall areas. An EDLA of 10 was assumed for project driveways and 30 for any public streets within the project. The EDLA values of 3, 10 and 30 were converted to 18-kip equivalent single axle (ESAL) values of 21,900, 73,000 and 219,000, respectively, for 20-year design lives. An EDLA of 30 also was assumed for trash collection zones and other areas subject to heavy truck traffic. If design traffic loadings differ significantly from these assumed values, GROUND should be notified to re-evaluate the pavement recommendations below.

Pavement Sections The soil resilient modulus and the assumed ESAL values were used to determine the required structural number for the project pavements. The required structural number was then used to develop recommended pavement sections. Pavement sections were based on the DARWin™ computer program that solves the 1993 AASHTO pavement section equation. Pavement parameters and calculations are summarized in Appendix A. Structural coefficients of 0.40 and 0.12 were used for high quality asphalt and aggregate base course, respectively. A Reliability Level of 75 percent was utilized for design of the private pavement sections; a Reliability Level of 90 percent was used for public streets.

The minimum pavement sections recommended by GROUND for the project are tabulated below. As indicated, trash collection areas as well as other pavement areas subjected to high turning stresses or heavy truck traffic should be provided with rigid (portland cement concrete) pavements.

Recommended Minimum Pavement Sections

<i>Location</i>	<i>Full Depth Asphalt (inches Asphalt)</i>	<i>Composite Section (inches Asphalt / inches</i>
-----------------	--	---

Glenwood Meadows Lot 14
Glenwood Springs, Colorado

		<i>Aggregate Base)</i>
Driveways	5	4 / 6
Automobile-Only Parking	4	-
High Turning Stresses & Heavy Vehicle Traffic	6 inches of portland cement concrete	
Public Streets	6½	4 / 8

For superior performance, concrete sections should be underlain by 6 inches of properly compacted aggregate base.

Private concrete pavements should contain sawed or formed joints. CDOT and various industry groups provide guidelines for proper design and concrete construction and associated jointing. In areas of repeated turning stresses we recommend that the concrete pavement joints be fully tied and doweled. We suggest that civil design consider joint layout in accordance with CDOT's M standards, found at the CDOT website: <http://www.dot.state.co.us/DesignSupport/>.

Materials Asphalt pavement should consist of a bituminous plant mix composed of a mixture of aggregate and bituminous material. Asphalt mixture(s) should meet the requirements of a job-mix formula established by a qualified engineer as well as applicable design requirements of the City of Glenwood Springs.

Concrete pavements should consist of a plant mix composed of a mixture of aggregate, portland cement and appropriate admixtures meeting the requirements of a job-mix formula established by a qualified engineer as well as applicable design requirements of the City of Glenwood Springs. Concrete should have a minimum modulus of rupture of third point loading of 650 psi. Normally, concrete with a 28-day compressive strength of 4,000 psi should develop this modulus of rupture value. The concrete should be air-entrained with approximately 6 percent air and should have a minimum cement content of 6 sacks per cubic yard. Maximum allowable slump should be 4 inches.

If composite flexible sections are placed, the aggregate base material should meet the criteria of CDOT Class 6 aggregate base course. Base course should be placed in uniform lifts not exceeding 8 inches in loose thickness and compacted to at least 95

percent of the maximum dry density a uniform moisture contents within 3 percent of the optimum as determined by ASTM D1557 / AASHTO T-180, the "modified Proctor."

Subgrade Preparation The pavement subgrade soils should be excavated and replaced with properly moisture-conditioned and compacted fill. To reduce the potential for consolidation and settlements somewhat, as well as any local potentials for heave, excavation and replacement should be undertaken to a depth of 36 inches beneath the pavement sections. Subgrade preparation should extend the full width of the pavement from back-of-curb to back-of-curb. As recommended in the *Exterior Flatwork* section of this report, sidewalks and other hardscaping should be underlain by at least 36 inches of properly moisture conditioned and compacted fill. If a significant time lag ensues between overlot grading and paving, e.g., several months or more, some re-working of the shallow soils may be necessary shortly prior to paving. In such cases, scarification, moisture conditioning and re-compaction to a depth of 8 to 12 inches likely will be appropriate. Performing GPR surveys along public street alignments as discussed in the *Site Conditions* section of this report should be coordinated with street subgrade preparation to accomplish both efficiently.

Some post-construction movements of the pavements should be anticipated. Grades should be restored in areas of local settlement to re-establish surface drainage. A greater depth of excavation and replacement will result in improved pavement performance over its design life. Recommendations in this regard can be provided upon request.

Soils that classify as A-1 through A-5 (granular soils) should be compacted to 95 or more percent of the maximum modified Proctor dry density within 2 percent of the optimum moisture content as determined by ASTM D1557 / AASHTO T-180. Soils that classify as A-6 and A-7 (cohesive materials) should be compacted to 95 or more percent of the maximum standard Proctor density at moisture contents from 1 percent below the optimum to 3 percent above optimum moisture content as determined by ASTM D-698 / AASHTO T-99.

The Contractor should be prepared either to dry the subgrade materials or moisten them, as needed, prior to compaction. Some site soils likely will "pump" or deflect during compaction if moisture levels are not carefully controlled, particularly the silts and silty sands. The Contractor should be prepared to process and compact such soils to

establish a stable platform for paving, including use of chemical stabilization, if necessary.

Where adequate drainage cannot be achieved or maintained, a greater depth of excavation and replacement is recommended, in addition to the edge drains recommended below.

Proof Rolling Immediately prior to paving, the subgrade should be proof rolled with a heavily loaded, pneumatic tired vehicle. Areas that show excessive deflection during proof rolling should be excavated and replaced and stabilized. Areas allowed to pond prior to paving will require significant re-working prior to proof-rolling. Passing proof-rolling is an additional requirement for pavement subgrade soils; it may be possible for soils to be compacted within the limits indicated in the *Project Earthworks* section of this report and fail proof-rolling, particularly in the upper range of recommended moisture contents.

Planter Drains We understand that the parking areas may have "islands" planted with, flowers, shrubs and trees. Infiltration of irrigation water in planters adjacent to pavements and in islands within paved areas should be carefully controlled or differential heave and/or rutting of the nearby pavements will result. Drip irrigation systems are recommended for such planters to reduce over-spray and water infiltration beyond the planters. GROUND recommends enclosing the soil in the planters with plastic liners and providing them with positive drainage or providing the planters with underdrains.

The planter drains should consist of perforated PVC drain pipe at least 3 inches in diameter, free-draining gravel, and filter fabric. We recommend use of rigid drain piping rather than flexible piping to better insure that proper drainage gradients are maintained. The free-draining gravel should contain less than 5 percent passing the No. 200 Sieve and more than 50 percent retained on the No. 4 Sieve, and have a maximum particle size of 2 inches. Each drain pipe should be surrounded with 4 or more inches of free-draining gravel. The gravel surrounding the drain pipe should be wrapped with filter fabric to reduce the migration of fines into the drain system. The underdrains should be located at sufficient depth to accommodate the anticipated plantings. The pipes for the planter drain systems should be graded at a minimum slope of 1 percent to one or more sumps from which water can be removed by pumping, or to outlet(s) for gravity discharge.

The island / planter drain systems should be tested by the Contractor after installation and after placement and compaction of the overlying backfill to verify that the systems function properly.

We understand, however, that provision of such an extensive drainage system may not be not feasible for this project. Therefore, GROUND suggests where these measures cannot be implemented, the plantings should be selected to minimize the necessary irrigation and a program of maintenance be implemented to repair the resultant distress.

Where islands and other planters near pavements are not provided with underdrains, we suggest that they and the plantings in them be underlain with a layer of relatively densely compacted fill at least 2 feet in thickness beneath the root balls to reduce water infiltration. The more densely compacted fill soils should extend at least 2 feet laterally beyond the limits of the islands. General recommendations for fill placement and compaction are provided in the *Project Earthworks* section of this report. Granular fill soils (classified as GP, GW, GM, GC, SP, SW, SM or SC) for this purpose should be compacted to 97 or more percent of the maximum 'modified Proctor' dry density at moisture contents within 2 percent of optimum moisture content as determined by ASTM D1557. Soils that classify as ML, MH, CL or CH (cohesive soils) should be compacted to 100 percent of the maximum standard Proctor density at moisture contents from optimum to 3 percent above the optimum moisture content as determined by ASTM D698.

Additional Observations The collection and diversion of surface drainage away from paved areas is extremely important to satisfactory performance of the pavement. The subsurface and surface drainage systems should be carefully designed to ensure removal of the water from paved areas and subgrade soils. Where topography, site constraints or other factors limit or preclude adequate surface drainage, pavements should be provided with edge drains to reduce loss of subgrade support. The long-term performance of the pavement also can be improved greatly by proper backfilling and compaction behind curb, gutter, and sidewalk. Unless the interceptor drain and edge drains (where included) are installed properly and maintained, and site drainage in general is well maintained, there is an increased risk of poor pavement performance at this site due to the expansive subgrade materials and the local introduction of off-site irrigation water.

Landscape irrigation in planters adjacent to pavements and in "island" planters within paved areas should be carefully controlled or differential heave and/or rutting of the nearby pavements will result. Drip irrigation systems are recommended for such planters to reduce over-spray and water infiltration beyond the planters. Enclosing the soil in the planters with plastic liners and providing them with positive drainage also will reduce differential moisture increases in the surrounding subgrade soils. In our experience, infiltration from planters adjacent to pavements is a principal source of moisture increase beneath those pavements. This wetting of the subgrade soils from infiltrating irrigation commonly leads to loss of subgrade support for the pavement with resultant accelerating distress, loss of pavement life and increased maintenance costs. This is particularly the case in the later stages of project construction after landscaping has been emplaced but heavy construction traffic has not ended. Heavy vehicle traffic over wetted subgrade commonly results in rutting and pushing of flexible pavements, and cracking of rigid pavements. Where the subgrade soils are expansive, wetting also typically results in increased pavement heave. In relatively flat areas where design drainage gradients necessarily are small, subgrade settlement or heave can obstruct proper drainage and yield increased infiltration, exaggerated distress, etc. (These considerations apply to project flatwork, as well.)

Also, GROUND's experience indicates that longitudinal cracking is common in asphalt-pavements generally parallel to the interface between the asphalt and concrete structures such as curbs, gutters or drain pans. This of this type is likely to occur even where the subgrade has been prepared properly and the asphalt has been compacted properly.

The anticipated traffic loading does not include excess loading conditions imposed by heavy construction vehicles. Consequently, heavily loaded concrete, lumber, and building material trucks can have a detrimental effect on the pavement. In areas where the maintenance traffic is turning, concrete pavement is recommended.

As noted above, the standard care of practice in pavement design describes the recommended flexible pavement section as a "20-year" design pavement; however, most pavements will not remain in satisfactory condition without regular maintenance and rehabilitation procedures performed throughout the life of the pavement. Maintenance and rehabilitation measures preserve, rather than improve, the structural capacity of the pavement structure. Therefore, GROUND recommends that an effective program of regular maintenance be developed and implemented to seal cracks, repair

distressed areas, and perform thin overlays throughout the lives of the pavements. The greatest benefit of pavement overlaying will be achieved by overlaying sound pavements that exhibit little or no distress.

A crack sealing and fog seal/chip seal program should be performed on the pavements every 3 to 4 years. After approximately 8 to 10 years after construction, patching, additional crack sealing, and asphalt overlay may be required. Prior to overlays, it is important that all cracks be sealed with a flexible, rubberized crack sealant in order to reduce the potential for propagation of the crack through the overlay. If actual traffic loadings exceed the values used for development of the pavement sections, however, pavement maintenance measures will be needed on an accelerated schedule.

CLOSURE

Geotechnical Review The poor performance of many pavements, foundations and subsurface structures has been directly attributed to inadequate geotechnical review and earthwork quality control. Therefore, project plans and specifications should be reviewed by the Geotechnical Engineer to evaluate whether they comply with the intent of the recommendations in this report. This review should be reported in writing.

Project earthwork construction operations should be observed by the Geotechnical Engineer. All excavations should be observed by the Geotechnical Engineer prior to placement of fill or backfill soils, installation of shoring, or foundation construction. Placement of fill/backfill soils should be observed by the Geotechnical Engineer, and the soils tested.

The geotechnical recommendations presented in this report are highly contingent upon observation and testing of project earthworks by representatives of GROUND. If another geotechnical consultant is selected to provide construction observation and quality control, then that consultant must assume all responsibility for the geotechnical aspects of the project by concurring in writing with the recommendations in this report, or by providing alternative recommendations.

Limitations This report has been prepared for Total Merchant Services, as it pertains to design and construction of the subject mixed use project as described herein. It may not contain sufficient information for other parties or other purposes. In addition, GROUND has assumed that project construction will commence by Autumn, 2008. Changes in project plans or schedule should be brought to the attention of the

Geotechnical Engineer, in order that the geotechnical recommendations may be re-evaluated and, as necessary, modified.

The geotechnical conclusions and recommendations in this report relied upon subsurface exploration at a limited number of exploration points, as shown on Figure 1. Subsurface conditions were interpolated between and extrapolated beyond these locations. Findings were dependent on the limited amount of direct evidence obtained at the time of this geotechnical evaluation. Our recommendations were developed for site conditions as described above. Actual conditions exposed during construction may be anticipated to differ, somewhat, from those encountered during site exploration. If during construction, surface, soil, bedrock, or groundwater conditions appear to be at variance with those described herein, the Geotechnical Engineer should be advised at once, so that re-evaluation of the recommendations may be made in a timely manner. In addition, a Contractor who relies upon this report for development of his scope of work or cost estimates may consider the geotechnical information in this report to be inadequate for his purposes or find the geotechnical conditions described herein to be at variance with his experience in the greater project area. In such cases, the Contractor should obtain the additional geotechnical information that he considers necessary to develop his workscope and cost estimates with sufficient precision.

Collapsible earth materials are present on the project site. These materials can shrink significantly if their moisture content is increased. The collapse potential of site soils can vary significantly, both laterally and vertically. Changes in moisture can occur irregularly, as well, resulting in conditions that cannot always be predicted.

The recommendations presented in this report are based on the current state-of-the-art for improvements placed on collapsible earth materials. The Owner should be aware that there are risks in construction on these types of soils. Performance of the proposed structures and pavements will depend on implementation of the recommendations in this report and on proper maintenance after construction is completed. Because water is the principal cause of volume change in expansive soils and rock, it is necessary that the changes in moisture content be kept to a minimum. Any indications of distress to project installations should be brought to the attention of the Geotechnical Engineer.

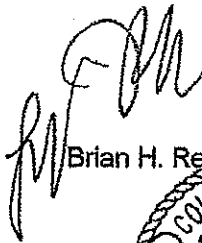
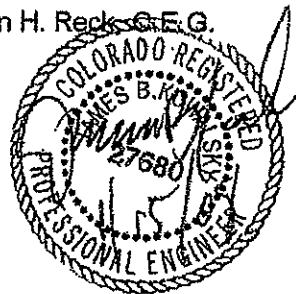
This report was prepared in accordance with generally accepted soil and foundation engineering practice in the Garfield County, Colorado, area, at the date of preparation.

Glenwood Meadows Lot 14
Glenwood Springs, Colorado

GROUND makes no other warranties, either express or implied, as to the professional data, opinions or recommendations contained herein.

Sincerely,

Ground Engineering Consultants, Inc.


Brian H. Reck, G.E.G.


Reviewed by James B. Kowalsky, P.E.



LAND USE APPLICATION

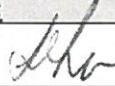
City of Glenwood Springs
Economic and Community Development Dept.
101 West 8th Street
Glenwood Springs, CO 81601
970-384-6411

Ordinance Amendments		Development Permits	
Rezoning	☐	Site/Architectural Plan Review	☐
Rezoning to Planned Unit Development (PUD)	☐	Administrative	☐
Annexation	☐	Minor	☐
Condominiumization	☐	Major	☒
Annexation	☐	Master Plan	☐
Street Vacation	☐	Construction Plans	☐
	☐	Location & Extent	☐
Subdivisions		Right of Way Encroachment License	☐
Minor Subdivision	☐	Floodplain Development Permit	☐
Preliminary Plat	☐		☐
Final Plat	☐	Flexibility and Relief Procedures	☐
Vacation of Right-of-Way	☐	Variance	☐
	☐	Administrative Adjustment	☐
	☐	Appeal	☐

Applicant/Property Owner Information:			
Applicant		Owner	
Boldt / Glenwood Springs Properties, LLC		Centura Ventures, LLC	
Relationship to Owner		Owner	
Purchaser			
Applicant Address		Owner Address	
1110 N Old World 3rd Street	Suite 610, Milwaukee, WI 53203	9100 E Mineral Circle	Englewood, Colorado 80112
Phone 414-276-4635	Email Address jake.garro@boldt.com	Phone	Email Address

Property Information:	
Address	Parcel Number
Wulfsohn Road	2185-053-38-014
Subdivision	Lot and Block Number
Glenwood Meadows No. 2	Lot: 14
Zone District M1	Existing Land Use Vacant

General Project Description:
See attached

Signatures:		
The owner or applicant must be present at the hearing. All public hearings must be properly noticed according to G.S.M.C. Section 070.010.030. Signatures of all owners of the property must appear before the application is accepted. Partnerships or corporations may have the authorized general partner or corporate officer sign the application. (Attach additional incorporation documents if necessary.) I declare under the penalty of perjury that the above information is true and correct to the best of my knowledge.	 Applicant	12/21/18 Date
	 Owner	12/21/18 Date
	Owner	Date
	Owner	Date



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Ordinance No 8, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, Amending 100.010.030 (c) Weed and Grass Control to Include the Noxious Weed Management Plan (FIRST READING)

Action Requested: Approve Ordinance Amending Ordinance 100.010.030 (c) Weed and Grass Control to include the Noxious Weed Management Plan

Department: Parks & Recreation

Presented By: Brian Smith, Recreation Director

Background Info: At the January 3rd regular meeting staff presented and recommended City Council adopt the proposed Noxious Weed Management Plan.

The proposed modifications incorporate the plan into the existing City ordinance (Public Health-100.010.030 c) and would allow for the implementation and enforcement of an Integrated Weed Management Plan in the community. The plan is patterned after the Garfield County Noxious Weed Management Plan and complies with the Colorado Weed Management Act of 1990, last amended in 2014.

The changes to the ordinance allows Code Enforcement staff, when notified of a species contained in the locally prepared Noxious Weed List, to notify property owners of the presence of a noxious weed or weeds and to provide options for management and a reasonable timeline for compliance.

The intent is for the property owner to incorporate those options that are the least environmentally damaging and are practical, timely and economically feasible to achieve the desired outcome. The goal of the Management Plan is to promote healthy plant communities in the local jurisdiction and suppress the expansion of noxious weeds.

Issues: None.

Staff Recommendation: Approve Resolution (___) Amending Ordinance 100.010.030 (c) Weed and Grass Control



City of Glenwood Springs, CO NOXIOUS WEED MANAGEMENT PLAN

**Adopted by the City of Glenwood Springs, CO
January 3, 2019**



Prepared by the City of Glenwood Springs, CO in cooperation with the
Garfield County Weed Advisory Board

CITY OF GLENWOOD SPRINGS
NOXIOUS WEED MANAGEMENT PLAN TABLE OF CONTENTS

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SECTION I – INTRODUCTION

1.01 Executive Summary

- A. The health of our environment is a high priority for residents of Glenwood Springs. The health and productivity of natural plant communities and agricultural lands is threatened by the introduction of numerous invasive alien plants. Without an effective integrated weed management plan these aggressive plants will continue to infest and degrade the lands we value so highly.
- B. Rapid expansion of noxious weeds is an obstacle to maintaining healthy ecosystems and restoring disturbed native plant communities and habitats. Because noxious weeds tend to be highly invasive and harmful to native vegetation, they can quickly dominate many sites and often cause permanent damage to plant communities. Estimates indicate that 100 million acres of private, state, and federal land are infested with noxious weeds in just 11 western states. This is occurring in both disturbed and relatively undisturbed areas.
- C. The intent of the Colorado Noxious Weed Act and the goal of the Garfield County Weed Advisory Board is to curb the degradation of our valued environment by implementing an Integrated Weed Management Plan designed to stop the spread of noxious weeds.
- D. Management of weeds may seem overwhelming, but through developing partnerships at all levels – local, regional and national – we hope to achieve our weed management goals. The challenge for all involved is to develop management systems, support and direction for the prevention of the spread of weeds before the situation becomes even more serious and economically unfeasible.

1.02 Purpose of the Plan

- A. The purpose of the Plan is to provide guidelines for managing designated noxious weeds which represent a threat to the continued economic, environmental and agricultural value of lands in the City of Glenwood Springs. This plan provides for the implementation of the Colorado Noxious Weed Act by detailing integrated management options for designated noxious weeds. Options include education, preventive measures, good stewardship, and control techniques.
- B. The intent is to incorporate those options that are the least environmentally damaging and are practical, timely and economically feasible. It is the responsibility of all landowners to use integrated methods to manage noxious weeds, and the responsibility of local governing bodies to ensure that these plants are managed on public and private lands.

