Appendix 9.9
Hydrology and Water Quality Data

FUSCOE ENGINEERING

GARDENA TOD SPECIFIC PLAN

PRELIMINARY HYDROLOGY STUDY
AND LOW IMPACT DEVELOPMENT (LID) PLAN

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DATE PREPARED: AUGUST 24, 2020
DATE REVISED: JANUARY 5, 2021

PROJECT NUMBER: 1724-002-01

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

The proposed Gardena TOD Specific Plan Project ("Project", "Gardena Project") will redevelop 1.33 acres located at 12850 & 12900 Crenshaw Boulevard ("Project Site") in the City of Gardena (City), within the County of Los Angeles. The Project Site is bounded by Crenshaw Boulevard to the west, the Dominguez Drainage Channel to the east, and existing commercial land uses to the north and south.

The Project will consist of redevelopment of an existing parking lot and industrial/warehouse building into a multi-story apartment complex. The complex will be 8 stories in total, with 5.5 stories dedicated to apartment units and associated amenities and 2.5 levels dedicated parking. Proposed amenities include a pool and outdoor lounge area. A total of up to 265 apartment-style units are proposed. The proposed land uses will impact hydrology and water quality for the Project Site.

1.2. SCOPE OF WORK

As part of the environmental impact report (EIR) for the Project, this report will describe the existing and proposed surface water hydrology, surface water quality, and groundwater at the Project Site and immediate surrounding areas, as well as an analysis of the Project's potential impacts on each of these water resources.

2. ENVIRONMENTAL SETTING

2.1. SURFACE WATER HYDROLOGY

2.1.1. Regional

The Project Site is located within a watershed that the County of Los Angeles classifies as the Dominguez Watershed. The Dominguez Watershed covers approximately 133 square miles and is largely built out. Land uses generally consist of commercial, industrial, and single family residential. Stormwater collected from this watershed conveys westerly and south before discharging into the Pacific Ocean via the Los Angeles Harbor. Please refer to Appendix I for the County's watershed map.

2.1.2. Local

Stormwater runoff is collected and conveyed in Crenshaw Blvd that surrounds the Project Site. Stormwater sheet flows to Crenshaw Blvd and then travels along the curb gutter to the south. Runoff then enters the City's catch basin near the intersection of W 131st and Crenshaw Blvd on the eastern edge of the street. From there, runoff is piped to the Los Angeles County Flood Control District (LACFCD) catch basin near the intersection of W 134th St and Crenshaw Blvd, whereby it enters a storm drain pipe within the public right of way. After flowing into the LACFCD storm drain pipe, the runoff is then taken eastward within the Dominguez Channel. Please refer to Appendix J for the existing drainage connection from the Project Site to the public storm drain system.

The stormwater continues southerly through Dominguez Channel where it eventually discharges into the Dominguez Channel Estuary, the Los Angeles Harbor, the San Pedro Bay Near/Off Shore Zones and then to the Pacific Ocean.

2.1.3. On Site

In its existing condition, the Project Site is partially developed with an industrial/warehouse building and paved parking areas to the north and south. The existing Project Site stormwater runoff sheet flows to the south/southwest direction towards Crenshaw Blvd. All roof flows from the existing building are captured by a series of drains and discharge directly to ground level, where they join surface-level sheet flows and discharge to Crenshaw Blvd. Please refer to Appendix B for the existing drainage pattern of the site.

Hydrology analysis was conducted at the Project Site to determine any increases in peak flows during the 10-year, 25-year and 50-year storm event in the existing and proposed condition. See Table 1 below for existing conditions hydrology analysis results. See Appendix F for existing condition hydrology calculations. Please refer to Section 5.2.1 for the full analysis of comparing existing peak flows to proposed peak flows.

Table 1 - Existing Drainage Conditions

Drainage Area	Area (acres)	% Impervious	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
A1	1.33	100	2.70	3.32	3.79
Existing Total	1.33	--	2.70	3.32	3.79

Refer to Appendices F and G for output calculations.

2.1.4. FEMA

According to the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Map (FIRM), the Project Site is located within Zone X. Zone X depicts areas determined to be outside of the 0.2% (500-year) annual chance floodplain. Therefore, the processing of a CLOMR/LOMR, through FEMA, will not be required for this project. See Appendix E for FIRM map.

2.2. SURFACE WATER QUALITY

2.2.1. Regional

The Project Site is located within the Dominguez Channel Watershed, which is located within the larger Los Angeles Basin and West Coast Groundwater subbasin. Surface drainage generally flows to the south through the watershed before outletting to the Port of Los Angeles. Water quality within the Dominguez Channel Watershed is guided by the Los Angeles Regional Water Quality Control Board.

2.2.1.1. Beneficial Uses in Dominguez Channel Watershed

The existing and potential beneficial uses for the waters within the Dominguez Channel Watershed, where all of the surface water flows from the Project ultimately discharge are described below. Beneficial uses for the Dominguez Channel (Estuary to 135th St) are identified below.

Table 2 - Beneficial Uses of the Dominguez Channel (Estuary to 135th St)

MUN* - Municipal and Domestic Supply	**WILD*** - Wildlife Habitat
WARM* - Warm Freshwater Habitat	**RARE** - Rare, Threatened, or Endangered Species
REC-1* - Water Contact Recreation	**REC-2** – Non-Contact Water Recreation
Notes: * Potential beneficial use Source: Los Angeles Regional Water Quality Control Board Beneficial Use Table, found here: http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Beneficial_Uses/ch2/Revised%20Beneficial%20Use%20Tables.pdf	

See the source note in Table 2 for a table containing beneficial uses for all reaches of the Dominguez Channel that the Project ultimately discharges into downstream.

2.2.1.2. Impairments and TMDL's in the Dominguez Channel Watershed

CWA 303(d) List of Water Quality Limited Segments

Under Section 303(d) of the CWA, states are required to identify water bodies that do not meet their water quality standards. Biennially, the LARWQCB prepares a list of impaired waterbodies in the region, referred to as the 303(d) list. The 303(d) list outlines the impaired waterbody and the specific pollutant(s)

for which it is impaired. All waterbodies on the 303(d) list are subject to the development of a Total Daily Maximum Load (TMDL).

Total Maximum Daily Loads (TMDLs)

Dominguez Channel

Once a water body has been listed as impaired on the 303(d) list, a TMDL for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, non-point sources, and natural background conditions (including an appropriate margin of safety), without exceeding its water quality standard. Those facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL. In general terms, municipal, small MS4, and other dischargers within each watershed are collectively responsible for meeting the required reductions and other TMDL requirements by the assigned deadline.

The Los Angeles RWQCB has adopted TMDLs for various reaches of the Dominguez Channel for different pollutants. Table 3 summarizes existing 303(d) Impairments and TMDLs in the Dominguez Channel watershed.

Table 3 - Dominguez Channel List of 303(d) Impairments and TMDLs

Water Body	303(d) Impairment & TMDLs
Dominguez Channel (lined portion above Vermont Ave)	Copper, Indicator Bacteria (*303d only*), Lead, Toxicity, Zinc
Dominguez Channel (unlined portion below Vermont Ave)	Benthic Community Effects, Benzo(a)anthracene, Benzo(a)pyrene(3,4-Benzopyrene-7-d), Chlordane (tissue), Chrysene (C1-C4), Copper, DDT (tissue & sediment), Dieldrin (tissue), Indicator Bacteria (*303d only*), Lead, PCBs (Polychlorinated biphenyls), Phenanthrene, Pyrene, Toxicity
Los Angeles Harbor – Consolidated Slip	2-Methylnaphthalene, Benthic Community Effects, Benzo(a)anthracene, Benzo(a)pyrene(3,4-Benzopyrene-7-d), Cadmium (sediment), Chlordane (tissue & sediment), Chromium, Chrysene (C1-C4), Copper (sediment), DDT (tissue & sediment), Dieldrin, Lead (sediment), Mercury (sediment), PCBs (Polychlorinated biphenyls), Phenanthrene, Pyrene, Toxaphene (tissue), Toxicity, Zinc (sediment)
Los Angeles/Long Beach Inner Harbor	Beach Closures (*TMDL only*), Benthic Community Effects, Benzo(a)anthracene, Benzo(a)pyrene(3,4-Benzopyrene-7-d), Chrysene (C1-C4), Copper, DDT (Dichlorodiphenyltrichloroethane), PCBs (Polychlorinated biphenyls), Toxicity, Zinc (sediment)
Los Angeles/Long Beach Outer Harbor (inside breakwater)	DDT (Dichlorodiphenyltrichloroethane), PCBs (Polychlorinated biphenyls), Toxicity
San Pedro Bay Near/Off Shore Zones	Chlordane, PCBs (Polychlorinated biphenyls), Total DDT (sum of 4,4' and 2,4'-isomers of DDT, DDE, and DDD), Toxicity
Notes: Source: 2014 - 2016 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) – Statewide, found here: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml	

2.2.2. Local

Contaminants that may be found in stormwater runoff include sediments, trash, oils, pesticides, and metals. These contaminants originate from various areas such as roadway surfaces, roof tops, maintenance areas, and parking lots. During a rain event, these contaminants may be transmitted by the stormwater to a local storm drain system. The City of Gardena typically installs and maintains catch basin systems, along with metal grate plates, bars, and/or filtration collection baskets, to capture pollutants before they enter the local storm drain system.

To reduce contaminant loads from entering the storm drain system, the City conducts routine street cleaning operations as well as periodic cleaning and maintenance of the catch basins to reduce stormwater pollution within the storm drain system.

As part of the state-wide mandate to reduce trash within receiving waters, the City of Gardena is required to adhere to the requirements of the amended CA Trash Total Maximum Daily Load (TMDL). The requirements include the installation and maintenance of trash screening devices at all public curb inlets, grate inlets and catch basin inlets. The trash screening devices must be approved by the local agency and consistent with the minimum standards of the Trash TMDL.

2.2.3. On Site

The site currently consists of a light industrial/warehouse building and associated parking. There are no known existing water quality BMPs on-site. Redevelopment of the Project Site will result in modified drainage patterns.

Existing potential pollutants at the Project Site are likely to exist based upon current uses. Likely existing pollutants include oil & grease, trash and hydrocarbons from the parking areas as well as metals from the warehouse.

2.3. GROUNDWATER

2.3.1. Regional

The Project Site and City of Gardena overlie the Los Angeles Coastal Plain Groundwater Basin (Basin) which consists of four major subbasins: Hollywood, Santa Monica, Central and West Coast. Replenishment of the Basin occurs primarily through percolation of rainfall throughout the watershed via permeable surfaces, spreading grounds, and groundwater migration from adjacent basins. Injection wells are also used to pump freshwater along specific seawater barriers to prevent the intrusion of saltwater. Groundwater within the Basin generally flows in a south and southwesterly direction.

2.3.2. Local

The West Coast Subbasin covers approximately 160 square miles in the southwestern portion of the Los Angeles County Groundwater Basin. The Basin was adjudicated in 1961, with the California Department of Water Resources serving as Watermaster for the basin and maintaining SGMA reporting

requirements. Groundwater replenishment and recharge is managed by the Water Replenishment District of Southern California (WRD)[12].

Groundwater within the West Coast Basin is replenished from stormwater percolation and through imported and recycled water, that is injected in order to prevent seawater intrusion. Groundwater depth is monitored at various stations throughout the County of Los Angeles, accessible on the Los Angeles County Department of Public Works website (Groundwater Well Map). There is a monitoring well (County Well ID: 792W) located near the Project Site. Data from a 5/28/2019 monitoring event showed groundwater levels at 39 feet below surface level[3]. Groundwater elevations have been gradually increasing across sampling measurements from 2011.

The SWRCB's Geotracker website indicates there are three closed LUST sites within 250 ft of the Project Site. All three sites reflect a case history of soil contamination from hydrocarbon pollutants. The last of these three sites to complete necessary soil remediation activities was in February 2014[4].

2.3.3. On Site

Geotechnologies, Inc. performed geotechnical analysis of the Project Site on January 30, 2020. Based on on-site explorations conducted, the Project Site is located on alluvial clayey sands and silts. The site sits directly on 2-3 feet of fill soils consisting of clayey sand, sandy clay, and sandy silt. Beneath the fill soils are layers of stiff fine to medium-grained soils. These layers were encountered through the maximum boring depth.

Groundwater was encountered at 26 ½ to 28 feet below ground surface (bgs). Historically high groundwater levels were considered to be 25 feet bgs for the purpose of the report. The applicant desired to use mainly infiltration-based LID BMPs based on conversations between the City and FEI. As noted in the geotechnical report, infiltration opportunities may be limited by site conditions (infiltration rates, high concentrations of clay materials, Geotracker sites nearby).

[1] West Basin Municipal Water District. *West Coast Groundwater Basin*. Found here: https://www.westbasin.org/water-supplies-groundwater/west-coast-groundwater-basin

[2] Water Replenishment District of Southern California. Groundwater Basins Master Plan. Found here: https://www.wrd.org/sites/pr/files/GBMP_FinalReport_Text%20and%20Appendicies.pdf

[3] Groundwater levels for nearby station. Found here: https://dpw.lacounty.gov/general/wells/#

[4] GeoTracker, April 2020; Set 250 ft buffer: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=12850%20Crenshaw%20Boulevard

3. SIGNIFICANCE THRESHOLDS

CEQA significance criteria are used to evaluate the degree of impact caused by a development project on environmental resources such as hydrology and water quality. According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in any of the following:

A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
B. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    (i) Result in a substantial erosion or siltation on- or off-site;
    (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    (iv) Impede or redirect flood flows?
D. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
E. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Should the answers to these environmental factors prove to be a potentially significant impact, mitigation measures would be required to reduce those impacts to a less-than-significant threshold.

4. METHODOLOGY

4.1. SURFACE WATER HYDROLOGY

According to the Los Angeles County Department of Public Work's 2006 Hydrology Manual, drainage facilities in developed areas must meet a level of protection equivalent to the Urban Flood. Urban. The Urban Flood is runoff from a 25-year frequency design storm. All drainage facilities must be designed to convey the 10-year frequency design storm, regardless of location in developed or undeveloped areas.

The Project was analyzed under the 10-year frequency design storm as well as the 25-year frequency design storm in order to determine potential flood hazard impacts and the movement of surface water during design frequency storms. Additional analysis was performed for the 50-year design storm to demonstrate that the Project will not affect the Capital Flood conveyance capabilities of any drainage systems. See Appendices F and G for existing and proposed condition 10-year, 25-year and 50-year design storm peak flow calculations.

This hydrologic analysis was prepared using HydroCalc 0.3.1-beta software in conformance with the County's Hydrology Manual (2006). The HydroCalc program uses the Modified Rational Method to calculate the required time of concentration and designed flowrates for 10-, 25-, and 50-year storm events. The peak runoff for a drainage area is calculated using the formula Q= CIA, where

- Q= flowrate (cfs)
- C= runoff coefficient (unit less)
- I=rainfall intensity (in/hr)
- A= basin area (acres)

The HydroCalc calculator is supported by the County's online GIS system. This database is used to locate the Project Site's isohyet rainfall frequency as well as relevant soil type (please refer to Appendix D). The data collected is then used in the HydroCalc program to calculate peak stormwater runoff values for different design storm events.

