Appendix 4.7-1: Water Resources Technical Report

FUSCOE ENGINEERING

WATER RESOURCES TECHNICAL REPORT

South Normandie Residential Project

16911 S Normandie Ave
Gardena, California 90247

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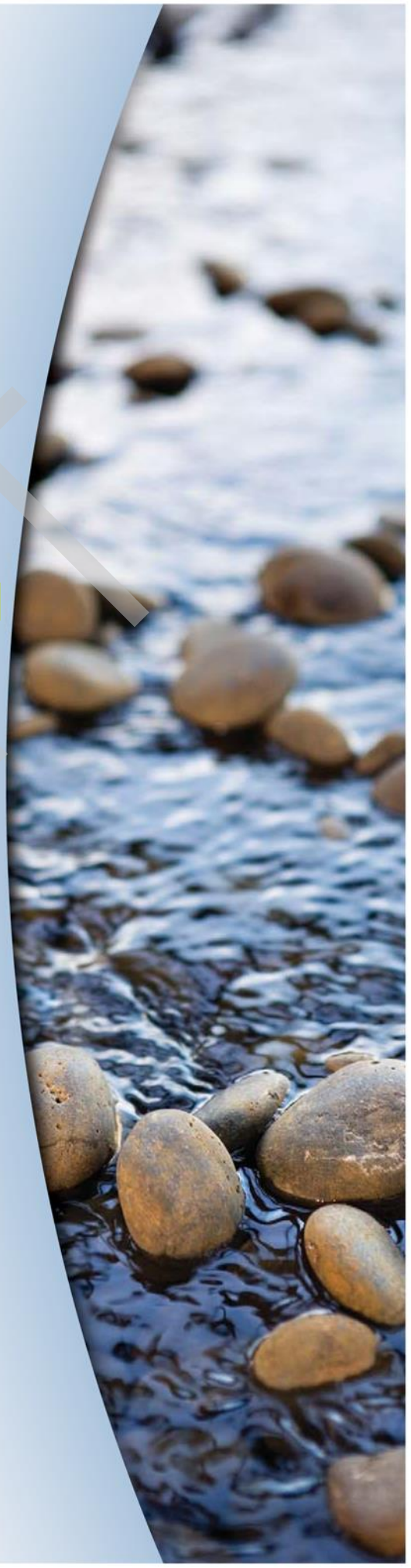

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The South Normandie Residential Project would include the development of new mixed-use residential development (Project) on an approximate 5.25-acre site, located at 16911 S Normandie Avenue in the City of Gardena. The Project proposes a 7-story structure with two levels of above ground parking and 3-story townhouses. The Project will include 328 apartment units (68 – Studio, 194 – 1 Bedroom, 66 – 2 Bedroom), 75 Townhouses, 10,519 square feet of amenity areas, and 559 residential parking spaces (399 – Apartment, 160 – Townhouses).

The Project site is fully developed with five industrial building. In total, there is approximately 106,100 square feet of built structures on the Project site. Additionally, the rest of the Project site is paved. Based upon the proposed building program; the existing building structure, foundations, parking lot surface, and all existing flatwork will be demolished. The Project will consist of a redevelopment of the existing parking lot and industrial/warehouse building into a multi-story apartment complex with townhomes along the westerly and southern property lines.

The Project is bounded by 169th Street to the North, Normandie Avenue to the East, 170th Street to the South, and Brighton Way to the West.

Project Site: Thomas Grid - Page 733 – Grid J7 & Page 734 – Grid A7

1.2 SCOPE OF WORK

This report will examine surface water quality, hydrology, and groundwater in existing and Project buildout scenarios. The goal of this report is to determine the ability of existing utilities to serve the Project area, and to assess any major changes to hydrologic resources that may occur under proposed conditions.

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. REGULATORY FRAMEWORK

2.1 SURFACE WATER HYDROLOGY

County of Los Angeles Hydrology Manual

The project site is located within a watershed that the County of Los Angeles classifies as the Dominguez Watershed. The Los Angeles County Flood Control District (LACFCD) is responsible for providing flood protection, water conservation, recreation, and aesthetic enhancement within this entire watershed. The Los Angeles County Department of Public Works (LACDPW) developed a Hydrology Manual (January 2006), which establishes the LACDPW hydrologic design procedures based on historic rainfall and runoff data collected within the County. The Project is required to utilize the 2006 Hydrology Manual and accompanying hydrologic tools including the HydroCalc Calculator to calculate existing and proposed discharges and volumes from the Project.

2.2 SURFACE WATER QUALITY

Clean Water Act (CWA)

The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and has given the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402).

In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The City of Gardena operates under their Municipal Regional Stormwater NPDES Permit (Order No. R4-2012-0175-A01, NPDES Permit No. CAS004001). The NPDES Permit covers much of the Los Angeles basin watershed.

Clean Water Act Section 402

Section 402 of the Clean Water Act authorizes the California SWRCB to issue NPDES General Construction Storm Water Permit (Water Quality Order 99-08-DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided they:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that would prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off-site into receiving waters;
2. Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation; and
3. Perform inspections of all BMPs.

The SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the

construction site discharges directly to a water body listed on the 303(d) list for sediment. Increased compliance tasks under the adopted 2009 Construction General Permit include project risk evaluation, effluent monitoring, receiving water monitoring, electronic data submission of the SWPPP and all other permit registration documents, and a Rain Event Action Plan (REAP), which must be designed to protect all exposed portions of a Project site within 48 hours prior to any likely precipitation event.

Clean Water Act Section 303(d)

Section 303(d) of the CWA (CWA, 33 USC 1250, et seq., at 1313(d)) requires states to identify "impaired" water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to U.S. EPA for review and approval. An affected waterbody, and associated pollutant or stressor, is then prioritized in a list of impaired water bodies known as the 303(d) List. The CWA further requires the development of a Total Maximum Daily Load (TMDL) for each listing.

National Flood Insurance Program (NFIP)

The NFIP, implemented by Congress in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by FIRMs developed by FEMA. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance.

California Porter-Cologne Act

The Porter-Cologne Water Quality Control Act established the legal and regulatory framework for California's water quality control. The California Water Code (CWC) authorizes the SWRCB to implement the provisions of the CWA, including the authority to regulate waste disposal and require cleanup of discharges of hazardous materials and other pollutants.

As discussed above, under the CWC, the State of California is divided into nine RWQCBs, governing the implementation and enforcement of the CWC and CWA. The Project site is located within Region 4, also known as the Los Angeles Region (LARWQCB). Each RWQCB is required to formulate and adopt a Basin Plan for its region. The LARWQCB's Basin Plan is a comprehensive document that reports beneficial uses for surface and ground waters, defines narrative and numeric parameters to protect water quality, and describes implementation programs to protect waters throughout the Region. This Plan must adhere to the policies set forth in the CWC and established by the SWRCB. The RWQCB is also given authority to include within its regional plan water discharge prohibitions applicable to conditions, areas, or types of waste.

California Toxics Rule

In 2000, the U.S. EPA promulgated the California Toxics Rule, which establishes water quality criteria for certain toxic substances to be applied to waters in the State. In 1994, a California state court revoked the State's water quality control plans, which contained numeric criteria for water quality. This was in direct violation of the CWA and required EPA action. The EPA then implemented the California Toxics Rule. The EPA promulgated this rule based on Section 303(c)(2)(B) of the Clean Water Act, which dictates that states must adopt numeric criteria in order to protect human health and the environment. The California Toxics 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 LARWQCB as having beneficial uses protective of aquatic life or human health.

Water Conservation Bill of 2009 (SBX7-7)

The Water Conservation Bill of 2009 (SBX7-7) requires a statewide 20 percent reduction in urban per capita water use by December 31, 2020. It requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified requirements, and requires agricultural water suppliers to prepare plans and implement efficient water management practices.

The General Permit for Construction Activities

SWRCB Order No. 2009-0009-DWQ known as the "Construction General Permit" was adopted on September 2, 2009 and was amended by Order No. 2010-0014-DWQ on February 14, 2011 and 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:

- Reduce erosion
- Minimize or eliminate sediment in stormwater discharges
- Prevent materials used at a construction site from contacting stormwater
- Implement a sampling and analysis program
- Eliminate unauthorized non-stormwater discharges from construction sites
- Implement appropriate measures to reduce potential impacts on waterways both during and after construction of projects
- 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 (SWPPPs). 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.

County Waste Discharge Requirements

The LACFCD, the County of Los Angeles, and the City along with 83 other incorporated cities therein (Permittees) discharge pollutants from their municipal separate storm sewer (drain) systems (MS4s). Stormwater and non-stormwater enter and are conveyed through the MS4 and discharged to Los Angeles Region surface water bodies. These discharges are regulated under countywide waste discharge requirements contained in Order No. R4-2012-0175[1] (NPDES Permit No. CAS004001), *Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges Within the Coastal Watersheds of Los Angeles County, Except Discharges Originating from the City of Long Beach MS4*, which was adopted November 8, 2012.[2] The MS4 Permit Order provides the revised waste discharge requirements for MS4 discharges within the Los Angeles County watersheds, which includes Gardena. The MS4 Permit Order, which became effective December 28, 2012, supersedes Order No.

[1] State of California Water Quality Control Board. (undated). *Order No. R4-2012-0175 NPDES Permit NO. CAS004001*. Los Angeles, CA: State of California Water Quality Control Board.
[2] Ibid.

01-182. Los Angeles County uses its Low Impact Development (LID) Ordinance to require that projects comply with NPDES MS4 Permit water quality requirements.

The MS4 Permit Order requires development and implementation of a Planning and Land Development Program for all "New Development" and "Redevelopment" projects subject to the Order. New development and redevelopment projects/activities subject to Los Angeles County's LID Ordinance include all development projects equal to 1.0 acre or greater of disturbed area and residential new or redeveloped projects that create, add, or replace 10,000 SF or greater impervious surface area.

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 NPDES Permit or MS4 permit were adopted for municipal stormwater and urban runoff discharges within Los Angeles County, covering 84 cities and most of the unincorporated areas of Los Angeles County.

Low Impact Development

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 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 runoff mitigation in a manner that captures or treats rainwater at its source, while utilizing natural resources. Stormwater runoff shall either be infiltrated, evapotranspired, captured and used, or treated through high removal efficiency BMPs, onsite, through stormwater management techniques that comply with provisions of the City of Los Angeles Planning and Land Development Handbook for Low Impact Development (May 2016).

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. 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

Low Impact Development – Sustainable Storm Water Management

On January 20, 2005, the SWRCB adopted sustainability as a core value for all activities and programs carried out by the SWRCB (SWRCB, 2017a). Low Impact Development (LID) is a sustainable practice that promotes water retention and the protection of water quality. LID design techniques include features that increase infiltration, filtration, storing of water, reduce evaporation, and detain runoff. Ten common LID practices are:

1. Bioretention and Rain Gardens

2. Rooftop Gardens
3. Sidewalk Storage
4. Vegetated Swales, Buffers and Strips; Tree Preservation
5. Roof Leader Disconnection
6. Rain Barrels and Cisterns
7. Permeable Pavers
8. Soil Amendments
9. Impervious Surface Reduction and Disconnection
10. Pollution Prevention and Good Housekeeping

Hydromodification

The Project is not required to implement hydrologic control measures as mitigation for hydromodification impacts. In addition, as described below, implementation of the Project will result in a reduction of peak flows and volumes as compared to existing conditions, thereby satisfying hydromodification requirements in addition to the receiving water exemption.

Watershed Management Program

The County of Los Angeles and all cities in the Los Angeles Watershed are responsible for the implementation of watershed improvement plans or Enhanced Watershed Management Programs (EWMP) to improve water quality and assist in meeting the Total Maximum Daily Load (TMDL) milestones.

City of Gardena General Plan

The GGP Community Resource Element provides a Conservation Plan with the following goals and policies for the treatment of hydrology and water quality resources:

- CN Goal 2: Conserve and protect groundwater supply and water resources.
  - Policy CN 2.2: Comply with the water conservation measures set forth by the California Department of Water Resources.
  - Policy CN 2.6: Encourage and support the proper disposal of hazardous waste and waste oil. Monitor businesses that generate hazardous waste materials to ensure compliance with approved disposal procedures.

2.3 GROUNDWATER

Sustainable Groundwater Management Act (SGMA)

In 2014, the State of California adopted the SGMA to help manage its groundwater. The SGMA requires that local GSAs be formed for all high and medium priority basins in the state. These GSAs must develop and implement Groundwater Sustainability Plans (GSPs) for managing and using groundwater without causing undesirable results: significant groundwater-level declines, groundwater-storage reductions, seawater intrusion, water-quality degradation, land subsidence, and surface-water depletions; these are also referred to as sustainability indicators.

SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that would be 2040. For the remaining high and medium priority basins, 2042 is

the deadline. The latest basin prioritization project, SGMA 2019 Basin Prioritization, was completed in December 2019. SGMA 2019 Basin Prioritization identified 94 basins/sub-basins as medium or high priority. 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 GSA and prepare a 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.

3. ENVIRONMENTAL SETTING

3.1 SURFACE WATER HYDROLOGY

3.1.1 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 A for a map of the County's Dominguez Channel Watershed.

3.1.2 LOCAL

Stormwater Runoff is collected from the Project Site and conveyed through offsite storm drain facilities along Normandie Avenue and 170th Street. There is a Los Angeles County Flood Control District (LACFCD) lateral located North of the Project site near the intersection of W 169th Street and Normandie Avenue, whereby it enters a storm drainpipe through a catch basin within the public right of way. The main storm drain line is located on Normandie Avenue. The LACFCD storm drainpipe on 170th Street runs east until it reaches the line on Normandie Avenue. After flowing into the LACFCD storm drainpipe, the runoff is then taken south within the Dominguez Channel. Please refer to Appendix B for the Local Storm Drain System Exhibit showing 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.

3.1.3 ON SITE

In its existing condition, the Project Site is developed with warehouse buildings with accessory offices and paved parking areas throughout. The existing Project Site consists of five structures with the remainder of the site being mostly paved as a surface parking lot. The existing Project site runoff sheet flows to a catch basin near the intersection between 169th Street and Normandie Avenue as well as a catch basin on Normandie Avenue. The catch basin on 169th Street and Normandie Avenue discharge into LA County stormdrain system which flows southerly. All roof flows from the southerly existing buildings and paved parking areas are captured by a series of drains and discharge directly to ground level, where they join surface-level sheet flows and discharge to a catch basin location on Brighton Way. Please refer to Appendix C 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 for existing conditions hydrology analysis results. See Appendix D 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. Refer to Appendices D output calculations.

Table 1 – Existing Drainage Conditions

Drainage Area	Area (acres)	% Impervious	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
A-1	1.34	100	2.61	3.45	4.28
A-2	0.38	100	0.87	1.07	1.21
A-3	0.23	100	0.52	0.65	0.73
A-4	0.58	100	1.32	1.63	1.85
A-5	2.72	98.5	5.29	7.00	8.69
Existing Total	**5.25**	**99.7**	**10.61**	**13.80**	**16.76**

3.1.4 FEMA

According to the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Map (FIRM), the Project Site is located within Zone X outside of the 0.2% chance of flooding. Zone X depicts areas determined to be outside of the 0.2-1.0% (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.

3.2 SURFACE WATER QUALITY

3.2.1 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.

3.2.1.1 Beneficial Uses in Dominguez Channel Watershed

The existing and potential beneficial uses for the waters within the Dominguez Channel Watershed, where all the surface water flows from the Project ultimately discharge are described below. Beneficial uses for the waters within the Dominguez Channel Watershed [C, W] are identified below.

Table 2 – Beneficial Uses of the Dominguez Channel Estuary (Ends at Vermont Avenue) C, W

NAV* – Navigation	**WILD** – Wildlife Habitat
COMM – Commercial and Sport Fishing	**RARE** – Rare, Threatened, or Endangered Species
EST – Estuarine Habitat	**MAR** – Marine Habitat
MIGR – Migration of Aquatic Organism	**SPWN** – Spawning, Reproduction and/or Early Development
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.

