

November 21, 2019

Mayor Judith R. Nissula
City of Cascade
P.O. Box 649
105 S. Main St.
Cascade, Idaho 83611

Re: Opinion of Impact of Cascade River Ranch Development and associated Review of T-O Engineers Cascade Water and Sewer System Impact Studies (memos)

Dear Mayor Nissula:

We have reviewed T-O Engineers' City of Cascade, ID Lagoon System Upgrade memo dated November 15, 2019 (attached) and City of Cascade Water Supply and Storage Assessment memo dated November 15, 2019 (attached) and have the following comments.

These comments augment the preliminary review comments made by Schiess & Associates, regarding the addition of the Cascade River Ranch Development (Development), by letter to the City dated June 11, 2019.

Wastewater

The City's wastewater treatment plant can accommodate the Development, as described in T-O Engineers' November 15, 2019 memo, by coordinating system upgrades with phasing of the Development. The City's sewer availability fees assessed to each new user will be adequate to pay for their share of treatment improvements at the treatment plant.

Our earlier opinion of the impacts to the City sewer collection and treatment system remains basically unchanged. We agree with the findings of the T-O Engineers' memo regarding treatment. Modest incremental improvements to the treatment plant, funded by existing user fees and sewer availability fees, should enable the City to expand capacity (add mechanical aeration) to continue to serve the City and the entire Development.

The Development will require a lift station and pressure sewer line connected to an existing pressure sewer line and gravity line in the existing collection system. We suspect that the portion of the existing collection system that will service this Development may be at or near capacity at full buildout. The impact on the existing collection system from the point of connection to the final lift station should be modeled to verify this preliminary assessment. The City may require the Development to upgrade gravity sewer lines outside of the Development to provide adequate capacity if proven to be necessary. The new lift station, pressure sewer line, and gravity sewer line within the Development should be designed and constructed to meet the City's requirements and DEQ wastewater rules. The City should require review of the construction documents and provide inspection during construction of these facilities.

Although T-O Engineers' November 15, 2019, memo identifies potential treatment system upgrades, a Sewer Facility Planning Study will be required to determine which upgrades should be implemented, and when to implement them. The City should apply for grant funding in early January 2020 to complete a Sewer Facility Planning Study. A current study will help the City comply with the soon to be issued IPDES permit and will be critical if the City approves the Development.

Drinking Water

The City's potable water system can accommodate the Development, but the City must take action to properly meet current summertime maximum day demands and to meet additional demands that will gradually accumulate from the Development.

To provide water to the current users, the primary well operates non-stop and the backup wells supplement the output of the primary well a few hours a day during the months of July and August (personal communication with the system operator). This does not meet the requirements of Paragraph 17 of IDAPA 58.01.08.501 of the Idaho Drinking Water Rules. The City should take immediate actions to correct the situation by implementing modest, short-term irrigation restrictions and completing a Water System Facility Planning Study. The study will surely recommend construction of another supply well.

Since the Development is proposing a self-operated, non-potable sprinkler irrigation system independent of the City's drinking water system, the per-user demand on the system from those in the Development will be small compared to users who rely on the drinking water system for in-house use and outside irrigation. But the large number of new users proposed for this Development aggregate into a significant impact. Although T-O Engineers estimated per capita use of those in the Development of 120 gpcd, we believe that 100 gpcd would be acceptable. Using 100 gpcd and the same peak factor used in the T-O memo, the Development would require 220 gpm of additional maximum day demand supplied by a new well at buildout. The Development appears to have a minimal impact to required storage.

If the City implements modest, short-term irrigation restrictions, completes a Water System Facility Planning Study, and develops another supply well, the water system will be able to supply in-home use to the entire Development with full source redundancy. After the new well is constructed, the modest, short-term water restrictions could be dropped. Water availability fees collected from new connections and existing user fees will pay for their share of developing an additional supply well.

It is reasonable to assume that the City's 12-inch water line along SH-55 will provide adequate distribution and fire flow to the Development at full build-out. This should be verified with a calibrated water model. Calibrated water models are valuable planning tools for water system operators and routinely included in facility planning studies. These facilities should be designed and constructed to meet the City's requirements and DEQ drinking water rules. The City should require review of the construction documents and provide inspection during construction of these facilities.

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Summary

In our opinion, the City's wastewater and drinking water systems will be able to serve the Development with proper planning, collection of water and sewer availability fees, and coordination of needed improvements with development phasing.

The City should submit Letters of Interest for DEQ planning funds in January 2020 for the water and sewer systems. If the Development is approved, its water and sewer demands should be included in the facility planning studies.

Please feel free to contact us if you have any questions.

Sincerely,



Paul H. Scoresby, PE

Cc: Horrocks Engineers

Attachments: T-O Engineers' City of Cascade, ID Lagoon System Upgrade memo dated
November 15, 2019
T-O Engineers' City of Cascade Water Supply and Storage Assessment memo
dated November 15, 2019