4.2. SURFACE WATER QUALITY

4.2.1. Construction

Prior to the issuance of grading permits, the applicant is required by the City to provide of a Notice of Intent (NOI) and WDID Number issued from the SWRCB in accordance with the requirements of the General Permit to ensure the potential for soil erosion and construction impacts are minimized. In accordance with the updated General Permit (Order No 2012-0006-DWQ), the following Permit Registration Documents (PRD's) are required to be submitted to the SWRCB prior to commencement of construction activities:

- Notice of Intent (NOI);
- Risk Assessment (Standard or Site-Specific);
- Particle Size Analysis (if site-specific risk assessment is performed);
- Site Map;
- Storm Water Pollution Prevention Plan (SWPPP);
- Annual Fee & Certification.

The updated General Permit uses a risk-based approach for controlling erosion and sediment discharges from construction sites, since the rates of erosion and sedimentation can vary from site to site depending on factors such as duration of construction activities, climate, topography, soil condition, and proximity to receiving water bodies. The updated General Permit identifies three levels of risk with differing requirements, designated as Risk Levels 1, 2 and 3, with Risk Level 1 having the fewest permit requirements and Risk Level 3 having the most-stringent requirements.

The Risk Assessment incorporates two risk factors for a Project Site: sediment risk (general amount of sediment potentially discharged from the site) and receiving water risk (the risk sediment discharges can pose to receiving waters). Based on the Risk Level a project falls under, different sets of regulatory requirements are applied to the site. The main difference between Risk Levels 1, 2, and 3 are the numeric effluent standards. In Risk Level 1, there are no numeric effluent standard requirements, as it is considered a Low sediment risk and Low receiving water risk. Instead, narrative effluent limits are prescribed. In Risk Level 2, Numeric Action Levels (NALs) of pH between 6.5-8.5 and turbidity below 250 NTU are prescribed in addition to the narrative effluent limitations found in Risk Level 1 requirements. Should the NAL be exceeded during a storm event, the discharger is required to immediately determine the source associated with the exceedance and to implement corrective actions if necessary, to mitigate the exceedance. Risk Level 3 dischargers must comply with Risk Level 2 requirements for NALs in addition to more rigorous monitoring requirements such as receiving water monitoring and, in some cases, bioassessment, should NALs be exceeded.

4.2.2. Operation

The Project will also meet the City of Gardena Low Impact Development (LID) standards. Specifically, the City has adopted the County of Los Angeles Department of Public Works *Low Impact Development Standards Manual, February 2014,* to use as its guidelines for stormwater quality mitigation. In accordance with these LID standards, the Project will be required to provide on-site stormwater management techniques that are properly sized, at a minimum, to infiltrate, evapotranspire, store for use, and/or treat through a high removal efficiency biofiltration/biotreatment system, without any stormwater runoff leaving the Project Site to the maximum extent feasible, for at least the volume of water produced by the 85th percentile, 24-hour rain event.

Sizing of all stormwater treatment systems and calculation of stormwater quality design volume (SWQDv) will be done in accordance with the *Low Impact Development Standards Manual* and will utilize the Hydrocalc program to ensure accuracy.

4.3. GROUNDWATER

This report discusses the impact of the Project as it relates to the underlying groundwater conditions of the West Coast Groundwater Subbasin. The significance of the Project as it relates to the condition of the underlying groundwater table included a review of the following existing considerations:

- Identification of the West Coast Groundwater Subbasin as the underlying groundwater basin, and description of the level, quality, direction of flow, and existing uses for the groundwater
- Description of the location, existing uses, production capacity, quality and other pertinent data for spreading grounds and potable water wells in the vicinity (typically within a one-mile radius) and;

The analysis of the proposed Project impacts on groundwater conditions include a review of the following proposed considerations:

- Description of the rate, duration, location and quantity of extraction, dewatering, spreading, injection or other activities;
- The projected reduction in groundwater resources and any existing wells in the vicinity (typically within one-mile radius); and
- The projected change in local or regional groundwater flow patterns

In addition, short-term groundwater quality impacts could potentially occur during construction of the Project as a result of soil or shallow groundwater being exposed to construction activities, materials, wastes and spilled materials. These potential impacts are qualitatively assessed.

5. PROJECT IMPACT ANALYSIS

5.1. CONSTRUCTION

5.1.1. Surface Water Hydrology and Quality

Construction activities for the Project would include the demolition of the existing warehouse building, the construction of a new, residential podium structure, construction of interior, vertical parking, construction of proposed post-construction stormwater BMPs, and new landscape areas. Excavation for the proposed development will be required for building the new residential facility's pad and some re-grading of the existing lot, as well as the installation of the stormwater storage tanks for runoff from the proposed post-construction biofiltration BMPs. The maximum depth of excavation is estimated to be no more than 8 feet below ground surface (bgs) for the proposed internal parking structure and significantly less for the remainder of the Project Site. This excavation will occur mainly in the central portion of the Project Site and will require the export of soil from the site. These activities have the potential to temporarily alter existing surface drainage patterns and flows of the Project Site by diverting existing surface flows.

The Project will be required to comply with all applicable City grading permit regulations that pertain to necessary measures, plans, and inspections to reduce sedimentation and erosion. Thus, through compliance with these applicable City grading regulations, the Project would not substantially alter the Project Site drainage patterns in a manner that would result in substantial erosion, siltation, or flooding. As mentioned in Appendix A of this report, because the Project Site is greater than 1 acre in size, an NPDES General Construction Permit will be required to be filed with the State. As part of this permit, a SWPPP will be required to be implemented for the Project Site. This SWPPP will follow the BMP Construction handbook for construction activities. The BMPs will provide erosion control measures that will eliminate and or control pollutants from discharging from the site. It will also control any stormwater runoff and run-on tributary to the site. Therefore, with the implementation of the NPDES permit, in conjunction with compliance with regulations required as part of the City's permitting process to reduce potential flooding or erosion, construction activities will have a minimal effect on the Project Site's drainage patterns.

Based on the Project's construction scope and duration, a Risk Level Assessment will be performed during the creation of the SWPPP. All requirements associated with the Project's assessed risk level will be satisfied. See Table 4 below highlighting the various requirements for Risk Levels 1-3.

Table 4 - Risk Level Requirements

Visual Inspection						Sample Collection	
Risk Level	Quarterly Non-Storm Water Discharge	Baseline	REAP	Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
1	X	X		X	X		
2	X	X	X	X	X	X	
3	X	X	X	X	X	X	X [1]

Notes
[1] When numeric effluent level (NEL) exceeded.
REAP (Rain Event Action Plan)

In the event exceedances of receiving water quality objectives are observed, measures must be taken and documented within the SWPPP to improve discharge water quality and runoff effluent. This may include but not limited to increasing the size of existing BMPs such as sediment traps, adding more BMPs to the drainage area such as erosion control stabilizers, additional filtering and/or a reduction in active grading area.

Construction Best Management Practices (BMPs)

In accordance with the existing and updated General Permit, a construction SWPPP must be prepared and implemented for the Project Site, and revised as necessary, as administrative or physical conditions change. The SWPPP must be made available for review upon request, shall describe construction BMPs that address pollutant source reduction, and provide measures/controls necessary to mitigate potential pollutant sources. These measures/controls include, but are not limited to: erosion controls, sediment controls, tracking controls, non-storm water management, materials & waste management, and good housekeeping practices including the following:

- Erosion control BMPs, such as hydraulic mulch, soil binders, and geotextiles and mats, protect the soil surface by covering and/or binding the soil particles. Temporary earth dikes or drainage swales may also be employed to divert runoff away from exposed areas and into more suitable locations. If implemented correctly, erosion controls can effectively reduce the sediment loads entrained in storm water runoff from construction sites.
- Sediment controls are designed to intercept and filter out soil particles that have been detached and transported by the force of water. All storm drain inlets on the Project Site or within the project vicinity (i.e., along streets immediately adjacent to the project boundary) should be adequately protected with an impoundment (i.e., gravel bags) around the inlet and equipped with a sediment filter (i.e., fiber roll). Bags should also be placed around areas of soil disturbing activities, such as grading or clearing.
- Stabilize all construction entrance/exit points to reduce the tracking of sediments onto adjacent streets. Wind erosion controls should be employed in conjunction with tracking controls.
- Non-storm water management BMPs prohibit the discharge of materials other than storm water, as well as reduce the potential for pollutants from discharging at their source. Examples include avoiding paving and grinding operations during the rainy season (i.e., October 1 through April

30 each year) where feasible, and performing any vehicle equipment cleaning, fueling and maintenance in designated areas that are adequately protected and contained.

- Waste management consists of implementing procedural and structural BMPs for collecting, handling, storing and disposing of wastes generated by a construction project to prevent the release of waste materials into storm water discharges.

Prior to commencement of construction activities, the General Permit requires the Project SWPPP to be prepared in accordance with the site-specific sediment risk analyses based on the grading plans, with erosion and sediment controls proposed for each phase of construction for the Project. The phases of construction will define the maximum amount of soil disturbed, the appropriately sized sediment basins and other control measures to accommodate all active soil disturbance areas and the appropriate monitoring and sampling plans. Major phases of the construction for the Project are described below.

Mass & Rough Grading

During mass and/or rough grading, a substantial amount of soil disturbing activities or earthwork will occur. As a consequence, soil loss potential will be at its highest risk level to exceed NALs/NELs specified in the General Permit. Therefore, an effective combination of erosion and sediment controls must be implemented during this phase of construction.

This region requires the use of sediment basins or sediment traps to control the amount of sediment discharged off-site during the rainy season. Sediment basins or sediment traps generally act as primary sediment control facilities at downstream locations that provide final polish of runoff prior to discharging off-site. Therefore, they are a major element in a project's erosion and sediment control design and would reduce the risk from soil loss potential to a less than significant level.

Utility and Road Installation

In addition to the erosion and sediment control BMP requirements for the grading phase, the utility and road installation phase will introduce materials to the Project Site that may cause or contribute to exceedances of NALs specified in the General Permit. Materials include, but are not limited to hydrated lime, concrete, mortar, Portland cement treated base, and fly ash. For this reason, pH levels must be controlled at this stage through non-storm water management and waste and materials management BMPs. Stockpile management will also be important due to the trenching activities involved during utility installation. Should NALs/NELs be exceeded at any point in time, additional site management or good housekeeping BMPs shall be implemented and the source of pollution controlled.

Vertical Construction

Once utilities and roads are in place, sediment controls (such as sediment/desilting basins) found in the rough grade phase may no longer be applicable as previously designed, due to the installment of curb and gutter, catch basins, and storm drain infrastructure to convey runoff off-site per the post-construction condition. BMPs at this stage will thus be more focused on on-site sediment control BMPs and at discharge points (i.e., catch basin inlet protection). During vertical construction, a substantial amount of construction materials will be delivered to the site, and wastes generated from the site have the potential to negatively impact pH levels. Therefore, non-storm water management and waste and materials management BMPs will be employed regularly.

Final Stabilization and Landscaping

During final stabilization and landscaping, minimal construction will be taking place and the majority of the Project Site will be stabilized. The majority of activities will involve planting and landscaping lots and common areas. Sediment control at discharge locations and stockpile management will be of primary concern. Good housekeeping practices will continue in this phase of construction.

Through compliance with the General Permit including the preparation of a SWPPP, implementation of BMPs, and compliance with applicable City grading regulations, construction of the Project would not cause flooding, substantially increase or decrease the amount of surface water in a water body, or result in a permanent, adverse change to flow direction. The Project would also not result in discharges that would cause: (1) pollution that would impact the quality of waters of the State to a degree which negatively impacts beneficial uses of the waters; (2) contamination of the quality of the waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of diseases; or (3) nuisance that would be injurious to health, affect an entire community or neighborhood or any considerable number of persons, and occurs during or as a result of the treatment or disposal of wastes.

Construction of the Project would not result in discharges that would cause regulatory impacts within the Dominguez Channel watershed.

Therefore, impacts to surface water and hydrology and quality from project construction would be less than significant.

5.1.2. Groundwater Hydrology and Quality

Because the proposed site excavation is limited to a depth of approximately 8 feet bgs or less, it is not expected groundwater will be encountered. It is possible that perched water zones could potentially be encountered elsewhere on the Project Site during excavation. If perched groundwater was to be encountered, it would be directed to a dewatering system and discharged in accordance with all applicable rules and regulations under the NPDES General Construction Permit regulations and City grading permit conditions. As a result, potential construction-related groundwater hydrology impacts would be less than significant.

During on-site grading and building construction, hazardous materials, such as fuels, paints, solvents, and concrete additives, could be used and would therefore require proper management and, in some cases, disposal. The proper management of any resultant hazardous wastes will decrease the opportunity for hazardous materials releases into groundwater. Compliance with all applicable federal, state, and local requirements concerning the handling, storage and disposal of hazardous waste, will reduce to a less than significant level the potential for the construction of the Project to release contaminants into groundwater that could affect existing contaminants, expand the area or increase the level of groundwater contamination, or cause a violation of regulatory water quality standards at an existing production well.

5.2. OPERATION

5.2.1. Surface Water Hydrology

The Project Site currently consists of one light industrial/warehouse building and associated paved parking areas, resulting in 100% impervious surface coverage. The development of the Project will include the addition of landscaped areas throughout the Project Site, which will result in approximately 95% impervious surface coverage. As a result, the construction of the Project would result in a reduction in stormwater runoff during the 10-year, ,25-year, and 50-year frequency design storm event. In each storm event, stormwater flows in the proposed condition were less than existing due to increased pervious area (landscaping) associated with the proposed Project. For example, under existing conditions, the amount of runoff (25-year storm frequency) produced from the Project Site is 3.32 cubic feet per second (cfs). Following construction of the Project, runoff produced from the Project Site would be 3.31 cfs, representing a 0.01 cfs reduction in stormwater runoff. Please see Table 5 below for this analysis of the existing and proposed conditions at the Project Site.

Table 5 - Existing Vs Proposed Drainage Conditions

Condition	Area (acres)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
Existing	1.33	2.70	3.32	3.79
Proposed	1.33	2.69	3.31	3.78
Difference	0	-0.01	-0.01	-0.01
% Increase or Decrease from Existing to Proposed Conditions	--	-0.37%	-0.30%	-0.26%

Based on the above, the operation of the Project would reduce peak flow rates during storm events, would not result in flooding, and would not impact the capacity of the existing storm drain system. Additionally, the Project Site is located entirely in FEMA Flood Zone X, outside of the 100-year flood hazard area. No significant impacts due to flooding are anticipated. The Project Site is also located inland and is outside of all tsunami hazard zones and is not at risk of inundation by seiche. No flooding or inundation impacts are anticipated. Operational impacts to surface water hydrology would therefore be less than significant. Refer to Appendices F and G for output calculations.

5.2.2. Surface Water Quality

To meet local and state government regulations, stormwater management strategies such as BMPs will be implemented throughout the Project Site. As mentioned previously in this report, the Project will conform to the City of Gardena, County of Los Angeles LID standards as a guideline to implementing BMPs. These BMPs are designed to address problems resulting from stormwater runoff and pollution. Please see Table 6 below for anticipated pollutants to the Project Site.

