

[FULL] STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
Proposed Downey Energy Company Liquid Propane Storage Facility

The system will include a precast concrete outlet structure with multiple flow control openings. The system will connect to a structure in the bioretention area and ultimately discharge to the roadside gutter.

The project will provide channel protection (**Cp**), Overbank Flood Control (**Qp**), and Extreme Flood Protection (**Qf**) by use of the proposed underground detention system.

Overbank Flood Control (**Qp**) sizing is used to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development. Overbank control requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate to predevelopment rates. A comparison of the pre-developed and post-developed, 10-year peak discharge for each design point is shown within the summary tables below. The Overbank Flood Control requirement has been met for the design point.

Extreme Flood Sizing (**Qf**) is used to prevent the increase risk of flood damage from large storm events, maintain the boundaries of the pre-development 100-year floodplain and protect the physical integrity of stormwater management practices. Extreme flood protection requires stormwater storage to attenuate the post-development 100-year, 24-hour peak discharge rate to pre-development rates. A comparison of the pre-developed and post-developed, 100-year peak discharge for each design point is shown within the summary tables below. The Extreme Flood Sizing requirement has been met for the design point. The HydroCAD Model indicates a peak elevation within the new catch basin installed on the street of 179.69 during the 100-year storm. This elevation is artificially high because of limitations of the software. Roadway culverts are typically designed to carry the 10-year storm. The analysis shows that this is the case for the existing culvert that crosses the street. In the case of the 100-year storm, the collected stormwater will backcharge the bioretention area on site and will begin to sheet flow over the roadway at the low point in the road near this catch basin. Because the grade of the road is relatively mild the sheet flow would be shallow.

The following tables summarize the stormwater management system performance and discharge point parameters as found in the engineering calculations presented in Appendix B of this SWPPP. All post-development peak runoff rates are less than the pre-development rates at all off-site design points.

A 24 hour extended detention of the one-year storm event is used to protect stream channels from erosion. The required and proposed stream Channel Protection Volume (CPv) for each basin is shown within the summary tables below. The Channel Protection Volume requirement has been met for the design point.