1.03 Enactment Authority

- A. The Colorado Weed Management Act (C.R.S. 35-5.5-101) was signed into state law in 1990 and last amended in 2014. Now known as the Colorado Noxious Weed Act, it states that noxious weeds pose a threat to the natural resources of Colorado.
- B. This plan is designed in accordance with the statutory provisions of the Colorado Noxious Weed Act.
- C. Municipalities shall adopt a weed management plan for all lands within their boundaries. The county and municipalities may cooperate, through an intergovernmental agreement, for the powers and authorities of the act.
- D. The Act directs the Board of County Commissioners to appoint a Weed Advisory Board, whose power and duties are:
 - a. Develop a noxious weed list.
 - b. Develop a Weed Management Plan for managing designated noxious weeds.
 - c. Declare noxious weeds and any state noxious weeds designated by rule to be subject to integrated management.
 - d. Recommend to the Board of County Commissioners that identified landowners be required to submit an integrated weed management plan for managing designated noxious weeds on their properties.

1.04 Colorado, Garfield County and Glenwood Springs Noxious Weed Lists

The Colorado Department of Agriculture's Noxious Weed Program has three noxious weed lists: A, B and C, plus a Watch List:

- A. Species are assigned to one of three State weed lists through the rule-making authority of the Department of Agriculture. The Commissioner of the Department of Agriculture uses a mandatory administrative process to create the lists, subject to the public notice and publication requirements of the State Administrative Procedure Act.
- B. The Colorado Noxious Weed Act requires the Commissioner to review and revise the lists at least once every 3 years, using this public process. Updated State weed lists and notices of departmental rule-making are available electronically through the State of Colorado's websites: www.state.co.us; www.ag.state.co.us and www.sos.state.co.us and through the Office of the Garfield County Vegetation Manager.
- C. State A, B and C Lists. The Colorado Department of Agriculture has determined that "an organized and coordinated effort must be made to stop the spread of noxious weeds." (C.R.S. 35-5.5-102). The rules designate and classify noxious weeds into four categories:
 - a. The State's A list is made up of rare noxious weed species that are subject to eradication, as a matter of law, wherever they are detected in the State, including Garfield County and the City of Glenwood Springs.
 - b. The B list includes species that have differing distributions throughout the State. Specified populations of B list species are subject to eradication, containment, or suppression in identified areas of the state, including portions of Garfield County and the City of Glenwood Springs.
 - c. The State's C list includes weed species that are widespread and well-established, for which the State recommends but does not require control, although Glenwood Springs's Weed Management Plan may require control.

- d. The Watch List was established in 2011 and is non-regulatory and advisory only. It is designed to increase awareness of new invasive species to the State.
- D. The City of Glenwood Springs follows the dictates of the State's rules as to which species on the A and B lists must be eradicated, contained or suppressed and manages those species and the species on its own locally-designated list in accordance with the Weed Management Plan contained in the following Sections II-V and the State Department of Agriculture's administrative rules.
 - a. The County's management plan for species on the State's lists is subject to review every 3 years.
 - b. The Board of County Commissioners may also adopt a revised Weed Management Plan that includes designated noxious weeds not previously included on any list.
 - c. The City of Glenwood Springs may also adopt a revised Weed Management Plan that includes designated noxious weeds not previously included on any list.
- E. In addition to the weeds designated on the State's A, B and C lists, the City of Glenwood Springs has the authority to declare plants as noxious weeds if the plant meets one or more statutorily defined criteria (C.R.S. 35-5.5-104 (16), 35-5.5-107, and 35-5.5-108 (3)).
 - a. The City of Glenwood Springs can also declare those weed species and the weeds on the State's weed lists to be subject to integrated management within city limits.
 - b. The City list is subject to change as the State amends the A, B and C lists and as the City declares species not included on the State's list as noxious.
- F. The City of Glenwood Springs Noxious Weed List as recommended by the Garfield County Weed Advisory Board on February 24, 2014, with Colorado designations listed as A, B or C or NL (Not Listed by the State). The list is current as of adoption of this regulation by the City.

Common Name	Scientific Name	Colorado Weed List
Absinth wormwood	<i>Artemisia absinthium</i>	B
Black henbane	<i>Hyoscyamus niger</i>	B
Bouncing Bet	<i>Saponaria officinalis</i>	B
Bull thistle	<i>Cirsium vulgare</i>	B
Canada thistle	<i>Cirsium arvense</i>	B

Chicory	<i>Cichorium intybus</i>	C
Chinese clematis	<i>Clematis orientalis</i>	B
Common burdock	<i>Arctium minus</i>	C
Common tansy	<i>Tanacetum vulgare</i>	B
Common teasel	<i>Dipsacus fullonum</i>	B
Corn chamomile	<i>Anthemis arvensis</i>	B
Curly dock	<i>Rumex crispus</i>	N
Cutleaf teasel	<i>Dipsacus laciniatus</i>	B
Cypress spurge	<i>Euphorbia cyparissias</i>	A
Dalmatian toadflax	<i>Linaria dalmatica</i>	B
Dame's rocket	<i>Hesperis matronalis</i>	B
Diffuse knapweed	<i>Centaurea diffusa</i>	B
Hoary cress	<i>Cardaria draba</i>	B
Houndstongue	<i>Cynoglossum officinale</i>	B
Jointed goatgrass	<i>Aegilops cylindrica</i>	B
Leafy spurge	<i>Euphorbia esula</i>	B
Mayweed chamomile	<i>Anthemis cotula</i>	B
Meadow knapweed	<i>Centaurea nigrescens</i>	A
Mediterranean sage	<i>Salvia aethiopsis</i>	A
Musk thistle	<i>Carduus nutans</i>	B
Myrtle spurge	<i>Euphorbia myrsinites</i>	A
Oxeye daisy	<i>Leucanthemum vulgare</i>	B
Perennial pepperweed	<i>Lepidium latifolium</i>	B
Plumeless thistle	<i>Carduus acanthoides</i>	B
Poison hemlock	<i>Conium maculatum</i>	C
Purple loosestrife	<i>Lythrum salicaria</i>	A
Russian knapweed	<i>Acroptilon repens</i>	B
Russian olive	<i>Elaeagnus angustifolia</i>	B
Salt cedar	<i>Tamarix parviflora</i>	B
Salt cedar	<i>Tamarix ramosissima</i>	B
Scentless chamomile	<i>Tripleurospermum perforata</i>	B
Scotch thistle	<i>Onopordum acanthium</i>	B
Spotted knapweed	<i>Centaurea stoebe</i>	B
Sulfur cinquefoil	<i>Potentilla recta</i>	B
Yellow starthistle	<i>Centaurea solstitialis</i>	A
Yellow toadflax	<i>Linaria vulgaris</i>	B

- G. The City has the statutory authority to adopt standards that are more stringent than those set by the State Commissioner of Agriculture.
- a. The Parks and Recreation Advisory Board will request such action of the City if and when a species presents a local threat which requires such action.
 - b. The City also has the authority to apply to the State Commissioner of Agriculture for a waiver of Compliance if and when the State Department of Agriculture's mandate that a species be eradicated in a portion of or all of the City of Glenwood Springs is deemed unfeasible.
 - c. If the Commissioner of Agriculture, in consultation with the City, determines that the most cost-effective manner to eradicate designated noxious weeds is for the state to implement an eradication program, the Commissioner may implement such a program through the Department of Agriculture (C.R.S. 35-5.5-108.5(3)(d)).

SECTION II - GENERAL INFORMATION

2.01 Definitions

Act: The Colorado Noxious Weed Act, Title 35 C.R.S., Article 5.5, as amended.

Adjacent: Having a common boundary that meets or touches at some point.

Aggressive: Fast growing, tending to spread quickly.

Agriculture: Uses involving the cultivation of land, production of crops, and/or the keeping of livestock and the preparation of these products for man's use and disposal.

Alien Plant: A plant species that is not indigenous to the State of Colorado.

Annual: A plant that lasts one growing season, completing its life cycle from seed to seed in one year.

Biennial: A plant that lives in 2 calendar years. The first year is usually a vegetative form, such as a rosette of leaves. The second year the plant grows a flowering shoot, sets seeds and dies.

Biological Control: The deliberate introduction of living agents such as insects, vertebrate predators, grazing animals and plant diseases to reduce a noxious weed population.

Biological Management: The use of organisms to disrupt the growth of noxious weeds.

Bolt: To flower or produce seeds prematurely or develop a flowering stem from a rosette.

Bract: A reduced or modified leaf often surrounding the base of a flower.

Browse: Tender shoots, twigs and leaves of trees and shrubs fit for food for wildlife.

Chemical Management: The use of agents or plant growth regulators to disrupt or inhibit the growth of noxious weeds.

City: The City of Glenwood Springs, CO

Commissioners: The Garfield County Board of Commissioners.

Containment: "...maintaining an intensively managed buffer zone that separates infested regions, where suppression activities prevail, from largely uninfested regions, where eradication activities prevail." (C.R.S. 35-5.5-103(11.7)(b)).

County: The unincorporated areas of Garfield County.

Cultural Management: Methods or management practices which favor the growth of desirable plants over noxious weeds, including maintaining optimum fertility and plant moisture status in an area, planting at optimum density and spatial arrangement in an area, and planting species most suited to a particular area.

Designated Noxious Weed: A non-native, invasive plant or plant parts that are identified as a threat to native plant communities and included on the Garfield County Noxious Weed List.

Desirable Plants: Plants considered to be advantageous and beneficial to the environmental viability of the County.

Elimination: Removing and destroying live plants of List A or List B species designated for eradication and preventing seed production until the seed source is depleted; considered the first step in the eradication process.

Eradication: "...reducing the reproductive success of a noxious weed species or specified noxious weed population in largely uninfested regions to zero and permanently eliminating the species or population within a specified period of time. Once all specified weed populations are eliminated or prevented from reproducing, intensive efforts continue until the seed bank is exhausted." (C.R.S. 35-5.5-103(11.7)(a)).

Escaped Ornamental: A plant originally intended for horticultural or landscape planting that has escaped its intended boundaries.

Exotic Plant: A plant that is not a regular member of the native or natural community in which it is found.

Forb: A broad-leafed, non-woody plant other than grass that dies back to the ground after each growing season.

Forage: Food for animals, especially when taken by browsing or grazing.

Garfield County Weed Advisory Board: A group of individuals appointed by the BOCC to advise on matters of management of noxious weeds.

Herbaceous: Applies to plants of soft texture whose stems die back to the ground after each growing season; green and leaf-like, not woody.

Infestation: Growth of an undesirable plant which has become harmful or bothersome. There are 3 types of infestation:

1. Heavy: Dense; 25-100% canopy cover.
2. Moderate: Widely scattered plants; 5-25% canopy cover.
3. Light: Occasional plant; less than 5% canopy cover.

Insectary: The Colorado Department of Agriculture Biological Pest Control Division operates the Palisade Insectary, which imports, rears, establishes and colonizes new beneficial organisms for control of specific plant and insect pests.

Integrated Management: The planning and implementation of a coordinated program utilizing a variety of methods for managing noxious weeds, in order to achieve desirable plant communities. Such methods may include but are not limited to education, preventive measures, good stewardship and biological, cultural, herbicide and mechanical management.

Invasive: Aggressive, capable of invading a plant community and creating a monoculture.

Invasive Ornamental: A plant originally intended for horticultural or landscape planting that has escaped its intended boundaries and is capable of invading a plant community and creating a monoculture.

Landowner: Any owner of record of state, municipal or private property including an owner of any easement, right-of-way, or estate within the county.

List A Species: "...rare noxious weed species with discrete statewide distributions that are subject to eradication wherever detected statewide in order to protect neighboring lands and the state as a whole." (C.R.S. 35-5.5-108(2)(a)(I)).

List B Species: "...noxious weed species with discrete statewide distribution that are subject to eradication, containment or suppression in portions of the state designated by the commissioner in order to stop the continued spread of these species." (C.R.S. 35-5.5-108(2)(a)(II)).

List C Species: "...widespread and well-established noxious weed species for which control is recommended but not required by the state, although local governing bodies may require management." (C.R.S. 35-5.5-108(2)(a)(III)).

Lobe: A division or segment of a leaf or other plant part, especially a rounded one.

Local Noxious Weed: Any plant of local importance which has been declared an invasive or undesirable plant by the Garfield County Board of County Commissioners or City of Glenwood Springs.

Management: Any activity that prevents a plant from establishing, reproducing or dispersing itself.

Management Plan: A plan developed by the City of Glenwood Springs and the Garfield County Weed Advisory Board and implemented by the City of Glenwood Springs in order to control the spread of noxious weeds.

Mechanical Management: Methods or management practices that physically disrupt plant growth, including tilling, mowing, burning, flooding, mulching, hand-pulling, shoveling, hoeing and chopping.

Monoculture: A single homogeneous crop without diversity.

Native Plant: A plant species that is indigenous to a particular locale.

Noxious Weed: An alien plant or parts of an alien plant that has been designated as being invasive and undesirable and has been declared a noxious weed by the Garfield County Weed Advisory Board and meets one or more of the following criteria:

1. Aggressively invades or is physically destructive to economic crops or native plant communities.
2. Detrimental directly or indirectly to the environmentally sound management of natural or agricultural ecosystems.
3. Poisonous to livestock.
4. Carrier of detrimental insects, diseases or parasites.

Noxious Weed Management: The planning and implementation of an integrated program to manage undesirable or problematic plant species.

Ornamental: A decorative, aggressive, non-native plant often sold through nurseries, seed catalogues, or spread through seed collection. A threat to native plant species because it has no natural predators and thus competes against the plants of the natural ecosystem.

Perennial: A plant that grows for 3 years or more; usually flowers and produces fruit each year. The above-ground part of the plant may die, but new growth comes from the roots or crown each spring.

Petiole: A slender stem that supports the blade of a foliage leaf.

Rhizome: An elongated subterranean plant stem that produces shoots above and roots below, and is distinguished from a true root by possessing buds, nodes and scale-like leaves.

Rosette: A cluster of closely-crowded leaves in a compact circle, usually at ground level.

State Noxious Weed: Any weed identified by the Colorado Commissioner of Agriculture by rule after notifying and consulting with the State Noxious Weed Advisory Committee.

Subject Lands: All public and private lands within the City of Glenwood Springs.

Suppression: "...reducing the vigor of noxious weed populations within an infested region, decreasing the propensity of noxious weeds species to spread to surrounding lands, and mitigating the negative effects of noxious weed populations on infested lands." (C.R.S. 35-5.5-103(11.7)(c)).

Surfactant: A compound that improves the emulsifying, dispersing, spreading, wetting or other surface modifying properties of liquids.

Watch List: The State Watch List, which is advisory and for educational purposes, includes plant species that have been determined to pose a potential threat to the agricultural productivity and environmental values of the lands of the state.

Wildflower: The flower of a wild or uncultivated plant or the plant bearing it.

Xeriscape: Landscaping with water conservation as a major objective.

2.02 Importation and Cultivation of City, County and State Listed Noxious Weeds

Persons are prohibited from importing seeds, propagating plant parts or live plants and cultivating City of Glenwood Springs, Garfield County and State of Colorado listed weed species within the City except as provided for in C.R.S. 35-5.5-104.5(a). All listed species are non- native and problematic in Glenwood Springs, Garfield County and/or the State of Colorado.

- A. Threat of Escaped Ornamentals. Most plants used for landscaping purposes cannot proliferate outside the cultivated environment of the home garden. Certain exotic plants and seeds were imported to the United States for their aggressive growth habits, xeriscape potential or re-seeding capabilities.
 - a. The escaped ornamentals include bouncing bet, chicory, cypress spurge, the chamomiles, Dalmatian toadflax, dame's rocket, myrtle spurge, oxeye daisy, purple loosestrife, Russian olive, yellow toadflax. The very traits that make these plants desirable for a garden or landscape may also enable them to thrive outside cultivated areas and become fierce competitors with native vegetation.
 - b. Because they exist here without the presence of any natural predators, these plants have the ability to spread extensively and pose a severe threat to the delicate balance of our native ecosystems.
- B. Since various invasive ornamental plants are attractive and establish themselves quickly, they are popular with landscapers and gardeners and may be purchased through certain nurseries in Colorado, in seed catalogues and on the Internet.
 - a. It is imperative to educate landscape architects, gardeners and nursery growers about the need to eliminate such plants from their landscape plans. Otherwise these plants will inevitably escape from the cultivated garden and jeopardize natural wildflower and plant communities.
 - b. Native grasses and forbs, as well as agricultural plantings, cannot compete with invasive ornamental plants for nutrients, sunlight and water. As a result, biologically diverse mountain meadows, grasslands, wetlands and agricultural lands are in danger of being overrun by non-native invasive ornamental plants.

2.03 Integrated Weed Management – Treatment Methods

An integrated approach to noxious weed management is important because no single technique will be effective.

- A. Prevention should always be practiced and is effective on all species of weeds. It is accomplished through good land stewardship, planting weed-free seed, avoiding planting invasive weed species, using weed-free seed mulch and erosion control, using clean equipment and taking legal measures such as quarantines and weed laws.
 - a. Cultural management includes methods or management practices which favor the growth of desirable plants over noxious weeds, including maintaining optimum fertility and plant moisture status in an area, planting at optimum density and spatial arrangement in an area, and planting species most suited to

- a particular area. Techniques include dense seeding, fertilization, mulching, careful irrigation practices, sensible grazing regimes and improved land management practices.
- b. Mechanical management methods or practices that physically disrupt plant growth and include tilling, mowing, burning, flooding, mulching, hand-pulling, shoveling, hoeing and chopping. Mechanical methods are most effective for annual and biennial weeds and less effective for perennials. Equipment should be cleaned thoroughly before moving to un-infested areas to prevent the spread of weeds.
 - c. Biological management involves the use of organisms such as insects and animals to disrupt the growth of noxious weeds. It rarely provides 100% control and must be incorporated with other methods for successful management. Insect species developed to mitigate specific noxious plants are available to the public free of charge from the Colorado Department of Agriculture Conservation Services Division, Biological Control Program, 750 37.8 Rd., Palisade, CO 81526; 866-324-2963 or 970-464-7916.
 - d. Herbicide application. It is extremely important to treat small infestation of certain weeds (List A and B species to be eradicated) as soon as possible. Herbicides are most effective when sprayed at specific stages during the life cycle of the weed. To ensure that small infestations of noxious weeds are controlled or eradicated effectively, it is extremely important to take immediate action on certain weed patches.
- B. The optimum method or methods for weed management will vary depending on a number of site-specific variables:
- a. Factors to be considered should include soil type and stability, grade, associated vegetation, existing and proposed land use, proximity to water, availability of irrigation water, weed type and stage of growth and severity of infestation.
 - b. The management method selected should be the least environmentally damaging, yet practical and reasonable in achieving the desired results.
 - c. When considering weed management on a property, work on the areas that may transport weed seeds. These areas include ditches, streams, roadsides, driveways, trails, livestock-concentrated areas and equipment storage sites.
- C. The Colorado Department of Agriculture has prepared fact sheets for most State-listed noxious weeds. They feature detailed descriptions and photographs of the plants, as well as integrated management for each species. (See Appendix A).
- D. Herbicide application. It is the City's philosophy to minimize the use of herbicides and impacts to desirable vegetation. However, for some species of noxious weeds herbicide application is the only effective method of control. It is extremely important to treat small infestation of certain weeds (List A and B species to be eradicated) as soon as possible. To ensure that small infestations of noxious weeds are controlled or eradicated effectively, it is extremely important to take immediate action on certain weed patches. The City uses hand gun, hand-held or backpack sprayers, utility task vehicles or truck-mounted equipment for selective spot spraying.
- a. No Spray Areas. Anyone living adjacent to a City right-of-way who does not want spraying in front of their property can call the Glenwood Springs Parks

and Recreation Department and request it be listed as a no-spray property. However, the property owner is responsible for elimination of noxious weeds. Only noxious weeds on the A and B State, County and City Lists need to be controlled. Land owners must dig up or mow any noxious weeds before they go to seed. If weeds are not properly managed, the City must resume spraying in order to comply with the Colorado Noxious Weed Act (C.R.S 35-5.5-101). Owners of organic crops or who have pesticide-sensitive crops can also call the City to request no-spray listing. Landowners may place “No Spray” signs on their property adjacent to City rights-of-way. Signs should be readable from the roadside and not impact city road maintenance operations.