Table 6 - Potential Pollutants

Potential Pollutants	Source of Pollutants
Sediment	Pedestrian, vehicle tracking, and runoff from landscaped areas (fertilizers)
Oils	Leakage from vehicles or other mechanical machines
Chemicals	Leakage from vehicles (hydrocarbons); runoff from landscaped areas (pesticides/fertilizers)
Metals	Parking, Leakage from vehicles
Trash/Debris	Pedestrians; vehicles; building operations & maintenance
Bacteria/Pathogens	Pedestrians (trash/debris); vehicular traffic/activities

The existing Project Site currently does not have any stormwater BMPs in accordance with the LA County LID Manual, which is due to the age of the current buildings on the site. Following construction of the proposed Project, stormwater will be treated by proposed BMPs prior to discharging into the public storm drain system, and potential pollutants will be contained and treated onsite before being discharged. Various BMPs across the Project Site will treat the "first flush" event, effectively treating the bulk of pollutant loads found in stormwater runoff. BMPs will be located and designed to effectively retain and treat runoff before it is discharged to the storm drain system. All proposed BMPs, including infiltration and biotreatment, will be appropriately sized and located to treat the design storm event.

To determine infiltration feasibility at the Project Site, one percolation test was performed and resulted in an infiltration rate of 0.03 in/hr. After discussions between the applicant, Fuscoe Engineering and the City, it was determined that infiltration BMPs with additional water storage components would be feasible to satisfy a portion of the SWQDv.

The feasibility of capture and use and full biofiltration treatment strategies were also assessed as part of conceptual site design. Capture and use was dismissed because the Project does not have a robust enough landscape scheme to provide adequate drawdown of the system. Further, treatment through biofiltration exclusively was deemed infeasible due to the bio-planter area needed to treat the 85th percentile storm volume of 4,094 cubic feet. The LID manual explains that biotreatment requires 1.5 times the amount of water storage of the 85th percentile storm. This would require the project to treat approximately 6,300 cubic feet of water, which corresponds to 6,300 square feet of planter area, assuming a 12-inch ponding depth. Given that the total available landscape space on the site is approximately 2,100 square feet, there is insufficient vegetation footprint on site to accommodate either capture and use or biofiltration treatment strategies.

Although the sub-standard infiltration rates are anticipated to increase drawdown times beyond the 3-day standard, the City of Gardena has expressed preliminary approval of the combination of infiltration with storage and biofiltration design. Currently, four drywells are proposed for the site. The design will also include additional storage to capture back to back storm events. Water from the storage will then be released to the drywells for infiltration. This design approach will satisfy approximately 90% of the SWQDv.

Accordingly, in tandem with infiltration, the Project will utilize biofiltration methods of stormwater treatment. For biofiltration, the rest of the required SWQDv (approximately 10%) will be treated within biofiltration planter areas located throughout the Project Site, particularly on the perimeter of the

proposed building. Water captured in these planter areas will be filtered through the soil and treated prior to ultimate discharge into the public storm drain system. The final footprint of the biofiltration planter areas will reflect the standard 1.5 volume multiplier for non-infiltration LID features. A preliminary LID design is included in Appendix H. This schematic LID design and associated treatment sizing and layout will ultimately be refined as part of site-specific final design within the LID Plan that will be required to be prepared as part of the Project. The Final LID Plan will be reviewed by City staff for compliance with the LID manual and for adequate selection and sizing of LID systems.

As shown in Table 7, the required peak mitigation flow rates (Qpm) and mitigation volumes (Vm) are shown for the Project Site. Please refer to Appendix H for calculations and a conceptual LID exhibit for the proposed Project Site.

Table 7 - Low Impact Development Calculations (85th Percentile)

Drainage Area	Area (acres)	Qpm (cfs)	Vm (ft3)	Vm (acre-feet)
Total	1.33	0. 49	4,094	0.09

The inclusion of the proposed LID treatment train is anticipated to reduce pollutant loads to levels below existing conditions. Impacts to surface water quality will be less than significant.

5.2.3. Groundwater Hydrology and Quality

The SWRCB's Geotracker website indicates there are no significant sources of soil or groundwater pollution within the Project Site. However, there are three closed LUST sites within 250 ft of the Project Site. The last of these three sites to complete necessary soil remediation activities was in February 2014[5]. The Project's design will ensure all proposed LID BMPs meet applicable LA County LID Manual requirements to the maximum extent practical. The proposed LID BMP systems are designed to safely convey stormwater runoff into the sub-surface soil without the threat of contaminant mobilization. Additionally, the West Coast Subbasin is managed by the Water Replenishment District of Southern California (WRD) as well as the California Department of Water Resources (CDWR) and is anticipated to meet all groundwater demands. Groundwater pumping and storage are covered through a robust master planning process. The Project will follow all requirements regarding groundwater quality to ensure that no impacts from proposed stormwater infiltration occur. Based on the design of the Project's stormwater storage tank systems, operational effects to groundwater quality are considered less than significant.

[5] GeoTracker, April 2020; Set 250 ft buffer: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=12850%20Crenshaw%20Boulevard

6. IMPACT ASSESSMENT

6.1. SURFACE WATER HYDROLOGY IMPACTS

The following impact assessments are based on the significance criteria established in Appendix G of the CEQA Guidelines in Section 3 of this report for surface water hydrology.

Impact C: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

(i) Result in a substantial erosion or siltation on- or off-site;

Impact Analysis: The Project is not anticipated to alter existing drainage patterns nor cause substantial erosion or siltation on or off site. The Project Site is located in a largely built-out, impervious area and is not expected to contribute any additional sediment to water bodies or increase the risks of erosion. LID features will retain sediment on-site and prevent its movement into local water bodies. The greatest on-site erosion risk will occur during construction. Per the Impact Analysis in Section 6.2 Impact A and Section 5.1.1, the Project Site will comply fully with the Construction General Permit and is not expected to generate excess sediment or be at risk of erosion. No significant impacts to sedimentation or siltation are anticipated.

(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Impact Analysis: As discussed in Section 5.2.1, the Project has been proven to reduce peak flows for the 10- , 25-, and 50-year design storm events based on a decrease in impervious surfaces over the existing condition. Peak flows will be reduced, and the time of concentration of peak flows will be increased, as more runoff will be retained on-site. Stormwater detention tanks that are proposed for the site will also reduce off-site flow rates and volumes. The Project will not have a significant impact on flooding either on or off-site.

(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems; or

Impact Analysis: As discussed in Section 5.2.1, the Project has been proven to reduce peak flows for the 10- , 25-, and 50-year design storm events based on a decrease in impervious surfaces over the existing condition. Downstream infrastructure will not be adversely impacted by implementation of the proposed Project, and no existing capacity issues will be exacerbated. Therefore, the Project will not have a significant impact existing or planned stormwater drainage systems.

(iv) Impede or redirect flood flows?

Impact Analysis: As discussed in Section 5.2.1, the Project's proposed LID BMPs, will reduce off-site flows. In the case where flood flows happen, there will be nothing to impede or redirect flows. Flows will move toward Crenshaw Blvd and then to the Dominguez Channel in any scenario. The Project will not have a significant impact on flooding either on or off-site.

Impact D: Would the Project risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone?

Impact Analysis: The Project Site is located entirely in a FEMA Flood Zone X, is inland, and is not at risk for inundation by seiche. See Appendix E for FEMA FIRM map exhibit. No significant impacts due to flooding or inundation are anticipated.

Impact E: Would the Project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Impact Analysis: See the Impact Analysis in Section 6.1 Impact D and Section 5.2.1. Implementation of the Project will reduce peak flows for both the 10-year, 25- and 50-year storm event and would therefore not adversely impact the capacity of the existing on or off-site storm drain systems. All drainage facilities tributary to the Project Site will see reduced flows during storm events, and will not be at a larger risk of flooding. No significant impact to storm drainage systems is anticipated.

6.2. SURFACE WATER QUALITY IMPACTS

The following impact assessments are based on the significance criteria established in Appendix G of the CEQA Guidelines in Section 3 of this report for surface water quality.

Impact A: Would the Project violate any water quality standards or waste discharge requirements or otherwise degrade stormwater quality?

Impact Analysis: The Project will comply with all City, State, and Federal grading permits and construction regulations, and will not violate any standards. Section 5.1.1 provides a discussion of the Construction General Permit and the actions that will be taken to comply during construction of the Project. LID BMPs will be implemented on-site during the operations and maintenance phase of the Project in order to ensure that no water quality standards are violated. See Section 5.2.2 for a discussion of stormwater quality initiatives that will be taken during the operations of the proposed Project. Various BMPs across the Project Site will treat the "first flush" event, effectively treating the bulk of pollutant loads found in stormwater runoff. BMPs will be located and designed to effectively retain and treat runoff, up to the design storm event, before it is discharged to the storm drain system. The Project will not have a significant impact on water quality standards, discharge requirements or to stormwater quality overall.

Impact C: Would the Project provide substantial additional sources of polluted runoff?

Impact Analysis: See the Impact Analysis in Section 6.2 Impact A and Section 5.2.2. All proposed LID BMPs will meet water quality standards at local, State, and Federal levels. No significant impacts to water quality runoff that flows into storm drainage systems tributary to the Project Site are anticipated.

Impact D: Would the Project risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone?

Impact Analysis: See the Impact Analysis in Section 6.1 Impact D and Appendices A and E. The Project Site is located inland, in a FEMA Flood Zone X, outside of all tsunami hazard zones, and is not at risk of inundation by seiche. No significant impacts to water quality during potential inundation of the Project Site are anticipated.

Impact E: Would the Project conflict with or obstruct implementation of a water quality control plan?

Impact Analysis: See the Impact Analysis in Section 6.2 Impact A and Section 5.2.2. The Project applicant will submit a LID plan to the City of Gardena once proposed site plans are finalized. All proposed LID BMPs will meet water quality standards at local, State, and Federal levels. No significant impact to storm drainage systems tributary to the Project Site are anticipated.

6.3. GROUNDWATER IMPACTS

The following impact assessments are based on the significance criteria established in Appendix G of the CEQA Guidelines in Section 3 of this report for groundwater quality and hydrology.

Impact A: Would the Project otherwise substantially degrade groundwater quality?

Impact Analysis: See the Impact Analysis in Section 6.2 Impact A and Section 5.2.3. The Project Site is located within 250 ft of three (3) inactive Geotracker sites where increased soil contamination would occur. All three sites are closed LUST Cleanup Sites, so all cleanup activities have been completed. All applicable regulations will be followed during project construction and operation to ensure that no pollutants are mobilized as a result of project implementation. No significant impacts to groundwater quality from proposed LID BMPs within the Project Site are anticipated.

Impact B: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact Analysis: There are no groundwater supply wells located on the Project Site. See Section 5.1.2 for a discussion on protection of groundwater quality during construction and Section 5.2.3 for a discussion on groundwater quality and hydrology during operations of the proposed Project. As mentioned, impervious conditions will decrease under proposed Project conditions as well as proposed LID BMPs that will increase infiltration of stormwater runoff. The West Coast Subbasin, which is managed by the Water Replenishment District of Southern California (WRD) and the California Department of Water Resources (CDWR,) is anticipated to meet all groundwater demands. The WRD's master plan addresses pumping and storage capacity in this subbasin[6]. Therefore, no significant impact to groundwater sources is anticipated.

[6] Water Replenishment District of Southern California. Groundwater Basins Master Plan. Found here: https://www.wrd.org/sites/pr/files/GBMP_FinalReport_Text%20and%20Appendicies.pdf

Impact E: Would the Project conflict with or obstruct implementation of a sustainable groundwater management plan?

Impact Analysis: The Project Site is located in an adjudicated basin under the jurisdiction of the CDWR and directly managed by the WRD. See the Impact Analysis in Section 6.3 Impact B for more information. No significant impacts to the implementation of a sustainable groundwater management plan due to the Project Site are anticipated.

7. CUMULATIVE IMPACTS ASSESSMENT

The Project will not require upsizing of any regional drainage infrastructure that is tributary to the Project Site. The downstream drainage infrastructure is owned by LACFCD, with only a small length of storm drain system under City jurisdiction. Stormwater will be treated by proposed BMPs prior to discharging into the public storm drain system, treating potential pollutants and reducing peak flows leaving the site. BMPs will be located and designed to effectively retain and treat runoff before it is discharged to the storm drain system. All proposed BMPs, including infiltration and biotreatment, will be appropriately sized and located to treat the design storm event. Therefore, it is anticipated that all downstream infrastructure would be able to adequately convey Project runoff.

Additionally, the City keeps records of all proposed developments in the City and the immediately adjacent area (Appendix K). Of the 22 projects currently in development or planning, only two are within a mile of the Project Site. The City is mostly built-out with a high existing imperviousness condition. Most new developments require minimum landscaping square footage as well as the implementation of LID BMPs which typically increase perviousness and consequently reduce peak flows in stormwater runoff. All new development within the City of Gardena is subject to City-specific and regional water quality and peak flow mitigation requirements, and will be reviewed on a per-project basis to ensure that storm drain infrastructure and water quality are not adversely impacted. If needed, the City can require on-site detention or upgrades to regional infrastructure. Therefore, cumulative impacts on water quality and drainage infrastructure would be less than significant.

APPENDIX A

REGULATORY FRAMEWORK

1. REGULATORY FRAMEWORK

1.1. SURFACE WATER HYDROLOGY

County of Los Angeles Hydrology Manual

The Los Angeles County (County) Department of Public Works Hydrology Manual requires that a storm drain conveyance system be designed for at least a 10-year storm event. Drainage facilities in developed areas must have a system capable of conveying a 25-year storm event, while areas with sump conditions are required to have a storm drain conveyance system capable of conveying flow from a 50-year storm event. The County also limits the allowable discharge into existing storm drain facilities based on the MS4 Permit and is enforced on all new developments that discharge directly into the County's storm drain system. Any proposed drainage improvements of County owned storm drain facilities such as catch basins and storm drain lines requires the approval/review from the County Flood Control District department.

The Los Angeles County Department of Public Works Hydrology Manual (January 2006) establishes the Los Angeles County Department of Public Works' hydrologic design procedures based on historic rainfall and runoff data collected within the County. The hydrologic techniques in the manual apply for the design of local storm drains, retention and detention basins, pump stations, and major channel projects.

The proposed Project is required to utilize the 2006 Hydrology Manual and accompanying hydrologic tools including HydroCalc Calculator to calculate existing and proposed discharges and volumes from the Project.

1.2. SURFACE WATER QUALITY

Clean Water Act

Controlling pollution of the nation's receiving water bodies has been a major environmental concern for more than three decades. Growing public awareness of the impacts of water pollution in the United States culminated in the establishment of the federal Clean Water Act[1] (CWA) in 1972, which provided the regulatory framework for surface water quality protection.

The United States Congress amended the CWA in 1987 to specifically regulate discharges to waters of the United States from public storm drain systems and storm water flows from industrial facilities, including construction sites, and require such discharges be regulated through permits under the National Pollutant Discharge Elimination System (NPDES).[2] Rather than setting numeric effluent limitations for storm water and urban runoff, CWA regulation calls for the implementation of Best Management Practices (BMPs) to reduce or prevent the discharge of pollutants from these activities to the Maximum Extent Practicable (MEP) for urban runoff and meeting the Best Available Technology Economically achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) standards for construction storm water. Regulations and permits have been implemented at the federal, state, and local level to form a comprehensive regulatory framework to serve and protect the quality of the nation's surface water resources.

