

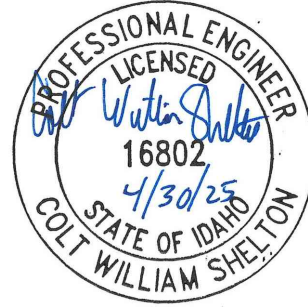
Technical Memorandum

DATE: 4/30/2025

TO: Jeff Bateman, Manager

FROM: David Watkins, P.E.
Colt Shelton, P.E.
Braxton Klas, P.E.

SUBJECT: IR-25-01 (Pine Creek Ranch)



General Note: The request uses the latest Master Plan model to determine the specific improvements described below, and the improvements are sized for buildout conditions.

I. Engineer's Notes

A model run was completed to analyze the downstream impacts of developing with a mixture of R4 and R8 densities east and southeast of Woodlands Dr on undeveloped parcels (parcels: RPM00000150605 (northern, within District) and RP18N03E154641(southern, outside of District)). The application information is attached to this report. The existing parcels are zoned R4, which would result in 634 EDU's total. The development was modeled as connected to the existing sewer lines running west of the northern parcel in Woodlands Dr, and to the existing sewer lines running north and west in Fox Ridge Ln. Wastewater generation was estimated based on the total area of R4 and R8 areas within these parcels, but not exceeding the existing R4 total EDU's. The development is in parcels zoned for residential. The development flows were distributed in the model based on discussions with, and layouts provided by the developer. In general, the layouts indicate two main sewer basins. One basin goes to Woodlands Dr and the larger basin goes to Fox Ridge. The flows from the proposed layouts are added to the model in the Woodlands Drive basin in manholes MH9AC53.020 (26,306 GPD) and MH9AC53.030 (17,117 GPD), and in the Fox Ridge basin in manhole FR.14 (117,786 GPD).

II. Results

The proposed development project location is shown on **Figure 1** with flow direction shown by the red arrow.

Model results indicate the requested development is in line with the flows anticipated in the Master Plan for buildout condition and indicates the need for project B4 and B6. In addition to these buildout projects, the flow from this development also passes through existing project E4. The model does not account for pipe condition other defects. The District's goals are to improve reliability and capacity in the system and ultimately remove surcharge in the manholes during a design storm event. Based on the location of this development (IR-25-01), the project would require upsizing pipes as noted in the Master Plan, Volume II projects E4, B4, and B6, which are summarized below:

- Project E4 (Figure 2)
 - Install 308 LF of new 12-inch pipe and upsize 215 LF of pipe to 15-inch pipe.
- Project B4 (Figure 3)
 - Upsize 668 LF of pipe to 12-inch pipe.
- Project B6 (Figure 4)
 - Upsize 1,280 LF of pipe to 10-inch pipe.

This development is located upstream of LS 25 which is identified in the Master Plan as needing rehabilitation in the next 5-10 years. The pumping capacity at LS25 is less than the modeled flows and pumps will be required to be upsized for this development project.

Due to the request to annex one parcel into the District for this development, additional requirements associated with infrastructure, facilities, or equipment may be required by the Board to address added risk to the impacted facilities. These could include:

- Replacement of older equipment
- Upsizing of generators at impacted lift stations
- New generators at impacted lift stations that don't currently have one

Figure 1 - Project Location

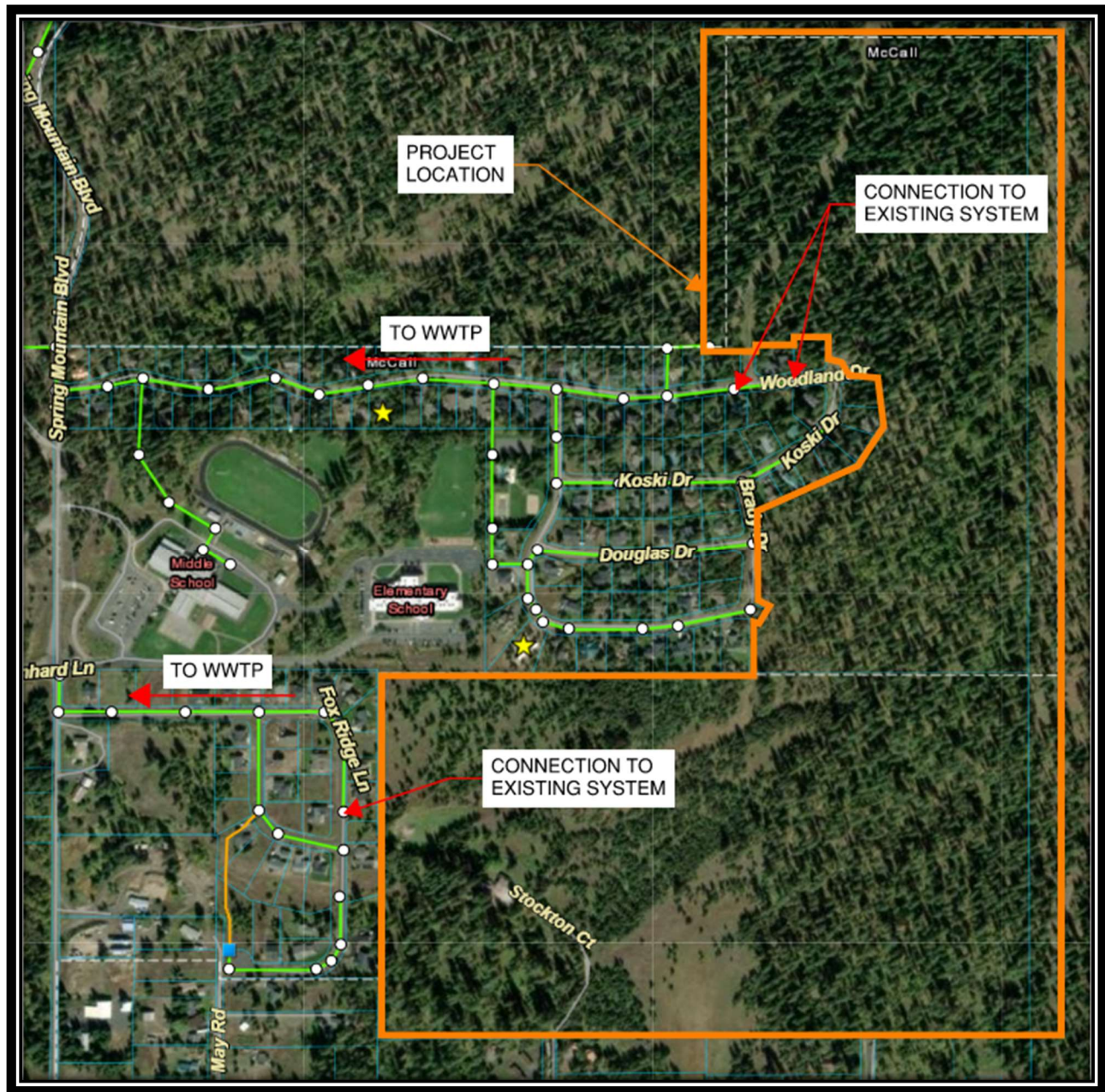


Figure 2 - Project E4



Figure 3 - Project B4



Figure 4 - Project B6