The next reach where the surface water flows from the Project also discharge is the Dominguez Channel (Estuary to 135th Street). Beneficial uses for the Dominguez Channel (Estuary to 135th Street) are described in Table 3.

Table 3 – Beneficial Uses of the Dominguez Channel (Estuary to 135th Street)

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 3 for a table containing beneficial uses for all reaches of the Dominguez Channel that the Project ultimately discharges into downstream.

3.2.1.2 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 Maximum Daily 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 4 summarizes existing 303(d) Impairments and TMDLs in the Dominguez Channel watershed. See Appendix F for the 2020 California 3039d) List.

Table 4 – Dominguez Channel List of 303(d) Impairments and TMDLs

Water Body	303(d) Impairment & TMDLs
Dominguez Channel (lined portion above Vermont Avenue)	Copper, Indicator Bacteria (*303d only*), Lead, Toxicity, Zinc
Dominguez Channel (unlined portion below Vermont Avenue)	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: 2020 - 2022 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), found here: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-c-catreports/category5_report.shtml	

3.2.2 LOCAL

Within the urban environment of the Project, stormwater runoff occurs during and shortly after rain events. The volume of runoff depends on the intensity and duration of the storm event and the imperviousness of the drainage area. Typical urban pollutants associated with stormwater runoff following rain events includes sediment, trash, bacteria, metals, nutrients, and potentially organics and pesticides. The source of contaminants is wide ranging and includes all areas where rainfall occurs along with atmospheric deposition. Therefore, sources of contaminants within urban areas include roadways, building tops, parking lots, landscape areas and maintenance areas.

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.

The City of Gardena Department of Street Maintenance is responsible for streets, sanitary sewer and storm drain maintenance; street sweeping and painting, traffic signs and signals, and vehicle equipment maintenance. To reduce contaminant loads from entering the storm drain system, the City of Gardena 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. The City of Gardena also installs catch basin screens to reduce trash from entering the catch basins.

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.

3.2.3 ON SITE

The site currently consists of industrial and commercial buildings and associated parking lots. Based on a visual inspection completed on March 2022, water quality treatment control Best Management Practices (BMPs) are not currently present at the Project Site. Stormwater leaves the Project Site via an existing catch basin, existing drains, roof drains which penetrate the finished surface, or exits onto adjacent streets and remains untreated. Ultimately flows discharge into curbside inlets on 169th Street, Normandie Avenue, or Brighton Way which get picked up by the public storm drain system. Redevelopment of the Project Site will result in modified drainage patterns. Existing potential pollutants at the Project Site are likely to exist based on the existing industrial and commercial uses. Likely existing pollutants include oil & grease, trash, and hydrocarbons from the parking areas. Anticipated pollutants consistent with parking lots, building areas and landscaping include total suspended solids (TSS), oil/grease, heavy metals, nutrients, pesticides, and trash.

3.3 GROUNDWATER

3.3.1 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.

3.3.2 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)[3,4].

Groundwater within the West Coast Basin is replenished from stormwater percolation and through imported and recycled water, that is injected 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 05/13/2020 monitoring event showed groundwater levels at 22 feet below surface level[5]. Groundwater elevations have been gradually increasing across sampling measurements from 2011. The County Well Number 792W is the closest neighboring active monitoring well, located approximately 0.2 miles southwest of the project site.

3.3.3 ON SITE

Hamilton & Associates, Inc. performed geotechnical analysis of the Project Site on July 21, 2021. Based on on-site explorations conducted, the Project Site is located on artificial fill and alluvium. The site, under the asphalts and concrete, sits directly on sandy silt and sandy clay. Beneath the fill soils are layers of clayey silts, sandy clay, clayey sand, sandy silts and silty sand. These layers were encountered through the maximum boring depth.

Groundwater was encountered at 22 feet below ground surface (bgs). Historically high groundwater level in the area is approximately 15 feet below the ground surface. Infiltration opportunities may be limited by site conditions due to a shallow groundwater location and high concentrations of clay materials.

[3] West Basin Municipal Water District. *West Coast Groundwater Basin*. Found here: https://www.westbasin.org/water-supplies-groundwater/west-coast-groundwater-basin
[4] 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
[5] Groundwater levels for nearby station. Found here: https://dpw.lacounty.gov/general/wells/#

4. 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.

5. PROJECT METHODOLOGY AND IMPLEMENTATIONS

5.1 CONSTRUCTION

5.1.1 SURFACE WATER HYDROLOGY AND QUALITY

Implementation of the Project would result in construction activities that includes demolition of the existing buildings and parking areas on-site and excavation of existing soils. Construction activities have the potential to temporarily alter the existing drainage patterns of the Project Site by diverting existing surface flows and increase the permeability of the site based on increased pervious surface coverage during construction. 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. Exposed pervious surfaces also have the potential for erosion, scour, and increased sediment and associated pollutants discharging from the Project Site during construction activities. The main pollutant of concern during construction is typically sediment and soil particles that discharge off-site due to wind, rain, and construction patterns. 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.

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.

Since 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.

Construction Best Management Practices (BMPs)

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;
- SWPPP;

- Annual Fee & Certification.

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.

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. Major phases of the construction for the Project are described in Section 5.1.

Potential Surface Water Hydrology and Quality Impacts

Through compliance with the General Permit including implementation of BMPs appropriate for each major phase of construction, and compliance with applicable LA County 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 construction of 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. Lastly, construction of the Project would not result in discharges that would cause regulatory impacts within the Dominguez Channel. Therefore, it is anticipated that surface water hydrology and water quality during construction will be properly accounted for.

The proposed project will potentially discharge pollutants into the County storm drain system. Anticipated pollutants include Sediments, Nutrients, Pesticides, Pathogens, Trash, Oil, and Metals. The Project Site shall implement capture and use design features to meet the local LID requirements. With these implemented BMPs, the additional pollutants will be treated and will not have a significant impact on the existing system.

5.1.2 GROUNDWATER HYDROLOGY

Construction of the Project is not anticipated to impact any water supply wells, as no active water supply wells are located at or within half a mile downstream of the Project and the Project will not include the construction of any water supply wells. Based on Hamilton & Associates' Geotechnical Report (October 25, 2021), the historical high groundwater level in the area is 15 feet bgs. Groundwater was encountered during exploration with samples taken up to 22 ft bgs. Since most of the structure will be above an elevation of 33 feet, it is not expected that groundwater would be encountered during construction that would require temporary or permanent dewatering operations. Per Hamilton & Associates' Geotechnical Report, the proposed site excavation is limited to a minimum 5-inch-thick slab with the addition of at least 3 feet below footing bottoms for foundation support. The excavation depth will be at a higher elevation than the groundwater, therefore, 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. Accordingly, construction of the Project will not adversely impact the rate or direction of flow of groundwater, and the Project potential impacts on groundwater hydrology during construction have been taken into consideration.

5.1.3 GROUNDWATER QUALITY

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 because of soil or shallow groundwater being exposed to construction activities, materials, wastes and spilled materials. These potential impacts are qualitatively assessed.

The Project will also result in a net export of existing soil material. The Environmental Site Assessments (ESA)[6] should be reviewed fully for conclusion and recommendations, but in summary, the project site associated with addresses 16911/16907 South Normandie Avenue, has no evidence of presence of hazardous substances or petroleum products (known as: recognized environmental condition, REC's) in connection with the subject property. The project site associated addresses 16829, 16831, and 16835-16839 South Normandie Avenue, appears to release petroleum hydrocarbons and VOCs that impacts the subject property subsurface. There may be mitigation measures, such as vapor intrusion barrier, passive vent system, and soils management plan.

If contaminated soils are found within the excavation limits, contaminated soils would be collected within the excavated material, removed from the Project Site, and disposed of in accordance with all applicable regulatory requirements. Compliance with all applicable federal, state, and local requirements concerning the handling, storage and disposal of hazardous materials, will reduce 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.

During on-site grading and building activities, minimal amounts of hazardous materials such as fuels, paints, solvents, and concrete additives could be used, and the presence of such materials provides an opportunity for hazardous materials to be released into groundwater. To protect groundwater resources, the Project will comply with applicable federal, state and local requirements related to the handling, storage, application and disposal of hazardous waste which will reduce the potential for construction activities of the Project to release contaminants into groundwater that could affect existing contamination, mobilize or increase the level of groundwater contamination, or cause a violation of regulatory water quality standards at an existing production well. Therefore, groundwater contamination through hazardous materials releases, and impacts on groundwater quality have been taken into consideration and should have no issues.

[6] ESA Documents From: 16831 Normandie Ph II Opinion Letter (9.28.22), 16831 Normandie VIRE (9.30.22) Final, 16831 S Normandie - Phase II Assessment (11.04.21), 16831 S Normandie - Phase II Report (7.26.21), 16911 S Normandie - Ph I - Partner Engineering

5.2 OPERATION

5.2.1 SURFACE WATER HYDROLOGY

According to the County's Hydrology Manual, the Project is required to have drainage facilities that meet the Urban Flood level of protection, which is equivalent to runoff from a 25-year frequency design storm falling on a saturated watershed. A 25-year frequency design storm has a probability of 1/25 of being equaled or exceeded in any year. All drainage facilities must be designed to convey the 10-year frequency design storm, regardless of location in developed or undeveloped areas.

In addition to the 25-year storm event, 10- and 50- year storm frequency analyses have been conducted for flood hazard and changes in the amount or movement of surface water. The Project was analyzed under the 10-year frequency design storm as well as the 25-year frequency design storm 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 D and H for existing and proposed condition 10-year, 25-year and 50-year design storm peak flow calculations.

This study was prepared using HydroCalc 1.0.2 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 85th percentile and 50-year isohyetal rainfall frequency as well as relevant soil type. The data collected is then used in the HydroCalc program to calculate peak stormwater runoff values.

Development of the Project would result in an increase in the landscaped areas throughout the Project Site and would decrease impervious surfaces from 99.7 percent to 85.9 percent. This increase in pervious surfaces would result in maintaining in stormwater runoff. Table 6 provides an analysis of a 10-year, 25-year and 50-year frequency design storm events following construction of the Project. Attachment G provides the Proposed Hydrology Map and output calculations are provided in Attachment H.

Table 5 – Proposed Drainage Conditions

Drainage Area	Area (acres)	% Impervious	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
A-1	2.13	82.7	4.11	5.48	6.81
A-2	3.12	89.1	5.07	6.62	7.99
Proposed Total	**5.25**	**85.9**	**9.18**	**12.10**	**14.80**

Table 6 – Existing vs. Proposed Drainage Conditions

Drainage Area	Area (acres)	% Impervious	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
Existing	5.25	99.7	10.61	13.80	16.76
Proposed	5.25	85.9	9.18	12.10	14.80
Difference	0	13.8	1.43	1.70	1.96
% Change from Existing to Proposed Conditions	-	-13.8%	-13.5%	-12.3%	-11.7%

Table 7 provides a comparison of the existing and proposed peak flows for the 10-year, 25-year and 50-year storm events. These values provide the basis for the LID design. The above analysis includes the assumption that more landscaped area shall be added within the property, thereby increasing the pervious area of the Project site. As shown in Table 7, the decrease in the impermeable surfaces on the Project site would result in a reduction of flows under a 10-year storm, under a 25-year storm, as well as under a 50-year storm event.

Based on the above, operation of the Project would not result in flooding, impact of the capacity of existing storm drain systems or worsen an existing flood condition. 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 would not substantially reduce or increase the amount of surface water in the local water body or result in a permanent adverse change in the drainage system. The capacity of the storm drain facilities, which the Project contributes to, will not be adversely impacted by the proposed change in flows.

5.2.2 SURFACE WATER QUALITY

Stormwater runoff from the Project has the potential to discharge pollutants into the City and County storm drain system. Anticipated pollutants and typical source of the pollutants are listed in Table 8.

Table 7 – Potential Pollutants

Potential Pollutants	Source of Pollutants
Sediment	Parking lots, pedestrians, driveways, building rooftops, landscape areas, road
Nutrients	Landscape areas, lawns
Pesticides	Landscape areas, lawns
Pathogens	Landscape areas, lawns, building rooftops, vehicular traffic/activities
Trash/Debris	Parking lots, pedestrians, driveways, roadways, vehicles
Oil/Grease	Parking lots, driveways, roadways, vehicles
Metals	Parking lots, driveways, roadways

To meet the local MS4 Permit and LID requirements consistent with the LID Ordinance and LID Manual (May 9, 2016), stormwater management strategies will be implemented throughout the Project Site. Capture and use design features will be implemented to meet the local LID requirements due to high concentration of clay materials and a shallow groundwater level.

The Project will comply with the LA County LID Manual,[7] which requires that post-construction stormwater runoff from new developments be infiltrated, evapotranspirated, captured and reused, and/or treated through a high efficiency BMP onsite for the 85th percentile storm event or 0.75"—whichever is greater. For the Project, the 85th percentile storm event is 0.88".

The LID Manual states that BMPs shall be designed to manage and capture stormwater runoff. Infiltration systems are the first priority type of BMP improvements as they provide for percolation and infiltration of the stormwater into the ground, which not only reduces the volume of stormwater runoff entering the MS4 but also contributes to groundwater recharge in some areas. The second priority BMP is capturing and reusing stormwater onsite for either landscape irrigation or toilet flushing. Projects that cannot infiltrate or harvest/reuse the water quality volume may implement biofiltration BMPs. Biofiltration BMPs shall be sized to adequately capture 1.5 times the volume not managed through infiltration and/or capture and reuse.

Per Hamilton & Associates, Inc. geotechnical report dated October 25, 2021, percolation testing was not performed as part of the geotechnical investigation at the aforementioned property. The water quality regulations for LID will be achieved. Preliminary and final LID Plans will be coordinated with the City to satisfy the water quality requirements of the Project Site.

As infiltration is deemed infeasible due to site conditions and grading elevations, a Capture and Use BMPs can be designed and maintained to ensure adequate capacity to capture and utilize the stormwater design volume within the 7-month wet season period. Therefore, capture and use BMPs shall be proposed, and biofiltration BMPs shall remain an option if currently unknown circumstances arise.

Capture and Use BMPs require pretreatment devices to clean stormwater before it is stored within a cistern. This stormwater is then used for drip irrigation to water plants within the 7-month wet season. This requires enough landscape with the correct planting factors to use the captured water within the 7 months. The capture and use irrigation system will be appropriately sized in conformance with the LID manual.

The existing Project Site has no known structural or LID BMPs to treat stormwater. Therefore, implementation of the LID features proposed as part of the Project would result in a significant improvement in surface water quality runoff as compared to existing conditions. Implementation of the proposed BMP system will result in the treatment of the entire required volume for the Project Site and the elimination of pollutant runoff up to the 85th percentile storm event.

Based on the proposed LID plan, operation of the Project would not result in discharges that would cause: an incremental increase in pollution which would alter the quality of the waters of the state (Dominguez Channel) to a degree which unreasonably affects beneficial uses of the waters; (2) an

[7] County of Los Angeles Department of Public Works Low Impact Development, found here: https://pw.lacounty.gov/ldd/lddservices/docs/Los Angeles County Low Impact Development (LID) Manual.pdf

incremental increase of 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) an incremental increase in the nuisance that would be injurious to health; affect an entire community or neighborhood, or any considerable numbers of persons; and occurs during or as a result of the treatment or disposal of wastes. Lastly, operation of the Project would not result in discharges that would cause regulatory standards to be violated in the Dominguez Channel.

5.2.3 GROUNDWATER HYDROLOGY

Under the proposed conditions, regional and local potable water levels, and adjacent wells or well fields will not be impacted by the Project. The Project does not include any groundwater pumping and relies on Golden State Water for water service. In addition, the Project is not anticipated to adversely change the rate of direction of flow of groundwater. Implementation of the Project would also result in an increase in pervious areas over the existing conditions. The increase in pervious areas would improve the groundwater recharge capacity of the Project Site over existing conditions. Since the Project is anticipated to implement an LID system to treat the required volume of runoff, the Project shall improve the existing groundwater hydrology.

5.2.4 GROUNDWATER QUALITY

The proposed LID systems are designed to safely convey stormwater runoff into the sub-surface soil without the threat of contaminant mobilization and will assist in improving the groundwater quality.