In addition to reducing pollution with the regulations described above, the CWA also seeks to maintain the integrity of clean waters of the United States – in other words, to keep clean waters clean and to prevent undue degradation of others. As part of the CWA, the Federal Anti-Degradation Policy [40 Code of Federal Regulations (CFR) Section 131.12] states that each state "shall develop and adopt a statewide

[1] Also referred to as the Federal Water Pollution Control Act of 1972.
[2] CWA Section 402(p).

anti-degradation policy and identify the methods for implementing such policy…" [40 CFR Section 131.12(a)]. Three levels of protection are defined by the federal regulations:

1. Existing uses must be protected in all of the Nation's receiving waters, prohibiting any degradation that would compromise those existing uses;
2. Where existing uses are better than those needed to support propagation of aquatic wildlife and water recreation, those uses shall be maintained, unless the state finds that degradation is "…necessary to accommodate important economic or social development" [40 CFR Section 131.12(a)(2)]. Degradation, however, is not allowed to fall below the existing use of the receiving water; and
3. States must prohibit the degradation of Outstanding National Resource Waters, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreation or ecological significance.

Federal Anti-Degradation Policy

The Federal Anti-Degradation Policy (40 CFR 131.12) requires states to develop statewide anti-degradation policies and identify methods for implementing them. Pursuant to the CFR, state anti-degradation policies and implementation methods shall, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality, where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

Porter-Cologne Water Quality Act

In the State of California, the State Water Resources Control Board (SWRCB) and local Regional Water Quality Control Boards (RWQCBs) have assumed the responsibility of implementing the United States Environmental Protection Agency's (USEPA) NPDES Program and other programs under the CWA such as the Impaired Waters Program and the Anti-Degradation Policy. The primary quality control law in California is the Porter-Cologne Water Quality Act (Water Code Sections 13000 et seq.). Under Porter-Cologne, the SWRCB issues joint federal NPDES Storm Water permits and state Waste Discharge Requirements (WDRs) to operators of municipal separate storm sewer systems (MS4s), industrial facilities, and construction sites to obtain coverage for the storm water discharges from these operations.

California Anti-Degradation Policy

The California Anti-Degradation Policy, otherwise known as the Statement of Policy with Respect to Maintaining High Quality Water in California was adopted by the SWRCB (State Board Resolution No. 68-16) in 1968. Unlike the Federal Anti-degradation, Policy, the California Anti-Degradation Policy applies to all waters of the State, not just surface waters. The policy states that whenever the existing quality of a water body is better than the quality established in individual Basin Plans, such high quality shall be maintained and discharges to that water body shall not unreasonably affect present or anticipated beneficial use of such water resource.

California Toxic Rule

In 2000, the EPA promulgated the California Toxic Rule, which establishes water quality criteria for certain toxic substances to be applied to waters in the State. The EPA promulgated this rule based on the EPA's determination that the numeric criteria are necessary in the State to protect human health and the environment. The California Toxic Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for bodies of water such as inland surface waters and enclosed bays and estuaries that are designated by the Los Angeles Regional Water Quality Control Board (LARWQCB) as having beneficial uses protective of aquatic life or human health.

Board Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties

As required by the California Water Code, the LARWQCB has adopted a plan entitled "Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties" (Basin Plan). Specifically, the Basin Plan designates beneficial uses for surface and groundwaters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and describes implementation programs to protect all waters in the Los Angeles Region. In addition, the Basin Plan incorporates (by reference) all applicable state and Regional Board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.

NPDES Permit Program

The NPDES permit program was first established under authority of the CWA to control the discharge of pollutants from any point source into the waters of the United States. As indicated above, in California, the NPDES stormwater permitting program is administered by the SWRCB through its nine RWQCBs.

The General Permit for Construction Activities

SWRCB Order No. 2009-0009-DWQ known as "General Permit" was adopted on September 2, 2009 and was amended by Order No 2012-0006-DWQ which became effective on July 17, 2012. This NPDES permit establishes a risk-based approach to stormwater control requirements for construction projects by identifying three project risk levels. The main objectives of the General Permit are to:

1. Reduce erosion
2. Minimize or eliminate sediment in stormwater discharges
3. Prevent materials used at a construction site from contacting stormwater
4. Implement a sampling and analysis program
5. Eliminate unauthorized non-stormwater discharges from construction sites
6. Implement appropriate measures to reduce potential impacts on waterways both during and after construction of projects
7. Establish maintenance commitments on post-construction pollution control measures

California mandates requirements for all construction activities disturbing more than one acre of land to develop and implement Stormwater Pollution Prevention Plans (SWPPP). The SWPPP documents the selection and implementation of BMPs for a specific construction project, charging Owners with stormwater quality management responsibilities. A construction site subject to the General Permit must prepare and implement a SWPPP that meets the requirements of the General Permit.

As part of the Project, preparation and implementation of a SWPPP will be required. In addition, the Project will be required to obtain a Waste Discharger Identification Number (WDID) through the State's Storm Water Multiple Application and Report Tracking System (S.M.A.R.T.S.).

Los Angeles County Municipal Storm Water System (MS4) Permit

As described above, USEPA regulations require that MS4 permittees implement a program to monitor and control pollutants being discharged to the municipal system from both industrial and commercial projects that contribute a substantial pollutant load to the MS4.

On December 13, 2001, the LARWQCB adopted Order No. 01-182 under the CWA and the Porter-Cologne Act. This Order is the NPDES Permit or MS4 Permit for municipal stormwater and urban runoff discharges within Los Angeles County. The requirements of this MS4 Permit cover 84 cities and most of the unincorporated areas of Los Angeles County. Under the MS4 Permit, the Los Angeles County Flood Control District (LACFCD) is designated as the Principal Permittee. The Permittees are the 84 Los Angeles County cities (including the City of Gardena) and unincorporated areas within Los Angeles County. Collectively, these are the "Co-Permittees". The Principal Permittee helps to facilitate activities necessary to comply with the requirements outlined in the Permit but is not responsible for ensuring compliance of any of the Permittees.

Since adoption of Order No. 01-182, the LARWQCB has seen adopted Order No. R4-2012-0175, as amended by State Water Board Order WQ 2015-0075 NPDES Permit No. CAS004001 on November 8, 2012. This current permit will expire on December 28, 2017.

Gardena Municipal Code

Chapter 8.70 of the Gardena Municipal Code sets forth the City's Stormwater and Runoff Pollution Control Ordinance. The ordinance prohibits the discharge of runoff containing toxic materials, oils or chemicals, food and processing wastes, dirt and landscape debris, and concrete materials, among other constituents. The discharge prohibition is aimed at protecting the health of the public and aquatic ecosystems, as well as preserving the natural flow of storm drain systems.

Earthwork activities, including grading, are overseen by the GMC Chapter 8.70.110.B. GMC Chapter 8.70.110.B also contains regulations pertaining to erosion control and drainage devices and provides requirements for flood, mudflow protection and general construction requirements.

Low Impact Development Plan (LID)

Under the current Los Angeles County Municipal NPDES Permit, permittees are required to implement a development planning program to address storm water pollution. These programs require project applicants for certain types of projects to implement Low Impact Development Plans (LID) throughout the operational life of their projects. The purpose of LID Plans is to reduce the discharge of pollutants in storm water by outlining BMPs which must be incorporated into the design plans of new development and redevelopment.

The Project falls within the definition of "redevelopment" under the MS4 Permit which requires compliance with the Low Impact Development (LID) requirements.

Low Impact Development Framework

LID is a stormwater strategy that is used to mitigate the impacts of runoff and stormwater pollution as close to its source as possible. Urban runoff discharged from municipal storm drain systems is one of the principal causes of water quality impacts in most urban areas. The stormwater may contain pollutants such as trash and debris, bacteria and viruses, oil and grease, sediments, nutrients, metals, and toxic chemicals that can negatively affect the ocean, rivers, plant and animal life, and public health.

LID encompasses a set of site design approaches and BMPs that are designed to address runoff and pollution at the source. These LID practices can effectively remove nutrients, bacteria, and metals, while reducing the volume and intensity of stormwater flows.

The Project is subject to compliance of Order No. R4-2012-0175, which became effective on November 8, 2012. The main purpose of this law is to ensure that development and redevelopment projects mitigate runoff in a manner that captures or treats rainwater at its source, while utilizing natural resources.

In accordance with Order No. R4-2012-0175, stormwater runoff shall be infiltrated, evapotranspired, captured and used, or treated through high removal efficiency BMPs.

The LARWQCB has a BMP hierarchy in which the project must follow when selecting the type or types of BMPs to be constructed on site. This BMP hierarchy is consistent with County guidance for BMPs, and is adhered to by the City. The following is the BMP hierarchy, per Order No. R4-2012-0175 as amended by Order WQ 2015-0075 NPDES NO. CAS004001:

1. On-site infiltration,
2. On-site bioretention and/or harvest and use,
3. On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit

The Project will comply with the LARWQCB BMP hierarchy based on site-specific conditions and constraints. See Section 5.2.2 in the *Preliminary Hydrology Study and Low Impact Development (LID) Plan* for a discussion of Project-specific LID strategies.

Hydromodification

In addition to the LID requirements listed in the County MS4 Permit (Order No. R4-2012-0175), the Permit also addresses requirements for Hydromodification as pertaining to the project. Per Part VI.D.7.c.iv of the Permit:

"Each Permittee shall require all New Development and Redevelopment projects located within natural drainage systems as described in Part VI.D.7.c.iv.(1)(a)(iii) to implement hydrologic control measures, to prevent accelerated downstream erosion and to protect stream habitat in natural drainage systems. The purpose of the hydrologic controls is to minimize changes in post-development hydrologic storm water runoff discharge rates, velocities, and duration. This shall be achieved by maintaining the project's pre-project stormwater runoff flow rates and durations."

However, per Part VI.D.7.c.iv.(1)(b)(iv) of the Permit, the project is exempt from such requirements as runoff from the site is discharged directly via storm drain to a receiving water that is not susceptible to hydromodification impacts, or if the Project is a redevelopment in an urbanized site that does not increase the effective impervious area. The proposed buildout conditions of the Project will decrease impervious areas an increase infiltration potential over the current conditions. Therefore, the project is not required to implement hydrologic control measures as mitigation for hydromodification impacts.

1.3. GROUNDWATER

California Groundwater Sustainability Act

On Sept. 16, 2014, California Governor Jerry Brown signed into law a three-bill legislative package, known as the Sustainable Groundwater Management Act of 2014 (SGMA). The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource.

The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. The act provides

substantial time – 20 years – for GSAs to implement plans and achieve long-term groundwater sustainability. It protects existing surface water and groundwater rights and does not impact current drought response measures.

The California Water Commission (CWC) requires a statewide prioritization of California's groundwater basins using the following eight criteria:

1. Overlying population;
2. Projected growth of overlying population;
3. Public supply wells;
4. Total wells;
5. Overlying irrigated acreage;
6. Reliance on groundwater as the primary source of water;
7. Impacts on the groundwater; including overdraft, subsidence, saline intrusion, and other water quality degradation; and
8. Any other information determined to be relevant by the Department.

The Project Site is located within a "low priority" California Statewide Groundwater Elevation Monitoring groundwater basin that is also part of an adjudicated groundwater. Basins prioritized as low- or very low-priority are not required to form a groundwater sustainability agency (GSA) and prepare a groundwater sustainability plan (GSP). However, these basins are still encouraged to form GSAs and develop GSPs, update existing groundwater management plans, and coordinate with others to develop a new groundwater management plan in accordance with Water Code Section 10750 et seq.

Water Code §10720.8 identifies adjudicated areas in SGMA, which have an existing defined entity administering the adjudication and managing the groundwater in the basin. Under SGMA, adjudicated portions of basins are exempt from developing a groundwater sustainability plan and forming a groundwater sustainability agency. However, the entities administering the adjudications are required to submit annual reports to DWR by April 1 of each year. SGMA requires that annual reports include the following information for the portion of the basin subject to adjudication:

- Groundwater elevation data unless submitted pursuant to Water Code §10932.
- Annual aggregated data identifying groundwater extraction for the preceding water year.
- Surface water supply used for or available for use for groundwater recharge or in-lieu use.
- Total water use.
- Change in groundwater storage.
- The annual report submitted to the court.

Board Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties

As required by the California Water Code, the LARWQCB has adopted a plan entitled "Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties" (Basin Plan). Specifically, the Basin Plan designates beneficial uses for surface and groundwaters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and describes implementation programs to protect all waters in the Los Angeles Region. In addition, the Basin Plan incorporates (by reference) all applicable state and regional board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.

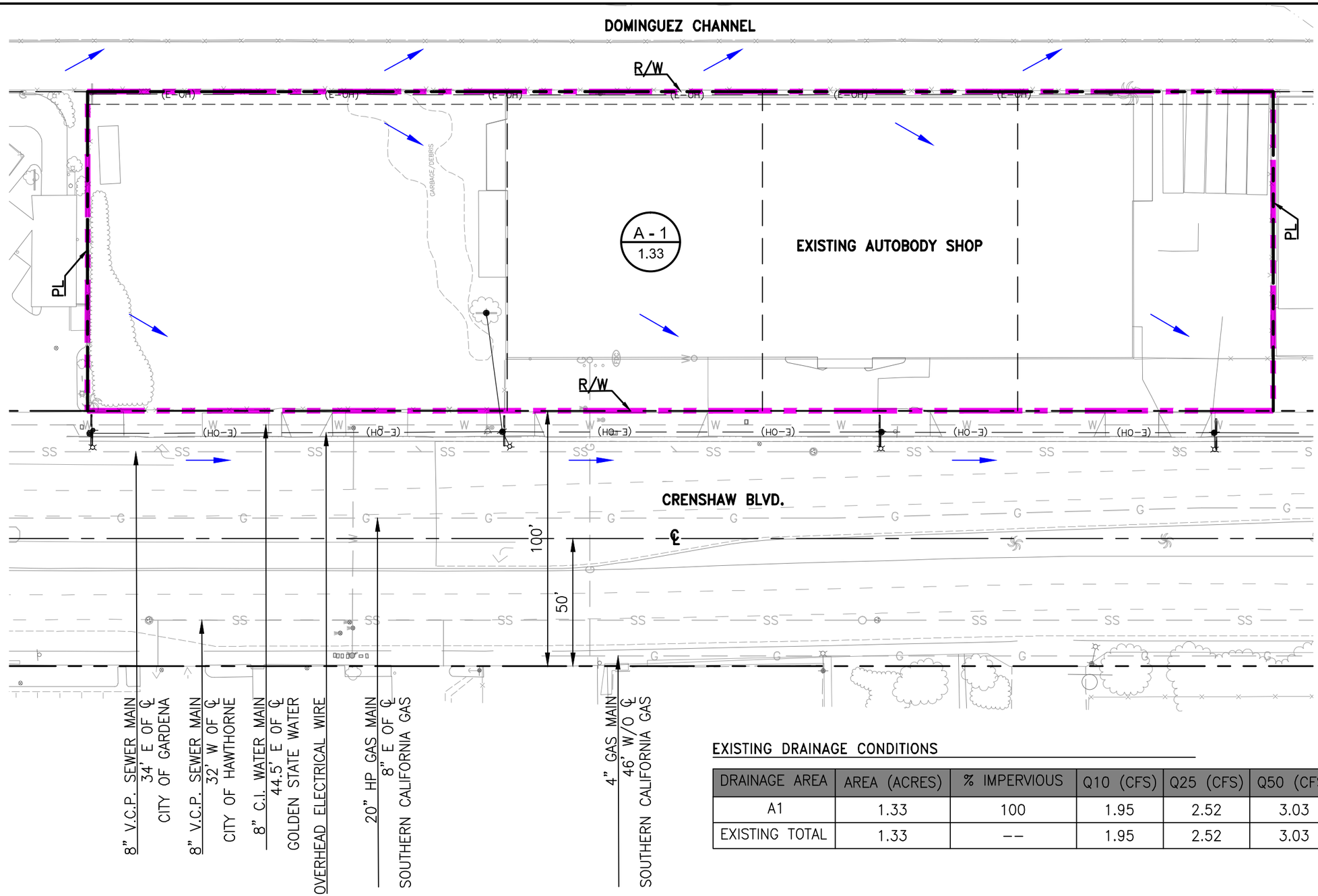
The Basin Plan is a resource for the LARWQCB and others who use water and/or discharge wastewater in the Los Angeles Region. Other agencies and organizations involved in environmental permitting and resource management activities also use the Basin Plan. Finally, the Basin Plan provides valuable information to the public about local water quality issues.