- b. Registry of Pesticide-Sensitive Persons. The registry is maintained by the State of Colorado under the regulatory requirements of the Pesticide Applications Act. Notification to registered individuals must be given in accordance with C.R.S 35-10-112, and Part 12 of the PAA rules. Pesticide applicators are required to notify registered individuals prior to application of pesticides on adjacent properties. For information about the registry, call the Colorado Department of Agriculture, 303-239-4146.
 - c. Source Water Protection. A Source Water Protection Plan was developed in 2013 for community drinking water systems in Garfield County. A current list of systems covered under the Source Water Protection Plan is available through the Garfield County Public Health Department. The plan prioritizes source water protection concerns and identifies local source water management approaches that can be implemented to protect the source of drinking water for these communities. It delineates areas around these communities as source water protection areas. Pesticide application was identified a potential source of water contamination. The City of Glenwood Springs is committed to using best management practices when applying herbicides to control noxious weeds. These practices include following label directions and selective spot spraying to ensure direct treatment of noxious weeds and protection of native vegetation and water resources. See Appendix A/Weed Fact Sheets for approved herbicides/controls.
 - d. Changes in herbicide registrations occur constantly. The herbicide label is the legal document on herbicide use. ***Read and follow all directions carefully.*** The use of an herbicide in a manner not consistent with the label can lead to injury of crops, humans, animals and the environment.
 - e. Specific chemical recommendations are available from the Garfield County Vegetation Management Department and/or licensed applicators and are not listed in the Plan. Before using any chemical, thoroughly read the label. Any use of an herbicide inconsistent with the label is neither legal nor recommended. See Appendix A/Weed Fact Sheets or Section 2.05 of this document for recommended herbicides/controls.
- E. The optimum method or methods for weed management will vary depending on a number of site-specific variables. Factors to be considered should include soil type and stability, grade, associated vegetation, existing and proposed land use, proximity to water, availability of irrigation water, weed type and stage of growth and severity of infestation.

- F. The management method selected should be the least environmentally damaging, yet practical and reasonable in achieving the desired results. When considering weed management on a property, work on the areas that may transport weed seeds, including ditches, streams, roadsides, driveways, trails, livestock-concentrated areas and equipment storage sites.

2.04 Cost Share Program

Garfield County offers cost-share programs to assist with noxious weed management. These programs are a partnership between the three local Conservation Districts based in Glenwood Springs and Garfield County. Check with them for information on how they can assist with the costs of managing noxious weeds.

2.05 Description of Designated Noxious Weeds

GARFIELD COUNTY NOXIOUS WEED LIST

The Garfield County Weed Advisory Board encourages all county residents to be knowledgeable about noxious weeds. Below are general descriptions of the County's listed noxious weeds. Locations of some weeds are provided in general terms under their descriptions. Not all locations are listed.

ABSINTH WORMWOOD (*Artemisia absinthium*)

Description: A member of the Sunflower family native to Eurasia, the Middle East and Africa. A long-lived perennial. Reproduces from seed. Grows to roughly 3 feet tall and 2 feet across, with silver-grey leaves and yellow flowers. Smells strongly of sage.

Comments: It is commonly found in disturbed sites with moist soils. Considered poor forage for all but sheep and will taint milk of cows.

Location: Common between Glenwood Springs and Carbondale. Infested sites include the Missouri Heights and Crystal Springs areas. Also spread to South Canyon, Peach Valley and Rulison.

Cultural Control: Cultural controls are possible but time-consuming and expensive. Complete removal of any seedling or newly established plants by continual hand-pulling is possible.

Chemical Control: Treat when plant is 12 inches tall through flowering growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Absinth wormwood* (Appendix A).

BLACK HENBANE (*Hyoscyamus niger*)

Description: A member of the Nightshade family originally introduced from Europe as an ornamental and medicinal herb. Annual or biennial; reproduces from seed. Recognized by its

rosettes, shallowly-lobed leaves with sticky hairs and brownish-yellow flowers with purple veins and a distinctly unpleasant smell. Grows up to 3 feet.

Comments: Poisonous due to alkaloids in all parts of the plant. It is important to protect threatened areas from over-grazing.

Location: Relatively rare. Found in Gibson Gulch west of Divide Creek; reported just west of the West Fork of Stewart Gulch on the Roan Plateau near the Rio Blanco County line.

Mechanical Control: Complete removal of any seedling or newly established plants by continual hand-pulling.

Chemical Control: Treat plants in spring to early summer prior to seed production, in rosette stage. Follow up treatments are recommended to pick up missed or late bolting plants. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Black henbane* (Appendix A).

BOUNCING BET (*Saponaria officinalis*)

Description: Member of the Pink family originally introduced from Europe as a garden plant. Perennial. Reproduces from seed and rhizomatous swollen nodes. Stout oppositely branching and leaved stems. Leaves smooth and narrow. Flowers have 5 light pink to white petals with notches at the end.

Comments: Grows most commonly in wet areas which may restrict the use of certain herbicides. Poisonous.

Location: No Name, Glenwood Springs and New Castle.

Cultural Control: Eliminate seed production while depleting nutrient reserves in the roots. Prevent the establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over-grazing.

Chemical Control: Treat at bolting to bud-growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Bouncing Bet* (Appendix A).

BULL THISTLE (*Cirsium vulgare*)

Description: Member of the Sunflower family introduced from Eurasia as a seed contaminant. Biennial. Reproduces from seed. Only thistle species with leaves that are prickly hair above and cottony below. Heads hairy with composite purple flowers.

Comments: Commonly found in dry to moist environments in full sun. Thrives in highly disturbed, nitrogen-rich, gravelly to clay-textured soils.

Cultural Control: Prevention is the most effective control. Maintain healthy plant communities and monitor for new infestations. Limit seed production. Plants with buds or flowers should be immediately disposed of or destroyed.

Biological Control: *Urophora stylata*, a fly predator lays its eggs in the seed head, then larvae consume the seeds. Crown weevils, *Trichosirocalus horridus*, lay eggs in rosettes and consume the seeds.

Chemical Control: Treat rosettes in spring or fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Bull thistle* (Appendix A).

CANADA THISTLE (*Cirsium arvense*)

Description: A member of the Aster family introduced from Europe. Creeping perennial. Reproduces from seeds and fleshy horizontal roots. Grows 1-4 feet tall. Flowers pink to purple. Leaves lance-shaped, spine-topped lobes. The root is extensive and creeping, forming colonies.

Comments: One of the most widespread and economically damaging noxious weeds in Colorado. Infestations are found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns and gardens, roadsides and in waste areas. Because of its seeding habits, vigorous growth and extensive underground root system, control and eradication are difficult.

Location: Common in Garfield County.

Cultural Control: Best managed through integrated management system that emphasizes competitive, desirable plants. Maintain soil fertility and moisture at optimum levels to favor grass growth.

Biological Control: It is best to release a complex of insects that will stress different parts of the plant: *Ceutorhynchus litura* weevil that stresses the crown of the plant; *Urophora carduii*, a stem and shoot gall fly; *Cassidia rubiginosa*, leaf beetle.

Mechanical Control: Mowing may be effective when repeated at 2 week intervals over a period of several years. Pulling and digging up is ineffective as the plant has an extensive root system.

Chemical Control: Treat in spring during bud to bloom stage or during fall regrowth after the first light frost. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Canada thistle* (Appendix A).

CHICORY (*Chicorium intybus*)

Description: Member of the Sunflower family. Perennial; reproduces from seed. Deep fleshy root and tufted basal leaves that resemble those of a dandelion. Stem multi-branched and can reach over 5 feet tall. Flowers bright blue, purple or occasionally white.

Location: Well established in western Garfield County (Parachute) and is spreading rapidly in other parts of the County.

Cultural Control: Reseed disturbed areas adjacent to chicory infestations with appropriate perennial grasses.

Biological Control: Close grazing by sheep will control chicory in pastures.

Chemical Control: Treat at early growth stage in early spring. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Chicory* (Appendix A).

CHINESE CLEMATIS (*Clematis orientalis*)

Description: Member of the Buttercup family introduced from Asia as a garden ornamental. Herbaceous to wood-vined perennial; reproduces by seed. Native clematis, *C. ligusticifolia*, distinguished from the noxious weed species by groups of small white flowers. Chinese clematis has single yellow flowers.

Comments: Found in well-drained, sunny areas with basic soils. Prefers roadsides, riparian corridors and rocky slopes. Known to cause death in young trees. Entire plant is poisonous, causing internal bleeding when ingested in large amounts.

Location: Glenwood Canyon on both sides of the Colorado River; along the Roaring Fork River south of Glenwood Springs.

Cultural Control: Eradication requires intensive and persistent control efforts to effectively eliminate weed infestations and soil seed reserves. Site must be monitored for 10 years after last flowering plant is destroyed. Prevent the establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over- grazing.

Chemical Control: Treat at flower stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Chinese clematis* (Appendix A).

COMMON BURDOCK (*Arctium minus*)

Description: A member of the Aster family. Biennial. Prolific seed producer. Grows to 6 feet tall with very large leaves and a prickly bur. Flowers are purple and white.

Comments: Grows along roadsides, ditch banks and neglected areas. A very serious threat to sheep as the burs can significantly damage the quality of their wool. May cause severe infections in cattle.

Location: Found throughout Garfield County.

Cultural Control: Minimize soil disturbances, encourage desirable plant growth.

Mechanical Control: Top growth removal through mowing or cutting is effective as is pulling or digging out the plant at flowering or early seed formation.

Chemical Control: Treat rosettes in late spring or early fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Common burdock* (Appendix A).

COMMON TANSY (*Tanacetum vulgare*)

Description: A member of the Sunflower family introduced from Europe as a medicinal herb. Perennial. Reproduces from seed and creeping rootstalks. Button-shaped flower heads that lack petals. Foliage has a strong smell when crushed.

Comments: Poisonous. Found most commonly in full sun on fertile, well- drained soils along roadsides, streams, irrigation ditch banks and pastures. Undesirable forage for livestock.

Location: Roaring Fork Valley along irrigation ditch banks. Isolated patches have been found along Elk Creek west of New Castle, and along the Colorado River south of Silt.

Cultural Control: Preventing establishment and seed production, and minimizing disturbance and seed dispersal are the most effective. Keep native community healthy. Maintain healthy pastures and avoid over- grazing.

Chemical Control: Treat when bolting to bud growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Common tansy* (Appendix A).

COMMON TEASEL (*Dipsacus fullonum*)

Description: A member of the Teasel family introduced from Europe. Biennial or sometime perennial forb; reproduces from seeds. Egg-shaped purple or white flowers at the top of each stem. Can grow to over 6 feet in height.

Comments: Commonly found in open, sunny areas. Prefers moist habitats such as ditches and rivers, however it appears to be moving to drier areas. Each plant can produce 2,000 seeds that remain viable for 2 years.

Location: Found in one location in Garfield County in Battlement Mesa at the golf course.

Cultural Control: The key to controlling is to eliminate seed production and exhaust the seed bank. Prevent the establishment of new infestation by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over- grazing.

Chemical Control: Treat spring or fall rosettes. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Common teasel* (Appendix A).

CORN CHAMOMILE (*Anthemis arvensis*)

Description: A member of the Sunflower family. Annual. Reproduces from seed. Small daisy-like flowers. Bushy branched plant that grows 10 to 30 inches.

Comments: Most commonly found in moist, poorly-drained soils. Tends to increase in abundance in years of above-average precipitation.

Location: While rare, it is found in Beaver Creek and throughout the County in small numbers.

Cultural Control: Prevent the establishment of new infestations by minimizing disturbance and eliminating seed dispersal. Continue to deplete seed bank from 4 to 6 years. Reseed infested areas to reduce infestation.

Chemical Control: Treat when plant is in rosette or bolting growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Corn chamomile* (Appendix A).

CURLY DOCK (*Rumex crispus*)

Description: A member of the Buckwheat family native to Eurasia. Robust, tap- rooted perennial. Grows 2 to 5 feet tall. Stems are erect; leaves basal with curly or wavy margins. Flowers small and in dense green, spike-like clusters.

Comments: Common in wet meadows and along ditch banks.

Location: Scattered throughout the County, in particular the Roaring Fork and Colorado River valleys.

Cultural Control: Treating before the plant seeds is the key to control. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not over-graze.

Chemical Control: Apply when plant is in rosette stage, in spring or fall, prior to bolting to eliminate seed production. For specific treatments for rangeland and pasture sites, contact Garfield County Vegetation Management.

CUTLEAF TEASEL (*Dipsacus laciniatus*)

Description: A member of the Teasel family introduced from Europe. Biennial, Reproduces from seed. Egg-shaped purple or white flowers at the top of each stem. Can grow to over 10 feet in height.

Comments: Commonly found in open, sunny habitats. Prefers moist areas such as ditches and rivers, however it appears to be moving to drier areas. Each plant can produce 2,000 seeds that remain viable for 2 years. More aggressive than common teasel.

Location: Not known in Garfield County at this time.

Cultural Control: The key to removing cutleaf teasel is to eliminate seed production and exhaust seed bank.

Chemical Control: Treat spring or fall rosettes. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Cutleaf teasel* (Appendix A).

CYPRESS SPURGE (*Euphorbia cyparissias*)

Description: A member of the Spurge family introduced from Eurasia; an invasive ornamental. Low-growing perennial that overwinters as root and crown tissue. Reproduces from seed. Leaves are stalkless, alternate, narrow and linear to lance-shaped. Flowers are yellowish-green usually turning reddish-green towards maturity.

Comments: Leaves and stems emit a milky, toxic sap when broken. Sap is an irritant and may cause dermatitis or rashes. The soil seed reserve is estimated to be at least 8 years.

Location: Found in the Crystal Springs area and in landscaping situations in Carbondale and Glenwood Springs.

Cultural Control: The most important consideration is replacing it in nurseries with alternative native or non-invasive cultivated plants. Remove plants before seed is set, in moist conditions. Be sure to wear gloves due to the toxic milky sap. Prevent establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over-grazing.

Chemical Control: Treat at flowering stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Cypress spurge* (Appendix A).

DALMATIAN TOADFLAX (*Linaria dalmatica*)

Description: A member of the Figwort family introduced as an ornamental from Europe. A creeping, aggressive perennial and escaped ornamental with stems from 2 to 4 feet tall. Flowers are snapdragon-shaped, bright yellow, with orange centers; leaves are waxy and heart-shaped.

Comments: Especially well-adapted to arid sites and can spread rapidly once established. Because of its deep, extensive root system, and heavy seed production, this plant is difficult to manage.

Location: Common in Glenwood Springs, Three Mile Creek, Four Mile Creek and one isolated patch up Slaughter Gulch north of Peach Valley.

Biological Control: The defoliating moth, *Calophasia lunula*, has been released on Dalmatian and yellow toadflax. It may defoliate up to 20% of the leaves of the plant. *Mecinus janthinus*, a stem-boring weevil, is capable of killing a large portion of the above-ground plant by boring into and killing stems where the larvae feed and live.

Cultural Control: Reseed disturbed areas adjacent to toadflax infestation with appropriate perennial grasses.

Mechanical Control: Repeated mowing 2 to 3 times a year will slow spread and reduce seed production.

Chemical Control: Treat at flower stage or in the fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Dalmatian toadflax* (Appendix A).

DAME’S ROCKET (*Hesperis matronalis*)

Description: A member of the Mustard family from Eurasia. Biennial or short-lived perennial forb; a prolific seed producer. Flowers have 4 white or purple petals on terminal stalks. Leaves are lance-shaped with toothed margins and are 2 to 4 inches long and slightly hairy.

Comments: Found most commonly in areas that have moist, well-drained soils and full sun to light shade.

Location: No Name and along Midland Avenue in Glenwood Springs. Cultural Control:

Mechanical Control: Locate and remove plants before seeds are allowed to set. The seed bank must be monitored until it is depleted. Check wildflower seed mix to make sure this plant is not included. Prevent the establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over-grazing.

Chemical Control: Treat when plant is in rosette or bolting stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Dame’s rocket* (Appendix A).

DIFFUSE KNAPWEED (*Centaurea diffusa*)

Description: A member of the Aster family introduced from Europe. Biennial or short-lived perennial forb; reproduces from seed. Usually produces a single main, multi-branched stem that is 1½ to 2 feet tall. Flower is white or pink with bracts.

Location: The largest infestation in Garfield County is located west of the Riverbend subdivision southeast of New Castle; scattered along Interstate 70 between Rifle and Parachute and south of Glenwood Springs at the Glenwood Airport and old rodeo grounds and Rifle Creek Golf Course.

Cultural Control: Reseeding of disturbed sites with fast growing grasses helps prevent diffuse knapweed establishment.

Mechanical Control: Hand-pulling has been effective, if repeated persistently over time.

Biological Control: A root-boring weevil, *Cyphocleonus achates*, weakens plants by destroying the root system. The weevil larvae of *Larinus minutus* feed within the seedhead and cause defoliation.

Chemical Control: Apply to spring to early rosette or bolt stage of growth, or fall rosettes. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Diffuse knapweed* (Appendix A).

HOARY CRESS (*Cardaria draba*)

Description: Also known as whitetop. A member of the Mustard family probably introduced from Europe in alfalfa seed. A very competitive, deep-rooted perennial that reproduces by root segments and seed. Grows erect from 10 to 18 inches high and has a grey-white colored leaf. Flowers are white and numerous in compact, flat-topped clusters which give the plant its name.

Comments: One of the earliest perennial weeds to emerge in the spring, producing flowers in May or June. Grows in waste places, cultivated fields and pastures, and is capable of vigorous growth.

Location: Common in Garfield County.

Cultural Control: Mowing or cultivation effectiveness will be increased if other plants like perennial native grasses or alfalfa are seeded in the hoary cress stand as competitors. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not over-graze.

Mechanical Control: Removal of top growth is somewhat effective. Repeated treatments may reduce seed production and spread.

Chemical Control: Treat at the early bud stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Hoary cress* (Appendix A).

HOUSTONGUE (*Cynoglossum officinale*)

Description: A member of the Borage family introduced from Europe. Biennial. Prolific seed producer. Grows 1½ to 3 feet high with reddish- purple flowers. Basal leaves resemble a dog's tongue in shape.

Comments: Its small nutlets attach to and are rapidly spread by people, domestic animals, wildlife and vehicles. Grows on ranges, pastures, trails and roadsides and is toxic to horses and cattle, as it contains alkaloids that may cause liver cells to stop reproducing.

Location: Widespread throughout Garfield County.

Cultural Control: Reseed disturbed sites with fast-growing native grasses. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not over-graze.

Mechanical Control: Physical removal of the plant at flowering or in early seed formation, by pulling or digging, will break the cycle of the plant.

Chemical Control: Treat in spring or fall rosettes. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Houndstongue* (Appendix A).

JOINTED GOATGRASS (*Aegilops cylindrica*)

Description: A member of the Grass family, Barley tribe. A non-native grass introduced from Turkey. Winter annual, reproduces from seed. Grows 15 to 30 inches tall in erect stems which branch at the base to give the plant a tufted appearance.

Comments: Established in many winter wheat-growing areas of North America. The seeds are very similar in size and shape to wheat seed and therefore are difficult to screen out. Found along roadsides, in waste areas, fields and pastures.

Location: Found in the Harvey Gap area, in West Mamm Creek, in fields adjacent to Parachute Creek, in scattered locations along county roadsides in the Silt and New Castle areas, and in Wallace and Spring Creeks.

Cultural Control: The key to control is to prevent the grass from becoming established in fields by cleaning equipment. Plant competitive native grasses.

Mechanical Control: Tillage can be effective when plants are in the seeding stage. The main goal is to prevent seed production and spread.

Chemical Control: Treat in early spring, late summer, or early fall when the plant is germinating, to prevent seed production. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Jointed goatgrass* (Appendix A).

LEAFY SPURGE (*Euphorbia esula*)

Description: A member of the Spurge family, introduced from Europe. A creeping perennial that grows up to 3 feet tall and reproduces by vigorous root stalks and seed. Roots can extend as deep as 30 feet from a plant that grows 1 to 3 feet tall, with pale green shoots and small yellow-green flowers.

Comments: The plant, including the root, has milky latex that is damaging to eyes and sensitive skin. Extremely difficult to control because of its extensive sprouting root. Adapted to a wide variety of Colorado habitats and very competitive with other plants species. If it becomes established in rangeland, pasture and riparian sites, it may exclude all other vegetation due to its competitive nature.

Location: Primarily found in Wallace and Spring Creeks in western Garfield County. Individual plants have been located throughout Garfield County.

Biological Control: Sheep or goats will graze leafy spurge. If livestock graze it after seed formation, hold animals in a corral for at least 7 days before moving them to an uninfested area to avoid seed spread.

Several flea beetles, *Apthona spp.*, produce larvae that bore into roots and the adults feed on the leaves. *Oberea erythrocephala*, a stem and root crown-mining, long-horned beetle, and *Spurgina esulae*, a shoot tip gall midge, are also available. The leafy spurge hawk moth, *Hyles euphorbiae*, deposits its eggs which then consume the leaves and bracts of the plant.

