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## D R A F T M E M O

TO:	<u>Cathie Pagano</u>	DATE:	<u>December 8, 2021</u>
FIRM:	<u>Gunnison County</u>	JOB NO.:	<u>3445c</u>
ADDRESS:	<u>221 N. Wisconsin Street, Suite D</u> <u>Gunnison, Colorado 81230</u>	PROJECT:	<u>Whetsone Affordable Housing</u>
		SUBJECT:	<u>Water and Sewer options</u>

Dear Cathie,

JVA has been hired by Trestle Strategy Group as part of their contract with Gunnison County to conceptually design civil components of the proposed affordable housing development at 25115 Highway 135, just south of the Town of Crested Butte. The proposed development parcel is bordered by Riverland Industrial Park to the south, Highway 131 and Skyland to the east, the Slate River to the west and several privately owned parcels to the north. The site is currently vacant but has been graded at some point in the recent past. Several past developments have been proposed on this parcel and the grading work may have been past beginnings of construction of these developments. There is also an existing water well on site. Documents provided by the County show this well is permitted for domestic use with a maximum flow of 15 GPM. The proposed density has been estimated at 200 units.

JVA has reviewed existing asbuilt maps of the Skyland water system and the East River sanitary sewer system as well as discussed the possibility of tying into those systems with both systems district manager, Mike Billingsley. JVA has also discussed the possibility of tying into the Town of Crested Butte water and wastewater systems. JVA has been told that Riverland currently uses septic fields for their sanitary sewer, but the system does not operate well, and that Riverland would be interested in connecting to the proposed developments sanitary sewer system. This could be an option whether the development ties into an existing system or builds its own sanitary sewer plant. An agreement to share infrastructure costs could be put in place.

Based on the number of proposed units, the estimated daily wastewater flow would be around 50,000 gallons per day. The proposed lift station in options 1 and 2 and the proposed wastewater treatment plant would need to be designed to handle that flow.

### Whetstone Affordable Housing Water and Sanitary Sewer Options

**1. Option 1 - Connect both water and sanitary sewer to the existing Skyland water and East River sanitary sewer systems.**

- The Skyland water system and the East River sanitary sewer system would both need to be tied into existing infrastructure in Brush Creek Road. The proposed water main would tie in to an existing Skyland water main at the intersection of Brush Creek Road and Slate River Road. A sanitary lift station would be required to pump sewage from the proposed site to the high point of the existing East River force main near the intersection of Brush Creek Road and Skyland Drive.
- Skyland water and East River sanitation would both require tap fees and/or require the development to pay for new infrastructure costs. The current East River wastewater plant is near capacity and does not currently have the capacity to accept the proposed flows from the Whetstone development. There has been some design done on an expansion of the existing East River waste water plant, but this expansion has not been



fully designed or permitted. All these costs could be negotiated with the district, but current tap fees have been included in our cost estimates.

- Infrastructure costs could be shared with Riverland or any other user.
- CDPHE will push to tie the development's infrastructure to existing systems, but more so the sanitary system.
- Separate fire water storage will most likely not be needed.
- Does not use the existing water well for domestic use. Would need to check water rights for permitted uses.
- Upgrades to the existing wastewater plant would need to be designed, permitted and constructed before Whetstone could tie in.

Conceptual Infrastructure Costs	\$2,325,550
Capital/Tap Fees	\$8,519,400
<b>Total Capital Costs</b>	<b>\$10,844,950</b>
<b>Cost per Unit</b>	<b>\$54,224</b>

Estimated Operating Costs        \$248,400 per year

**2. Connect both water and sanitary sewer to the existing Town of Crested Butte water and sewer systems.**

- The Town of Crested Butte water and sanitary sewer systems would both need to be tied into at the intersection of Red Lady Avenue and Highway 135. This tie in is approximately 10,000 feet from the site. A sanitary lift station would be required to pump sewage from the proposed site to this point. Because of the distance required to pump, hydrogen sulfide can build up in the force main. Mitigation of this issue is included in the cost estimate.
- Tap fees for water and sanitary sewer for the Town of Crested Butte have been included in the cost estimate. Tap fees outside the town limits are 1.5 times the listed in town tap fees. The town has indicated that the tap fees are negotiable, especially for affordable housing. The Town has indicated that the water and wastewater systems have the capacity to accept the proposed flows from the Whetstone development.
- Infrastructure costs could be shared with Riverland, Brush Creek or any other user.
- CDPHE will push to tie the development's infrastructure to existing systems, but more so the sanitary system.
- Separate fire water storage will most likely not be needed.
- Does not use existing water well for domestic use. Would need to check water rights for permitted uses.

Conceptual Infrastructure Costs	\$5,315,530
Capital/Tap Fees	\$5,400,000
<b>Total Capital Costs</b>	<b>\$10,715,530</b>
<b>Cost per Unit</b>	<b>\$53,577</b>

Estimated Operating Costs        \$191,600 per year



**3. Use existing well for water system, build wastewater treatment plant.**

- CDPHE will push to tie the development's infrastructure to existing systems, but more so the sanitary system.
- A water system will need to be designed, permitted with CDPHE and constructed. This will require storage tanks, treatment and to be overseen by a licensed water operator. Storage of domestic and fire protection water will be required.
- A wastewater treatment plant will need to be designed, permitted with CDPHE and constructed. It is estimated that this plant will need a capacity of around 50,000 gallons per day. This will require treatment tanks, a direct discharge to the Slate River and will need to be overseen by a licensed operator.
- Design, permitting and construction of a wastewater treatment plant is estimated to take around 3 years.

<b>Total Capital Costs</b>	<b>\$9,044,750</b>
<b>Cost per Unit</b>	<b>\$45,233.75</b>

Estimated Operating Costs      \$360,000 per year

Signed: \_\_\_\_\_

J.R. Spung, P.E.  
JVA

Copies to: Trestle Strategy Group \_\_\_\_\_

jv DeSousa \_\_\_\_\_