Safe Drinking Water Act (SDWA)

The federal Safe Drinking Water Act (SDWA), established in 1974, sets drinking water standards throughout the country and is administered by the USEPA. The drinking water standards established in the SDWA, as set forth in the CFR, are referred to as the National Primary Drinking Water Regulations (Primary Standards, Title 40, CFR Part 141) and the National Secondary Drinking Water Regulations (Second Standards, 40 CFR Part 143). California passed its own SDWA in 1986 that authorizes the State's Department of Health Services (DHS) to protect the public from contaminants in drinking water by establishing maximum contaminants levels, as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15, that are at least as stringent as those developed by the USEPA, as required by the federal SDWA.

APPENDIX B

EXISTING ON-SITE HYDROLOGY DATA MAP



LEGEND

- SD — EXISTING STORM DRAIN
- A-# / 2.16 — DRAINAGE AREA DESIGNATION / ACRES
- SITE HYDROLOGIC BOUNDARY
- HYDRLOGY SUB-AREA
- DIRECTION OF FLOW
- CENTERLINE
- PROPERTY LINE
- G — EX. GAS MAIN
- SS — EX. SEWER MAIN
- (E-OH) — EX. OVERHEAD ELECTRICAL
- W — EX. WATER LINE

EXISTING DRAINAGE CONDITIONS

DRAINAGE AREA	AREA (ACRES)	% IMPERVIOUS	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)
A1	1.33	100	1.95	2.52	3.03
EXISTING TOTAL	1.33	--	1.95	2.52	3.03

N

40' 0' 20' 40'

SCALE: 1" = 40'

FUSCOE ENGINEERING

EXISTING HYDROLOGY EXHIBIT

12850 CRENSHAW BLVD, GARDENA, CALIFORNIA

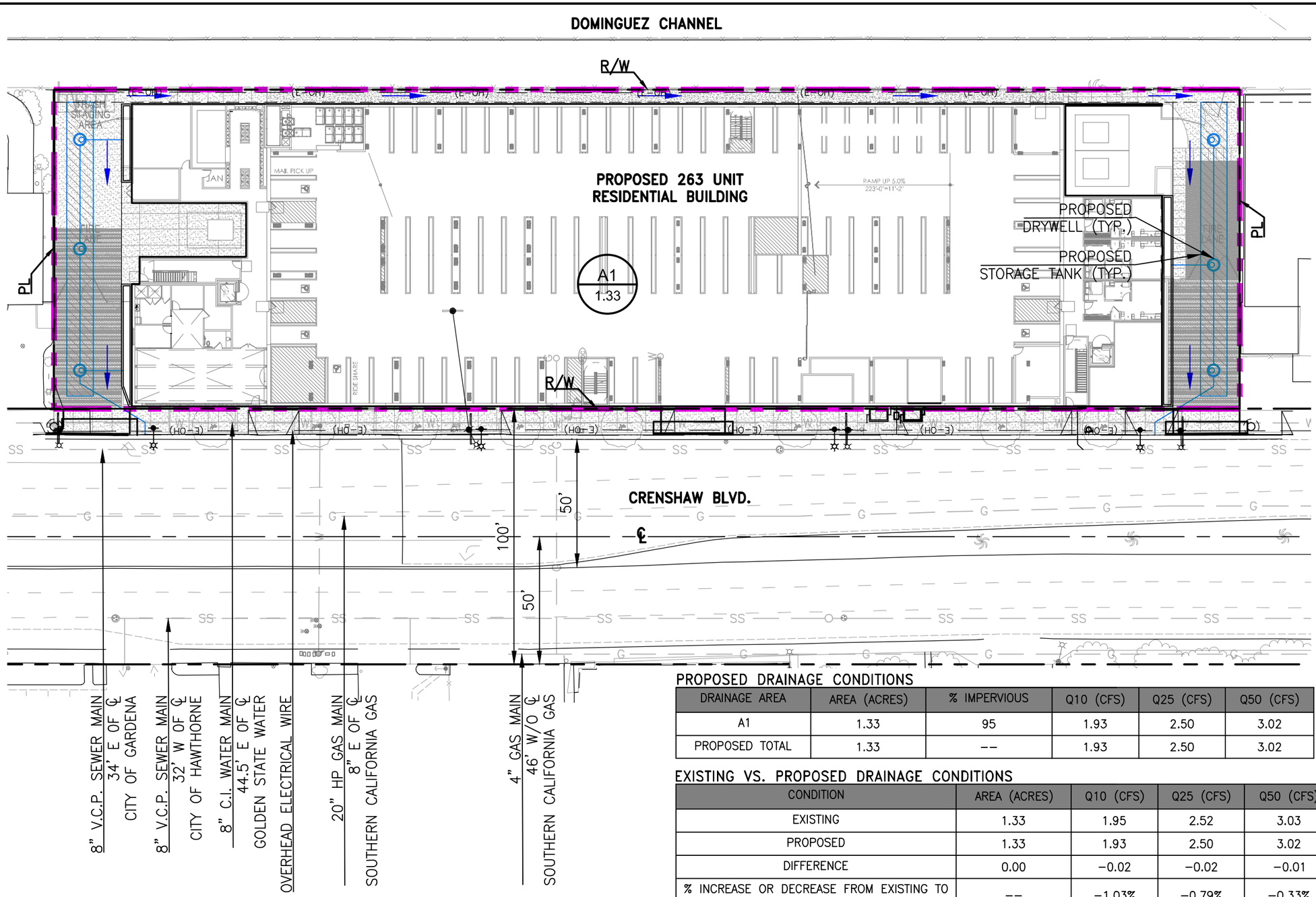
SHEET 1 of 1

DATE: 04/22/20

F:\PROJECTS\1724\002\EXHIBITS\1724-002XH-EX HYDROLOGY.DWG (04-22-2020 9:55:15AM) Plotted by: Robert Spagnuolo

APPENDIX C

PROPOSED ON-SITE HYDROLOGY DATA MAP



LEGEND

- SD — PROPOSED STORM DRAIN
- A# / 1.33 — DRAINAGE AREA DESIGNATION / ACRES
- SITE HYDROLOGIC BOUNDARY
- HYDRLOGY SUB-AREA
- DIRECTION OF FLOW
- CENTERLINE
- PROPERTY LINE
- G — EX. GAS MAIN
- SS — EX. SEWER MAIN
- (E-OH) — EX. OVERHEAD ELECTRICAL
- W — EX. WATER MAIN

PROPOSED DRAINAGE CONDITIONS

DRAINAGE AREA	AREA (ACRES)	% IMPERVIOUS	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)
A1	1.33	95	1.93	2.50	3.02
PROPOSED TOTAL	1.33	--	1.93	2.50	3.02

EXISTING VS. PROPOSED DRAINAGE CONDITIONS

CONDITION	AREA (ACRES)	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)
EXISTING	1.33	1.95	2.52	3.03
PROPOSED	1.33	1.93	2.50	3.02
DIFFERENCE	0.00	-0.02	-0.02	-0.01
% INCREASE OR DECREASE FROM EXISTING TO PROPOSED CONDITIONS	--	-1.03%	-0.79%	-0.33%

N

40' 0' 20' 40'

SCALE: 1" = 40'

FUSCOE ENGINEERING

PROPOSED HYDROLOGY EXHIBIT

12850 CRENSHAW BLVD, GARDENA, CALIFORNIA

SHEET 1 of 1

DATE: 04/22/20

F:\PROJECTS\1724\002\EXHIBITS\1724-002XH-PROP HYDROLOGY.DWG (04-22-2020 9:54:09AM) Plotted by: Robert Spagnuolo

APPENDIX D

LA COUNTY ISOHYETAL CALCULATIONS AND SOILS MAP

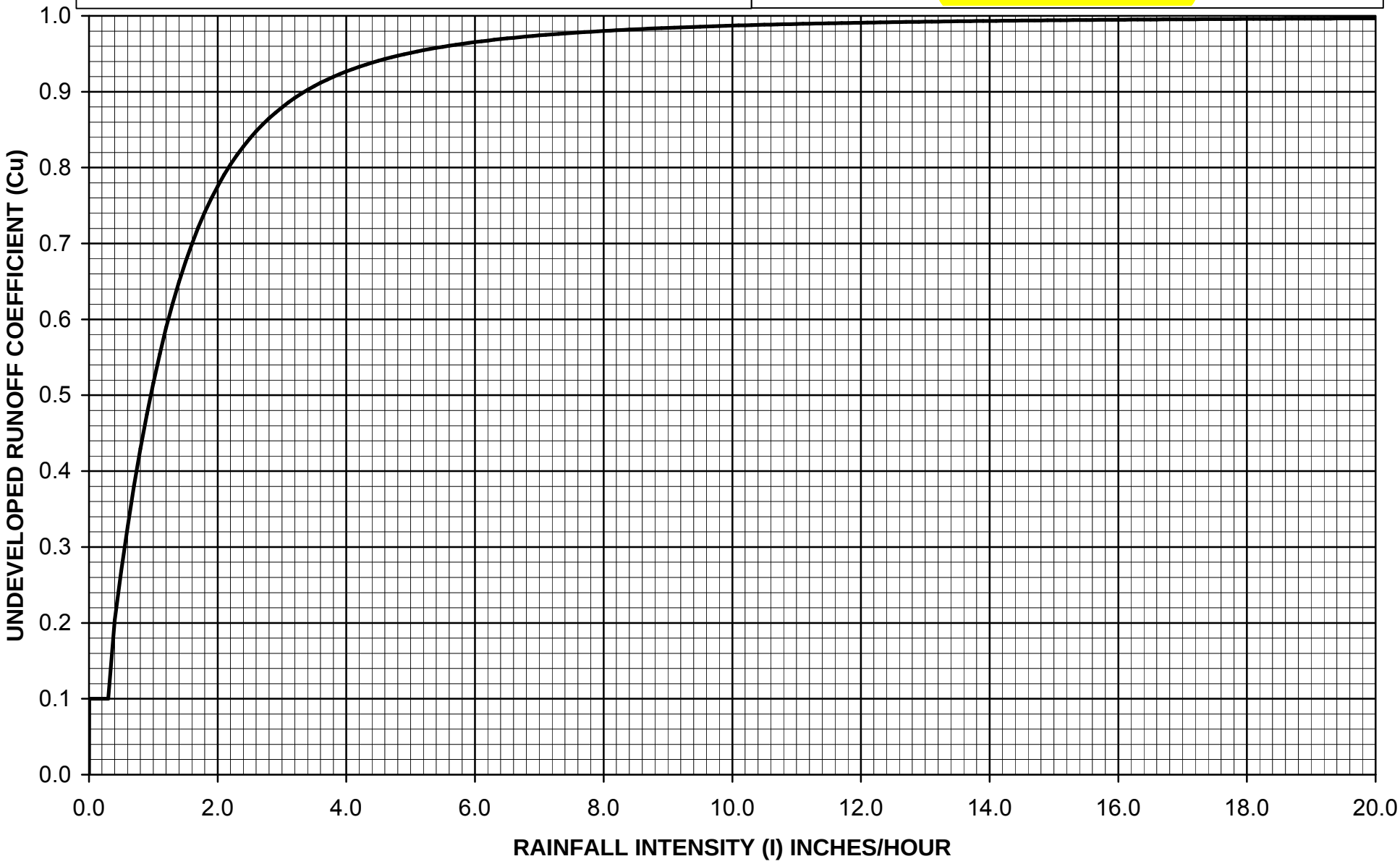
$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

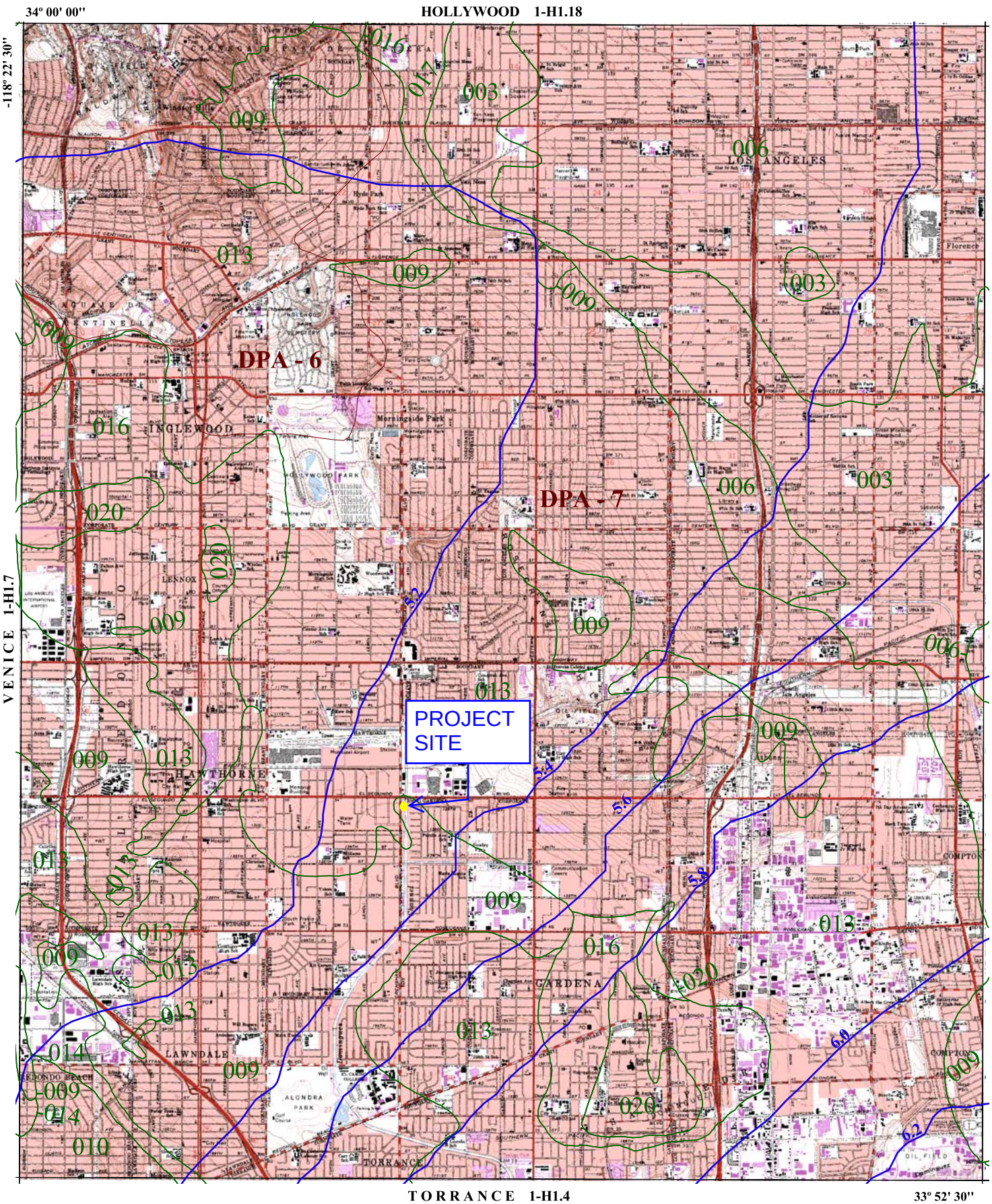
Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE

SOIL TYPE NO. 009





016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

INGLEWOOD
50-YEAR 24-HOUR ISOHYET

1-H1.8

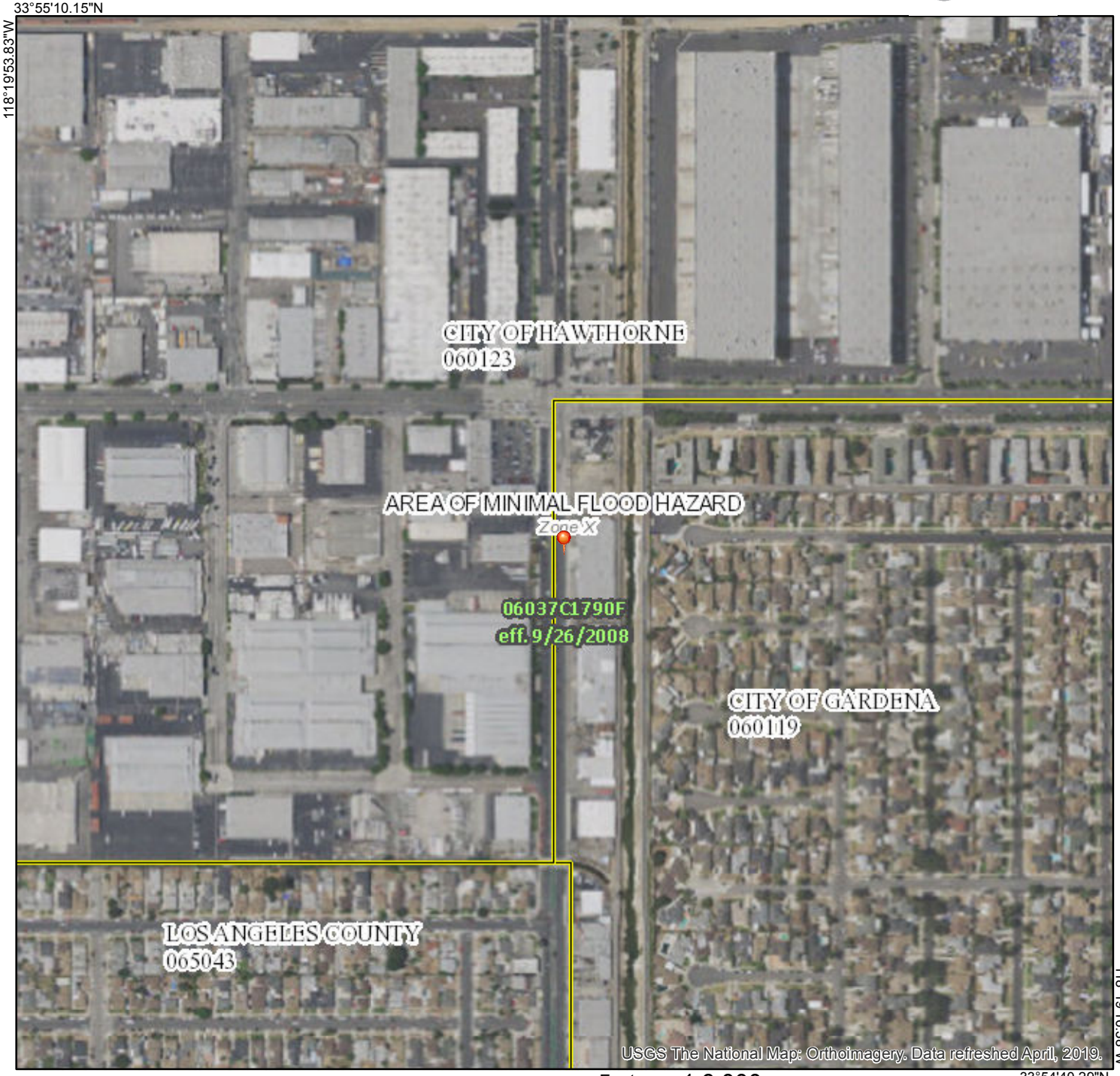
LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

APPENDIX E

FEMA FLOODPLAIN MAP

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN — Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - 513 — Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/30/2019 at 7:27:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX F

TC (HYDROCALC) HYDROLOGY RESULTS FOR EXISTING SITE

Peak Flow Hydrologic Analysis

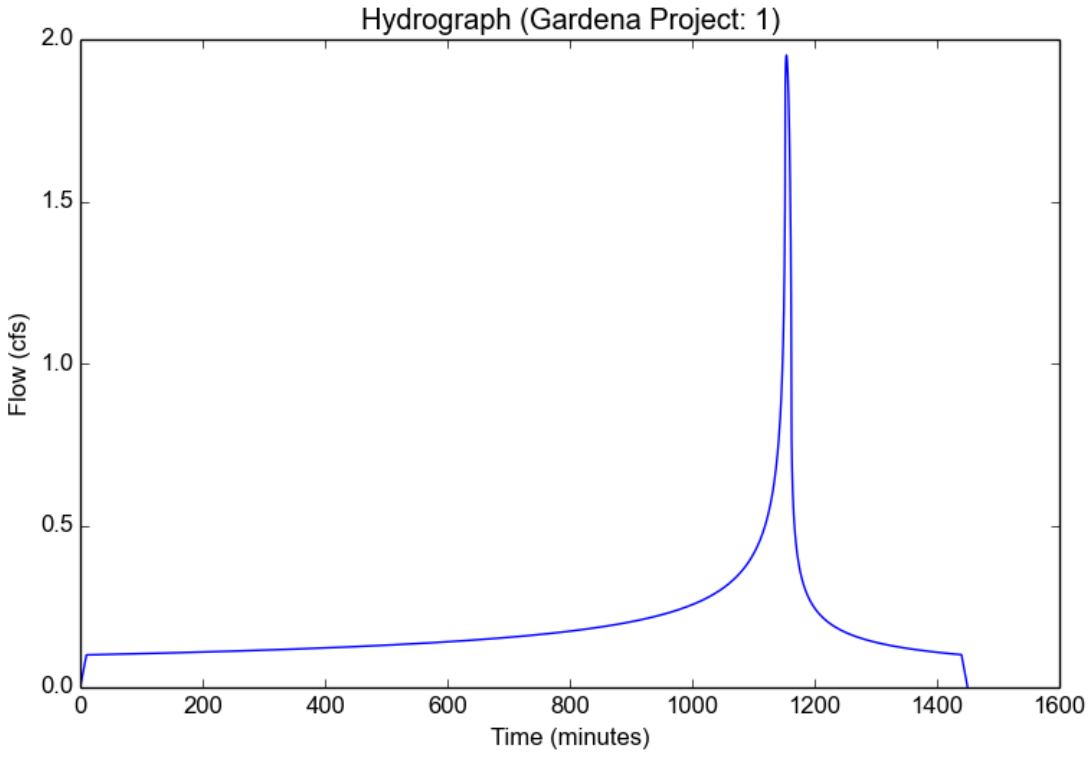
File location: F:/Projects/1724/002/_Support Files/Reports/Hydrology/Gardena Project - 10 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	1.0
Soil Type	9
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7842
Peak Intensity (in/hr)	1.63
Undeveloped Runoff Coefficient (Cu)	0.7012
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	1.9511
Burned Peak Flow Rate (cfs)	1.9511
24-Hr Clear Runoff Volume (ac-ft)	0.3744
24-Hr Clear Runoff Volume (cu-ft)	16306.8952



Peak Flow Hydrologic Analysis

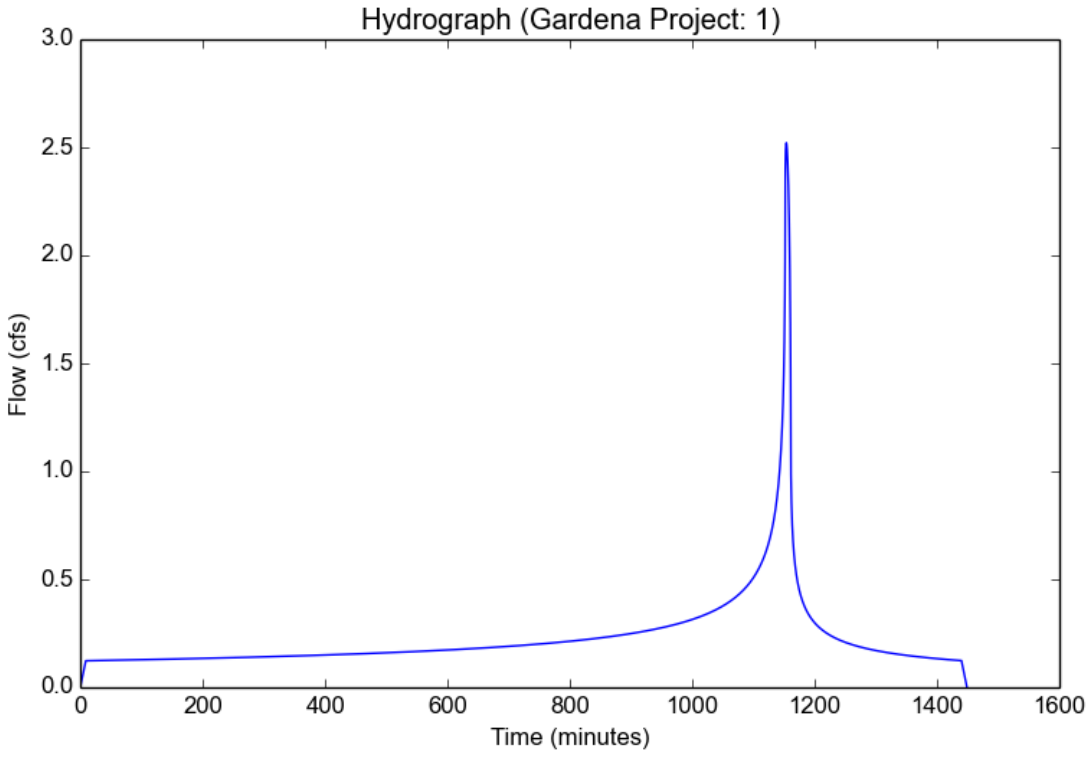
File location: F:/Projects/1724/002/_Support Files/Reports/Hydrology/Gardena Project - 25 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	1.0
Soil Type	9
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.6534
Peak Intensity (in/hr)	2.1062
Undeveloped Runoff Coefficient (Cu)	0.7823
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	2.5211
Burned Peak Flow Rate (cfs)	2.5211
24-Hr Clear Runoff Volume (ac-ft)	0.4603
24-Hr Clear Runoff Volume (cu-ft)	20052.4517



Peak Flow Hydrologic Analysis

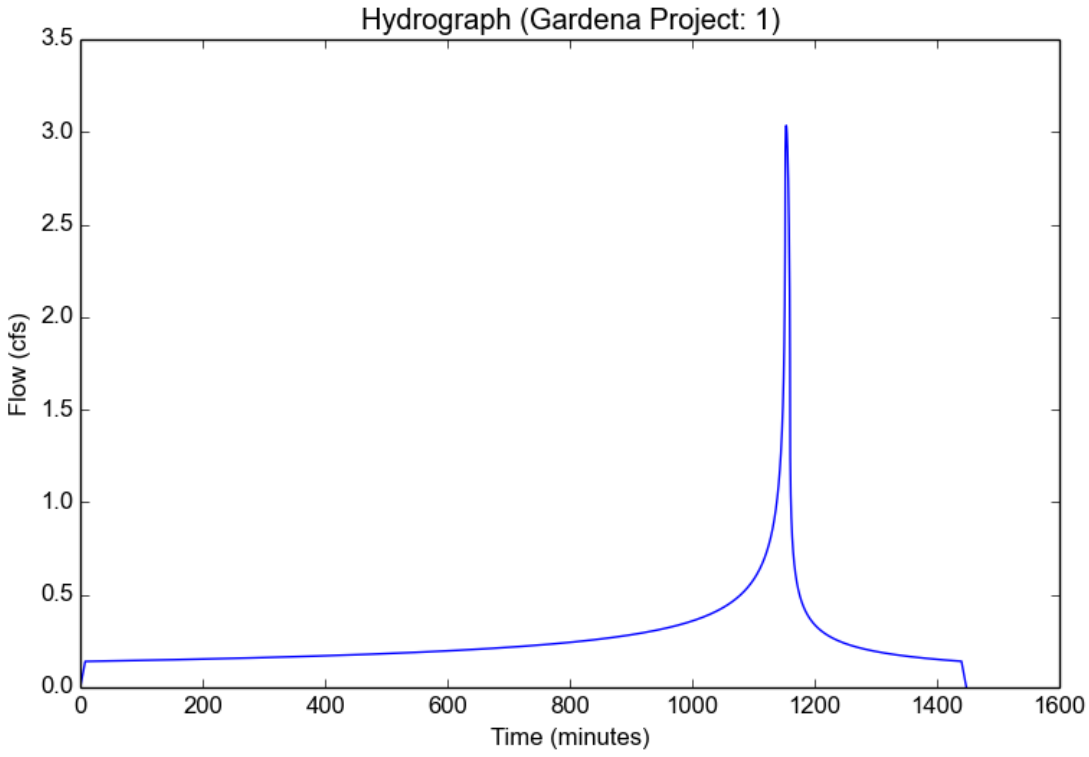
File location: F:/Projects/1724/002/_Support Files/Reports/Hydrology/Gardena Project - 50 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	1.0
Soil Type	9
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.3
Peak Intensity (in/hr)	2.5354
Undeveloped Runoff Coefficient (Cu)	0.8413
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	3.0348
Burned Peak Flow Rate (cfs)	3.0348
24-Hr Clear Runoff Volume (ac-ft)	0.5243
24-Hr Clear Runoff Volume (cu-ft)	22838.7784