Cultural Control: Any activity that encourages vigorous grass growth is very important. Over-grazing stresses grasses and makes them less competitive to leafy spurge.

Mechanical Control: Mowing leafy spurge at 14 to 21-day intervals may cause higher susceptibility to fall-applied herbicides.

Chemical Control: Treat after full bloom or in the fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Leafy spurge* (Appendix A).

MAYWEED CHAMOMILE (*Anthemis cotula*)

Description: A member of the Sunflower family introduced from Europe. A bushy annual that reproduces prolifically from seed. Mature plants are one-half to 2 feet tall with finely dissected alternate leaf structures. White ray flowers.

Comments: Each plant is capable of producing 960,000 seeds that are viable for up to 6 years. The most distinguishing feature is the unpleasant odor it emits. Most commonly found in a wide range of soils but prefers moist poorly-drained soils. Increases in abundance in years of above-average precipitation. Can cause skin rashes, blistering of livestock muzzles, and irritation to the mucous membranes of grazing livestock. Can impart a strong flavor to the milk of dairy animals.

Location: While rare, may be found in Beaver Creek and throughout the County in small numbers.

Cultural Control: Prevent establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over-grazing. Mowing is an effective method before the seed is set. Perennial grasses should be reseeded for several years. Seed bank must be monitored for 4 to 6 years.

Chemical Control: Treat from rosette to bolting stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Mayweed chamomile* (Appendix A).

MEADOW KNAPWEED (*Centaurea nigrescens*)

Description: A member of the Sunflower family introduced from Europe as a forage species. Perennial. Reproduces from seed. Pink to purple flower heads that are solitary at the tips of branches. Grows 20 to 40 inches with many branches. Leaves up to 6 inches long and 1 inch wide.

Comments: When disturbed, has the ability to re-sprout from root and crown fragments. Found most commonly in moist sites, irrigated pastures, moist meadows, river banks, streams, irrigation ditches, roadsides and openings in forested area.

Location: Found in the upper Dry Hollow area south of Silt.

Cultural Control: Prevent the establishment of new infestations by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over-grazing. Since meadow knapweed has only been found in small quantities in Colorado, preventing populations from spreading is the most important consideration. Eradication requires intensive work to eliminate seed dispersal and deplete the seed bank. An integrated management plan utilizing hand-pulling, herbicides and cultural remediation is the most effective method.

Chemical Control: Treat in spring to early summer during bolting to bud growth stages or in fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets
– *Meadow knapweed* (Appendix A).

MEDITERRANEAN SAGE (*Salvia aethiopsis*)

Description: A member of the Mint family introduced from northern Africa. Biennial or short-lived perennial. Reproduces from seed. Very hairy rosette of leaves during both the first and second years. During the second year the plant bolts and sends up stems that end in white to yellowish-white flower clusters. Flowers will eventually form 4 nutlets with dark veins.

Comments: When crushed, the leaves have a pungent odor. Most commonly found on rangeland but will invade riparian areas, forests, roadsides and dry pastures. Prefers south-facing slopes in loose, gravelly, well-drained soils. Once established, has the capability to adapt to numerous conditions and form dense monocultures. In the fall of the second year, the stem breaks off and forms a tumbleweed, dispersing 100,000 seeds. Unpalatable to livestock.

Location: The only known County location is on the south-facing slope surrounding the No Name Tunnel on Interstate 70 and along the Colorado River bikepath.

Cultural Control: Prevent establishment of new infestations by minimizing disturbance and seed dispersal while keeping native community healthy. Maintain healthy pastures and avoid over-grazing. Hand pull or shovel when soil is moist, before flowering, and turn over to dry out. If flowering, collect specimens and bag them carefully to collect all seeds. Seed bank must be monitored for years. Sites must be monitored for 10 years after plant is eradicated.

Chemical Control: Apply in spring during rosette to bolting growth stages. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Mediterranean sage* (Appendix A).

MUSK THISTLE (*Carduus nutans*)

Description: A member of the Aster family introduced from Eurasia. A winter annual or biennial; reproduces from seed. First year growth is a large, compact rosette from a large, fleshy, corky taproot. Second year stem is erect, spiny, 2 to 6 feet tall and branched at the top. Waxy leaves dark green with light green midrib and mostly white margins; flowers purple or occasionally white.

Comments: Commonly found in pastures, roadsides and waste places. Prefers moist bottomland soil, but can also be found on drier uplands.

Location: Scattered throughout the County; heaviest in the Crystal River Valley.

Cultural Control: Musk thistle, like other biennial thistles, thrives on disturbance. The best management is to minimize disturbance. If it does occur, be certain to revegetate with competitive grasses.

Biological Control: A weevil, *Trichosiromus horridus*, attacks the crown area of the rosettes and weakens the plant before it bolts. This weevil has reduced stand density in areas where it has become well established.

Chemical Control: Treat rosettes in spring or fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Musk thistle* (Appendix A).

MYRTLE SPURGE (*Euphorbia myrsinites*)

Description: A member of the Spurge family introduced from Eurasia as an ornamental. Perennial. Reproduces from seed. Capable of projecting seeds up to 15 feet. Blue-green waxy leaves. Plants emit a toxic milky latex when stems are broken. Flowers yellow-green petal-like bracts that appear from March to May.

Comments: A popular plant in xeriscapes and rock gardens. Prefers sunny to partly sunny areas in well-drained soils. Poisonous if ingested; milky sap causes blisters upon contact. Most important consideration is replacing it in nurseries with alternative native or non-invasive cultivated plants. Remove plants before seed is set, in moist conditions.

Location: Fairly common in Glenwood Springs and Battlement Mesa. Isolated patches have been found in Westbank, Peach Valley and New Castle.

Cultural Control: Area must be monitored for 9 years after last flowering plant is eradicated. Prevent the establishment of new infestation by minimizing disturbance and seed dispersal, while keeping native community healthy. Maintain healthy pastures and avoid over- grazing.

Mechanical Control: Hand pull or dig when soil is moist. Make certain to pull all the roots and wear rubber gloves and eye protection to protect yourself from the toxic milky sap. Treatment follow-up is important to check root fragment re-sprouts that will occur when the taproot is not completely removed.

Chemical Control: Treat at flowering stage in spring or fall regrowth. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Myrtle spurge* (Appendix A).

OXEYE DAISY (*Chrysanthemum leucanthemum*)

Description: A member of the Aster family; a native of Eurasia. Rhizomatous perennial, escaped ornamental. White ray and yellow disk flowers, which bloom from June through August.

Comments: Commonly sold in wildflower seed mixes or transplanted as an ornamental despite its tendency to crowd out more desirable vegetation.

Location: A rapidly spreading weed in Garfield County on the increase along Main Elk Creek, East Elk Creek, Canyon Creek, Crystal Springs, Missouri Heights and Four Mile Creek.

Mechanical Control: Hand pull or dig when soil is moist.

Chemical Control: Treat at flowering stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Oxeye daisy* (Appendix A).

Education: The key to oxeye daisy management is to create an awareness among homeowners, nurseries, landscapers and landscape architects that oxeye is a noxious weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects.

PERENNIAL PEPPERWEED (*Lepidium latifolium*)

Description: A member of the Mustard family introduced from southern Europe and western Asia as a contaminant in sugar beet seed. Perennial. Reproduces from seed, roots and shoots. One to over 3 feet in height and has waxy leaves with a white midrib. White flowers in dense round clusters at branch tips.

Comments: Can grow in a variety of habitats but frequently found in moist soils such as riparian areas, wetlands, marshes, irrigation ditches, canals and floodplains. Alters ecosystems by acting as a “salt pump,” pulling salts from deep in the soil and excreting them on the surface. Change in soil pH alters biodiversity drastically and decreases agriculture and pasture production. Extremely invasive. The best method is prevention. In order to control this plant intensive use of herbicides and revegetation must be utilized.

Location: Scattered throughout central to western Garfield County, with the largest infestation found along Parachute Creek.

Cultural Control: Prolonged spring flooding of new growth will kill pepperweed. Reestablishment of native and desired plants can take years. Re- plantings must be repeated.

Chemical Control: Apply when plant is in bolting to early flower growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Perennial pepperweed* (Appendix A).

PLUMELESS THISTLE (*Carduus acanthoides*)

Description: A member of the Aster family introduced from Eurasia. Winter annual or biennial; prolific seed producer. Distinguished from musk thistle by smaller flowers from ½ to 1 inch in diameter. Leaves lack prominent white margin present on musk thistle leaves. May grow to 5 feet or more. Flowers reddish-purple, either solitary or clustered.

Comments: Found in pastures, river valleys and along roadsides.

Location: Common in southern Garfield County; rapidly spreading south of Battlement Mesa.

Biological Control: A weevil, *Trichosiocalus horridus*, attacks the crown area of rosettes and weakens the plant before it bolts. This weevil has reduced stand density in areas where it has become well established.

Cultural Control: Like other biennial thistles, it thrives on disturbance. The best management is to minimize disturbance and revegetate with competitive species.

Mechanical Control: Mowing is generally not effective due to the plant's capacity for rapid regrowth. Hand cutting is not effective unless there are repeated follow-up treatments and should only be conducted if there is a commitment to follow-up efforts. Plumeless tends to branch out where it is cut and then re-flowers. Pulling can be very effective, especially after a light rain. Hand-pulling with a good set of gloves is preferable to shoveling which disturbs the ground creating a potential seedbed for future infestations.

Chemical Control: Treat rosettes in spring or fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Plumeless thistle* (Appendix A).

POISON HEMLOCK (*Conium maculatum*)

Description: A member of the Parsley family. A biennial forb native to Europe. Grows 4 to 10 feet tall. Has white flowers in an umbrella-like cluster. Leaves are shiny green and finely divided, with a musty odor.

Comments: Seeds may remain viable in soil for about 3 years. All parts of the plants are highly poisonous. Found along streams, ditch banks and pasture borders. Highly poisonous.

Location: Garfield and Baldy Creeks.

Cultural Control: The key to control is containment and prevention. Pulling the taproot when the soil is moist can be effective. When the plants are present, the use of herbicides is critical.

Biological Control: Larvae of the hemlock moth, *Agonopterix alstroemeriana*, feed on the leaves, stem, flowers and seeds causing severe defoliation and death of the plant.

Mechanical Control: Deplete root reserves and reduce seed production with repeated mowing.

Chemical Control: Treat in early spring. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Poison hemlock* (Appendix A).

PURPLE LOOSESTRIFE (*Lythrum salicaria*)

Description: A member of the Loosestrife family introduced from Europe; an escaped ornamental. Prolific seed producer, able to produce over 10,000 seeds per square yard. Erect, square stem; can reach 1½ to 8 feet tall. Magenta-colored flowers.

Comments: Highly aggressive invader species found in most wetland sites throughout the state. If left unchecked, a wetland will eventually become a monoculture of loosestrife, posing a severe threat to waterfowl habitat and impeding water flow in irrigation ditches.

Location: Tara Park in Silt and the Westbank subdivision in Glenwood Springs.

Mechanical Control: Include hand-pulling, mowing and flooding. Hand-pulling is effective only on small plants, when infestations are detected early. The root system must be completely removed, since the root sections can sprout and form new plants.

Chemical Control: Cut and properly dispose of flower heads before chemical treatment. Treat in summer. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Purple loosestrife* (Appendix A).

RUSSIAN KNAPWEED (*Acroptilon repens*)

Description: A member of the Aster family introduced from Europe. Perennial that reproduces from seed with an extensive underground root system. Ridged stems are stiff and 1 to 3 feet high, with thistle-like flowers that are lavender to white.

Comments: Very difficult to control or eradicate once it becomes established. Grows in cultivated fields, along ditch banks, fence rows, roadsides and in waste places. Toxic to horses, and will cause death if consumed over a period of time.

Location: Very common in Garfield County; most common in Dry Hollow, Silt Mesa and Missouri Heights.

Cultural Control: A single control strategy such as mowing or an herbicide usually is not sufficient. Tends to form monocultures by eliminating other plants. Sowing desirable plant species is necessary after the weed is controlled. Research indicates that the native grasses streambank wheatgrass and thick-spike wheatgrass will establish in an area after Russian knapweed is suppressed with herbicides. If the stand is not too old and grasses are still present, stimulating grass growth by irrigation, where possible, should increase grass competition with knapweed and keep it under continual stress.

Mechanical Control: Repeated mowing combined with herbicide applications will gradually stress the plant.

Chemical Control: Treat in spring to bud stage or to dormant plants in fall after the first freeze. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Russian knapweed* (Appendix A).

RUSSIAN OLIVE (*Elaeagnus angustifolia*)

Description: Member of the Oleaster family. A hardy, fast-growing tree from Europe, Russian olive has been promoted for windrow and ornamental plantings. Many reach heights from 10 to 25 feet. Trunks and branches armed with 1 to 2 inch woody thorns. Leaves covered with small scales which give the foliage a distinctive silvery appearance. Fruit berry-like and silvery when first formed but turns brown at maturity.

Comments: Once imported as a wind-break, it has spread to riparian areas throughout the County where it is becoming the dominant plant. It has invaded cottonwood areas along streams, and impacted wildlife and bird habitat.

Location: Very common along the Colorado River and other drainages especially between Silt and Rifle in western Garfield County.

Cultural Control: Plant native trees or less aggressive introduced trees. In riparian areas, establish native riparian vegetation.

Mechanical Control: Small trees may be controlled mechanically by using an appropriate tool or shovel.

Chemical Control: Treatments include cut-stump, foliar or basal bark. Timing varies; avoid late spring and early summer during heavy sap flow. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Russian olive* (Appendix A).

SALT CEDAR (*Tamarix ramosissima*, *Tamarix parviflora*)

Description: A member of the Tamarisk family. Deciduous or evergreen shrub or small tree, 5 to 25 feet tall.

Comments: May live 50 to 100 years. Tolerance to saline and alkaline soil and water. Copes with high concentrations of dissolved solids by absorbing them through its roots and excreting salts through glands in its stem and leaves which eventually form a saline crust on the soil. A

single plant of salt cedar will use about 200 gallons of water a day while it is actively growing. Leaves small and scale-like, on highly branched slender stems. *Ramosissima* flowers are 5-petaled and pink to white; *Parviflora* flowers are 4-petaled.

Location: Widespread throughout Garfield County in riparian areas.

Biological Control: Tamarisk leaf beetle, *Diorhabda carinulata*, has been released along the mainstem of the Colorado River in western Garfield County and some tributaries, and is now established. Adult and larvae cause defoliation.

Cultural Control: Establish native riparian vegetation.

Mechanical Control: Historically, salt cedar management projects have included root plowing and raking, dozing, mowing and prescribed burning. These methods provide only short-term benefits and are labor intensive.

Chemical Control: Treatments include cut-stump, foliar or basal bark. Timing varies; avoid late spring and early summer during heavy sap flow. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Salt cedar* (Appendix A).

SCENTLESS CHAMOMILE (*Tripleurospermum perforata*)

Description: A member of the Sunflower family introduced from Europe. Annual, biennial or short-lived perennial forb; reproduces by seed. Flowers are daisy-like with 1 yellow centered flower with white petals for every stem. Leaves are alternate, finely divided, fernlike, odorless when crushed. Stems can grow 3 to 6 feet tall.

Location: While rare, may be found throughout the County in small numbers.

Comments: Scentless chamomile is most commonly found in moist areas such as hayfields, pastures, roadsides, stream banks, fence lines and drainages. A single plant can produce 300,000 seeds. Has the potential to be devastating in agricultural settings because it causes blistering on livestock muzzles and irritation to mucous membranes.

Cultural Control: Any practice that aids in the establishment of forage into a firm moist seedbed will help reduce growth. Integrated management is the most effective method for controlling scentless chamomile. A combination of tillage, herbicide and competitive cropping can be very effective in preventing seed production and crowding out infestations.

Chemical Control: Treat in rosette or bolting stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Scentless chamomile* (Appendix A).

SCOTCH THISTLE (*Onopordum acanthium*)

Description: A member of the Aster family introduced from Europe or eastern Asia. A biennial that can reach a height of 8 feet. Rosette forms the first year and can have leaves up to 2 feet long and 1 foot wide.

The second year the plant produces flowers that are reddish-purple to violet.

Comments: Found primarily along roadsides and railroads, but can become an impassable obstacle to livestock on rangeland and pastures.

Location: Common in the County. The worst infestations are located between Glenwood Springs and New Castle.

Cultural Control: Reseed disturbed sites with appropriate perennial grasses.

Mechanical Control: Digging the plant at the rosette stage is effective.

Chemical Control: Treat rosettes in spring or fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Scotch thistle* (Appendix A).

SPOTTED KNAPWEED (*Centaurea stoebe*)

Description: A member of the Aster family, native to central Europe. Short-lived, non-creeping perennial that reproduces from seed and forms a new shoot each year from a taproot. One or more shoots up to 4 feet tall. Flowers lavender to purple.

Comments: Occupies dry meadows, pastures, stony hills, roadsides and the sandy or gravel flood plains of streams and rivers, where soils are light textured, well-drained and receive summer precipitation. Tolerates dry conditions similar to diffuse knapweed, but will survive in higher moisture areas as well. One of the most invasive, aggressive weeds to plague the western United States.

Location: Scattered, isolated patches are increasing in the County. A large infestation is located just west of the Riverbend subdivision southeast of New Castle. Also North Dry Fork northwest of DeBeque, the East Divide area, Cardiff area south of Glenwood Springs, and Battlement Creek.

Biological Control: A root-boring weevil, *Cyphocleonus achates*, weakens plants by destroying the root system. The weevil larvae of *Laridius minutus* feed within the seedhead and cause defoliation.

Cultural Control: If desirable grass competition is evident in spotted knapweed stands, judicious herbicide application that does not injure grasses may release them to compete effectively with the weeds. Irrigation may help stimulate grass competition in these cases. Seeding suitable perennial grasses is necessary to prevent weed reinvasion.

Chemical Control: Treat spring or fall rosettes. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Spotted knapweed* (Appendix A).

SULFUR CINQUEFOIL (*Potentilla recta*)

Description: A member of the Rose family introduced from Eurasia. Perennial, reproduces from seed. Leaves are palmately compound with 5 to 7 toothed leaflets. Flowers light yellow with 5 petals, seeds are coated with a net-like pattern.

Comments: Most commonly found in disturbed areas such as roadsides and pastures. Prefers dry, sandy, gravelly and rocky soils that receive 13 to 50 inches of annual precipitation. Unpalatable to livestock due to a high concentration of phenolic tannins. Can live for 20 years.

Location: Found in South Canyon.

Cultural Control: Small infestations can be controlled by hand pulling while larger infestations are commonly controlled with herbicides. Re-vegetation should focus on improving the competitiveness of native communities. Increasing the competitiveness of native communities can prevent the establishment of sulfur cinquefoil. As with all weeds, disturbance and bare ground should be avoided.

Chemical Control: Treat anytime during the growing season. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Sulfur cinquefoil* (Appendix A).

YELLOW STARHISTLE (*Centaurea solstitialis*)

Description: A member of the Aster family introduced from Europe. Annual; prolific seed producer. Grows two to 3 feet tall. Flowers are yellow, located singly on ends of branches, armed with sharp straw-colored thorns up to $\frac{3}{4}$ inches long.

Comments: In California alone, this plant has infested more than 20 million acres. “Chewing disease” results when horses are forced to eat yellow starthistle.

Location: No known infestations in the County, however there have been reports in the past of single plant infestations.

Biological Control: A seed-feeding beetle, *Bangasterus orientalis*, has been released in California and Idaho. Seed weevils and seed flies have also been released.

Cultural Control: Vigorous competitive grass is essential to maintain a plant community's resistance to starthistle invasion.

Mechanical Control: Mowing or cutting is rarely effective.

Chemical Control: Treat during rosette growth stage. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Yellow starthistle* (Appendix A).

YELLOW TOADFLAX (*Linaria vulgaris*)

Description: A member of the Figwort family sometimes called common toadflax or “Butter and Eggs.” Introduced from Europe. Escaped ornamental perennial reproducing by seed and rootstalk. Flowers bright yellow with deep orange centers that resemble the snapdragon.

Comment: Has now become a serious problem to rangelands and mountain meadows. Does well in all types of soils. Its displacement of desirable grasses not only reduces ecological diversity, but also reduces rangeland value and can lead to erosion problems. Because of its early vigorous growth, extensive underground root system and effective seed dispersal methods, yellow toadflax is difficult to control.

Location: Infests thousands of acres in the Flat Tops Wilderness. Increasing in the Lookout Mountain area above Glenwood Springs.

Biological Control: The defoliating moth, *Calophasia lunula*, has been released on Dalmatian and yellow toadflax. It may defoliate up to 20% of the leaves of the plant. *Mecinus janthinus*, a stem-boring weevil, is capable of killing a large portion of the above-ground plant by boring into and killing stems where the larvae feed and live.