The Project's design will ensure all proposed LID systems meet applicable LA County LID Manual requirements. 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 systems, operational effects to groundwater quality are considered less than significant.

6. CONCLUSIONS

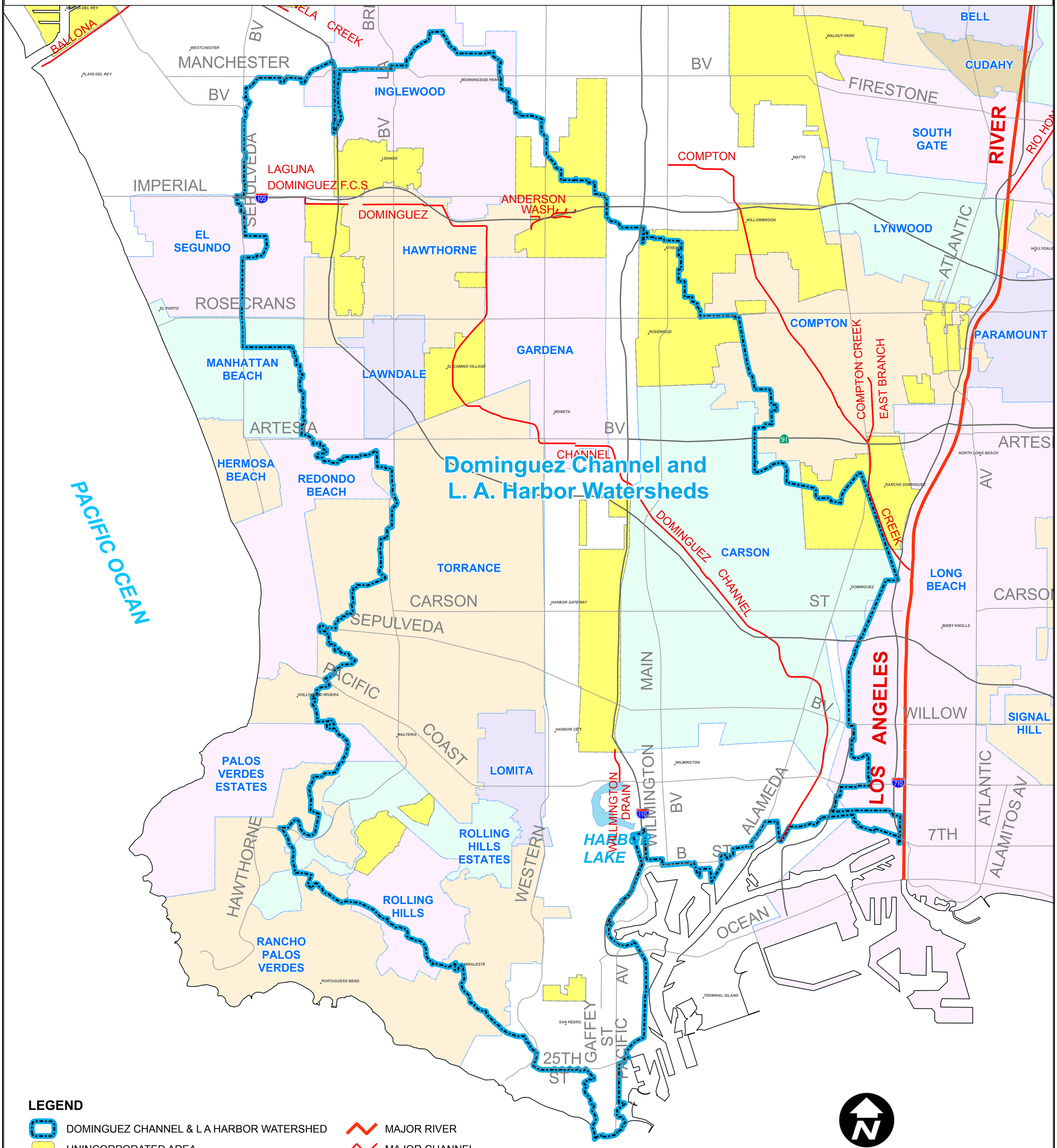
The proposed Project will implement best management practices and will maximize landscaping to minimize effects to hydrology and surface water and groundwater quality. Under buildout conditions, flows are anticipated to remain similar or decrease and to be efficiently treated through LID treatment technologies.

ATTACHMENT A

DOMINGUEZ CHANNEL WATERSHED MAP

COUNTY OF LOS ANGELES

DOMINGUEZ CHANNEL & LA HARBOR WATERSHEDS



LEGEND

- DOMINGUEZ CHANNEL & L A HARBOR WATERSHED
- UNINCORPORATED AREA
- DAM / LAKE / RESERVOIR
- MAJOR RIVER
- MAJOR CHANNEL

MILES
0 0.375 0.75 1.5

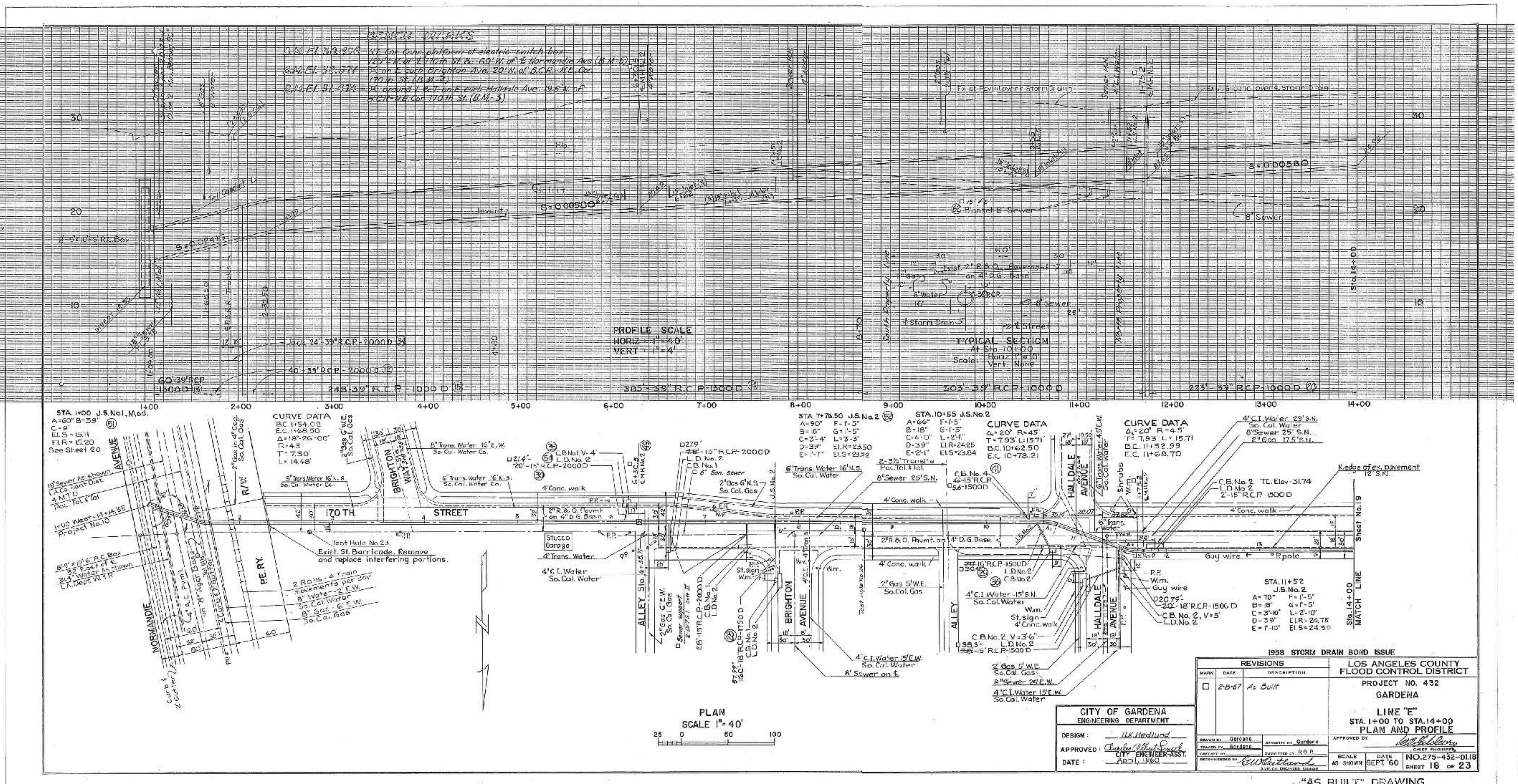
Data contained in this map is produced in whole or part from the Los Angeles County Department of Public Works' digital database.

REF: \\pwgisd02\mpmgis$\MPMGIS\projects\mpm\gismaps\wk_2627\DomingChanl&LAHarbor_wtrsheds.mxd DATE: 08/22/07

Mapping & Property Management Division, Mapping & GIS Services Section

ATTACHMENT B

LOCAL STORM DRAIN SYSTEM EXHIBIT



"AS BUILT" DRAWING

6-97

B.M. SY-3015 (K.E.76) El. 33.371 F.B. 1901-15
Normandie Ave. (E. Side) 730'± S. of 168th St.
Left in N.W. Cor. Loading Platform of Meadow Park Dairy Bldg. 175'± S. & 16940' ± E. of Normandie Ave. ℄

B.M. 113-34 El. 17.903 F.B. 1901-15
Normandie Ave. (W. Side) 700'± S. of 168th St.
F.C. Brass Cap Mon. in Conc. Headwall 1'± S. of Nend 50'± W. of Normandie Ave. Stamped 113-34
E. Side R.R. Tracks

B.M. SY-132 El. 18.283 F.B. 1901-15
Normandie Ave. (W. Side) 130'± S. of Send 1st.
Brass Cap Mon. in S. end of Conc. Headwall of culvert under P.E. R.R. 98.33'± W. of Normandie Ave. W. Side of R.R. Tracks.

B.M. K.E. 76 El. 20.642 F.B. 1901 Pg. 16
Normandie Ave. ℄ 174th St. 6'± W. ℄ Int.
1.8'± N. of N. side of Conc. ring around S.M.H.

168th STREET

Existing Ground Line

8'-9" x 10'-6" R.C. BOX OR 126" R.C. PIPE

8'-9" x 10'-6" R.C. BOX OR 126" R.C. PIPE

126" R.C. PIPE

Invert Exist. 15" San Sewer

8'-9" x 10'-6" R.C. BOX OR 126" R.C. PIPE

8'-9" x 10'-6" R.C. BOX OR 126" R.C. PIPE

Invert Exist. 15" San Sewer

14'-0" W. x 9'-9" H. R.C. BOX

Removed 90 of 8'-9" W. x 10'-6" H. R.C. Box

8'-9" x 10'-6" R.C. BOX OR 126" R.C. PIPE TYPICAL SECTION
Sta. 18+00
SCALE: 1" = 10'

DETAIL A
No Scale

DETAIL B
No Scale
See Dwg. No. 28-D97.4 & .5

DETAIL C
No Scale

DETAIL D
No Scale

PROFILE
HORI. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'

PART OF SAN PEDRO RANCHO
M.R. 59-15

NORMANDIE AVE.

GARDENA CITY BOUNDARY

P.E. RY. R/W

MACDONALD ST.

168th ST.

Curve Data:
Δ = 14°05'07"
R = 760'
T = 93.89'
L = 186.84'

Curve Data:
~~Δ = 16°48'55"~~
~~R = 100'~~
~~T = 14.78'~~
~~L = 29.35'~~

PLAN
SCALE: 1" = 40'
M.R. 15-21-22

NOTE:
Resurface trench within the paved area of 168th St. with 3 inches of premix pavement.

NOTE:
Resurface trenches within the paved area of Normandie Ave. from Sta. 17+95 to Sta. 45+15 with 3 inches of premix pavement.

NOTE:
Resurface trenches within the paved area of Normandie Ave. from Sta. 14+63 to Sta. 17+95 with 4 inches of premix pavement.

△NOTE:
FROM STA. 13+20 TO DOMINGUEZ CHANNEL SEE DWG. NOS. 28-D97.4 & .5.

~~80' Drainage Easement Extending to Dominguez Channel Right of Way~~
△Not acquired

TRACT
APPROVED AS TO GARDENA
GARDENA ASSISTANT CITY ENGINEER
DATE: 5-10-55

COUNTY STORM DRAIN BOND ISSUE

PREPARED BY
WILLIAM J. FOX
COUNTY ENGINEER

RECOMMENDED BY
CONSTRUCTION AND STORM DRAIN ENGINEER

DRAWN BY P.R. Pearl DESIGNED BY P.R. Pearl
TRACED BY H.A. Dell WORKSHEETED BY C.H. Green
CHECKED BY G.W. Tatchell DATE 1-26-55

REVISIONS		
MARK	DATE	DESCRIPTION
△	5-21-57	As Built
△	7-1-59	Revised
E	9-12-68	Permit 68218-Dwg. 181-10-F 19
D	11-22-71	" 69774-181-10-F27
A	11-22-71	" 68199-181-10-F26

DRAWN BY County of L.A. DESIGNED BY County of L.A.
TRACED BY County of L.A.
CHECKED BY W.H. Ed. SUBMITTED BY Gillo
RECOMMENDED BY [signature] DIVISION ENGINEER SURVEYS

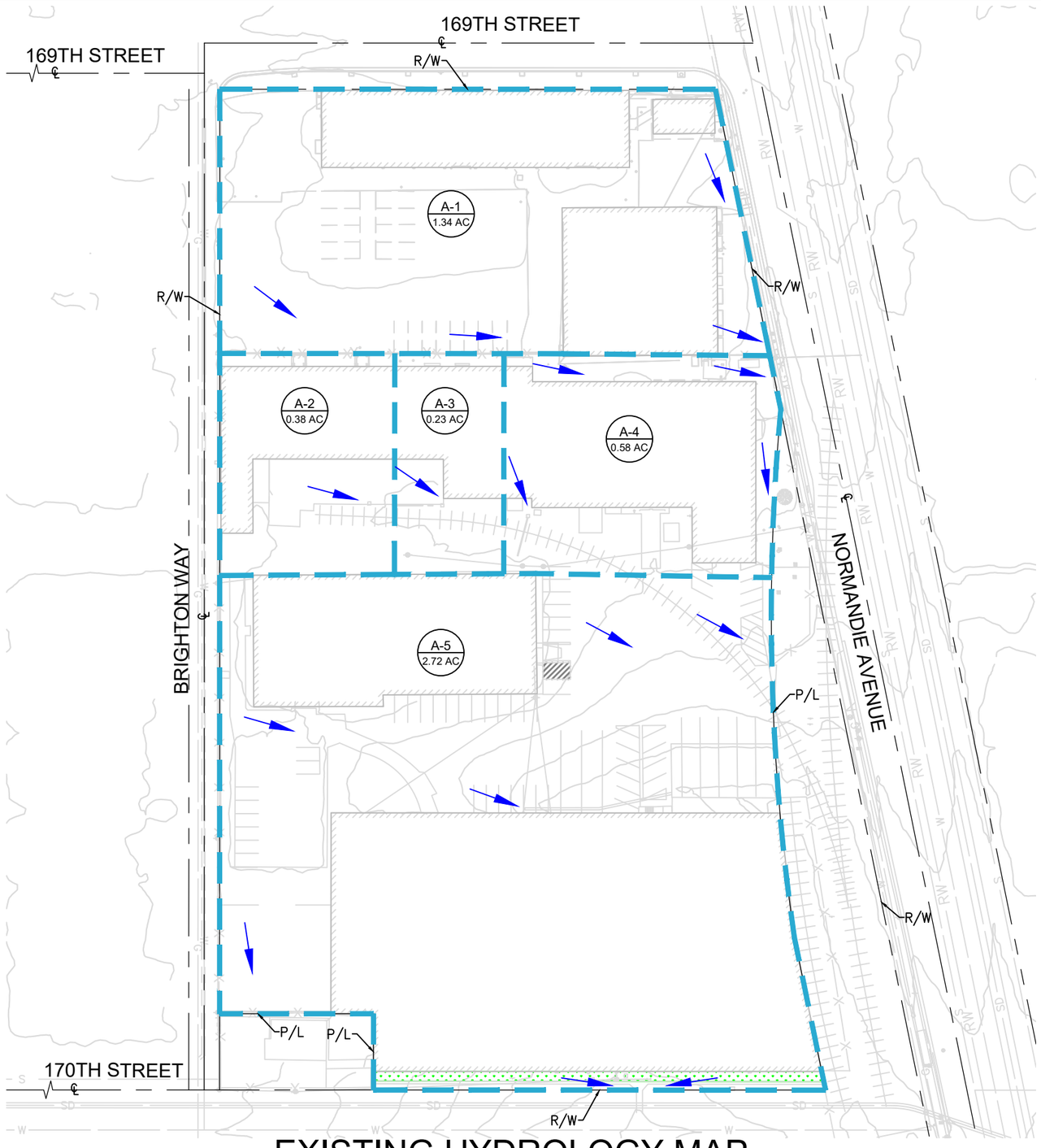
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
PROJECT NO. 10
NORMANDIE AVENUE
CONCRETE CONDUIT
STA. 12+10.00 TO STA. 24+00.00
PLAN AND PROFILE