APPENDIX G

TC (HYDROCALC) HYDROLOGY RESULTS FOR PROPOSED SITE

Peak Flow Hydrologic Analysis

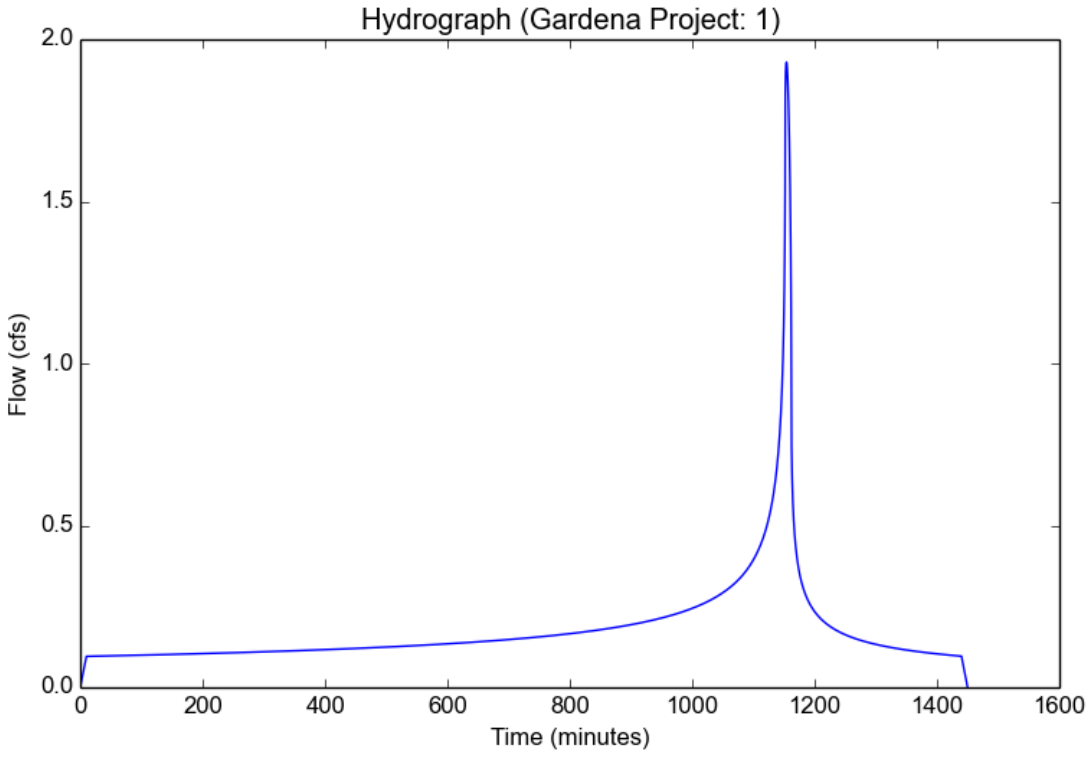
File location: F:/Projects/1724/002/_Support Files/Reports/EIR/Water Resources/Attachments/Gardena Project - Prop 10 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	0.95
Soil Type	9
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7842
Peak Intensity (in/hr)	1.63
Undeveloped Runoff Coefficient (Cu)	0.7012
Developed Runoff Coefficient (Cd)	0.8901
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	1.9296
Burned Peak Flow Rate (cfs)	1.9296
24-Hr Clear Runoff Volume (ac-ft)	0.359
24-Hr Clear Runoff Volume (cu-ft)	15639.5668



Peak Flow Hydrologic Analysis

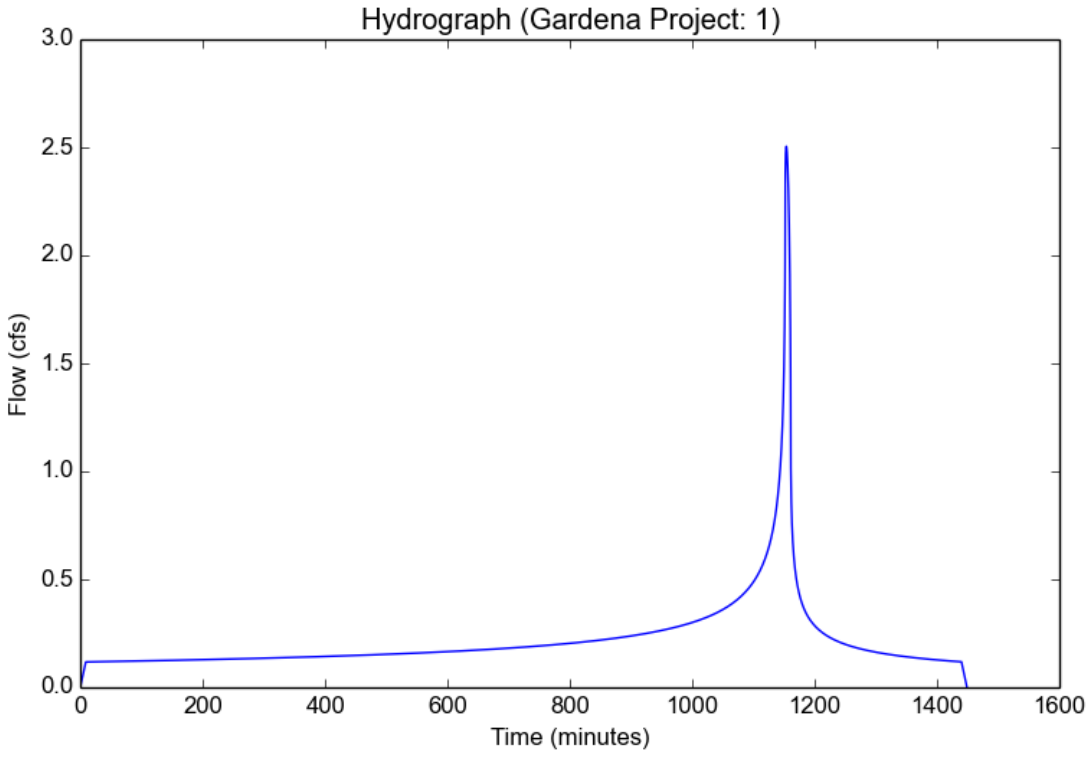
File location: F:/Projects/1724/002/_Support Files/Reports/EIR/Water Resources/Attachments/Gardena Project - Prop 25 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	0.95
Soil Type	9
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.6534
Peak Intensity (in/hr)	2.1062
Undeveloped Runoff Coefficient (Cu)	0.7823
Developed Runoff Coefficient (Cd)	0.8941
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	2.5046
Burned Peak Flow Rate (cfs)	2.5046
24-Hr Clear Runoff Volume (ac-ft)	0.442
24-Hr Clear Runoff Volume (cu-ft)	19252.9194



Peak Flow Hydrologic Analysis

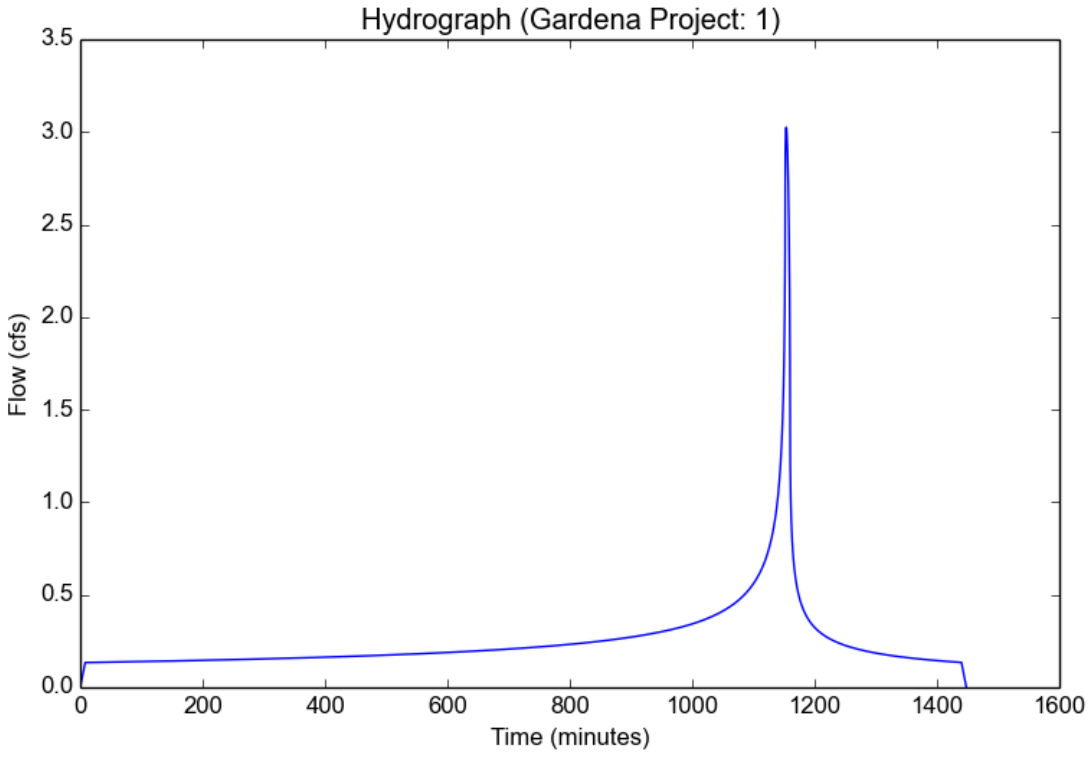
File location: F:/Projects/1724/002/_Support Files/Reports/EIR/Water Resources/Attachments/Gardena Project - Prop 50 yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.3
Percent Impervious	0.95
Soil Type	9
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

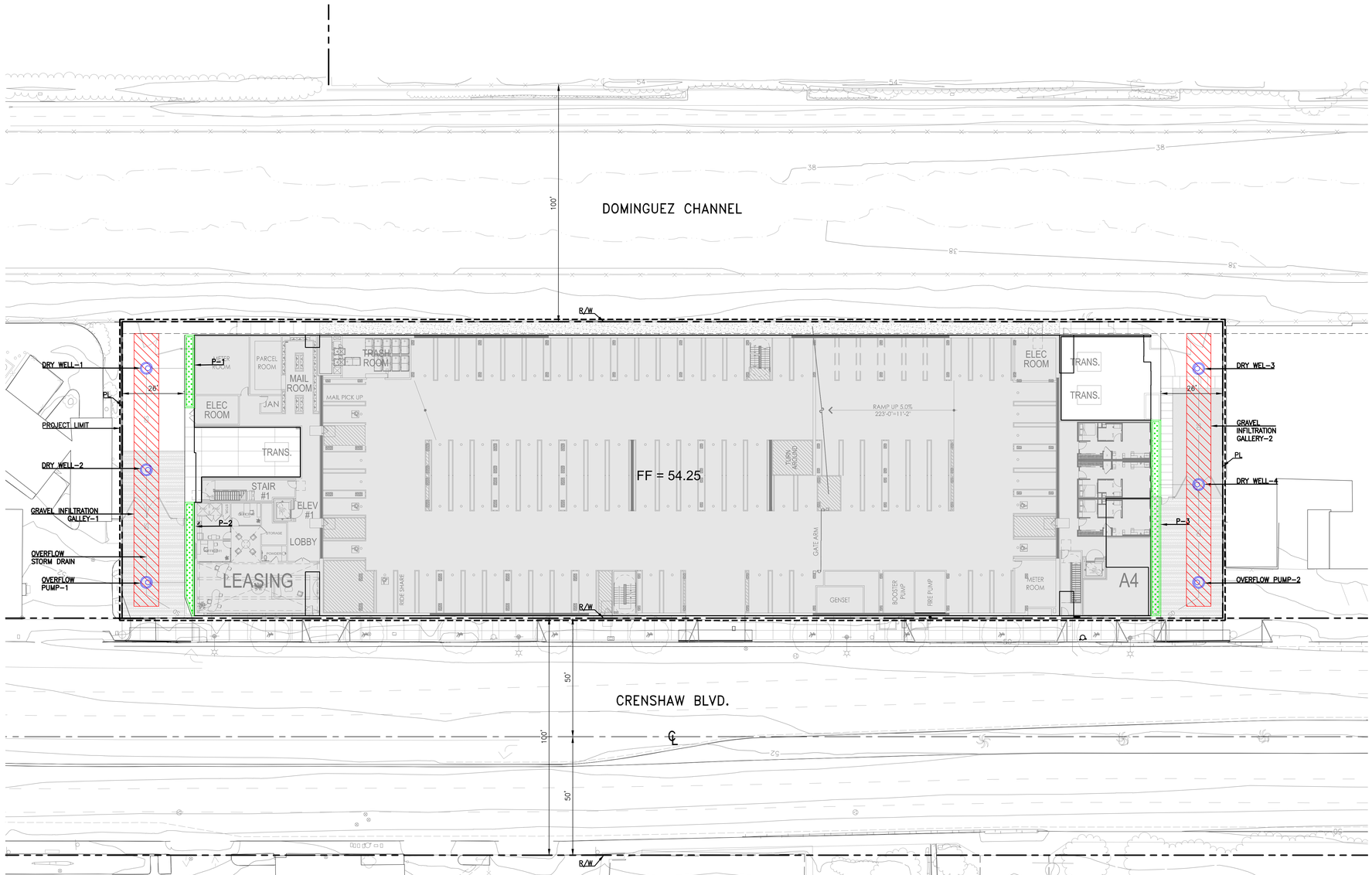
Output Results

Modeled (50-yr) Rainfall Depth (in)	5.3
Peak Intensity (in/hr)	2.5354
Undeveloped Runoff Coefficient (Cu)	0.8413
Developed Runoff Coefficient (Cd)	0.8971
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	3.025
Burned Peak Flow Rate (cfs)	3.025
24-Hr Clear Runoff Volume (ac-ft)	0.5038
24-Hr Clear Runoff Volume (cu-ft)	21946.2401



APPENDIX H

LID EXHIBIT, SIZING METHODOLOGY, AND NARRATIVE

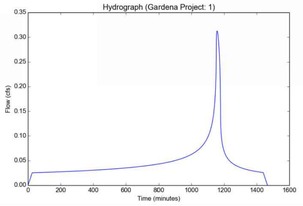


Peak Flow Hydrologic Analysis

File location: F:/Projects/1724.002/_Support Files/Reports/Hydrology/Gardena Project - 85th percentile.pdf
Version: HydroCalc 1.0.2

Input Parameters	
Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.95
Percent Impervious	1.0
Soil Type	9
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results	
Modeled (85th percentile storm) Rainfall Depth (in)	0.95
Peak Intensity (in/hr)	0.2612
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	26.0
Clear Peak Flow Rate (cfs)	0.3126
Burned Peak Flow Rate (cfs)	0.3126
24-Hr Clear Runoff Volume (ac-ft)	0.094
24-Hr Clear Runoff Volume (cu-ft)	4093.7752



BMP TREATMENT VOLUMES (CF)		
	GROUND LEVEL/SITE	%
BIOFILTERS	425	10%
INFILTRATION	3,669	90%
TOTAL	4,094	

LEGEND

℄	CENTERLINE
EX	EXISTING
EG	EXISTING GRADE
FF	FINISHED FLOOR
FG	FINISHED GRADE
FL	FLOWLINE
FS	FINISHED SURFACE
PL	PROPERTY LINE
R/W	RIGHT OF WAY
SD	STORM DRAIN
SS	SANITARY SEWER
TC	TOP OF CURB
W	WATER
- - -	PROJECT LIMIT
— — —	RIGHT OF WAY / PL
— · —	CENTERLINE
— X —	FENCE (PER LANDSCAPE PLANS)
	PROPOSED BUILDING
	BIOFILTER
	STORAGE TANK
	DRY WELL

