



Memo

Date: Friday, April 24, 2020

Project: Fyffe Grade Separation Project

To: Glenn Armstrong

From: Kevin Fellows

Subject: Fyffe Grade Separation Project (Fyffe Road) – Storm Water Quality

The Fyffe Grade Separation Project (Fyffe Road) is a proposed transportation project in the Port of Stockton and is defined as a priority development project based on the NPDES Permit Order No. R5-R52007-0173, NPDES NO. CAS083470. A Low Impact Development (LID) Strategy is being developed based on the Guidance and Standards for Transportation Projects and Green Streets Criteria. This strategy will present the source control, site design, and treatment control Best Management Practices (BMPs) that will be incorporated into the project to address potential pollutants of concern and preserve the beneficial uses of receiving waters. The LID Guidance and Standards for Transportation Projects has been developed by the Permittees to comply with the Municipal Stormwater Program Stormwater Management Plan to reduce the discharge of pollutants to municipal separate storm sewer systems (MS4). The BMP strategy for Fyffe Road is currently being developed for the project based on sizing of BMPs to treat the 85% average annual rainfall (rainfall depth = 0.62 inches). The City of Stockton's Stormwater Quality Control Criteria Plan (SWQCCP) development standards for streets and roads with more one acre or more of impervious area will be followed. Additionally, the site would comply with requirements of the State General Construction Activity Stormwater Permit (General Construction Permit), CAS000002. Order No. 99-08-DWQ

Hydrologic Conditions of Concern (HCOC) should be considered when the alteration of a site's hydrologic regime, due to a proposed project, would cause significant impacts on downstream channels and habitats. HCOCs are considered mitigated if they meet one of the following conditions:

- a) Additional onsite or offsite mitigation is performed to address potential erosion or habitat impact using LID BMPs.
- b) The project is developed consistent with an approved Watershed Action Plan that addresses HCOC for the downstream Receiving Waters.
- c) Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. (Generally, the HCOCs are not considered significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow).



In order to preserve erosion and protect beneficial uses due to HCOC's, the Fyffe Road mitigation strategy will address condition "a)" above and include mitigation for erosive flow velocities by providing adequate energy dissipation for flows discharged from proposed drain inlets and culvert crossings and detention basins are used to take peak flows. This strategy will ensure flow velocities are not increased at discharge points from the project.

The Fyffe Road project has been assessed for the feasibility for BMP installation. The following constraints have been identified.

- 1) Hydrologic Soil Type D soils within the project boundary limit the use of infiltration.
- 2) Underground Utilities are prevalent and the Rail Road line also runs along the Fyffe Road's right of way that will limit placement of BMPs.
- 3) High groundwater limits the depth of detention basis and possible use of other types of BMPs.

Given these constraints, this project will apply Green Streets Criteria and incorporate stormwater BMPS to maximum extent practicable given the constraints listed above and provide mitigation at the channel culvert crossings in the form of energy dissipation and detention basins will be incorporated into the landscape where possible to ensure downstream receiving waters are protected from increased erosion. Additionally, Asphalt dikes will be constructed at the grade separation to direct flow into catch basins that will be retrofitted with trash capture devices (BioClean Connector Pipe Screens (CPS)), prior to discharge into the energy dissipation devices at the basins. The CPS units provide 100% capture of trash and debris 5mm and larger.

This strategy will maximize stormwater treatment with in the available right of way through the removal of trash and other debris from the stormwater, while preserving flow velocities and reducing erosion downstream.