

MEMORANDUM

DATE: June 12, 2026
TO: Chance Baxter
Bear River Water Conservancy District
102 W. Forest Street
Brigham City, UT 84302

FROM: Ridley Griggs, P.E.
Hansen, Allen & Luce, Inc. (HAL)
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SUBJECT: Sunset Vista Subdivision
Development Review

PROJECT NO.: 091.02.126

DRAFT

INTRODUCTION

This memorandum is a hydraulic evaluation to determine the water infrastructure necessary to serve the Sunset Vista Subdivision development.

The development is located in the Collinston system of the BRWCD service area. It is east of Highway 38 and north of Deweyville Cemetery. The developer proposes 11 single-family lots. The purpose of this memo is to identify appropriate peak water demands, recommend water line sizing, and analyze pressures during peak demands.

HYDRAULIC MODELING REQUIREMENTS

The Collinston system provides water for indoor uses, irrigation, and fire protection. The following are peak day demands, fire flow demands, and pressure requirements as specified by the District and Utah Administrative Code.

- 20 psi residual pressure during Peak Day + Fire Flow Events (R309-105-9(2)(a))
- 30 psi during peak instantaneous demands (R309-105-9(2)(b))
- 40 psi during peak day demands (R309-105-9(2)(c))
- 150 psi maximum static pressure (R309-550-5(1)(b))
- 1,785 gpd/ERC for peak day demand
- Fire flow requirement of 1,000 gpm for 2 hours

WATER DEMANDS

Peak day water demands for the model were estimated based on information provided in the developer's submittal. The developer proposes 11 single-family lots for a total of 11 ERCs. The level of service (LOS) provided by the district was used to compute the total water demand for the development. See Table 1.

Table 1
Sunset Vista Subdivision Water Demands

ERCs	LOS (gpd/ERC)	Total Water Demand (gpm)
11	1,785	13.6

ASSUMPTIONS

The following assumptions were made for this analysis:

- This review is focused on hydraulic performance. Source and water rights capacity for the system as a whole was not considered.
- A fire flow requirement of no more than 1,000 gpm will be specified by the local fire authority.
- The development will connect downstream of the Collinston system South booster.
- 8-inch diameter pipes will be constructed inside the development.

HYDRAULIC ANALYSIS – DRINKING WATER

Drinking water pipes were put into the model as required to provide local transmission and fire flow capacity. Water demands were entered into the model, and the system was checked to ensure adequate hydraulic performance. The model was also used to test fire flow capacity for the development. Findings are summarized in this section.

Findings

The development was modeled during peak day and peak day plus fire flow scenarios. Results from the modeling analysis are as follows:

- The model indicates an available fire flow capacity of at least 1,000 gpm for 2 hours.
- The model indicates that peak day pressures in the development would range from approximately 125 psi to 136 psi.
- The model indicates that diurnal pressure variations in the development would be less than 10 psi under peak day conditions.

CONCLUSIONS AND RECOMMENDATIONS

The following are key conclusions and recommendations from this analysis:

1. The model indicates adequate service pressures under peak day conditions and a fire flow capacity of at least 1,000 gpm for 2 hours assuming 8-inch pipes are constructed inside the development and that the development will connect to BRWCD pipes downstream of the Collinston South Booster Station.