APPROVED BY [signature] 6/1/55
CHIEF ENGINEER

SCALE: AS SHOWN
DATE: FEB. 1955
DRAWING NO. 181-10-D1.2
SHEET 2 OF 25

ATTACHMENT C

EXISTING ON-SITE HYDROLOGY



EXISTING HYDROLOGY MAP

16911 S NORMANDIE AVE
GARDENA, CA 90247

LEGEND & ABBREVIATIONS:

	DRAINAGE AREA LIMIT
AC	ACRE
CFS	CUBIC FEET PER SECOND
SF	SQUARE FEET
P/L	PROPERTY LINE
R/W	RIGHT OF WAY
	FLOW DIRECTION
X / X.XX	SUB–AREA ID / ACREAGE
	PERVIOUS AREA

EXISTING HYDROLOGY CALCULATIONS

SUBAREA ID	TOTAL AREA (SF/AC)	IMPERVIOUS AREA (SF/AC)	PERVIOUS AREA (SF/AC)	IMPERVIOUS %	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)
A–1	58,365/1.34	58,365/1.34	0	100	2.61	3.45	4.28
A–2	16,339/0.38	16,339/0.38	0	100	0.87	1.07	1.21
A–3	10,153/0.23	10,153/0.23	0	100	0.52	0.65	0.73
A–4	25,272/0.58	25,272/0.58	0	100	1.32	1.63	1.85
A–5	118,430/2.72	116,574/2.68	1,856/0.04	98.5	5.29	7.00	8.69
TOTAL	228,559/5.25	226,703/5.21	1,856/0.04	99.7	10.61	13.80	16.76

NOTE:

SOIL TYPE – 13
50TH YR RAINFALL DEPTH – 5.95 IN

80’ 0’ 40’ 80’
SCALE: 1” = 80’

FUSCOE
ENGINEERING
16795 Von Karman, Suite 100, Irvine, California 92606
tel 949.474.1960 fax 949.474.5315 www.fuscoe.com

ATTACHMENT D

HydroCalc Hydrology Results For Existing Site

Peak Flow Hydrologic Analysis

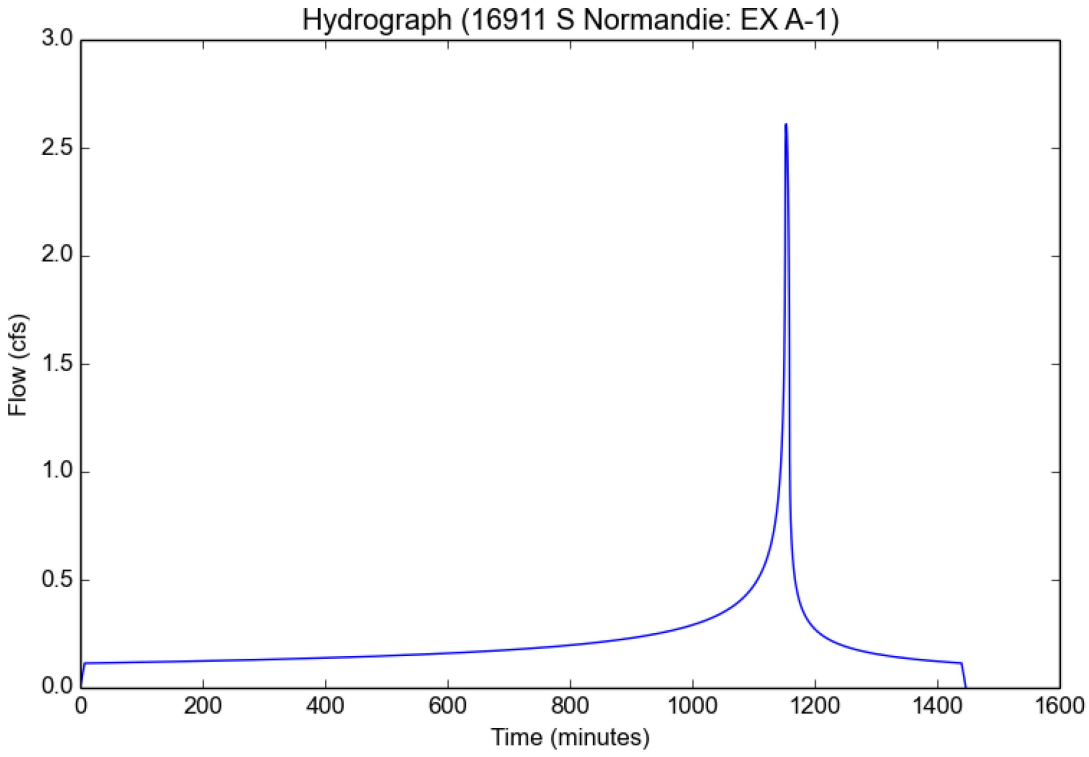
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-1-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-1
Area (ac)	1.34
Flow Path Length (ft)	397.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.1639
Undeveloped Runoff Coefficient (Cu)	0.8468
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.6097
Burned Peak Flow Rate (cfs)	2.6097
24-Hr Clear Runoff Volume (ac-ft)	0.4234
24-Hr Clear Runoff Volume (cu-ft)	18444.4306



Peak Flow Hydrologic Analysis

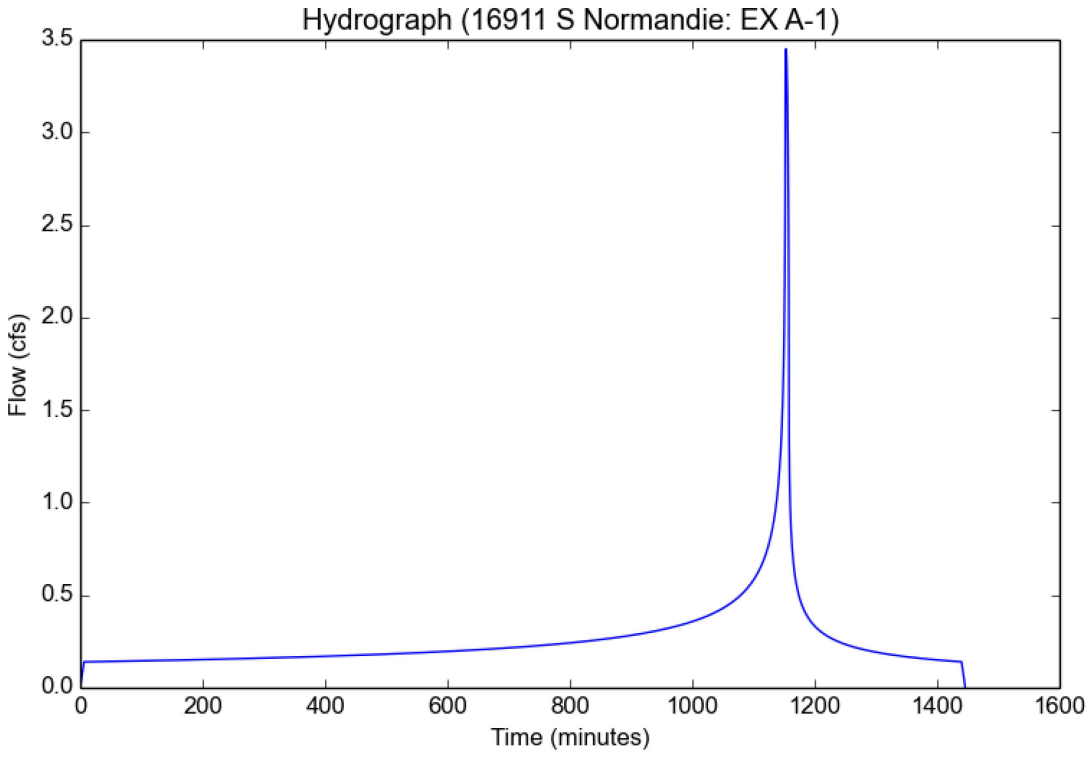
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-1-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-1
Area (ac)	1.34
Flow Path Length (ft)	397.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	2.8609
Undeveloped Runoff Coefficient (Cu)	0.9168
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	3.4502
Burned Peak Flow Rate (cfs)	3.4502
24-Hr Clear Runoff Volume (ac-ft)	0.5207
24-Hr Clear Runoff Volume (cu-ft)	22680.9628



Peak Flow Hydrologic Analysis

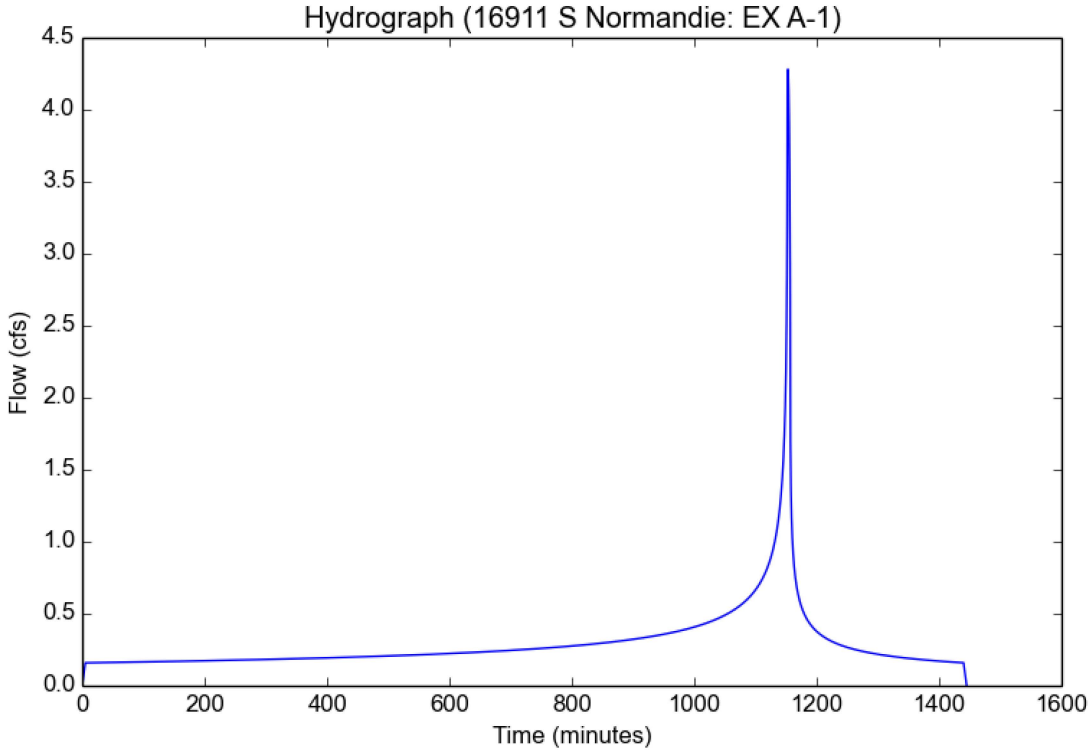
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-1-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-1
Area (ac)	1.34
Flow Path Length (ft)	397.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	4.2812
Burned Peak Flow Rate (cfs)	4.2812
24-Hr Clear Runoff Volume (ac-ft)	0.593
24-Hr Clear Runoff Volume (cu-ft)	25832.5281



Peak Flow Hydrologic Analysis

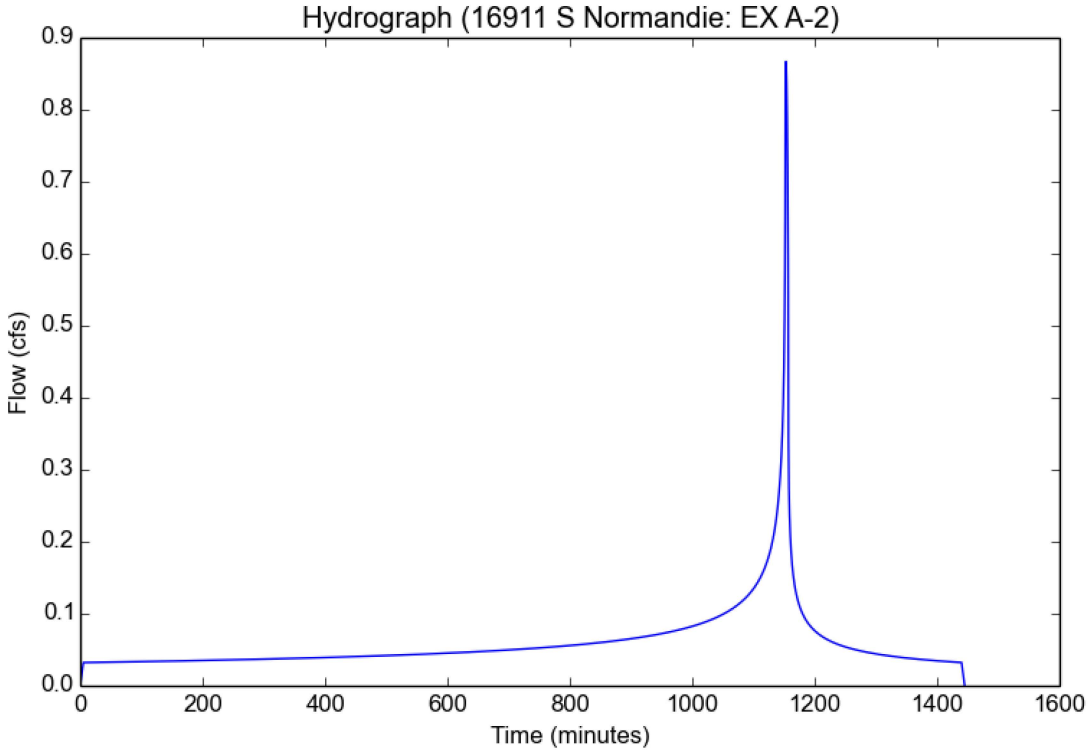
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-2-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-2
Area (ac)	0.38
Flow Path Length (ft)	138.09
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.5347
Undeveloped Runoff Coefficient (Cu)	0.8934
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8669
Burned Peak Flow Rate (cfs)	0.8669
24-Hr Clear Runoff Volume (ac-ft)	0.1201
24-Hr Clear Runoff Volume (cu-ft)	5230.5086