Cultural Control: Attempt to maintain competitive communities of desirable species. Reseed any open ground with perennial grasses to prevent invasion by other weed species.

Education: The key to management of escaped ornamentals is to create awareness among homeowners, nurseries, landscapers and landscape architects that yellow toadflax is a noxious

weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects.

Mechanical Control: Digging and pulling where feasible can provide effective control if conducted annually for 10 to 15 years.

Chemical Control: Treat at flowering through fall. For specific treatments for rangeland and pasture sites, refer to the Colorado Department of Agriculture Fact Sheets – *Yellow toadflax* (Appendix A).

2.06 Identification of Native and Noxious Thistles

A. Colorado has several species of thistle which are native and do not cause the problems of the noxious species. Some of them are very rare. An excellent reference guide is “Thistles of Colorado,” published by the Larimer County Weed District. Native thistles share these characteristics:

1. They have mostly white, sometimes very pale lavender flowers and are more succulent than the noxious species. The flowers may have a hairy or fuzzy appearance and stems of some species are reddish.
2. They are valuable to pollinators and wildlife and contribute to biodiversity.
3. They are sometimes inadvertently sprayed, pulled, clipped or dug up because they are confused with noxious, non-native thistles.
4. Among the native thistles in Garfield County are Barneby’s thistle (*Cirsium barneybi*), fringed thistle (*Cirsium centaureae*), Fish Lake thistle (*Cirsium clavatum* var. *americanum*), Rocky Mountain thistle (*Cirsium perplexans*), and adobe thistle (*Cirsium perplexans*). These may also be present in the City of Glenwood Springs.

B. Five introduced thistle species include Canada, musk, plumeless, bull and Scotch.

1. Canada thistle is a perennial and has an extensive root system.
2. Plumeless, Scotch and musk thistles are biennials. They are relatively shallow- rooted and reproduce by seed only.
3. Canada and plumeless are often mistaken for each other. It is very simple to tell them apart:
 - a) Canada has a smooth stem; plumeless has a spiny stem and leaves.
 - b) The bracts under the flower of Canada are spineless; bracts under the leaves of plumeless appear as sharp spines.
 - c) The flowers of musk thistle are about 3 times larger than those of Canada or plumeless.
4. Musk thistle seedlings have a very prominent white midrib.
5. Scotch thistle leaves are larger than those of the other thistles. They grow up to 2 feet in length and 1 foot wide. The leaves are covered with dense hairs which give them a grey appearance.
6. The leaves of bull thistle are deeply lobed and spiny with prickly hair above and cottony hair below. Canada leaves are smooth above and smooth or hairy below.
7. All of the biennial thistles may grow to heights of greater than 6 feet. Canada thistle may grow from 1 to 4 feet tall.

SECTION III - JURISDICTIONAL OVERVIEW OF AREAS OF INFESTATION

3.01 Overview

It is the goal of The City of Glenwood Springs to develop and implement a comprehensive noxious weed management program on all City-owned property and to be available as a resource for private landowners and public land managers. The City has adopted an “early detection, early treatment” policy for the purpose of establishing priorities. Early detection involves identification and documentation of recently introduced weed species into an area. Early treatment is the follow-up that could possible eradicate new infestations.

3.02 City of Glenwood Springs: Streets/Roadsides, Airport, Landfill

The City of Glenwood Springs has specific responsibilities as described in the Colorado Noxious Weed Act (See Section 1.03 of this plan). As of February 2010, the City has had a representative on the County Weed Advisory Board which serves in an advisory capacity. This cooperation does not preempt the above-stated responsibilities. Listed below are general descriptions of the weed issues in the City of Glenwood Springs. The list is meant to provide institutional memory as to where key species are known to occur. The list is not all-inclusive.

The suggested goal is to manage all noxious weeds in accordance with the latest version of State Rules and Regulations Pertaining to the Noxious Weed Act (8CCR 1206-2).

1. Key Species: Myrtle spurge (List A), Dalmatian toadflax, diffuse knapweed, tamarisk, Scotch thistle, plumeless thistle, sulfur cinquefoil, oxeye daisy.
2. Locations:
 - a. South Canyon Landfill: Scotch thistle.
 - b. South Canyon Parklands: Scotch thistle, tamarisk, Dalmatian toadflax, sulfur cinquefoil, oxeye daisy.
 - c. Glenwood Springs Airport and rodeo grounds: Dalmatian toadflax, diffuse knapweed.
 - d. Two Rivers Park: Tamarisk, Russian Olive
 - e. Midland Avenue: Dalmatian toadflax

B. Streets/Roadsides: Glenwood Springs has over 43 miles of streets. The street/roadsides shall be managed for weeds on the City’s noxious weed list, Garfield County listed weeds and Colorado listed weeds designated for eradication.

1. A Priority List of roads will be established each growing season based upon input from the Parks and Recreation Department, the public and past observations by staff. Roadsides will be selectively spot-treated for noxious weeds.
2. There will be no general herbicide applications to non-listed weeds unless specifically requested by the Parks and Recreation Department to treat a roadside for safety and sight reasons or to protect new paving.
3. Roadside treatment will start in mid- April. Each street on the Priority List will be treated at least twice. If time and workload allows some of the heavily infested roadsides will be treated a third time.

C. Airport: The Airport will be treated on an as-needed basis for noxious weeds.

D. Landfill: The City of Glenwood Springs Landfill will be treated on an as-needed basis for noxious weeds.

3.03 State Land

A. Colorado Department of Transportation's state highways in the City of Glenwood Springs are Highways 82 and U.S. Highway 6&24. These highways are managed for noxious weeds by CDOT through their offices in Glenwood Springs, Grand Junction and Craig

1. Goals:

a. Manage all noxious weeds in accordance with the Garfield County Weed Management Plan and the latest version of State Rules and Regulations Pertaining to the Noxious Weed Act, (8CCR 1206-2).

b. Establish an intergovernmental agreement with CDOT that enables the City to perform weed management on a very limited basis. The major responsibility for weed management would still lie with CDOT.

2. Key Species:

a. Interstate 70: Diffuse knapweed, spotted knapweed, Russian knapweed, Scotch thistle, Russian olive, tamarisk.

b. Highway 82: Plumeless thistle, Canada thistle, Russian knapweed.

c. Highway 6&24: Diffuse knapweed, Russian knapweed, Scotch thistle, Canada thistle, whitetop.

B. Garfield County is available to provide technical assistance and weed identification upon request.

3.04 Railroad

The Union Pacific Railroad owns the rail line that generally runs parallel to Interstate 70 from Glenwood Canyon to the Mesa County line. Garfield County worked with other Western Slope counties to develop a weed management plan for UP in 2010. Portions of the rail line between Glenwood Springs and Rifle were mapped by the County in 2009 with the cooperation of UP.

A. Suggested Goal: Manage all noxious weeds in accordance with the Garfield County Weed Management Plan and the latest version of State Rules and Regulations Pertaining to the Noxious Weed Act (8CCR-1206-2).

B. Key Species: Scotch thistle, tamarisk, Russian knapweed, whitetop, Russian olive, common tansy, Chinese clematis.

SECTION IV - IMPLEMENTATION OF WEED MANAGEMENT PLAN

4.01 Objectives and Goals

A. Management Goals for Weed Species. Management goals will vary from species to species, by location and over time.

1. For some species, such as Colorado List A species, complete eradication of existing infestations and total suppression of newly identified infestations is mandated by State law.
2. Containment of existing intentional plantings, exclusion of seed from new wildland or open space mixes and elimination of targeted escaped infestations are goals for certain ornamentals such as oxeye daisy.
3. Russian knapweed, tamarisk and Russian olive infestation are so widespread that they must be managed, in many cases, merely for containment and reduction in the rate of spread. Eradication of these stands may only be viewed as unlikely in some instances or as a long range objective.

B. Objectives:

1. Develop and implement a comprehensive noxious weed management program on all City-owned property.
 2. Educate the public concerning weed management issues.
 3. Foster a spirit of cooperation among federal, state and local government agencies and private landowners.
 4. Work with other government agencies and departments to institute Best Management Practices and policies that stress prevention as a weed management tool.
 5. Promote and use integrated management techniques.
 6. Establish and maintain healthy plant communities with native or beneficial vegetation.
 7. Restore and maintain desirable plant communities and healthy ecosystems in the City of Glenwood Springs.
 8. Stop the spread of noxious weeds to non-infested lands.
 9. Contain heavily weed-infested areas.
 10. Implement Title 35, Article 5.5, of the Colorado Weed Management Act (8CCR 1206-2).
- C. In all cases, revegetation either from the existing seed bank or through supplemental planting must be included as a management goal. Without revegetation, disturbed or denuded soils invite weed infestation.

4.02 Prevention and Detection

Prevention is the highest priority weed management technique on non-infested lands. Among government officials, land managers, farmers, ranchers and the general public there is a growing recognition that protecting weed-free plant communities is the most economical and efficient land management practice.

A. Weed-free plant communities:

1. Provide essential wildlife habitat and forage.
2. Save ranchers and farmers many billions of dollars in labor costs and lost production.
3. Ensure aesthetic and recreational qualities of an area.
4. Prevent soil erosion and improve water quality. The spread of noxious weeds is most likely to occur where soil has been disturbed either by human activities such as road and trail cuts,

construction sites, the spread of gravel, road fill and topsoil contaminated with noxious weed seed, or over-grazing.

B. Exotic plants and seeds such as oxeye daisy, purple loosestrife, chicory, toadflax and Russian olive escape from our yards and gardens. Since they are attractive and establish themselves quickly, they are popular with landscapers and gardeners for ornamental planting and may be purchased through nurseries. They have the same ability to dominate and spread, however, as other better known noxious weeds.

C. Other methods of weed introduction include:

1. Contaminated seed, feed grain, hay, straw and mulch.
2. Movement of contaminated equipment, cars, bikes, etc. across uncontaminated lands.
3. Animal fur, fleece, human clothing.
4. Dried flower arrangements.

D. Prevention is best accomplished by ensuring that new weed species seed or vegetative reproductive plant parts are not introduced into new areas, and by early detection of any new weed species before they become widespread.

E. Strategies to prevent the introduction or establishment of noxious weeds in areas not already infested include:

1. Identification and eradication of small, new infestations.
2. Continuous monitoring and evaluation to prevent recurrence.
3. Identification of existing conditions, disturbances and activities that represent a potential threat to native habitat.
4. Identification of recently introduced weed species that represent a future threat.
5. Timely revegetation and reclamation of disturbed sites using appropriate native plant species.
6. The use of weed-free seeds and mulch.
7. County-wide promotion of the Colorado Weed Free Hay and Forage program.
8. Prioritization of weed management along areas of entry and dispersal.
9. Discouraging the sale of weedy ornamental plants and seed packets that contain weeds.

4.03 City of Glenwood Springs Gravel Purchase Guidelines

A. The City shall require the following before agreeing to purchase any gravel for City projects:

1. The gravel pit shall be inventoried and mapped by the pit operator for all plant species on the City's noxious weed list on an annual basis.
2. The gravel pit operator shall provide the City with a weed management plan. Noxious weeds shall be treated prior to seed formation.
3. The gravel pit operator must supply the City with a detailed treatment record.
4. The City will inspect the pit, the inventory and the application records 2 weeks prior to the purchase of gravel or other aggregates.

4.04 Education and Awareness

A. Education must play a major role in implementing the weed management plan.

Groups targeted for public education include golf course managers, homeowner associations, private citizens, housing developers, gardeners, landscapers, nurseries, public and private land management agencies, recreational users, youth groups, and schools.

B. A partnership of the public and private sectors, along with awareness of noxious weeds and the problems they cause, is essential to maintain or create plant communities that are free of noxious weeds.

C. Knowledge about how to identify weeds, how and where weeds are spread and what it takes to manage weeds is needed.

D. Continuation and expansion of current educational programs as well as the development of new programs is a priority of the City of Glenwood Springs' Noxious Weed Management Plan.

E. The City of Glenwood Springs and other governmental agencies will provide this instruction. Workshops will be held throughout the year to enhance public awareness.

F. Opportunities for education include:

1. Updates on City's Website.
2. Widespread distribution of informative printed material.
3. Offering weed tours and talks to the public.
4. Private applicator certification, applicator safety and laws and regulations.
5. Proper calibration of spraying equipment.
6. Contacting area nurseries, landscapers and landscape architects to emphasize the problems created by escaped ornamentals.
7. Cooperation with local media to disseminate weed information.
8. Custom weed management recommendations for individual landowners.

4.05 Land Stewardship

The Colorado Noxious Weed Act requires that all property owners use integrated methods to manage noxious weeds. Weed management must be ongoing, requiring an integrated approach in which proper land stewardship practices are utilized. Most weed species, if detected early, can be managed.

A. Strategies for implementing a noxious weed management plan:

1. Identify your plants.
2. Understand the target weed. Does it reproduce by seed or roots or both?
3. Maintain inventory maps.
4. Develop a noxious weed database.
5. Develop site-specific weed management plans in cooperation with other individual landowners and public agencies.
6. Develop a decision-making process that uses site-specific information to make decisions about treatment choices.
7. Develop a long-term strategy including regular monitoring of treatment areas.
8. Correct the situation or practices that allowed the weeds to spread.
9. Take necessary action.

B. Maintaining land that is free of weeds is good stewardship. Landowners who do not manage their weeds place their neighbors' land at risk.

4.06 Revegetation

A crucial part of any weed management plan is the reintroduction of site-appropriate vegetation.

A. Establishing a desirable plant community after noxious weeds have been removed from a highly infested area requires timely cultivation and reseeding.

B. Since the seeds from noxious weeds may lay dormant for many years, removing all visible signs of the noxious weeds does not ensure against their return.

C. Revegetation can help prevent the germination of weed seeds. It is important to inspect the land regularly to identify and treat small, new infestations.

D. For proper revegetation, managed irrigation of dry areas and reseeding are essential to establish desirable communities.

E. Native plants are most appropriate when the goal is restoration of native habitat.

F. Weed-free seeds of native Colorado grasses, wildflowers or plant species appropriate to the site may be purchased, but the best source for seeds is from native species that grow in the immediate vicinity of the infestation. They will be best adapted to local conditions and will help maintain local integrity and genetic viability.

G. Using native plants or seeds to revegetate disturbed land reduces degradation of native ecosystems, reduces the need for herbicides and conserves water resources.

H. Native plants provide broad biological diversity and help keep the Colorado landscape from being irrevocably altered by non-native species.

I. When the goal is reclamation – reseeding for quick ground cover establishment or erosion control – it may be appropriate to use introduced, non-aggressive grasses and forbs.

J. Contact the Natural Resources Conservation Service or Colorado State University Extension for specific seeding recommendations. General seeding recommendations:

a) Study all vegetation in the area and surrounding areas. b) Preserve plant species native to Colorado.

c) Test the soil for pH balance.

d) Retain and utilize as much on-site topsoil as possible.

e) Select a predominant species that is appropriate to the site. Then choose a few complementary species to provide a balanced plant community.

f) Choose plants that are healthy, vigorous and pest-free. g) Use weed-free, non-hybrid seeds.

h) Avoid commercial seed packets containing exotic plant species.

i) Confirm viability and purity of seed through seed testing from an accredited seed testing lab.

j) When choosing seeding rates, consider the guidelines provided by the Natural Resource Conservation Service. Fact sheets are available for individual species at the USDA-NRCS Plants Database website: <http://plants.usda.gov/java/factSheet>.

4.07 Requirements – Reclamation/Revegetation Plan, Soil Management Plan and Security

Various land use change permits processed through the Community Development Departments (e.g. grading, pipeline, and Land Use Change permits) may require a Reclamation/Revegetation and Soil Management Plan which includes a Weed Management Plan.

A. Soil Plan to include:

1. Provisions for salvaging on-site topsoil.
2. Timetable for eliminating topsoil and aggregate piles.
3. Provision for soil cover if any disturbances or stockpiles that sit exposed for a period of 90 days or more.

B. Reclamation/Revegetation Plan to include:

1. Plant material list and seed mix. Specifically, scientific names and common names and the application rate in terms of Pure Live Seed per acre.
2. Planting schedule which includes timing, methods, mulching and provisions for watering, if applicable.
3. A map of the impacted area with a calculation of the surface area of disturbance in acres of the disturbed area, at preliminary plan.
4. A Weed Management Plan for all listed City, Garfield County and State of Colorado listed noxious weeds that are targeted for statewide eradication. The Plan will include a site specific map and weed inventory. A Weed Management Plan is required if an area 1 acre or greater is disturbed for the purposes of site construction, development or grading but not including areas serving the long- term function of the site such as building footprint, road surface or permanent parking areas.
5. A revegetation security in cash, bond or letter of credit.
6. Agricultural practices are exempt from revegetation requirements unless they are in association with a subdivision or land use proposal.

C. A financial security may be required for revegetation if, in the determination of the City, the proposed project has:

1. A potential to facilitate the spread of noxious weeds.
2. A potential to impact watershed areas.
3. A potential for visual impacts from public viewing corridors.
4. Steep slopes of 15% or greater or unstable areas.
5. Disturbs large areas of 1 acre or greater where topsoil is exposed for the purposes of site construction, development or grading but does not comprise the long term functioning of the site (i.e. building footprint, road surface or permanent parking areas).

D. The revegetation security will be in an amount to be recommended by the City that will be site-specific and based on the amount of disturbance.

1. The security shall be held by the City until vegetation has been successfully reestablished, in any specific land use action, according to the Reclamation Standards.
2. The City will designate a member of its staff to evaluate the reclamation prior to the release of the security.

E. If a property owner fails to comply with his/her approved Reclamation/Revegetation and Soil Management Plan, the provisions of the County's adopted land use and development code in regard to enforcement may be in effect.

4.08 Reclamation Standards

Areas disturbed during development shall be restored as natural-appearing landforms that blend in with adjacent undisturbed topography within 90 days of completion of construction unless an alternative timeframe is approved by the Vegetation Manager.

A. Site Stability. The reclaimed areas shall be stable and exhibit none of the following:

1. Large rills or gullies.
2. Perceptible soil movement or head-cutting in drainages.
3. Slope instability on or adjacent to the reclaimed area.
4. Slopes shall be stabilized using appropriate reshaping and earthwork measures, including proper placement of soils and other materials.

B. Soil management. Topsoil management shall be salvaged from areas to be disturbed and managed for later use in reclamation.

C. Erosion Prevention. The surface area disturbed at any one time during the development of a project shall be kept to the minimum necessary and the disturbed areas reclaimed within 90 days to prevent unnecessary or undue degradation resulting from erosion.

1. The soil surface must be stable and have adequate surface roughness to reduce run-off, capture rainfall and snow melt, and allow for revegetation.
2. Application of certified noxious weed-free mulch or erosion netting may be necessary to reduce soil movement, retain soil moisture and promote revegetation.
3. Soil conservation measures, including surface manipulation, reduction in slope angle, revegetation and water management techniques shall be used.
4. Sediment retention structures or devices shall be located as close to the source of the sediment-generating activities as possible to increase their effectiveness and reduce environmental impacts.

D. Contouring and Revegetation. Abrupt transitions and linear placement on visible slopes shall be avoided. Areas disturbed by grading shall be contoured so they can be revegetated and shall be planted and have vegetation established.

1. When final landform is achieved, the surface shall be stabilized by vegetation or other means to reduce further soil erosion from wind or water, provide forage and cover, prevent fugitive dust as required by State Statute, and reduce visual impacts.
2. A uniform vegetative cover shall be established with an individual plant density of at least 70% of pre-disturbance levels within 4 growing seasons. State or county-listed noxious weeds, as well as alien annual invasive species, do not count as part of the 70% cover.
3. Application of topsoil. Topsoil will be stockpiled, placed on disturbed areas and managed for later use in reclamation. Provisions for salvaging on-site topsoil, a timetable for eliminating topsoil and aggregate piles and a plan that provides for soil cover if any disturbances or stockpiles sit exposed for a period of 90 days or more will be reviewed and accepted by the Garfield County Vegetation Manager.
4. Specific criteria for evaluating revegetation success must be site-specific and included as a part of the reclamation plan.
5. Vegetation production, species diversity and cover shall support the post- disturbance land use.
6. Areas where post-disturbance land use does not include lawns, gardens and flower beds shall approximate the surrounding undisturbed areas or be revegetated to a desired plant community with a composition of species and plant cover typical to that site.

