

Water Quality and Detention Design Narrative

We have reviewed the 170th Ave. and Merlo Rd. corridors and conceptual profiles and have identified the potential locations for water quality/detention sites. Four water quality/detention sites have been identified to treat/detain the increase in impervious areas of the 170th Ave and Merlo Rd projects. The calculations assume a five lane section with 6' bike lane and 8' sidewalk on both sides of the street for 170th Ave and Merlo Rd corridors. Detention modeling have not been completed for these sites to determine the dimension of these facilities. The approximate sizes of these facilities have been based on the modeling for 158th and Jenkins projects, applying the proportionate factor of drainage basin impervious to determine the facility dimension for 170th Ave and Merlo Rd projects. The four facility locations with approximate dimension are listed below:

1. East of 170th Ave and South of Sullivan Ln: 18' wide x 250' long.
2. East of 170th Ave at Vendla Park Ln: 30' wide x 270' long.
3. North of Merlo Rd and East of Merlo Dr: 18' wide x 185' long.
4. West of Merlo Rd and North of railroad track on PGE property: 15' wide x 140' long.

1st Location:

This water quality/detention pond will treat the impervious surface on 170th Ave corridor between SW Merlo Rd and W Baseline Rd but is located in a wetland area and will need to be under the roadway or the wetlands will need to be mitigated.

2nd Location:

This water quality/detention pond will treat the impervious surface on 170th Ave corridor between SW Alexander St and SW Merlo Rd.

3rd Location:

This water quality/detention pond will treat the impervious surface on Merlo Rd corridor between SW 170th Ave and approximately 1200 feet north of Merlo Ct (crest point of Merlo Rd).

4th Location:

This water quality/detention pond will treat the impervious surface on Merlo Rd corridor between the street crest point (see location 3) and SW Jenkins Rd.

The design has not utilized pervious sidewalk as an option to reduce the imperviousness for these projects. If this method is selected, there will be some reduction in the dimension of the facilities identified above. Also, the facility at location #4 could be combined with the 158th/Jenkins project to create a regional facility that can serve both projects. The attached exhibits show the locations of the facilities identified and discussed above.