Peak Flow Hydrologic Analysis

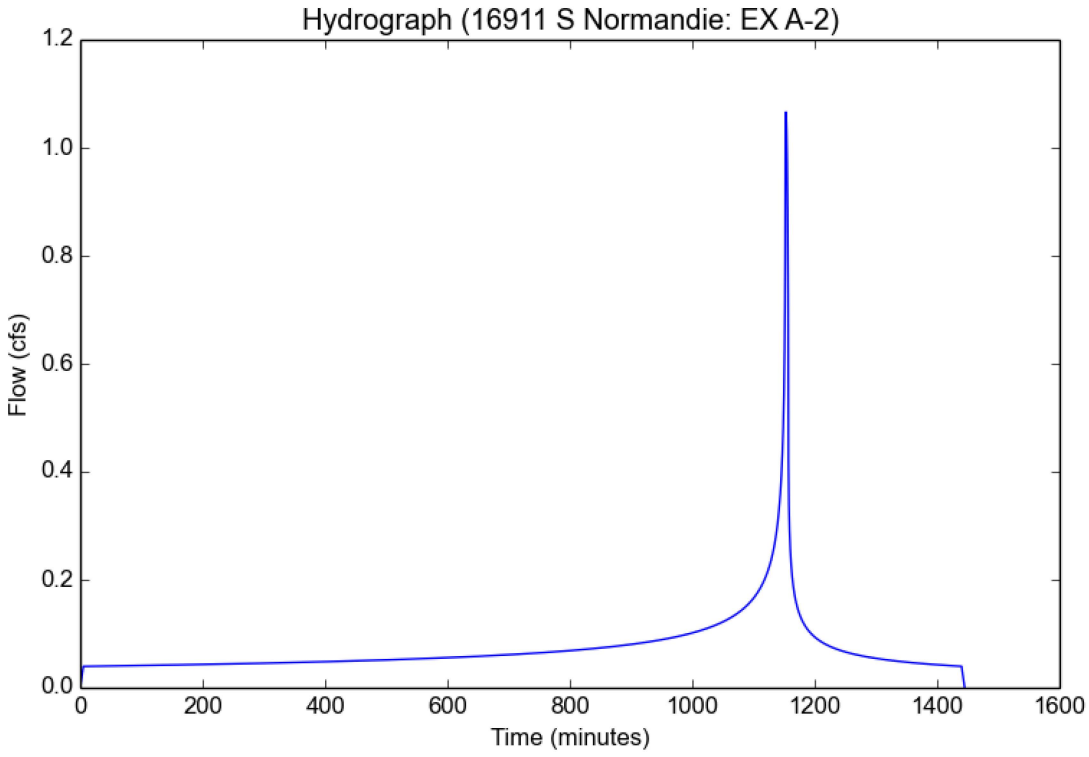
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-2-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-2
Area (ac)	0.38
Flow Path Length (ft)	138.09
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	3.1168
Undeveloped Runoff Coefficient (Cu)	0.9317
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.066
Burned Peak Flow Rate (cfs)	1.066
24-Hr Clear Runoff Volume (ac-ft)	0.1477
24-Hr Clear Runoff Volume (cu-ft)	6431.9139



Peak Flow Hydrologic Analysis

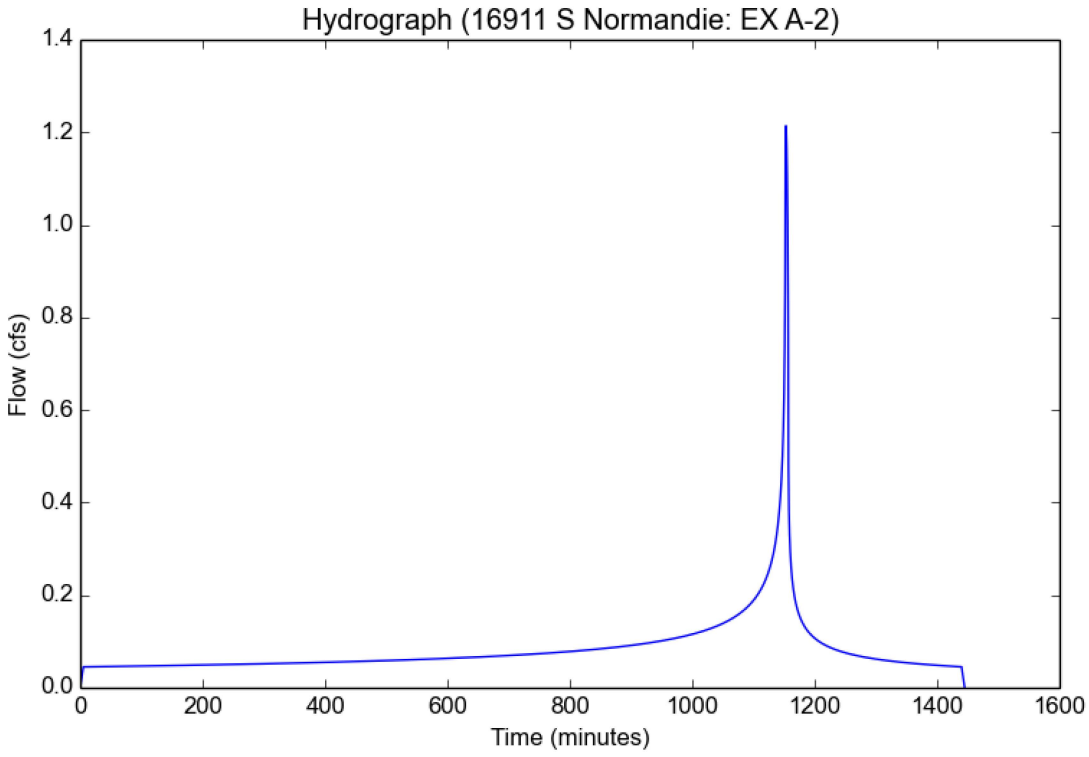
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-2-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-2
Area (ac)	0.38
Flow Path Length (ft)	138.09
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2141
Burned Peak Flow Rate (cfs)	1.2141
24-Hr Clear Runoff Volume (ac-ft)	0.1682
24-Hr Clear Runoff Volume (cu-ft)	7325.6423



Peak Flow Hydrologic Analysis

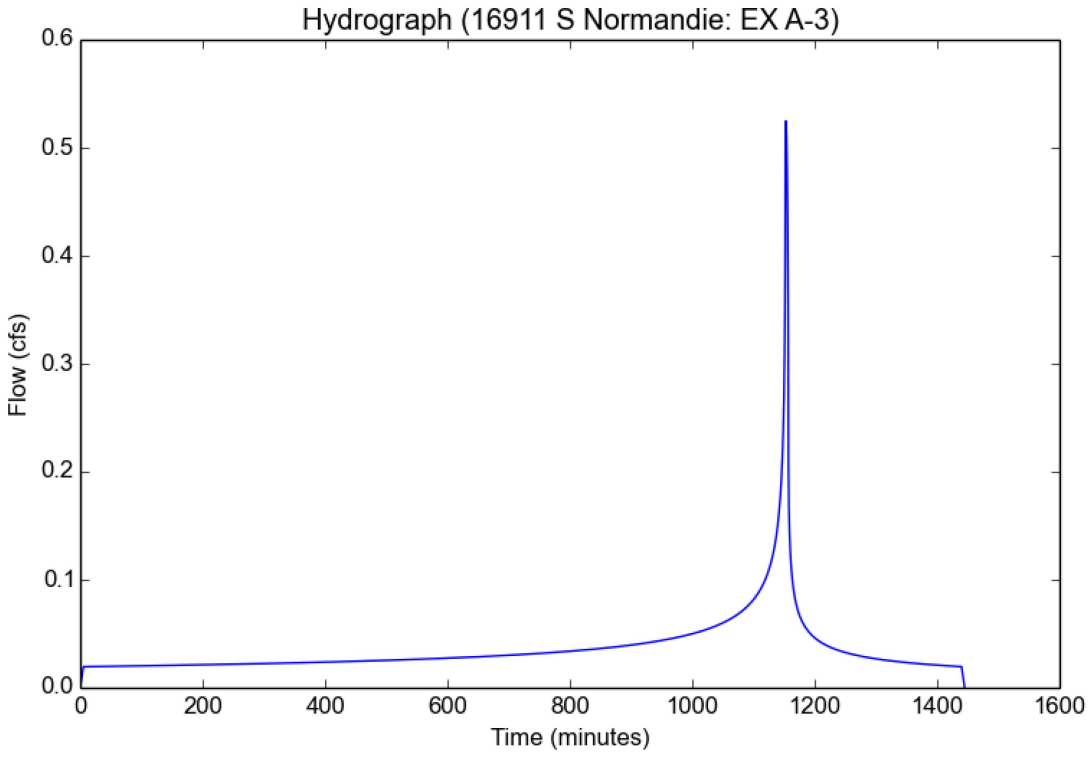
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-3-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-3
Area (ac)	0.23
Flow Path Length (ft)	103.24
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.5347
Undeveloped Runoff Coefficient (Cu)	0.8934
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.5247
Burned Peak Flow Rate (cfs)	0.5247
24-Hr Clear Runoff Volume (ac-ft)	0.0727
24-Hr Clear Runoff Volume (cu-ft)	3165.8342



Peak Flow Hydrologic Analysis

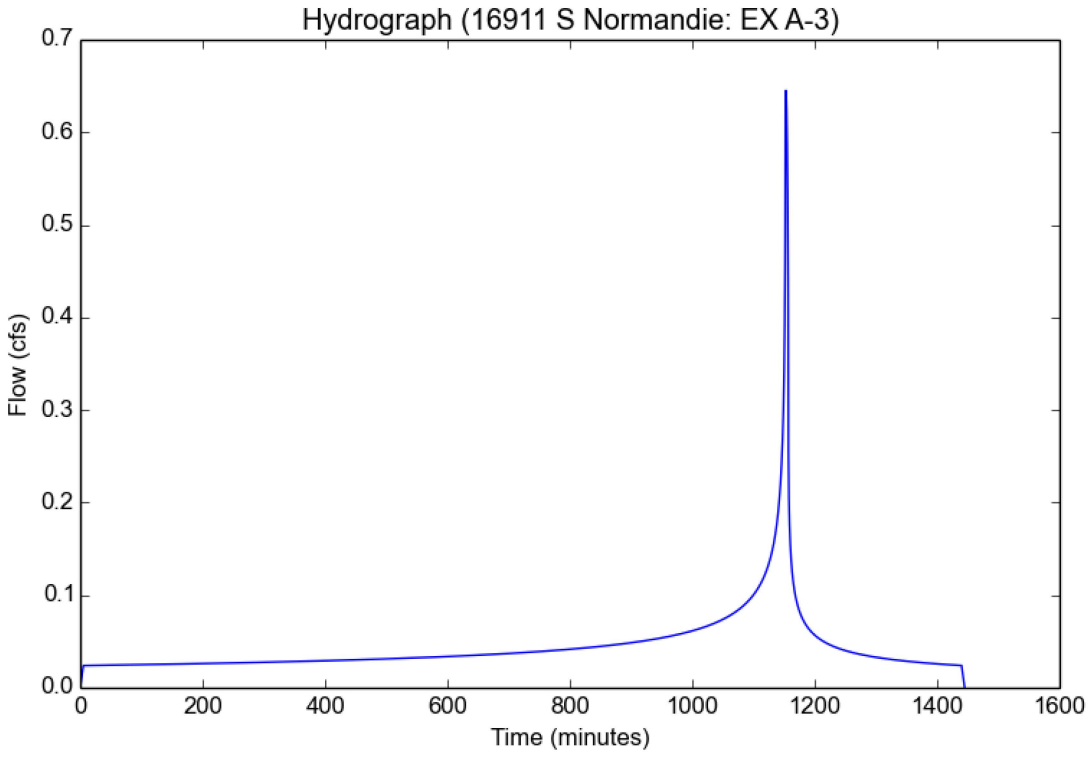
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-3-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-3
Area (ac)	0.23
Flow Path Length (ft)	103.24
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	3.1168
Undeveloped Runoff Coefficient (Cu)	0.9317
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6452
Burned Peak Flow Rate (cfs)	0.6452
24-Hr Clear Runoff Volume (ac-ft)	0.0894
24-Hr Clear Runoff Volume (cu-ft)	3893.0005



Peak Flow Hydrologic Analysis

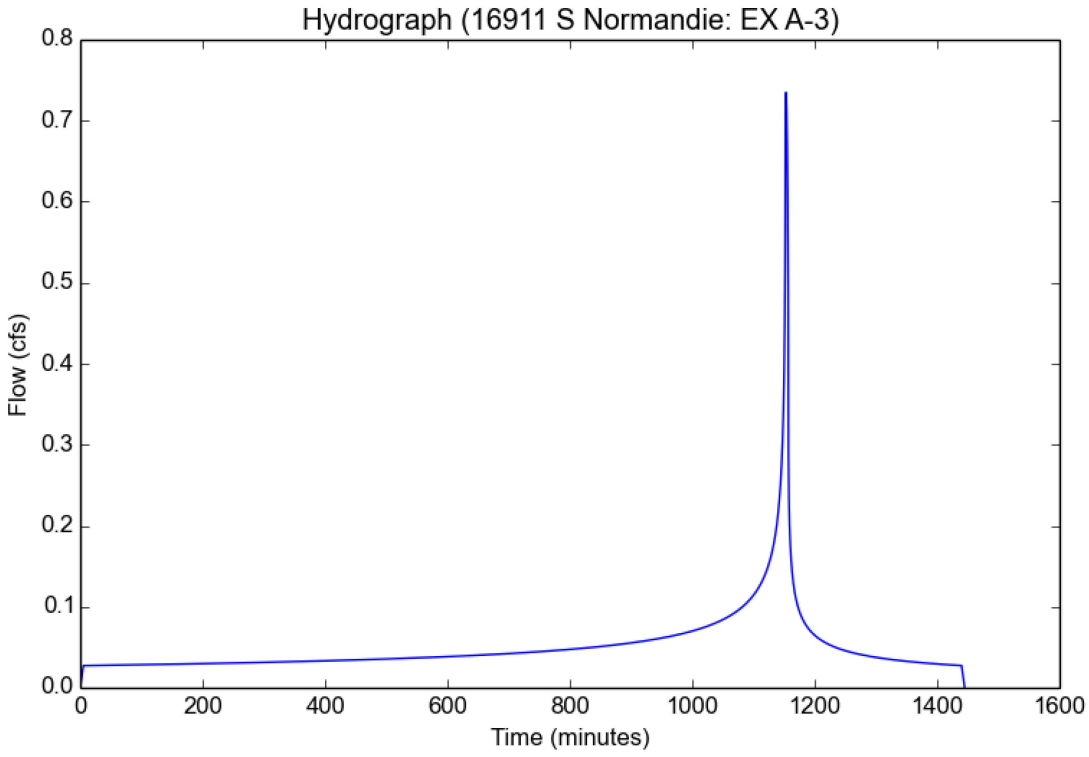
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-3-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-3
Area (ac)	0.23
Flow Path Length (ft)	103.24
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7348
Burned Peak Flow Rate (cfs)	0.7348
24-Hr Clear Runoff Volume (ac-ft)	0.1018
24-Hr Clear Runoff Volume (cu-ft)	4433.9414



Peak Flow Hydrologic Analysis

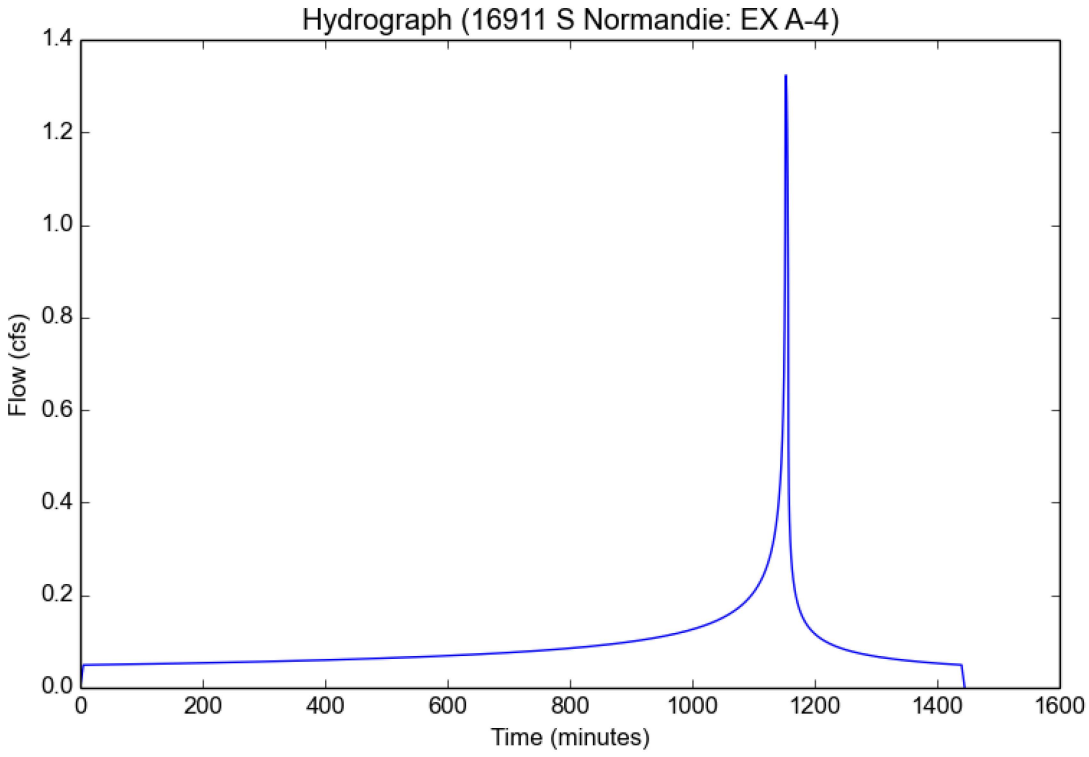
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-4-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-4
Area (ac)	0.58
Flow Path Length (ft)	106.55
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.5347
Undeveloped Runoff Coefficient (Cu)	0.8934
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.3231
Burned Peak Flow Rate (cfs)	1.3231
24-Hr Clear Runoff Volume (ac-ft)	0.1833
24-Hr Clear Runoff Volume (cu-ft)	7983.4079