NOTE: THE BMP TREATMENT PLAN INCORPORATES BOTH BIOFILTRATION AND INFILTRATION BMPs. ALTHOUGH THE PERCOLATION RATE IS BELOW THE DESIRED VALUE PER LA COUNTY (0.03 IN/HR VS 0.3 IN/HR), THERE ARE MINIMAL OPPORTUNITIES FOR BIOFILTRATION ON SITE. INFILTRATION WILL BE USED TO OFFSET THE REMAINING TREATMENT VOLUMES THAT CAN NOT BE ACCOMMODATED BY BIOFILTRATION PLANTERS IN ORDER FOR THE PROJECT TO MEET TOTAL STORMWATER VOLUME TREATMENT REQUIREMENTS

N

20' 0' 10' 20' 40'
SCALE: 1" = 20'

LID TREATMENT EXHIBIT

04/20/2020

FUSCOE ENGINEERING
600 Wilshire Blvd., Suite 1470
Los Angeles, California 90017
tel 213.988.8802 • fax 213.988.8803
www.fuscoe.com

Peak Flow Hydrologic Analysis

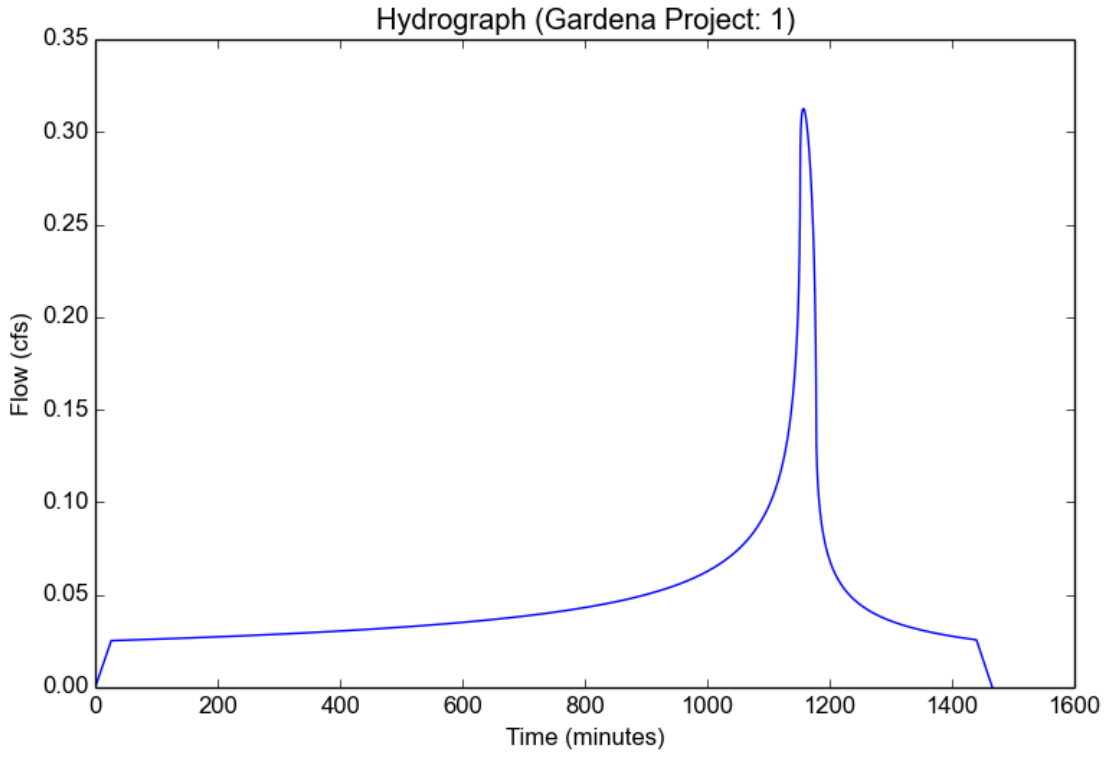
File location: F:/Projects/1724/002/_Support Files/Reports/Hydrology/Gardena Project - 85th percentile.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	Gardena Project
Subarea ID	1
Area (ac)	1.33
Flow Path Length (ft)	480.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.95
Percent Impervious	1.0
Soil Type	9
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.95
Peak Intensity (in/hr)	0.2612
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	26.0
Clear Peak Flow Rate (cfs)	0.3126
Burned Peak Flow Rate (cfs)	0.3126
24-Hr Clear Runoff Volume (ac-ft)	0.094
24-Hr Clear Runoff Volume (cu-ft)	4093.7752



Water Quality Management Plan (WQMP), Low Impact Development Report (LID), & Hydromodification

The preparation of a Low Impact Development (LID) Report or Water Quality Managements Plan (WQMP) will be a requirement of this project. The City of Gardena follows the County of Los Angeles' LID requirements for new development which complies with State and Federal regulations to control and eliminate runoff pollution into receiving waters such as creeks, lakes, and the ocean.

The WQMP shall include Best Management Practices (BMP's) for source control, pollution prevention, site design, and low impact development.

The City of Gardena uses the LA County Specific MS4 storm water management plan to comply with the federal Clean Water Act and the regional NPDES MS4 permit. As such, they require that the runoff generated from private developments is treated and discharged into a municipal storm drain. The recommended design guidelines and treatment methods are found in the County's Low Impact Development BMP Design Manual.

The project will be required to treat the volume of water produced by the "water quality" design storm event that results from the greater of the following:

a) The 85th percentile 24-hour event determined from the Los Angeles County 85th Percentile precipitation isoheytal map.
b) The 0.75-inch, 24-hour rain event

The BMPs to be implemented in the LID design need to be selected in accordance with the hierarchy outlined in the County of LA LID Manual.

1. Infiltration Systems
2. Stormwater Capture and Use
3. Biofiltration
4. Combination of Above.

It is anticipated that the proposed project may utilize a combination of the above BMPs. If infiltration is feasible in the soils report for the project, this may be the most viable solution for stormwater mitigation. If infiltration is not feasible to mitigate the stormwater, capture and use or biofiltration treatment designs will need to be utilized.

The project is exempt from hydromodification due to runoff ultimately discharging into the concrete lined Dominguez Channel.

As an additional note, our project site has an area greater than 1 acre, and a SWPPP will have to be filed for the improvements.

APPENDIX I

DOMINGUEZ CHANNEL WATERSHED MAP

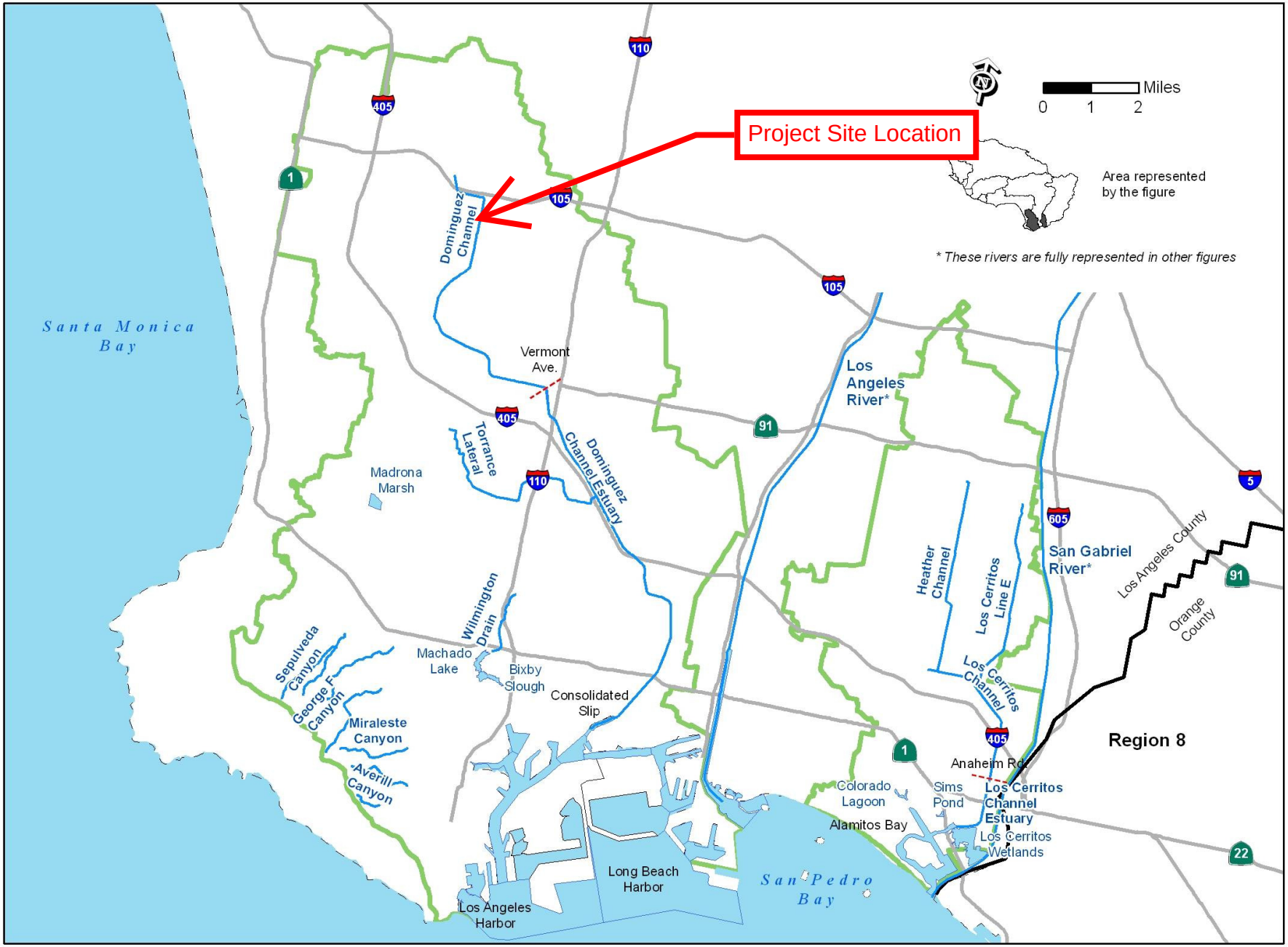


Figure 2-7. Major surface waters of the Dominguez Channel and Los Cerritos Channel watersheds.

APPENDIX J

LOCAL STORM DRAIN SYSTEM EXHIBIT

Median Open

REFERENCES
FB 294, FB 375
FB 398, LB 294

LOS ANGELES COUNTY ROAD DEPARTMENT

HIGHWAY DIVISION

JOB NAME CRENSHAW BOULEVARD

LIMITS 131st. STREET TO ROSECRANS AVE.

SCALE HORIZ. 1" = 40' VERT. 1" = 4'

JOB NO. 40921

SHEET 3 OF 6 SHTS.

DWG. NO. #28670

APPENDIX K

CITY OF GARDENA CUMULATIVE PROJECTS LIST

GARDENA TOD CUMULATIVE PROJECTS LIST						
Type	**ID#**	**Location (Project Name)**	**Project Description**	**Status**	**Non-Residential (SF)**	**Residential (DU)**
CITY OF GARDENA						
Residential	0	12850 Crenshaw Boulevard[1] (Gardena TOD SP Project)	265 DU, Apartments/Studio Apartments	Planning Review		265
Residential		1333 West 168th Street	3 DU, Condominiums	Entitlements Received		3
Mixed-Use		1112 Gardena Boulevard	12 DU, Apartments & 3,986 SF Commercial	Entitlements Received	3,986	12
Residential		1515 West 178th Street (Melia 178th Street Project)	114 DU Townhomes	Building & Safety Plan Check		114
Residential		1932 West 145th Street	4 DU, Apartments, with 2 DU existing	Building & Safety Plan Check		4
Residential		1348 West 168th Street (Normandie Courtyard Project)	9 DU, Small Lot Subdivision, 3-story	Entitlements received		9
Residential		1017 West 141st Street & 14031 South Vermont Avenue (KB Home Stonefield Project)	63 DU, Townhomes, 3-story	Under Construction		63
Residential		13919 Normandie Avenue	20 DU, Single-Room Occupancy	Building & Safety Plan Check		20
Mixed-Use		1341 West Gardena Boulevard	14 DU, Townhomes & 3,385 SF Retail/Office	Under Construction	3,385	14
Residential		16819 Normandie Avenue	63 DU, Single-Room Occupancy	Entitlements Received (Not yet submitted to Building and Safety)		63
Mixed-Use		14321 Van Ness Avenue	35 DU, Townhomes & 5 DU Live/Work with 1,835 SF Commercial	Under Construction	1,835	35
Industrial		1528 West 134th Street	62,960 SF Industrial	Building & Safety Plan Check	62,960	
~~Residential~~		~~2315, 2401, 2403, 2415, 2421, & 2545 Marine Avenue (Gardner Marine Avenue Project)~~	~~64 DU, Townhomes + 10 Live/Work~~	~~Entitlement Application Withdrawn~~		
Commercial		2169 West Redondo Beach Boulevard	3,486 SF Commercial (drive thru restaurant)	Planning Review	3,486	
Residential		1938 West 146th Street	6 DU, Townhomes	Planning Review		6
Residential		1621 West 147th Street	6 DU, Townhome, Three-story	Planning Review		6
Residential		1335 West 141st Street	50 DU, Townhomes, Three-story	Planning Review		50
Residential		1515 West 178th Street (Melia 178th St. Townhomes Project)	114 DU, Townhomes	Building & Safety Plan Check		114
Residential		13615, 13619, 13633 Vermont Avenue	84 DU, Townhomes (2 DU affordable)	Planning Review		84
Mixed-Use		2129 West Rosecrans Avenue (Rosecrans Place Project)	113 DU Townhomes, 3-Story, including 15 Live/Work with 3,969 SF Commercial	Planning Review	3,969	113
CITY OF HAWTHORNE						
Mixed-Use		3670 Imperial Highway	96 DU and approximately 6,200 SF Commercial (retail and office)	Under Construction	6,200	96
Mixed-Use		12540 Crenshaw Boulevard	238 DU and approximately 3,100 SF of restaurant space	Under Construction	3,100	238
Mixed-Use		14128 Kornblum	100 DU and approximately 15,000 SF of Commercial (retail and office space)	Grading	15,000	100
Industrial		12515 Cerise	62,000 SF Warehouse	Finalizing Plan Check	62,000	
23		***Total***			***165,921***	***1,409***
22		***Total Excluding Project***			***165,921***	***1,144***

Note:
1. Proposed Project

Kimley»Horn

TECHNICAL MEMORANDUM

To: Ray Barragan and Lisa Kranitz, City of Gardena

From: Jason Marechal and Rita Garcia

Date: January 14, 2021

Subject: **Gardena Transit Oriented Development Specific Plan, 12850 and 12900 Crenshaw Boulevard, Preliminary Hydrology Study and LID Plan Peer Review**

Kimley-Horn has conducted a follow-up third-party peer review of the Project's Preliminary Hydrology Study and LID Plan (Fuscoe Engineering, Inc., revised January 2021) on behalf of the City of Gardena to verify that Kimley-Horn's July 27, 2020 third-party peer review Technical Memo (TM) recommendations have been incorporated. The revised January 2021 report addressed the third-party peer review comments and thus is in compliance with the TM recommendations. The analysis, as revised, meets the applicable provisions of CEQA and the State CEQA Guidelines and is adequate for inclusion in the Project EIR.

Please do not hesitate to contact Jason Marechal at 714.705.1305 or jason.marechal@kimley-horn.com with any questions.