7. The vegetation shall stabilize the site and support the planned post-disturbance land use, provide natural plant community succession and development, and be capable of renewing itself. This shall be demonstrated by:
 - a. Using certified noxious weed-free seed.
 - b. Successful on-site establishment of the species included in the planting mixture or other desirable species.
 - c. Evidence of vegetation reproduction, either spreading by rhizomatous species or seed reproduction.
 - d. Evidence of overall site stability and sustainability.
8. The revegetation plan shall provide for the greatest probability of success in plant establishment and vegetation development by considering environmental factors such as seasonal patterns of precipitation, temperature and wind, soil texture and fertility, slope stability and direction of slope faces.
9. To ensure the establishment of a diverse and long-lasting vegetative cover, the permittee shall employ appropriate techniques of site preparation and protection.
10. Species diversity should be selected for long-term land uses and provide for a reduction in visual contrast.
11. Where vegetation is to be used, a diversity of vegetation species shall be used to establish a resilient, self-perpetuating ecosystem capable of supporting the post-disturbance land use.
12. Species planted should include those that will provide quick soil stabilization, litter and nutrients for soil building and are self-renewing.
13. Integrated weed management methods shall be employed for all noxious weed species on the Garfield County List. Weed management methods shall be used whenever the infestation of the reclaimed area by noxious weeds threaten nearby areas.
14. Where revegetation is impractical or inconsistent with the surrounding undisturbed areas, other forms of surface stabilization shall be used.

4.09 Mapping and Inventory

- A. The City will establish and maintain visual maps of past and present infestations of noxious weeds on City land. This will provide a graphic representation of weed management progress and needs.
- B. The primary goal of mapping will be to record the noxious weed species present, areas infested, density of infestations and other site factors pertinent to successfully managing the infestation.
- C. Mapping priorities will be List A species, List B species designated for eradication and support for future grant-funded projects.
- D. The Mt. Sopris Conservation District has provided mapping for parts of the City including South Canyon. They will provide more mapping as requested and feasible.

SECTION V - ENFORCEMENT

The control of noxious weeds is the responsibility of the subject property's owner or occupant. The City of Glenwood Springs, Garfield County Weed Management and the Garfield County CSU Extension Office are available to provide technical assistance.

Enforcement of the City of Glenwood Springs Weed Management Plan is authorized by the Colorado Noxious Weed Act (the Act), C.R.S 35-5.5-101.1, *et seq.* The Act directs local governments to take the necessary steps to manage noxious weeds in their jurisdiction, and provides specific authorization for local enforcement of duly adopted Weed Management Plans. The City will manage noxious weeds identified in the City of Glenwood Springs Weed Management Plan and the Act in accordance with the following procedures:

5.01 Compliance: Private Lands - Removal of noxious weeds

A. *Management of noxious weeds required.* It shall be unlawful for any owner or occupant of any lot, block or parcel of ground within the City, or for any agent in charge of such property, to **cultivate** noxious weeds, allow noxious weeds to **grow uncontrolled** on, or allow noxious weeds to **spread** beyond said property. List **A** noxious weeds must be removed from said property.

B. Failure to Comply. In the event the landowner or occupant fails to comply with managing noxious weeds, the City has the authority to impose 'Section 100.010.030 - Prohibited acts regarding littering, dumping, weed control and property maintenance standards' of the City's Municipal Code following the process outlined in 'Section 100.010.050 - Abatement of nuisances'.

5.02 Compliance: Public Lands

A. The City of Glenwood Springs shall adopt a noxious weed management plan pursuant to C.R.S. 35-5.5-106 for all lands within its jurisdiction.

1. The City will adopt and provide for the enforcement of such ordinances, resolutions, rules and other regulations as necessary to enforce such a plan.
2. Any city agent, delegate, employee, staff or contractor applying or recommending the use of chemical management methods using restricted chemicals in the administration of the Weed Management Plan shall be certified by the Colorado Department of Agriculture.
3. The City may cooperate with counties and other municipalities to exercise any and all powers and authorities granted by the Act by entering into intergovernmental agreements.

5.03 City Rights-of-Way

The City of Glenwood Springs must confirm that all City owned public roads, highways, rights-of-way, and any easements pertaining to these, under the jurisdiction of these entities, are in compliance with C.R.S. 35-5.5-112, and any violations of the Act shall be the financial responsibility of the City of Glenwood Springs.

SECTION VI - PLAN EVALUATION

6.01 Plan Evaluation

- A. The goals and plan of work in the City of Glenwood Springs Noxious Weed Management Plan will be reviewed and evaluated annually at a Parks and Recreation Advisory Committee meeting. Any proposed additions or changes shall be recommended by the Parks and Recreation Advisory Committee and approved by ordinance by the City before becoming final.
- B. The City of Glenwood Springs Weed Management Plan shall be reviewed by the City at least every 3 years (C.R.S. 35-5.5-107(4)(a)). The management plan and any recommended amendments to the plan shall be transmitted to the City for approval, modification or rejection.

APPENDIX A

Link to Fact Sheets:

<https://www.colorado.gov/pacific/agconservation/noxious-weed-species>

Fact Sheets include Identification and Management recommendations.

Tom Jankovsky
District 1

John Martin, Chair
District 2

Mike Samson, Chair Pro Tem
District 3



December 20, 2018

Glenwood Springs City Council
101 West 8th St.
Glenwood Springs, CO 81601

RE: Garfield County Supports the Adoption of the Glenwood Springs Noxious Weed Management Plan

Dear Council Members,

On behalf of the Garfield County Commissioners, I am writing in support of the Noxious Weed Management Plan for Glenwood Springs that will be on the Council's January 3, 2019 agenda.

As you know, Glenwood Springs resident Deb Martin represents the City on the County Weed Advisory Board and has worked with your city staff to put together this plan.

The Glenwood Springs Parks & Recreation staff have been good caretakers of city property in their weed management efforts. They have been great partners with Garfield County and the Mount Sopris Conservation on many weed management and stewardship projects over the years.

The adoption of a city-wide weed management plan will complement these accomplishments.

We are appreciative of the City's consideration of this plan and look forward to continued collaboration as we all work together to minimize the impacts of noxious weeds on our native ecosystems and surrounding agricultural lands.

Sincerely,

John Martin, Chairman
Board of County Commissioners



City of Glenwood Springs Noxious Weed Plan



What are Noxious Weeds

- An alien plant or parts of an alien plant that has been designated as being invasive and undesirable and has been declared a noxious weed by the State of Colorado and the Garfield County Weed Advisory Board and meets one or more of the following criteria:
 1. Aggressively invades or is physically destructive to economic crops or native plant communities.
 2. Detrimental directly or indirectly to the environmentally sound management of natural or agricultural ecosystems.
 3. Poisonous to livestock.
 4. Carrier of detrimental insects, diseases or parasites

What is the Purpose of a Noxious Weed Plan

- The purpose of the Plan is to provide guidelines for managing designated noxious weeds which represent a threat to the continued economic, environmental and agricultural value of lands in the City of Glenwood Springs. This plan provides for the implementation of the Colorado Noxious Weed Act by detailing integrated management options for designated noxious weeds. Options include education, preventive measures, good stewardship, Purge the Spurge/Sock the Rocket campaigns and control techniques.
- The intent is to incorporate those options that are the least environmentally damaging and are practical, timely and economically feasible. It is the responsibility of all landowners to use integrated methods to manage noxious weeds, and the responsibility of local governing bodies to ensure that these plants are managed on public and private lands.

Why have a Noxious Weed Plan

- To protect our native species, wildlife, tourism and agriculture
- To assist with fire mitigation
- To cooperate with other Jurisdictions including Garfield County, Mt. Sopris Conservation District, COGS River Commission, etc.
- Required by State Law
 - The Colorado Weed Management Act (C.R.S. 35-5.5-101) was signed into state law in 1990 and last amended in 2014. Now known as the Colorado Noxious Weed Act.
 - It states that noxious weeds pose a threat to the natural resources of Colorado and municipalities shall adopt a weed management plan for all lands within their boundaries. The county and municipalities may cooperate, through an intergovernmental agreement, for the powers and authorities of the act.

About the proposed Plan

- Modeled after Garfield County Plan
 - Plant lists are identical, however, the City may add plants to the list
 - Garfield County's list of noxious weeds is taken from the State's larger weed list with the exception of Curly Dock which is not on the State list. Curly dock is a problem for our Agriculture communities
- Emphasis on control and management of noxious weeds
- Emphasis on education – goal is voluntary compliance
- Includes eradication of List A plants – addendum to existing Nuisance Abatement Ordinance

What is List A



- Weeds are categorized as List A, B or C
 - List A - rare noxious weed species that are subject to eradication, as a matter of law, wherever they are detected in the State
 - List B - species that have differing distributions throughout the State. Specified populations of B list species are subject to eradication, containment, or suppression
 - List C - weed species that are widespread and well-established, for which the State recommends but does not require control, although Glenwood Springs's Weed Management Plan may require control

Examples of Noxious Weeds in GWS

- Myrtle Spurge/*Euphorbia myrsinites* List A
- Cypress spurge/*Euphorbia cyparissias* List A
- Dames Rocket/*Hesperis matronalis* List B
- Canada thistle/*Cirsium arvense* List C
- Chicory/*Cichorium intybus* List C



Educational Information

- Garfield County Extension Colorado Master Gardeners will provide education to the general public on both the plan and how to eradicate, control and/or manage noxious weeds
- Colorado Master Gardeners would request a public meeting place free of charge to provide this training
- Garfield County Vegetation Management provides educational programs on noxious weeds as well as training on use of herbicides
- Colorado Department of Agriculture provides information on Noxious Weeds and recommendations for control/management

Questions?

- Resources

- Garfield County Vegetation Management
- Garfield County Extension/Colorado Master Gardeners
- <http://www.Colorado.gov> - Title 35, Article 5.5, **Colorado Noxious Weed Act**, Sections 35-5.5-104.5 to 35-5.5-118
- <https://www.colorado.gov/pacific/agconservation/noxious-weed-species>

ORDINANCE NO. 8

Series of 2019

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO AMENDING ARTICLE 100.010 OF THE MUNICIPAL CODE TO ADDRESS THE CONTROL AND ABATEMENT OF NOXIOUS WEEDS.

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) is a home-rule municipality organized under Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, Article 100.010 of the Glenwood Springs Municipal Code sets forth public health regulations relating to property maintenance standards and nuisance abatement; and

WHEREAS, on March 7, 2019 City Council passed Resolution 2019-13 adopting the Glenwood Springs Noxious Weed Management Plan (the “Plan”); and

WHEREAS, the Plan recognizes that noxious weeds are a threat to the economic, environmental and agricultural values of the lands and must be properly managed through containment or abatement, depending on the type of noxious weed; and

WHEREAS, the Glenwood Springs City Council finds and declares that it is in the interest of the public health, safety, and welfare to amend Section 100.010 to recognize noxious weeds as a prohibited nuisance and to provide for the abatement of noxious weeds pursuant to the nuisance abatement procedure set forth in Section 100.010.040 of the Municipal Code.

NOW, THEREFORE, THE CITY COUNCIL OF CITY OF GLENWOOD SPRINGS, COLORADO, ORDAINS:

Section 1. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. Section 100.010.020 of the Glenwood Springs Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

100.010.020 - Definitions.

Non-noxious weed means a troublesome and valueless plant growing wild and uncontrolled, but which is not classified as a Noxious weed.

Noxious weed means any plant or part thereof which has been classified by the City’s Noxious Weed Management Plan as a “List A” or “List B” noxious weed.

~~*Weeds* means noxious, troublesome, and valueless plants growing wild and uncontrolled.~~

Section 3. Section 100.010.030(c) of the Glenwood Springs Municipal Code is repealed and replaced as follows:

(c) *Noxious and non-noxious weed and grass control.* It shall be unlawful for the owner or occupant of any property within the City to allow noxious weeds to grow or remain in place on the property or on adjacent rights of way. It shall be unlawful for the owner or occupant of any property within the City to allow non-noxious weeds or grass to grow to a height of twelve (12) inches or more on the property or on adjacent rights of way or to have non-noxious weeds or grass of any size on their property or adjacent rights of way if they subject or tend to subject adjacent property or the public at large to harm due to fire hazards, rodents, vermin or insect infestation, visual blight, or other similar harmful effects. Such prohibition shall not include native grasses or Xeriscaping, so long as both are visibly managed and controlled so as not to negatively impact the health and safety of adjacent property owners.

Section 4. Section 100.010.040(a) of the Glenwood Springs Municipal Code is repealed and replaced as follows:

(a) *Garbage, junk, refuse, trash, noxious and non-noxious weeds and property maintenance standards.* Any of the conditions which are prohibited by the provisions of Section 100.010.030 are hereby declared to be a nuisance.

Section 5. Section 100.010.050(a) of the Glenwood Springs Municipal Code is repealed and replaced as follows:

(a) *Notice.* When a nuisance does not require summary abatement pursuant to Section 100.010.055, the City shall cause notice to be served upon the owner, occupant, any person with responsibility for maintenance of property or agent in charge of any property upon which any nuisance may be found, or any person who may be the cause of such nuisance, requiring him/her to abate the nuisance within fourteen (14) days or as otherwise specified in such notice. The abatement notice may be hand-delivered to such owner, occupant, agent or cause of nuisance or mailed by certified mail, return receipt requested. Where deemed appropriate and effective by the City, abatement may involve the screening of the nuisance from adjacent properties by the owner, occupant or agent; increasing the number of containers available; or increasing the frequency of garbage, refuse or trash pickup service. When the nuisance is a noxious weed, the City will specify whether the noxious weed must be eradicated, contained or suppressed and will provide guidance on methods to achieve eradication, containment or suppression. Generally, List A noxious weeds must be eradicated.

Section 6. Any ordinance or resolutions or parts thereof in conflict with this ordinance are hereby repealed to the extent of such conflict only.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED
PUBLISHED IN FULL THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

INTRODUCED, READ ON SECOND READING, AND ORDERED PUBLISHED BY
TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND
PUBLICATION THIS _____ DAY OF _____ 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

ORDINANCE NO. 13

Series of 2019

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ADOPTING A NEW SECTION 190.040.120 REGARDING HAUL ROUTES TO THE GLENWOOD SPRINGS MUNICIPAL CODE.

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) is a home-rule municipality organized pursuant to Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, pursuant to Sections 31-23-101 *et seq.*, 29-20-101 *et seq.*, and 42-4-101 *et seq.*, C.R.S., and the Glenwood Springs Home Rule Charter, the City is authorized regulate the use of roads, streets, and bridges within its jurisdiction to ensure the continued viability of the City’s transportation system and mitigate the impacts and damage sustained as a consequence of commercial truck hauling operations; and

WHEREAS, in 2017, the City completed a Pavement Condition Survey, which documented the increasing degradation and substandard conditions of the City’s roadway infrastructure; and

WHEREAS, the Glenwood Springs City Council finds that the unregulated use of the City’s roads, streets, and bridges for purposes of commercial truck hauling threatens the public health, safety, and welfare by the costly and potentially dangerous degradation of the City’s infrastructure; and

WHEREAS, the Glenwood Springs City Council finds and determines that it is necessary and proper to address the adverse impacts caused to the City’s roadway infrastructure by commercial truck hauling operations through the adoption of appropriate regulations, permit requirements and impact fees for such activities.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ORDAINS THAT:

Section 1. The forgoing recitals are incorporated herein as if set forth in full.

Section 2. A new Section 190.040.120 is hereby added to the Glenwood Springs Municipal Code to read as follows:

190.040.120 – Truck Haul Route Regulations

(a) *Intent; authority.* City Council finds and determines that these regulations are necessary for the protection of the public health, safety, and welfare from adverse impacts caused by unregulated commercial truck haul route traffic over the City’s roads, streets, and bridges. This Section is authorized, inter alia, by Sections 31-23-101 *et seq.*, 29-20-101 *et seq.*, and 42-4-101 *et seq.*, C.R.S., and the Glenwood Springs Home Rule Charter.

(b) *Definitions.* As used in this section, the following words shall have these meanings ascribed to them:

Applicant means the person or entity applying for a hauling permit.

ESAL means equivalent single load axle.

Hauling means using a haul route to transport goods or materials by truck for commercial purposes from one location to another of 30 round trips or more in a period of 60 days.

Haul route means a designated route taken by a truck on a roadway within City limits that is not a state or federal highway for hauling.

Truck means a vehicle over 30' in length.

(c) *Permit procedures.*

- (1) An application for a hauling permit shall be submitted to the City Manager on a form approved by the City no less than 30 business days prior to the requested date to commence hauling.
- (2) Upon receipt of an application for a permit, the City Manager or his or her designee shall refer the same, as appropriate, to the City Engineer, Fire Chief, and Police Chief for review and comment.
- (3) Following review of a permit application, the City Manager may approve, deny, or approve with conditions such permit. The reason for denial or terms of any conditioned permit shall be provided in writing within 10 days of receipt of said application. Denied or conditioned permits may be appealed to the Glenwood Springs City Council within 30 days of the date of notice of such denial or conditioned approval, and a hearing shall be scheduled not less than seven or more than 30 days from the date of appeal.
- (4) A permit shall not be issued until the Applicant pays all applicable impact fees as set forth herein.
- (5) An issued permit shall remain in effect for the duration of the hauling term identified pursuant to section (d)(1)c below.

(d) *Calculation of impact fees.*

- (1) The Applicant will provide the City with the following information to allow the City to calculate the impact fee associated with a hauling permit:
 - a. Truck information - a description of the type of truck(s) that will be used for hauling, including the number of axles and proposed loaded weight and weight per axle for each truck.

- b. Haul routes – a description of the haul route(s) that will be used for hauling.
- c. Term - the anticipated period of time during which the hauling will be performed.
- d. Schedule of use – an itemization of the number of trucks that will be used for hauling each day on each designated haul route for the duration of the hauling term.

- (2) Based on the foregoing information provided by the Applicant, the City will determine the overall ESAL life expectancy decrease for the roadways in the proposed haul routes and calculate a twenty year life pavement section. The City will then calculate the amount of roadway life lost to the public within the existing roadway design. This information will be multiplied by the square foot replacement cost of the roadway at the beginning of the term and at the end of the term based on an inflation rate of five percent per year.
- (3) The impact fee shall be paid at the beginning of the term, prior to the issuance of the permit, and will be valid for the duration of the proposed term identified by the Applicant. If the hauling continues beyond the original proposed term, the Applicant will be required to obtain a new permit and pay a new fee calculated in an amount consistent with this section. A new permit shall not be issued until the new impact fee is paid by the Applicant.
- (4) If the Applicant's additional ESALs exceed the life expectancy of the existing roadway, the City will calculate the period of time the new load would be applied to a new roadway and the costs to build the roadway to the section needed for the hauling activities. Applicant shall be responsible for paying these additional costs. If the Applicant's additional ESALs do not exceed the life expectancy of the existing roadway, the Applicant shall be responsible for the normal reconstruction costs calculated pursuant to paragraph (2) above.

(e) *Violation; penalty.* Engaging in hauling in violation of this Section 190.040.120 shall be punished by a fine of not more than \$1,000.00 for each occasion.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

INTRODUCED, READ ON SECOND READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE
OF SECOND PUBLICATION THIS ____ DAY OF _____ 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

Ordinance No. 14

Series of 2019

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, AMENDING THE GLENWOOD SPRINGS MUNICIPAL CODE TO ALLOW GLENWOOD SPRINGS CITY COUNCIL TO RESCHEDULE OR CANCEL A REGULAR CITY COUNCIL MEETING BY RESOLUTION.

WHEREAS, the City of Glenwood Springs (the “City”) is a Colorado home rule municipality organized pursuant to Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, the Glenwood Springs Municipal Code provides that regular meetings of the City Council shall be held on the first and third Thursdays of each month; and

WHEREAS, on occasion extenuating circumstances require the cancellation or rescheduling of a regular meeting of City Council; and

WHEREAS, as currently drafted, the Municipal Code requires passage of an ordinance to reschedule or cancel a regular meeting; and

WHEREAS, City Council typically does not have sufficient advance notice of the circumstances requiring rescheduling or cancelling a meeting to effectively pass an ordinance prior to the Council meeting to be rescheduled or cancelled; and

WHEREAS, City Council desires to amend the Municipal Code to allow City Council to reschedule or cancel a regular City Council meeting by resolution.

NOW THEREFORE, IT IS ORDAINED BY THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, THAT:

Section 1. The recitals hereinabove are hereby adopted as findings and incorporated herein.

Section 2. Glenwood Springs Municipal Code Section 020.030.010 – Place and dates of regular and special meetings of Council - is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

- (a) *Regular meetings.* Regular meetings of the City Council shall be held at City Hall, or other designated assembly room, on the first and third Thursdays of each month. Any regular meeting of City Council may be canceled or rescheduled to a different date by resolution of City Council. The first regular meeting of each month shall convene at 6:00 p.m. unless another time is set by prior approval of a majority of the City Council. The second regular meeting of each month shall convene at 6:00 p.m. Regular meetings shall adjourn no later than 11:00 p.m. unless

a later time is agreed upon by unanimous vote of all Council Members present at said meeting. In the event one (1) or more agenda items has not been called prior to 11:00 p.m. and unanimous approval for extension of the meeting has not been obtained, such items shall be automatically continued to the next regular City Council meeting or to a special meeting called in accordance with the Charter.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED
PUBLISHED BY TITLE ONLY THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

INTRODUCED, READ ON SECOND READING, PASSED AND ORDERED PUBLISHED
BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND
PUBLICATION THIS ____ DAY OF _____, 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Ordinance No 15, Series of 2019; An Ordinance of the City Council of the City of Glenwood Springs, Colorado, amending Section 070.040.060 of the Municipal Code (FIRST READING)

Action Requested: Staff recommends that City Council approve Ordinance 15, Series of 2019

Department: Economic and Community Development

Presented By: Gretchen Ricehill, Assistant Director of Economic and Community Development

Background Info: On January 17, 2019 City Council conducted a public hearing to consider several amendments of Title 070, the City's new Development Code adopted the previous August.