Peak Flow Hydrologic Analysis

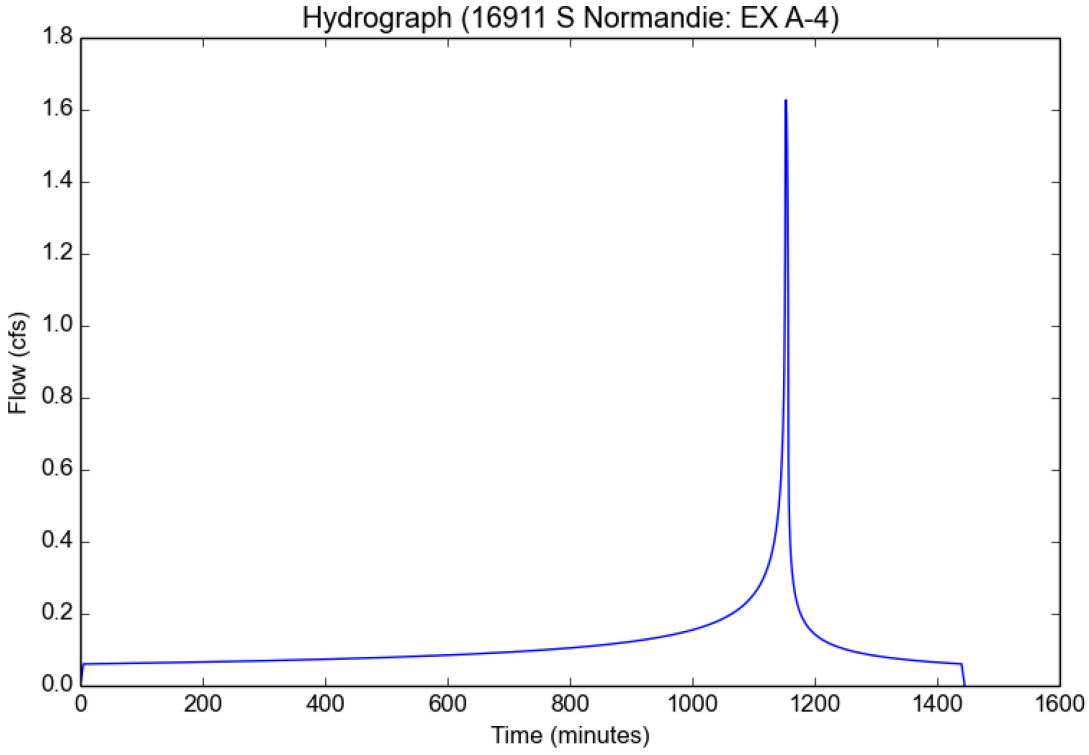
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-4-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-4
Area (ac)	0.58
Flow Path Length (ft)	106.55
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	3.1168
Undeveloped Runoff Coefficient (Cu)	0.9317
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.627
Burned Peak Flow Rate (cfs)	1.627
24-Hr Clear Runoff Volume (ac-ft)	0.2254
24-Hr Clear Runoff Volume (cu-ft)	9817.1318



Peak Flow Hydrologic Analysis

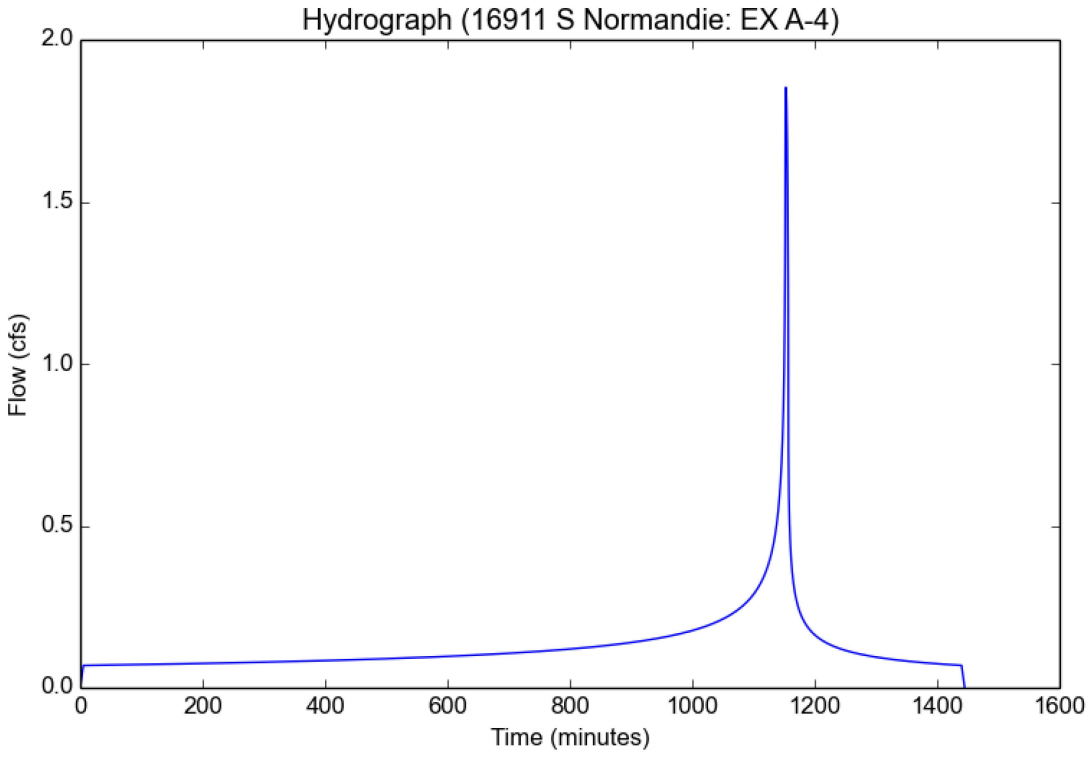
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-4-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-4
Area (ac)	0.58
Flow Path Length (ft)	106.55
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.8531
Burned Peak Flow Rate (cfs)	1.8531
24-Hr Clear Runoff Volume (ac-ft)	0.2567
24-Hr Clear Runoff Volume (cu-ft)	11181.2435



Peak Flow Hydrologic Analysis

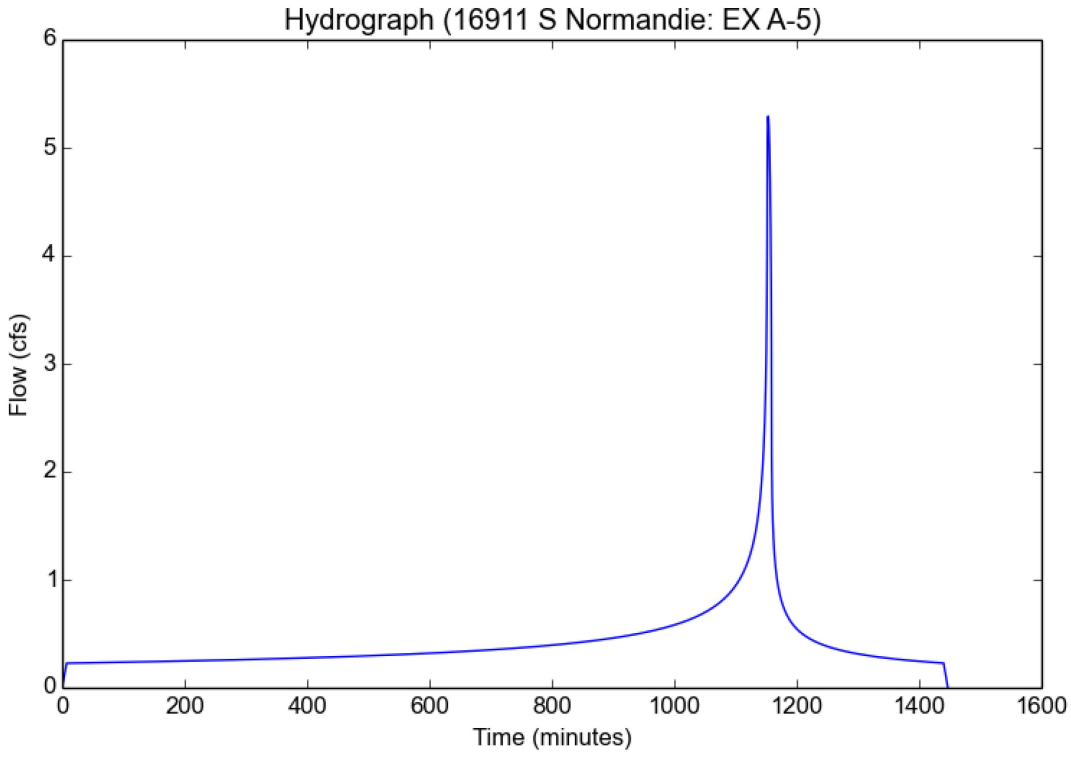
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-5-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-5
Area (ac)	2.72
Flow Path Length (ft)	395.15
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.985
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.1639
Undeveloped Runoff Coefficient (Cu)	0.8468
Developed Runoff Coefficient (Cd)	0.8992
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	5.2925
Burned Peak Flow Rate (cfs)	5.2925
24-Hr Clear Runoff Volume (ac-ft)	0.8489
24-Hr Clear Runoff Volume (cu-ft)	36976.0602



Peak Flow Hydrologic Analysis

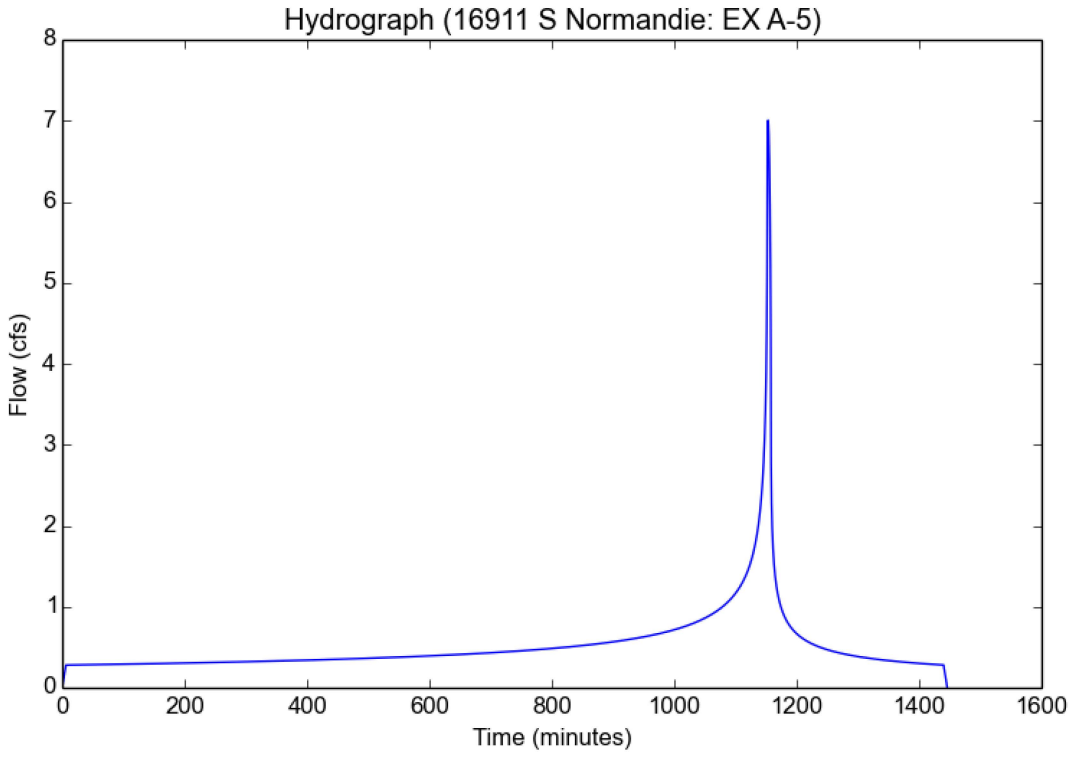
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-5-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-5
Area (ac)	2.72
Flow Path Length (ft)	395.15
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.985
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	2.8609
Undeveloped Runoff Coefficient (Cu)	0.9168
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	7.0034
Burned Peak Flow Rate (cfs)	7.0034
24-Hr Clear Runoff Volume (ac-ft)	1.0441
24-Hr Clear Runoff Volume (cu-ft)	45481.0769



Peak Flow Hydrologic Analysis

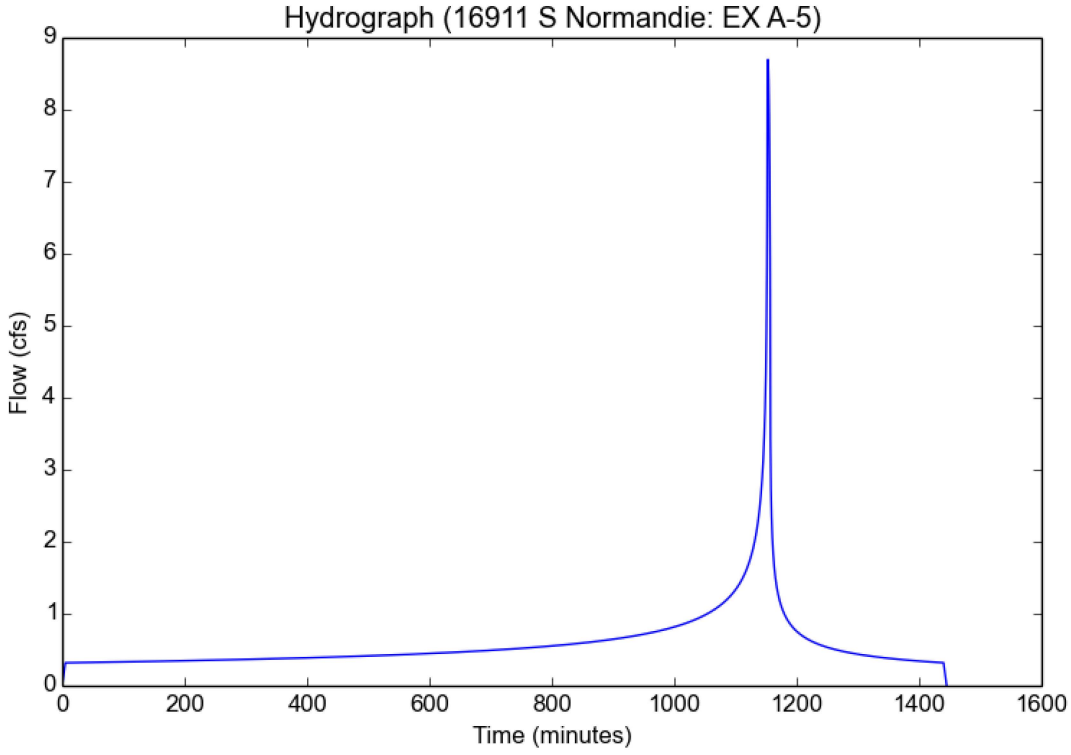
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/16911 S Normandie - EX A-5-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	EX A-5
Area (ac)	2.72
Flow Path Length (ft)	395.15
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.985
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	8.6902
Burned Peak Flow Rate (cfs)	8.6902
24-Hr Clear Runoff Volume (ac-ft)	1.1894
24-Hr Clear Runoff Volume (cu-ft)	51810.5286



