

INTEROFFICE MEMO



August 19, 2024

FROM: Doug Pike, PE, District Engineer

TO: Guy Savage, General Manager

SUBJECT: Peak Flow Factors (PFFs)

The several analyses performed regarding estimated wastewater flows for Los Olivos CSD seem to vary widely, primarily because of different “peak flow factors (PFFs)” also known as “peaking factors” (PFs). Engineers design wastewater treatment plants, sewer mains, and effluent disposal systems based on anticipated peak flows. **Effluent disposal systems**, the real topic of this memo, are specifically designed by selecting an appropriate PFFs to account for inflow and infiltration (I&I) into the collection system during stormwater events.

The biggest issue with widely ranging PFFs is the need to get a handle on a reasonable (not overly conservative) design capacity criteria for percolation chambers. We need to determine a recommended size of an easement within the available open space in or adjacent to the District to develop a budget.

I recommend we have a professional firm address this question in a focused way. My suggested scope for this effort is:

1. Review the following studies addressing estimated flows and peaking factors:
 - a. Stantec Wastewater Loading Technical Memorandum.
 - b. Stantec Basis of Design Report for the Los Olivos CSD.
 - c. GSI-Confluence Effluent Disposal Alternatives Evaluation Technical Memorandum.
 - d. REGEN Basis of Design Report Los Olivos Wastewater Hybrid Collection Analysis.
2. Obtain recorded flow data from 5 other regionally located wastewater treatment plants and systems of a similar size and condition and perform a comparison study to validate recommended PFFs.
3. Provide an independent recommendation supporting the most appropriate range for PFFs, and potential justifications and risks associated with using the low-range numbers.
4. Discuss how the following two treatment options could justify a reduced PFF by providing a permitted wastewater outflow to Alamo Pintado creek as a backup effluent disposal method:
 - a. STEP or gravity collection to centralized treatment (secondary with nitrate reduction and disinfection.)
 - b. STEP or gravity collection to centralized treatment (tertiary/MBR with nitrate reduction and disinfection.)
5. Considering the Regional Water Quality Control Board's policy or requirement for redundancy and set-aside land, recommend a minimum practical required easement size for each of the following:
 - a. Zones 1 & 2 (Possible 1st Phase Project) in the REGEN Basis of Design Report Los Olivos Wastewater Hybrid Collection Analysis.
 - b. Full District Alternatives A, B, C & D in the REGEN Basis of Design Report Los Olivos Wastewater Hybrid Collection Analysis.

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