Twenty amendments correcting errors and omissions were listed in the January staff report including #10, a proposed amendment to the way the City calculated the number of required off-street parking spaces. Staff explained:

*The new Code requires that parking be based on **gross** floor area.*

Gross floor area is defined as the total square footage of all finished and unfinished enclosed in a building.

The previous Code calculated parking on the basis of the floor area which is, the total habitable area of all floors. This definition excludes bathrooms, garages, storage areas, utility spaces, etc.

During the Code re-drafting process we discussed the impact of changing how parking calculations are made. By using a gross floor area definition we would increase the parking requirement for many businesses. Staff recommends going back to the old method of calculating parking – by floor area.

The January report included the following recommended correction which was inadvertently omitted from Ordinance 3, Series 2019:

070.040.060 Off-Street Parking and Loading

...

(c) Calculation of Off-Street Parking and Loading Requirements

(1) Area Measurements

- a. All parking and loading requirements that are based on square footage shall be calculated on the basis of **gross the** floor area of the subject use.

Staff believes that it was Council's intent to correct the method in which the City calculates off-street parking and therefore staff recommends that Council approve Ordinance 15, Series 2019, first reading which codifies this change to the Code.

Issues: None.

Staff Recommendation: Approve Ordinance 15, Series 2019: An Ordinance of the City of Glenwood Springs, Colorado, Amending Section 070.040.060 of the Municipal Code.

ORDINANCE NO. 15

Series of 2019

**AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS,
COLORADO, AMENDING SECTION 070.040.060 OF THE MUNICIPAL
CODE.**

WHEREAS, the City of Glenwood Springs (“Glenwood Springs” or the “City”) is a home-rule municipality organized under Article XX of the Colorado Constitution and with the authority of the Glenwood Springs Home Rule Charter; and

WHEREAS, on August 2, 2018, City Council approved a revised development code as set forth in Title 070 of the Municipal Code; and

WHEREAS, in the process of applying the revised development code, City staff discovered an error in Section 070.040.060, Off-Street Parking and Loading; and

WHEREAS, on December 18, 2018 the Planning and Zoning Commission conducted a public hearing and recommended correcting the error as set forth below; and

WHEREAS, on January 17, 2019 the City Council conducted a public hearing and found that the amendment set forth below was necessary to correct and clarify the development code.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS,
COLORADO, ORDAINS:**

Section 1. The foregoing recitals are incorporated herein as if set forth in full.

Section 2. Section 070.040.060(c)(1)a. of the Municipal Code is hereby amended as follows, with double underlined text added and ~~strike through language deleted~~:

- a. All parking and loading requirements that are based on square footage shall be calculated on the basis of ~~gross~~ the floor areas of the subject use.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED PUBLISHED BY
TITLE ONLY THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

INTRODUCED, READ ON SECOND READING, AND ORDERED PUBLISHED BY TITLE
ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND
PUBLICATION THIS ____ DAY OF _____ 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

ATTEST:

Catherine Mythen Fletcher, City Clerk

RESOLUTION 2019-17

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF GLENWOOD SPRINGS, COLORADO, REPEALING
THE ADMINISTRATIVE FEE FROM THE RESIDENTIAL
PARKING PERMIT POLICY.**

WHEREAS, by Resolution 2019-10, City Council adopted a Residential Parking Permit Policy to allow citizens residing in certain downtown areas to apply for and receive a residential parking permit; and

WHEREAS, the adopted Residential Parking Permit Policy requires payment of a \$50 administrative fee per parking permit; and

WHEREAS, City Council has reconsidered imposing this fee and wishes to repeal the permit fee referenced in the Residential Parking Permit Policy.

**NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY
OF GLENWOOD SPRINGS, COLORADO, THAT:**

Section 1. The above recitals are hereby incorporated as findings by the City Council of the City of Glenwood Springs.

Section 2. The “\$50 administrative fee per permit issued” referenced in paragraph 3 of Residential Parking Permit Policy is hereby repealed.

Section 3. A revised Residential Parking Permit Policy reflecting the repeal of the permit fee is attached as **Exhibit A**.

INTRODUCED, READ AND PASSED THIS 21ST DAY OF MARCH 2019.

CITY OF GLENWOOD SPRINGS, COLORADO

Michael Gamba, Mayor

ATTEST:

Catherine Mythen Fletcher, City Clerk

City of Glenwood Springs Residential Parking Permits

1. Residents residing in the following areas may apply for a residential permit:
 - a. Pitkin Avenue – 800 and 900 blocks
 - b. Colorado Avenue – 700, 800 and 900 blocks
 - c. Grand Avenue – 700, 800 and 900 blocks
 - d. Cooper Avenue – 700, 800 and North half of 900 block (900 – 916)
 - e. Blake Avenue – 700 block
 - f. 7th Street – 200, 300 and 400 blocks
 - g. 8th Street – 100, 200, 300 and 400 blocks
 - h. 9th Street – 100, 200, 300 and 400 blocks
 - i. 10th Street – 200 block
2. A maximum of 2 permits will be issued per residential unit and must be applied for and issued individually.
3. Residents will be required to apply for permits in person at the Police Department and show proof of residency and vehicle registration.
4. Permits will be issued for a maximum of 1 year, with renewals processed by the original application standards within 30 days of expiration. Expiring permits must be returned to the Police Department upon renewal.
5. Permits will only be valid upon the vehicle matching the registration listed upon issuance.
6. Permits will only apply to exemption from the 2 Hour limits for parking in the downtown zone, and will NOT exempt parking in short-term loading zones, no parking zones or handicap spaces.
7. Parking on public streets is limited to 72 hours under State Law and City Ordinances, and permit holders must still comply with this requirement.
8. Parking permits must be hung from the rearview mirror or otherwise prominently displayed for inspection of all permit information by Parking Enforcement personnel.
9. Residential Parking Permits are not transferrable. Abuse or “loaning” of permits will result in revocation of all permits issued to a resident.
10. Residential Parking Permits shall not be valid in the 700 block of Cooper Avenue, the 700 block of Colorado Avenue or the City/ County parking lot in the 700 block of Colorado Avenue on the East side of Colorado Avenue. Vehicles with permits that park in those locations shall be treated as vehicles without permits for purposes of enforcement.
11. Other City parking lots or structures that are signed for 24 hour parking will be allotted for 72 hour parking by permitted vehicles.

Tracking of permits will be the responsibility of the Police Department and a database of issued permits with permit numbers, permit holders address and contact information, and permitted vehicle information will be contained. Changes in information, such as a new vehicle, license plate or applicant phone number, must be reported to the Police Department to maintain accurate information.

To apply for a residential permit, update permit information, or ask questions about the program, contact the Police Department at (970) 384-6500, or at 101 W. 8th Street, Glenwood Springs.



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: SGM Additional Services at Two Rivers

Action Requested: Approval of additional \$51,800 in design funds to evaluate changes to the park plan discussed at the February 7th Council meeting. These additional funds will come from A&I.

Department: Parks & Recreation

Presented By: Brian Smith, Recreation Director
Terri Partch, City Engineer

Background Info: On February 7th the council asked staff to evaluate several changes to the Two Rivers Park plan. These major scope items included the following elements:

- Removal of the bridge and island trail
- Access to the side channel from a natural trail along the north bank
- Verify vehicle maneuvering for the boat ramp and evaluate and design tie down areas
- Add air and water for boaters
- Evaluate reducing the amount of rock on the lower trail by grading the upper wall back toward the existing concrete trail
- Verify existing band shell condition
- Evaluate grading to create a "bowl" in front of the band shell
- Evaluate grading concept that eliminates the existing band shell
- Pending Council decision on best scenario, design final amphitheater/grading.

Approval of the additional civil design scope will bring the SGM contract to a total of \$159,672.

Issues: None at this time

Staff Recommendation: Approve additional scope.

February 28, 2019

Brian Smith
Parks and Recreation Director
City of Glenwood Springs, CO
Via email: brian.smith@cogs.us

**Re: Engineering Services Proposal
Two Rivers Park Improvements Project – Additional Scope 02/28/19**

Dear Brian,

Following the team meeting of February 13th which provided some guidance from Council and City staff concerning the future direction of the Two Rivers Park project, we are pleased to provide you with an updated proposal addressing these added scope items. Associated with this is an exhibit map used at that meeting to guide the discussion and provide our scope breakdown.

That map shows a general “regionalization” of scope targets. From the discussion, it appeared that dividing the work up into such regions makes for easier tracking and management. Too, these regions currently stand at different levels of development, as will be described below. As this is the second scope adjustment, we have referenced the initial proposal from November of 2018, with the added designation “B” under the initially anticipated elements and created new tasks for the other items.

This letter presents these regionalized proposals, timeframe needs, and a few ancillary items that should be considered. We understand these can be as a new, separate contract, or added to the previous agreement, and may be engaged in whole or in part. For continuity, however, we have still placed this work in the same general tasks

Updated Scope Elements – February 28, 2019

Task 05-B and 06-B

Region 1: Island and Lazy River

The City desires to delete the bridge and island plan due to anticipated expenses. However, analysis of the side channel, design for a “lazy river” type float beyond what is currently shown on the REP plans, and a minor, riverbank natural trail in coordination with the landscaping plan are anticipated. We currently have sufficient information to begin this design in earnest toward biddable documentation.

Region 2: Boat Ramp Area Amendments

Staff has requested some review of traffic flow for the teardrop, ramp, and access into the existing parking area. Concern has been raised over smooth flow, “curb hopping” and better ensuring good access. Along with this, an interest is raised to provide staging area parking for truck/boat type configurations. It is possible such analysis would move, slightly, the ramp and placement of the restroom by a few feet, but still in the same general locations.

Too, water supply via a yard hydrant and power for an air compressor has been requested at an appropriate location around the boat ramp or perhaps in the staging area. This can easily be incorporated into the already scoped efforts for the restroom designs, therefore no additional fee for this exercise.

We understand the restroom supplier does not provide foundation design for their restroom kit systems. At this point we had “structural review” only for affirming aspects of the structure, but not design of a footer. In addition to the previous estimated hours, we have the below design fee. Further, it is our estimation that the boat ramp itself is lacking in design detail and endurance characteristics. We submit that design needs significant updating and additional information.

As with Region 1, it would appear we have sufficient information to begin biddable documentation design right now. These requests would not require any change to items 03, the utility designs we were already working on for the park.

R1 Fee Estimate:

Grading Revisions and Trail	\$2,200
Hydraulic Analysis and Memorandum on side channel	\$4,800
PM / Meetings / Communications w City	\$1,000

R2 Fee Estimate:

Grading Revisions, C/G/SW amendments, Boat Ramp	\$5,800
Autoturn Exercises and Analysis	\$2,400
Structural Design of Restroom Foundation	\$1,800
Structural Design of Boat Ramp	\$2,400
PM / Meetings / Communications w City	\$800

Task 10 (new: Region 3) – Trail Grading Analysis

With a view toward reducing the amount of boulder / rock walls to save costs, we are requested to conduct some preliminary grading along the river trail from the boat ramp to the tie in near the existing Colorado River Pedestrian bridge. The general intent is to see what the impacts are of lessening the wall, laying back slope, and associated grading and landscaping. Alternatives will be analyzed, reviewed with the landscaper, and quantities with cost estimates provided for staff and Council review. Preliminary plans, cost estimate, and memorandum will be provided. It is not anticipated that this work will impact the river / floodplain analysis already underway.

T10:R3 Fee Estimate:

Grading Revisions and Trail(s), alternatives, exhibits	\$5,400
Quantities and Cost Estimating	\$800
PM / Meetings / Communications w City	\$800

Task 11 (new) – Amphitheater Options

Council is interested in comparing costs for a) evaluating and improving the existing band-stand area to maximum reasonable capacity, repairs and function and b) a significantly enlarged river-side amphitheater option. SGM will provide a site assessment of the band stand, produce grading plans, and the alternate amphitheater for functionality and cost comparison.

Pending the results of the initial analysis and estimates, it is likely that a full, park-wide survey is warranted for accurate and biddable quantities. If an alternative is selected, we can then provide services for full designs and biddable information for these two new tasks.

T11:R4 Fee Estimate:

Conceptual Grading Revisions for both options	\$4,800
Quantities and Cost Estimating	\$1,600
Engineering Assessment of Existing Bandstand (struct/MEP)	\$5,000
PM / Meetings / Communications w City	\$1,200
Architectural Assessment of Existing Bandstand Sub-consult	\$1,700
Acoustical Engineer Sub-consultant Review**	TBD

** We request consideration of acquiring the services of an acoustical engineer for either amphitheater option chosen. While we understand the general surface features such as slopes and trail alignment, the most suitable geometry, anticipated crowd density, and minor orientation issues can impact the visual and auditory enjoyment of an event. SGM is not equipped to provide that criteria and commentary internally. This can be postponed for the time being but we do recommend an acoustic review of selected alternatives in parallel with full design services.

As SGM does not have architectural services internally, we would like to request consideration of such an assessment as part of the band stand review.

Task 02-B

Full Park Survey

To truly bring this project to completion, with the added scope elements requested by the City, we need to acquire a full field survey of the whole park. We already have topographic information for the river corridor for the flood analysis. We anticipate additional topography from the far east end (the lift station) all the way across Devereaux for planning and engineering purposes. This is needed for well designed and accurate irrigation system layout as well as precise quantification of grading elements.

T02-B Fee Estimate:	\$7,800
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Tabulated Fee Proposal w/ Updated Scope**

The table below presents SGM's updated fee proposal for the scope of work described above with the new elements added in **bold**.

Phase	Phase Name (w/ Updated Scope, 2/28)	Fees
01	Project Management	\$9,455.00
02	Survey	\$12,006.00 + \$7,800
03	Water and Sewer Design for Bathroom	\$22,392.00
04	Electrical Design	\$9,444.00
05	Site Civil Design	\$13,981.00 + \$16,400
06	River Hydrology/Hydraulics and Wetlands	\$18,334.00 + \$4,800
07	Bridge (Design & Build) and Geotech	\$9,592.00
08	Bid Documents	\$4,168.00
09	GIS As-built information	\$4,000.00
10 (new)	Trail Analysis	\$7,000
11 (new)	Amphitheater Review and Options	\$12,600
SUB-3	GJ Pipe Irrig Design	\$5,500
SUB-11A (new)	Architectural Analysis	\$1,700
SUB-11B (new)	Acoustical Analysis**	TBD
Sub-total SGM Labor		\$107,372 + \$51,800
Reimbursable Expenses		\$500.00
Total Proposed Fee		\$107,872 + \$51,800** TOTAL \$159,672

These scope adjustment gets the project to full CD's for Regions 1 and 2, and approved concept plans for Regions 3 and 4, with the intention of final design services scoped and accomplished in the summer.

Proposed Schedule

As noted, SGM can begin work immediately on the Region 1 and 2 priorities. Doing so will aid us in keeping the target goal of complete biddable documentation in August. Following, we would anticipate getting concept plans for Region 3 and 4 priorities by the first week of April with a hope of review, questions and amendments, and final decisions for alternatives in May so that we can likewise catch those elements

up to full documentation in August. Presuming approval of this proposal by March 8th, we have the following:

Region 1 and 2 review information	-	March 28
Review meeting	-	April 3
Region 3 and 4 concept information	-	April 5
Review meeting	-	April 10
R3/4 Alternatives Chosen	-	May 1
R1/2 90% CD set	-	June 26
R3/4 90% CD set	-	July 17
Complete Biddable documents	-	Aug 2

Please contact me at 970-384-9088 with any questions. Thank you for this opportunity and we look forward to hearing from you.

Sincerely,

SGM



Rick L Barth, PE / Senior Engineer I

Chris Lehrman, PE / SGM Principal / Senior Engineer



City Council
STAFF REPORT
City of Glenwood Springs
March 21, 2019

Agenda Item: Board and Commission Appointments for VALE Board, Historic Preservation Commission, and Housing Commission

Action Requested: Boards and Commission Appointments for VALE, Historic Preservation and Housing Commission

Department: City Clerk

Presented By: Catherine Fletcher, City Clerk

Background Info: Some of the boards and commissions have members with expiring terms. Applications have been submitted.

1 open seat for VALE with 3 applicants

2 open seats for historic preservation boards and 2 applicants

2 open seats for the housing commission and 2 applicants

Issues:

Staff Recommendation:

**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name	Patti Cummings
Home Address	163 County Road 132, Glenwood Springs, CO 81601
Mailing Address	PO Box 73, Glenwood Springs, CO 81602

Section 2 - Contact Information

Home	Work	970-945-1133
Fax	Mobile	720-281-2145
Email	mountainocean@msn.com	

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

My interest in this position comes from long experience in the Dependency and Neglect system as both a Court Appointed Special Advocate and the Executive Director of CASA of the Ninth in Glenwood Springs. Currently I am an Independent Contractor for River Bridge Regional Center providing Forensic Interview services to child victims and/or witnesses of sexual and physical abuse.

2. Have you ever been the victim of a crime?

I had a car stolen in 1987 or 1988 while living in Wichita, Kansas. It was found nearby, stripped down.

I was hit by a drunk driver in 1998 or 1999 in Boulder, CO. I was not injured but the driver was. I was not required to testify due to a guilty plea by the driver.

3. Have you ever been convicted of a crime, and if so, what was the violation?

I was arrested and subsequently pled guilty to a misdemeanor DWAI on 12-31-1999.



City of Glenwood Springs
Office of the City Clerk
101 West 8th Street
Glenwood Springs, CO 81601
Fax: 970-945-5023
Email: catherine.mythen@cogs.us

VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

No

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

I currently serve as a state-appointed member of the Western Region Division of Youth Services Community Board.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes

Thank you for your interest and time commitment in serving your community

Please complete and submit this application online or
Mail to: City Clerk, 101 West 8th Street, Glenwood Springs, CO 81601;
Fax to: 970-945-5023;
Email: catherine.mythen@cogs.us



City of Glenwood Springs

Office of the City Clerk
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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:

(8) Victim's and Witnesses Assistance and Law Enforcement Board:

- a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.
- b. (R 20-05 §2)
- c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:

(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.

- (1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.
- (2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)
- (3) The Victim's and Witnesses Assistance and Law Enforcement Fund, hereinafter referred to as the "Fund," consist of all monies paid as a surcharge as provided in Subsection (2) above. All monies deposited in the Fund shall be deposited in an interest-bearing account, and all interest earned by monies in the Fund shall be credited to the Fund. The City Manager, by and through the Finance Director, shall be responsible for establishing a separate fund for purposes of accounting for the revenues and expenditures. At the conclusion of each fiscal year, all monies remaining in the Fund shall remain in the Fund for allocation as hereinafter set forth.
- (4) The Board shall disburse monies from the Fund in the following manner:
 - a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.
 - b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims= and witnesses= services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances



City of Glenwood Springs

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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

(6) The Board is authorized to accept and evaluate all applications for disbursement of funds, whether emanating from victims, witnesses or law enforcement agencies. Applications for disbursement shall be made upon forms prescribed by the Board, and made available by the Municipal Court and the Police Department. The Board shall establish its own criteria for evaluating applications for disbursement, and nothing herein contained shall obligate the Board to make disbursement of any funds available to it. Upon a finding by the Board that a disbursement shall be made from the Fund, the Board shall submit a written request for payment to the Finance Department, which shall then remit payment in accordance with the request.

(7) The Board is required to submit minutes of its meetings to the City Council at the next regular Council meeting following the Board's meeting.



City of Glenwood Springs

Office of the City Clerk

101 West 8th Street

Glenwood Springs, CO 81601

Fax: 970-945-5023

Email: Catherine.mythen@cogs.us

HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name

John Matthew Spidell

Home Address

322 Silver King Court, GWS 81601

Mailing Address

same

Section 2 - Contact Information

Home 970-930-6169

Work

Fax

Mobile

719-660-9984

Email jjglenwood@gmail.com

Section 3 – Occupation

Occupation Restaurant Owner - Jimmy John's 1331 Grand Ave, 81601

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

If see and feel the extreme need for first time job seekers and first time home owners to have option

2. What do you view as your role if selected as a member of the Housing Commission?

A great team player interested in getting results

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

I hire first time and seasoned workers at all levels. I've also owned and managed vrbo's but I'm r

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

Not specifically in housing, but I've served at a planning commissioner in Castle Rock, CO and have

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing is our life blood for diversity and balance. We need all kind of entry points and options for

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes.