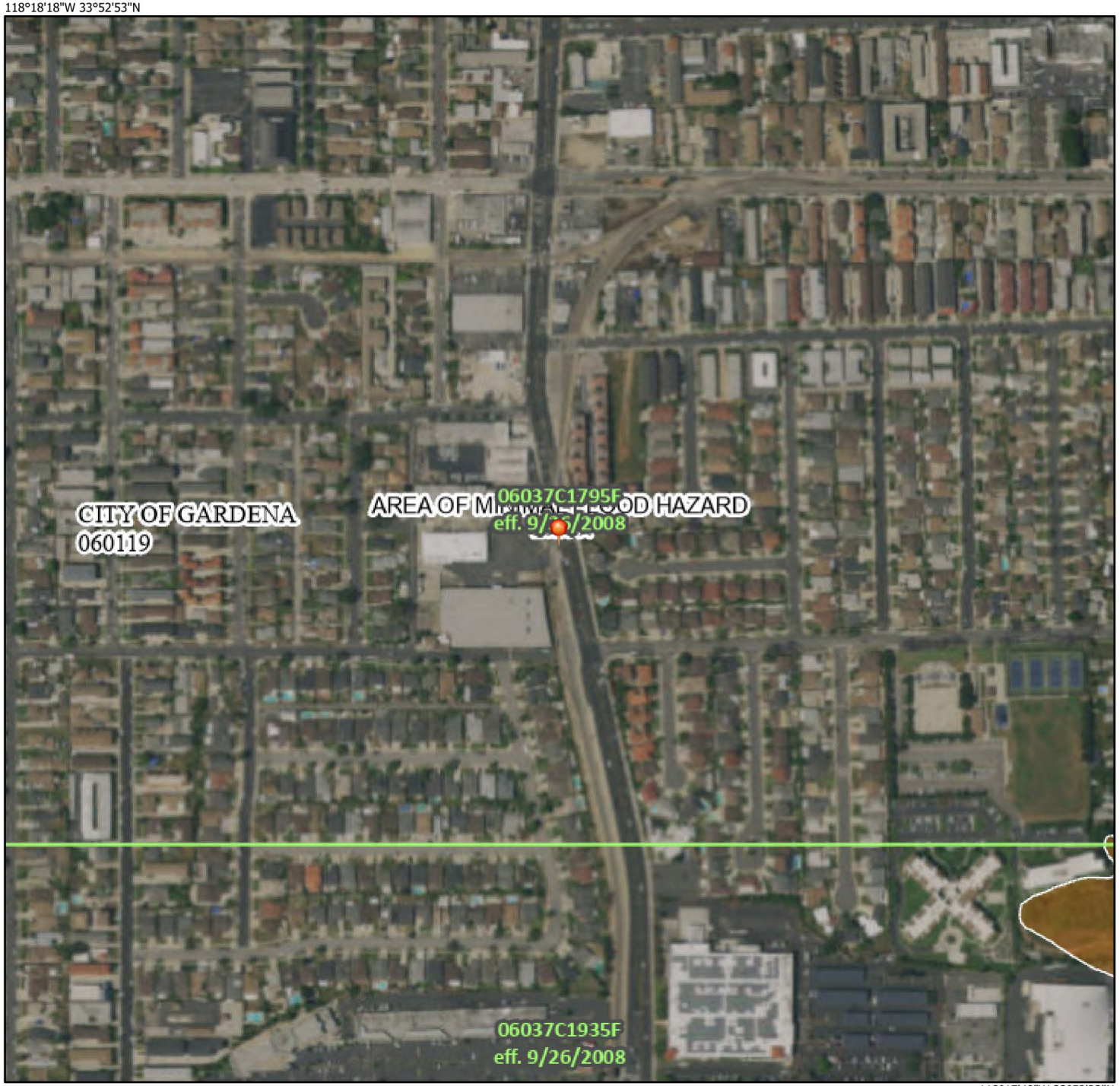
ATTACHMENT E

FEMA FLOODPLAIN MAP

National Flood Hazard Layer FIRMette

FEMA

118°18'18"W 33°52'53"N



118°17'40"W 33°52'23"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

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
- 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 3/2/2022 at 12:18 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.

ATTACHMENT F

2020 CALIFORNIA 303(D) LIST

Category 5 criteria: 1) A water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment.

* USGS HUC = US Geological Survey Hydrologic Unit Code. Calwater = State Water Resources Control Board hydrological subunit area or even smaller planning watershed.

** TMDL requirement status definitions for listed pollutants are: A= TMDL still required, B= being addressed by USEPA approved TMDL, C= being addressed by action other than a TMDL, ALT= being addressed by USEPA approved TMDL alternative

*** Dates relate to the TMDL requirement status, so a date for A= TMDL scheduled completion date, B= Date USEPA approved TMDL, and C= Completion date for action other than a TMDL

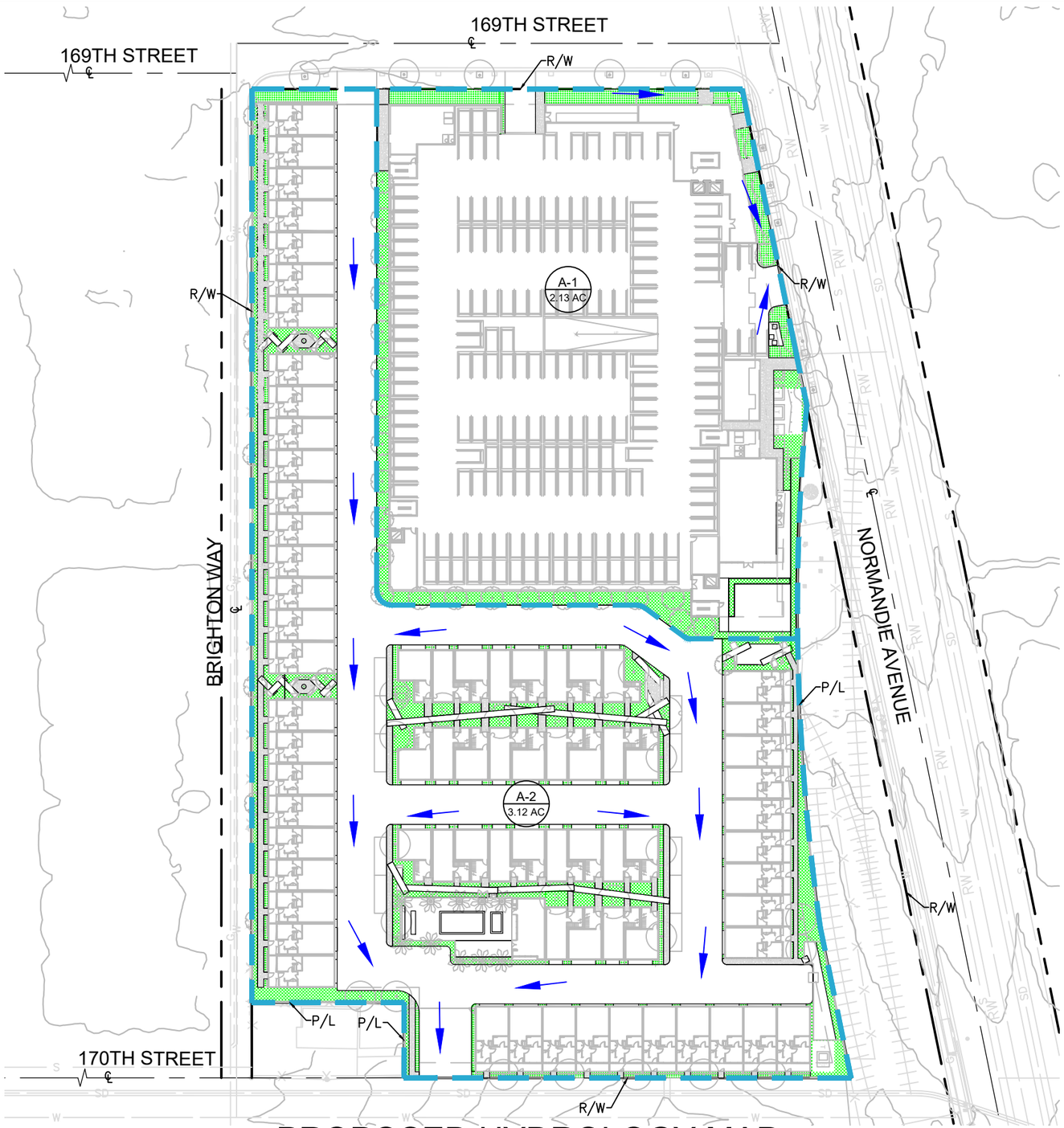
REGION	WATER BODY NAME	WATER TYPE	WATERSHED* CALWATER / USGS HUC	POLLUTANT / POTENTIAL SOURCES / *Relevant Notes*	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS**	TMDL REQUIREMENT DATE***
Region 1	Big River Beach at Mendocino Bay	Coastal & Bay Shoreline	1113.300405 / 18010108	Indicator Bacteria A Source Unknown	3.9 Miles	2010	5A	2022
Region 1	Bodega HU, Bodega Harbor HA	Bay & Harbor	11522000 / 18010111	Invasive Species A Source Unknown	810 Acres	2006	5A	2025
Region 1	Bodega HU, Estero Americano HA, Americano Creek	River & Stream	1115.300001,1115.300002,1115.300003 / 18010111	Nutrients A Source Unknown	38 Miles	1996	5A	2025
Region 1	Bodega HU, Estero Americano HA, estuary	Estuary	1115.300001,1115.300002 / 18010111	Nutrients A Source Unknown	37 Acres	1996	5A	2025
				Sedimentation/Siltation A Source Unknown	37 Acres	1992	5A	2025
Region 1	Bodega HU, Estero de San Antonio HA, Stemple Creek/Estero de San Antonio	River & Stream	1115.400001,1115.400002,1115.400003 / 18010111	Nutrients A Source Unknown	87 Miles	2026	5A	2025
				Sediment A Source Unknown	87 Miles	2006	5A	2025
Region 1	Campbell Cove	Coastal & Bay Shoreline	1115.210000,1115.220000 / 18010111	Indicator Bacteria A Source Unknown	0.24 Miles	2006	5A	2022
Region 1	Caspar Headlands State Beach	Coastal & Bay Shoreline	1113.300404,1113.300405 / 18010108	Indicator Bacteria A Source Unknown	0.19 Miles	2010	5A	2022
Region 1	Clam Beach (near Mad River mouth)	Coastal & Bay Shoreline	1109.100101 / 18010102	Indicator Bacteria A Source Unknown	1.5 Miles	2012	5A	2022
Region 1	Clam Beach (near Strawberry Creek)	Coastal & Bay Shoreline	1108.200002,1109.100200,1109.100300 / 18010102	Indicator Bacteria A Source Unknown	1.3 Miles	2006	5A	2022

REGION	WATER BODY NAME	WATER TYPE	WATERSHED* CALWATER / USGS HUC	POLLUTANT POTENTIAL SOURCES *Relevant Notes*	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS**	DATE***
				pH Nonpoint Source Point Source	8.5 Miles	1996	5B	2004
Region 4	Coyote Creek, North Fork	River & Stream	4405.150000 / 18070104	Indicator Bacteria A Source Unknown	5 Miles	2010	5B	2016
				Selenium A Source Unknown	5 Miles	2010	5A	2021
Region 4	Crystal Lake	Lake & Reservoir	4405.430000 / 18070106	Organic Enrichment/Low Dissolved Oxygen A Source Unknown	6.7 Acres	1998	5A	2019
Region 4	Dominguez Channel (lined portion above Vermont Ave)	River & Stream	4411.010000 / 18070104	Copper A Source Unknown	6.8 Miles	1996	5B	2012
				Indicator Bacteria A Source Unknown	6.8 Miles	2006	5A	2027
				Lead A Source Unknown	6.8 Miles	1800	5B	2012
				Toxicity A Source Unknown	6.8 Miles	2010	5B	2012
				Zinc A Source Unknown	6.8 Miles	1800	5B	2012
Region 4	Dominguez Channel Estuary (unlined portion below Vermont Ave)	Estuary	40512000 / 18070104	Benthic Community Effects A Source Unknown	140 Acres	1996	5B	2012
				Benzo(a)anthracene Agriculture-storm runoff	140 Acres	2006	5B	2012
				Benzo(a)pyrene A Source Unknown	140 Acres	1996	5B	2012
				Chlordane (tissue) A Source Unknown	140 Acres	2016	5B	2012
				Chrysene (C1-C4) A Source Unknown	140 Acres	2006	5B	2012
				Copper Other	140 Acres	2026	5B	2012
				DDT (tissue & sediment) A Source Unknown	140 Acres	2016	5B	2012

REGION	WATER BODY NAME	WATER TYPE	WATERSHED* CALWATER / USGS HUC	POLLUTANT POTENTIAL SOURCES *Relevant Notes*	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS**	TMDL DATE***
				Dieldrin (tissue) A Source Unknown	140 Acres	2016	5B	2012
				Indicator Bacteria A Source Unknown	140 Acres	2014	5A	2007
				Lead A Source Unknown	140 Acres	1800	5B	2012
				PCBs (Polychlorinated biphenyls) Agriculture Agriculture-animal Agriculture-grazing	140 Acres	1996	5B	2012
				Phenanthrene A Source Unknown	140 Acres	2006	5B	2012
				Pyrene A Source Unknown	140 Acres	2006	5B	2012
				Toxicity A Source Unknown	140 Acres	2014	5B	2012
Region 4	Downtown Shoreline Marina (part of San Pedro Bay Near/Off Shore Zones)	Bay & Harbor	40512000 / 18070104	Copper A Source Unknown	83 Acres	2014	5A	2027
				Oxygen, Dissolved A Source Unknown	83 Acres	2014	5A	2027
Region 4	Dry Canyon Creek	River & Stream	4412.210000 / 18070104	Indicator Bacteria A Source Unknown	4.2 Miles	2014	5A	2027
				Selenium, Total Nonpoint Source	4.2 Miles	2016	5B	2005
Region 4	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No 2	River & Stream	4408.110000,4408.130000 / 18070103	Bifenthrin A Source Unknown	12 Miles	2014	5A	2027
				ChemA Nonpoint Source	12 Miles	2026	5B	2006
				Chlordane A Source Unknown	12 Miles	1800	5B	2006
				Chlorpyrifos A Source Unknown	12 Miles	2014	5B	2006

ATTACHMENT G

PROPOSED ON-SITE HYDROLOGY MAP



PROPOSED HYDROLOGY MAP

16911 S NORMANDIE AVE
GARDENA, CA 90247

LEGEND & ABBREVIATIONS:

	DRAINAGE AREA LIMIT
AC	ACRE
CFS	CUBIC FEET PER SECOND
SF	SQUARE FEET
P/L	PROPERTY LINE
R/W	RIGHT OF WAY
	FLOW DIRECTION
X / X.XX	SUB–AREA ID / ACREAGE
	PERVIOUS AREA

PROPOSED HYDROLOGY CALCULATIONS

SUBAREA ID	TOTAL AREA (SF/AC)	IMPERVIOUS AREA (SF/AC)	PERVIOUS AREA (SF/AC)	IMPERVIOUS %	Q10 (CFS)	Q25 (CFS)	Q50 (CFS)
A–1	92,772/2.13	76,715/1.76	16,057/0.37	82.7	4.11	5.48	6.81
A–2	135,787/3.12	120,953/2.78	14,834/0.34	89.1	5.07	6.62	7.99
TOTAL	228,559/5.25	197,668/4.54	30,891/0.71	85.9	9.18	12.10	14.80