7. What experience do you have working with people on a board, commission or committee?

City Planning Commission Castle Rock, CO 2008/9, Past President of the American Society of Lan

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes



City of Glenwood Springs

Office of the City Clerk

101 West 8th Street

Glenwood Springs, CO 81601

Fax: 970-945-5023

Email: Catherine.mythen@cogs.us

HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

POWERS AND DUTIES OF THE HOUSING COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the River Commission:

(11) Glenwood Springs Housing Commission.

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Membership should reflect a broad representation of organizations and other entities which are related to housing, including but not limited to the financial community, the building and development community, the real estate industry, and organizations which support low-income residents of the community.

(k) Powers and duties of Housing Commission. The powers and duties of the Housing Commission shall be:

- (1) To investigate, study and report to the City Council any and all matters concerning housing issues which directly affect the City, including the preparation of a Comprehensive Housing Affordability Strategy (CHAS).
- (2) To assist City Council in defining the nature and scope of housing opportunities in the City.
- (3) To meet with the City Council on an annual basis to identify which housing issues require priority attention.
- (4) To investigate, study and report to the City Council on grants, donations and other forms of funding to assist in meeting the housing needs of the City.
- (5) To perform functions concerning oversight of housing issues or functions as delegated by the City Council, including monitoring the implementation of activities as described in the CHAS.
- (6) To appoint subcommittees as necessary to carry out the foregoing functions subject to the approval of the City Council.



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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name Joyce Jenkins
Home Address 340 13th St., #3; Glenwood Springs CO 81601
Mailing Address same

Section 2 - Contact Information

Home 720.431.2547 Work none
Fax none Mobile 720.431.2547
Email joycejenkins@msn.com

Section 3 - Occupation

Occupation retired attorney

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

As a lawyer since 1985, I am intimately familiar with and appreciative of confidentiality requirements.

2. Have you ever been the victim of a crime?

No.

3. Have you ever been convicted of a crime, and if so, what was the violation?

No.



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VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

From 2004 to 2011, I was in-house counsel for the 911 database manager, Intrado, Inc. of Longmont. Many Intrado employees had been first responders or had served in law enforcement prior to joining the company. I worked and socialized with several of them, and one, who had been a state patrolperson, is a good friend. However, my contacts with that person and other Intrado employees related to business and personal interests as opposed to law enforcement issues. Those relationships would not affect decisions I would make as a VALE board member one way or another.

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

Yes. I assume this question seeks information about experience in collaborative decision-making. Note I have no prior governmental decision-making experience, either volunteer or elected. In my rather distant past (1970's), I served as president of the Mesa County League of Women Voters (LWV). In that capacity, I chaired board meetings and participated in committee meetings where collective decision-making took place. I also served on the state LWV board where I participated in discussion and resolution of matters that affected the membership statewide. Also while residing in Grand Junction at that time, I was active in a citizen downtown improvement group, the Grand Junction Renaissance Committee, which worked with homeowners to improve maintenance and upkeep of their properties. This also required numerous instances of joint decision-making. The practice of law is a heavily collaborative endeavor from what case to take on to trial to finalization of an appellate brief. Even a sole practitioner reaches out to other professionals when making decisions that affect her or his practice. Accordingly, most of my experience with decision-making groups comes from my legal career. My legal decision-making focused on hearing different points of view and reaching a consensus as to the best course of action based on the facts of the individual case, precedent and ethical considerations. After I quit practicing law, I joined the Peace Corps for two years where I ended up in Cambodia teaching English to rural high school students. Part of my mission was to help Cambodian English teachers improve their instruction. This challenge meant that much of my work concentrated on joint decision-making sessions with teachers, principals and administrators to improve curriculum and teaching methods using TEFL (Teaching English as a Foreign Language) principles. Also, I participated in a number of joint efforts with other Peace Corps volunteers which required group consultation and delegation of workload. Recently, I have taken on the responsibility of serving as a Precinct Captain for the Garfield County Democratic Party, something which demands group participation, planning and decision-making and follow-through.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes.

Thank you for your interest and time commitment in serving your community

Please complete and submit this application online or
Mail to: City Clerk, 101 West 8th Street, Glenwood Springs, CO 81601;
Fax to: 970-945-5023;
Email: catherine.mythen@cogs.us



City of Glenwood Springs
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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**
(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD
(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:

(8) Victim's and Witnesses Assistance and Law Enforcement Board:

- a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.
- b. (R 20-05 §2)
- c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:

(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.

(1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.

(2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)

(3) The Victim's and Witnesses Assistance and Law Enforcement Fund, hereinafter referred to as the "Fund," consist of all monies paid as a surcharge as provided in Subsection (2) above. All monies deposited in the Fund shall be deposited in an interest-bearing account, and all interest earned by monies in the Fund shall be credited to the Fund. The City Manager, by and through the Finance Director, shall be responsible for establishing a separate fund for purposes of accounting for the revenues and expenditures. At the conclusion of each fiscal year, all monies remaining in the Fund shall remain in the Fund for allocation as hereinafter set forth.

(4) The Board shall disburse monies from the Fund in the following manner:

- a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.
- b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims= and witnesses= services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances



City of Glenwood Springs

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101 West 8th Street
Glenwood Springs, CO 81601
Fax: 970-945-5023
Email: catherine.mythen@cogs.us

VICTIM ASSISTANCE AND LAW ENFORCEMENT

(VALE) BOARD

APPLICATION

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

(6) The Board is authorized to accept and evaluate all applications for disbursement of funds, whether emanating from victims, witnesses or law enforcement agencies. Applications for disbursement shall be made upon forms prescribed by the Board, and made available by the Municipal Court and the Police Department. The Board shall establish its own criteria for evaluating applications for disbursement, and nothing herein contained shall obligate the Board to make disbursement of any funds available to it. Upon a finding by the Board that a disbursement shall be made from the Fund, the Board shall submit a written request for payment to the Finance Department, which shall then remit payment in accordance with the request.

(7) The Board is required to submit minutes of its meetings to the City Council at the next regular Council meeting following the Board's meeting.



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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD**

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Tara D. Rosinski

Home Address

46151 Hwy 6 + 24 Glenwood Springs CO 81601

Mailing Address

" " "

Section 2 - Contact Information

Home

Work

Fax

Mobile

970-618-3519

Email

tara.mmd@gmail.com

Section 3 - Occupation

Occupation

Server - The Brew Pub

Section 4 - Personal and Professional Interests

1. Describe any experience with maintaining confidential information:

Work with my Probation officer in helping people with their addictions.

2. Have you ever been the victim of a crime?

yes

3. Have you ever been convicted of a crime, and if so, what was the violation?

I am over a year sober. During my addiction I got 2 DUI's and a criminal mischief charge. Since sober, no crimes.

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VICTIM ASSISTANCE AND LAW ENFORCEMENT**(VALE) BOARD****APPLICATION**

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (Continued)

4. Have you or a close family member or friend ever been employed in law enforcement or the criminal justice system?

NO

5. Do you have any experience working with people on a board, commission, committee, or as part of some other decision-making group?

I attend all District meetings and I have attended the Female Offender Program meetings where decisions are made to help girls get sober.

6. The VALE Board meetings typically occur one morning a month. Will you be sufficiently available to participate?

Yes

Thank you for your interest and time commitment in serving your community

Please complete and submit this application online or
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VICTIM ASSISTANCE AND LAW ENFORCEMENT**(VALE) BOARD****APPLICATION**

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE VALE BOARD

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the VALE Board:**(8) Victim's and Witnesses Assistance and Law Enforcement Board:**

a. Five (5) citizens, at least four (4) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

b. (R 20-05 §2)

c. The Chief of Police as an advisory member, but a nonvoting member of the Board.

Powers and Duties:**(h) Powers and duties of the Victim's and Witnesses Assistance and Law Enforcement Board.**

(1) The Board shall designate one (1) of its members as chairman, shall establish rules of procedure and order and shall hold meetings as it might deem necessary.

(2) A surcharge equal to twenty-five percent (25%) of the fine imposed for violation of all municipal ordinances, including ordinance violations under the Model Traffic Code, is hereby levied on each Municipal Court action resulting in a conviction, plea of guilty or no contest or in a deferred judgment and sentence, which municipal ordinance violation is charged pursuant to City ordinances. All calculated surcharge amounts resulting in dollars and cents shall be rounded to the nearest whole dollar. In the event a portion of the fine is suspended, the surcharge levied shall be computed based upon the original fine, regardless of whether a portion of said fine has been suspended. Said surcharges shall be paid to the Clerk of the Court by the defendant, and said Clerk shall deposit the money so received in the fund hereinafter created. (A 33-05, §2)

(3) The Victim's and Witnesses Assistance and Law Enforcement Fund, hereinafter referred to as the "Fund," consist of all monies paid as a surcharge as provided in Subsection (2) above. All monies deposited in the Fund shall be deposited in an interest-bearing account, and all interest earned by monies in the Fund shall be credited to the Fund. The City Manager, by and through the Finance Director, shall be responsible for establishing a separate fund for purposes of accounting for the revenues and expenditures. At the conclusion of each fiscal year, all monies remaining in the Fund shall remain in the Fund for allocation as hereinafter set forth.

(4) The Board shall disburse monies from the Fund in the following manner:

a. First, to the payment of all reasonable and necessary expenses and costs incurred by the Board in the performance of its duties, including but not limited to professional fees, office supplies and meeting expenses.

b. Second, not less than fifty percent (50%) of the monies remaining in the Fund after the deduction of reasonable expenses and costs shall be allocated for the purchase of victims' and witnesses' services and reimbursements, as hereinafter set forth. No funds shall be paid except in those specific instances

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**VICTIM ASSISTANCE AND LAW ENFORCEMENT
(VALE) BOARD
APPLICATION**

(for Powers and Duties, see page 3)

where a police report has been filed by the Police Department for an alleged violation of a municipal ordinance, regardless of whether the perpetrator has been identified, arrested or prosecuted.

c. Third, any remaining monies may be allocated to the Police Department for the following purposes, including, but not limited to: equipment purchases, training programs for personnel and the employment of additional personnel. Such funds shall not be used by the Police Department for defraying the costs of routine and ongoing operating expenses. No disbursement within this category of expenditure shall be made without the approval of the City Council following a written recommendation by the Board.

(5) Disbursement of funds by the Board on behalf of the victim's and witnesses assistance services may be used for the following purposes:

- a. Provision of services for early crisis intervention;
- b. Assistance in prompt return of victims' property;
- c. Assistance to victims and witnesses in arranging transportation to and from court;
- d. Provision of translator services;
- e. Protection from threats of harm and other forms of intimidation;
- f. Reasonable medical and hospital expenses and expenses incurred for dentures, eyeglasses, hearing aids or other prosthetic or medically necessary devices; and
- g. Losses resulting from property damage, including repair or replacement of property damaged as a result of crime or payment of the deductible amount on a residential insurance policy in an amount not to exceed five hundred dollars (\$500.00). Victims' recovery due to property damage shall not exceed five hundred dollars (\$500.00) for any crime, but in no case shall a loss be compensable if the aggregate property damages are less than twenty-five dollars (\$25.00).

(6) The Board is authorized to accept and evaluate all applications for disbursement of funds, whether emanating from victims, witnesses or law enforcement agencies. Applications for disbursement shall be made upon forms prescribed by the Board, and made available by the Municipal Court and the Police Department. The Board shall establish its own criteria for evaluating applications for disbursement, and nothing herein contained shall obligate the Board to make disbursement of any funds available to it. Upon a finding by the Board that a disbursement shall be made from the Fund, the Board shall submit a written request for payment to the Finance Department, which shall then remit payment in accordance with the request.

(7) The Board is required to submit minutes of its meetings to the City Council at the next regular Council meeting following the Board's meeting.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Home Address

Mailing Address

Section 2 - Contact Information

Home

Work

Fax

Mobile

Email

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Historic Preservation Commission?

I grew up in Glenwood Springs and have always been interested in its history. When I returned to the City to pursue my legal career I was looking for a way to give back to the community. Serving on the Commission allows me to do that by preserving the City's history. I was appointed for my first term in 2016 and hope to be reappointed.

2. What do you view as your role if selected as a member of the Historic Preservation Commission?

Providing guidance and insight regarding processes, procedures, and application of standards to and use applications and other matters that come before the Commission.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (continued)

3. Do you have any professional experience in one of the following disciplines: architecture, landscape architecture, architectural history, history, archaeology, planning, geography, anthropology, building trades, law or real estate? (Note - professional experience in these fields is not a requirement for appointment to the Historic Preservation Commission.)

Yes, law, real estate, and land use

4. Please list degrees received, school/college/university attended and area of study.

Glenwood Springs High School graduate
CU Boulder - BA, environmental studies
University of Utah S.J. Quinney College of law - JD

5. The Historic Preservation Commission generally attends one meeting a month in the evening. Do you have any existing time commitments that will hamper your ability to serve?

Occasional evening meetings for work and other organizations I am involved with, none of which occur the first Monday of the month

6. What experience do you have working with people on a board, commission or committee?

My legal practice includes representing other municipalities and special districts. I also served on various boards throughout high school, college, and law school.

Thank you for your interest and time commitment in serving your community

Please complete this application and forward it to the City Clerk either by mail to: 101 West 8th Street, Glenwood Springs, CO 81601; fax to: 970-945-5023; email: catherine.mythen@cogs.us; or online:

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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE HISTORIC PRESERVATION COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the Historic Preservation Commission:

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Powers and Duties:

(I) Powers and Duties of Historic Preservation Commission. The powers and duties of the Historic Preservation Commission shall be:

- (1) To recommend to City Council methods for the protection and preservation of the City's historic and cultural heritage, including, but not limited to, the designation of historic landmarks and districts by appropriate regulations.
- (2) To recommend to City Council methods for enhancing property values and the stabilization of historic neighborhoods.
- (3) To recommend to City Council methods for increasing economic and financial benefits, including, but not limited to, City attractions.
- (4) To provide educational opportunities to increase public appreciation of the City's unique heritage.
- (5) To do any other tasks related to the historic preservation of resources in the community of Glenwood Springs.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 1 - Name and Address

Name

Home Address

Mailing Address

Section 2 - Contact Information

Home

Work

Fax

Mobile

Email

Section 3 - Occupation

Occupation

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Historic Preservation Commission?

I have had the honor of serving as a member of the Historic Preservation Commission for multiple years at this point. I would enjoy continuing my work to help ensure the preservation of the historical treasures of Glenwood Springs. I believe that the history of our city is a vital component of both its unique culture and its appeal to visitors and tourists. I also believe that it is critical for our city to help balance the needs of development against the need to protect Glenwood Springs unique architectural treasures.

2. What do you view as your role if selected as a member of the Historic Preservation Commission?

To review and advise City Council on the impact of any development plans upon the unique architectural treasures of Glenwood Springs. To assist in the preservation and promotion of Glenwood Springs unique history. To help ensure and protect our historical legacy for future generations.



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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

Section 4 - Personal and Professional Interests (continued)

3. Do you have any professional experience in one of the following disciplines: architecture, landscape architecture, architectural history, history, archaeology, planning, geography, anthropology, building trades, law or real estate? (Note - professional experience in these fields is not a requirement for appointment to the Historic Preservation Commission.)

No.

4. Please list degrees received, school/college/university attended and area of study.

Bachelor of the Arts, University of Michigan, History Major
Master of the Arts, Eastern Michigan University, History Major

5. The Historic Preservation Commission generally attends one meeting a month in the evening. Do you have any existing time commitments that will hamper your ability to serve?

No

6. What experience do you have working with people on a board, commission or committee?

I have now served multiple years with the Glenwood Springs Historic Preservation Commission.

Thank you for your interest and time commitment in serving your community

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HISTORIC PRESERVATION COMMISSION

APPLICATION

(for Powers and Duties, see page 3)

POWERS AND DUTIES OF THE HISTORIC PRESERVATION COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the Historic Preservation Commission:

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Powers and Duties:

(I) Powers and Duties of Historic Preservation Commission. The powers and duties of the Historic Preservation Commission shall be:

- (1) To recommend to City Council methods for the protection and preservation of the City's historic and cultural heritage, including, but not limited to, the designation of historic landmarks and districts by appropriate regulations.
- (2) To recommend to City Council methods for enhancing property values and the stabilization of historic neighborhoods.
- (3) To recommend to City Council methods for increasing economic and financial benefits, including, but not limited to, City attractions.
- (4) To provide educational opportunities to increase public appreciation of the City's unique heritage.
- (5) To do any other tasks related to the historic preservation of resources in the community of Glenwood Springs.



City of Glenwood Springs

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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name

John Matthew Spidell

Home Address

322 Silver King Court, GWS 81601

Mailing Address

same

Section 2 - Contact Information

Home 970-930-6169

Work

Fax

Mobile

719-660-9984

Email jjglenwood@gmail.com

Section 3 – Occupation

Occupation Restaurant Owner - Jimmy John's 1331 Grand Ave, 81601

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

If see and feel the extreme need for first time job seekers and first time home owners to have option

2. What do you view as your role if selected as a member of the Housing Commission?

A great team player interested in getting results

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

I hire first time and seasoned workers at all levels. I've also owned and managed vrbo's but I'm r

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

Not specifically in housing, but I've served at a planning commissioner in Castle Rock, CO and have

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing is our life blood for diversity and balance. We need all kind of entry points and options for

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes.

7. What experience do you have working with people on a board, commission or committee?

City Planning Commission Castle Rock, CO 2008/9, Past President of the American Society of Lan

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes



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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

POWERS AND DUTIES OF THE HOUSING COMMISSION

(as defined in Title 020 of the Glenwood Springs Municipal Code)

Composition of the River Commission:

(11) Glenwood Springs Housing Commission.

- a. Seven (7) citizens, at least six (6) who are residents of the City and one (1) who may reside outside of the City but within the 81601 zip code area or own real property or a business within the City.

Membership should reflect a broad representation of organizations and other entities which are related to housing, including but not limited to the financial community, the building and development community, the real estate industry, and organizations which support low-income residents of the community.

(k) Powers and duties of Housing Commission. The powers and duties of the Housing Commission shall be:

- (1) To investigate, study and report to the City Council any and all matters concerning housing issues which directly affect the City, including the preparation of a Comprehensive Housing Affordability Strategy (CHAS).
- (2) To assist City Council in defining the nature and scope of housing opportunities in the City.
- (3) To meet with the City Council on an annual basis to identify which housing issues require priority attention.
- (4) To investigate, study and report to the City Council on grants, donations and other forms of funding to assist in meeting the housing needs of the City.
- (5) To perform functions concerning oversight of housing issues or functions as delegated by the City Council, including monitoring the implementation of activities as described in the CHAS.
- (6) To appoint subcommittees as necessary to carry out the foregoing functions subject to the approval of the City Council.



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HOUSING COMMISSION

APPLICATION

(for Powers and Duties, see Page 3)

Section 1 – Name and Address

Name Erin Bradshaw

Home Address 367 County Rd 130 Glenwood Springs CO 81601

Mailing Address Po Box 1911 Glenwood Springs CO 81602

Section 2 - Contact Information

Home _____ Work (970) 925-2075

Fax _____ Mobile _____

Email erin@advocatesafehouse.org

Section 3 – Occupation

Occupation Housing Advocate with the Advocate Safehouse Project

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

Please See Attached for Answers to these questions

2. What do you view as your role if selected as a member of the Housing Commission?

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.
5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?
6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?
7. What experience do you have working with people on a board, commission or committee?
8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Section 4 - Personal and Professional Interests

1. Why are you interested in serving on the Housing Commission?

As a housing advocate and lifetime resident of Glenwood Springs, I would like to be a voice for those who are in need of a safe and affordable home.

2. What do you view as your role if selected as a member of the Housing Commission?

I would like to help find solutions for more affordable housing options.

3. What personal or professional experience do you have relative to the mission of the Housing Commission (see Powers and Duties attached)?

This is all new to me; however, being in Glenwood for over 30 years I have seen a tremendous amount of change. I am excited to potentially join a commission that is looking for solutions to a big issue in the City of Glenwood.

4. Have you previously served in any policy advisory capacity relative to Housing? If so, state your role.

No, I have not.

5. What do you see as the role that Housing play in the character and function of the Glenwood Springs Community?

Housing and the Housing Commission are a big part of the character and function of our town. Helping find solutions and guides that will help keep the wages and cost of living on and equal playing field.

6. Can you separate yourself from your personal opinions and represent the City's goals, policies, plans and the Glenwood Springs Municipal Code in an equitable fashion?

Yes

7. What experience do you have working with people on a board, commission or committee?

Very Little

8. Are you able to attend a monthly meeting of the Housing Commission held at 4:00pm on the second Wednesday of each month?

Yes