80’ 0’ 40’ 80’
SCALE: 1” = 80’

NOTE:

SOIL TYPE – 13
50TH YR RAINFALL DEPTH – 5.95 IN
85TH PERCENTILE, RAINFALL DEPTH – 0.88 IN

ALL PROPOSED PERVIOUS AREAS ARE NOT SHOWN

FUSCOE ENGINEERING
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tel 213.988.8802 ◦ fax 213.988.8803 ◦ www.fuscoe.com

ATTACHMENT H

HydroCalc Hydrology Results For Proposed Site

Peak Flow Hydrologic Analysis

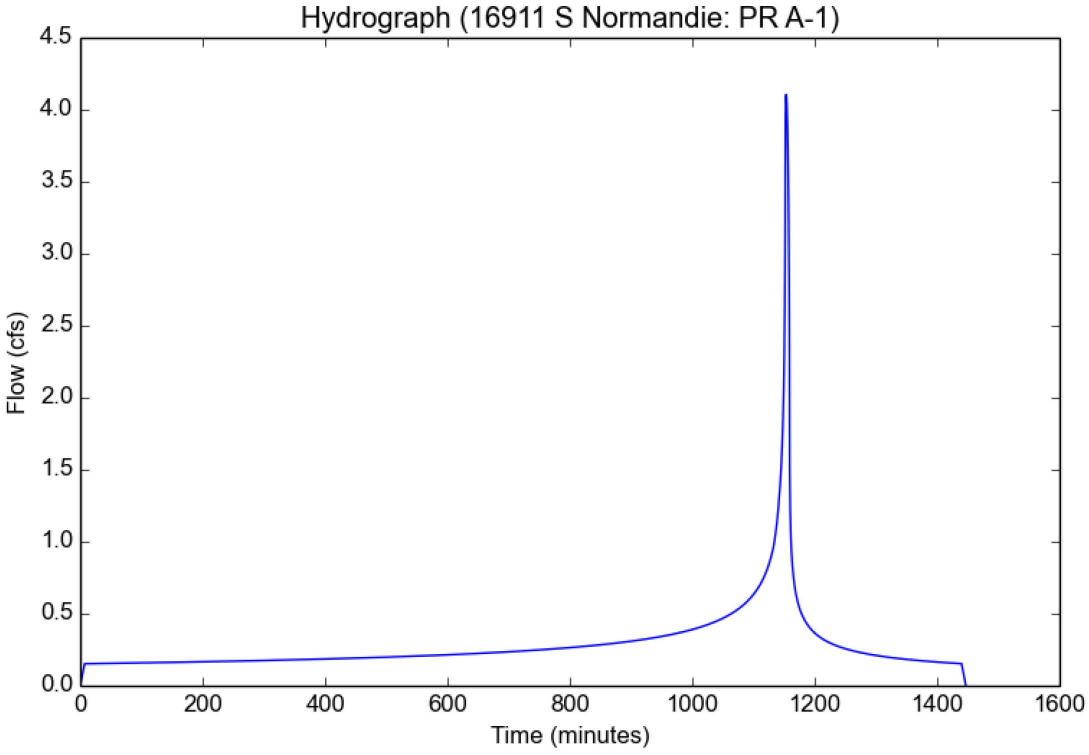
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-1-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-1
Area (ac)	2.13
Flow Path Length (ft)	330.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.827
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	2.1639
Undeveloped Runoff Coefficient (Cu)	0.8468
Developed Runoff Coefficient (Cd)	0.8908
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	4.1058
Burned Peak Flow Rate (cfs)	4.1058
24-Hr Clear Runoff Volume (ac-ft)	0.577
24-Hr Clear Runoff Volume (cu-ft)	25133.3048



Peak Flow Hydrologic Analysis

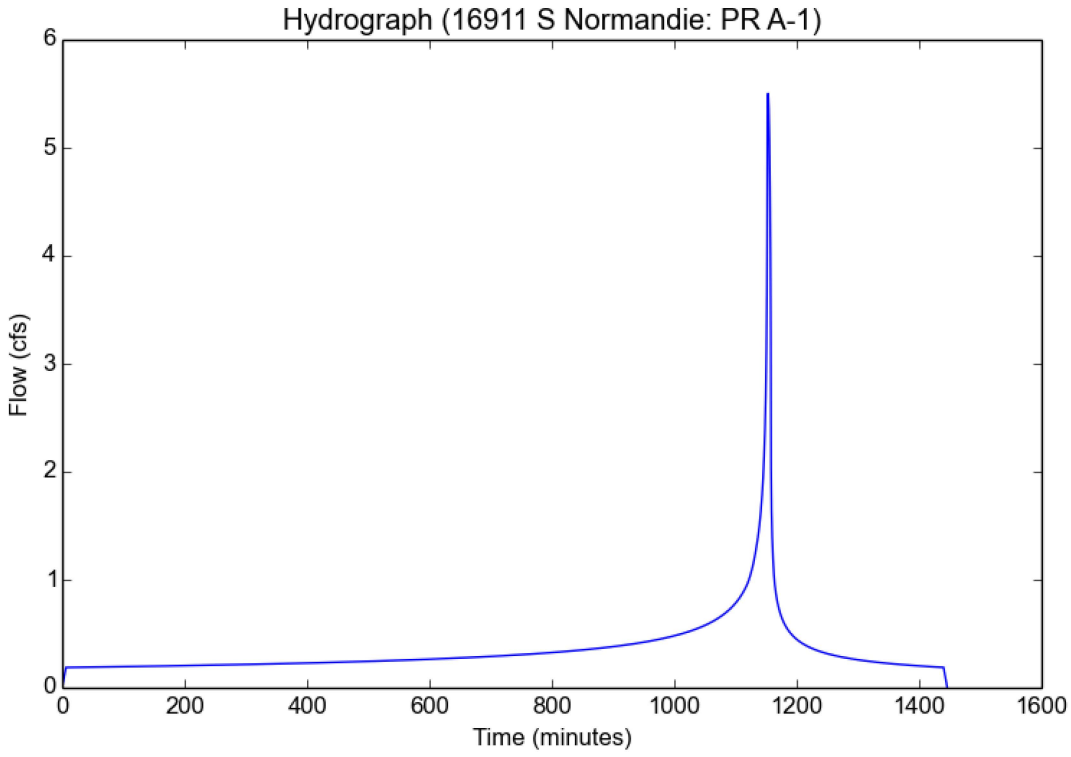
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-1-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-1
Area (ac)	2.13
Flow Path Length (ft)	330.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.827
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	2.8609
Undeveloped Runoff Coefficient (Cu)	0.9168
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	5.4843
Burned Peak Flow Rate (cfs)	5.4843
24-Hr Clear Runoff Volume (ac-ft)	0.712
24-Hr Clear Runoff Volume (cu-ft)	31013.9044



Peak Flow Hydrologic Analysis

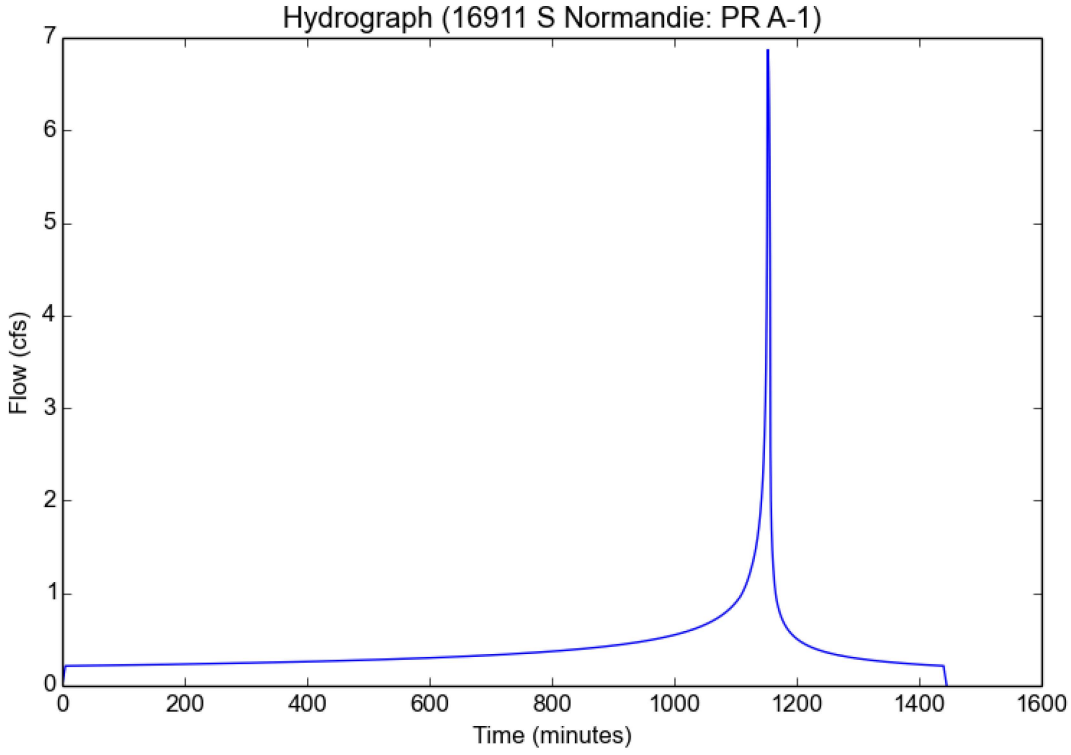
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-1-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-1
Area (ac)	2.13
Flow Path Length (ft)	330.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.827
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	3.5499
Undeveloped Runoff Coefficient (Cu)	0.9487
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.8052
Burned Peak Flow Rate (cfs)	6.8052
24-Hr Clear Runoff Volume (ac-ft)	0.8129
24-Hr Clear Runoff Volume (cu-ft)	35411.5413



Peak Flow Hydrologic Analysis

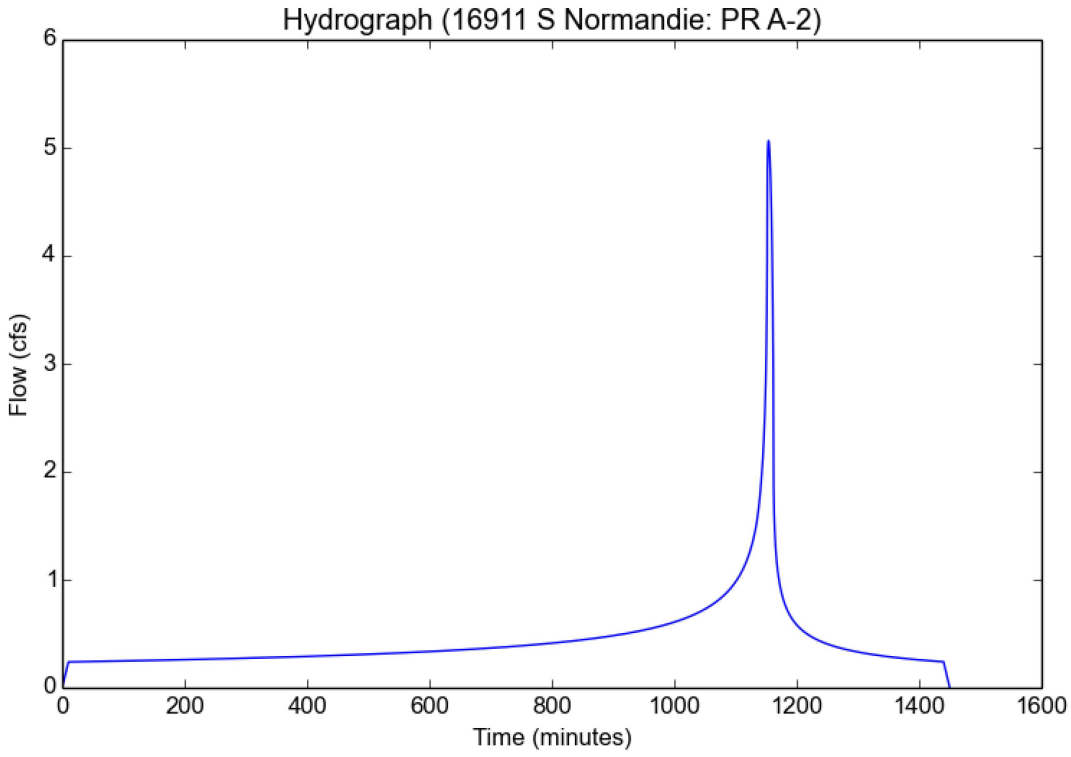
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-2-10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-2
Area (ac)	3.12
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.891
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2483
Peak Intensity (in/hr)	1.8299
Undeveloped Runoff Coefficient (Cu)	0.782
Developed Runoff Coefficient (Cd)	0.8871
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	5.065
Burned Peak Flow Rate (cfs)	5.065
24-Hr Clear Runoff Volume (ac-ft)	0.8971
24-Hr Clear Runoff Volume (cu-ft)	39075.8287



Peak Flow Hydrologic Analysis

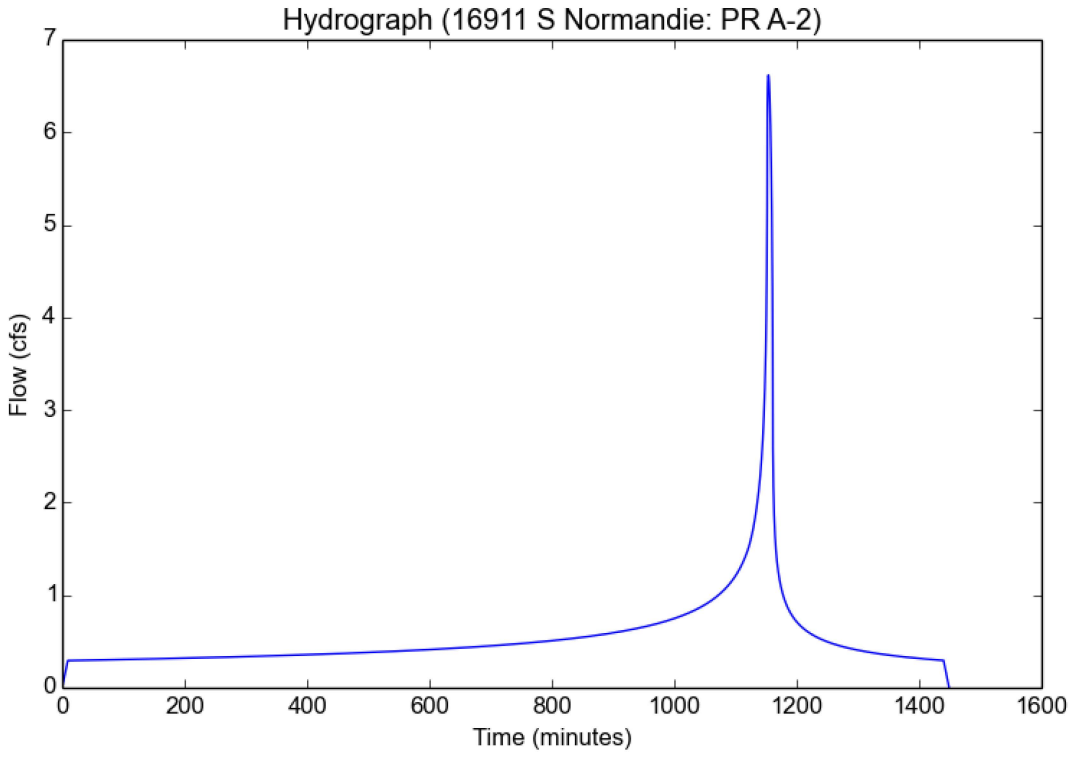
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-2-25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-2
Area (ac)	3.12
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.891
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2241
Peak Intensity (in/hr)	2.3645
Undeveloped Runoff Coefficient (Cu)	0.8731
Developed Runoff Coefficient (Cd)	0.8971
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	6.6179
Burned Peak Flow Rate (cfs)	6.6179
24-Hr Clear Runoff Volume (ac-ft)	1.1056
24-Hr Clear Runoff Volume (cu-ft)	48158.1384



Peak Flow Hydrologic Analysis

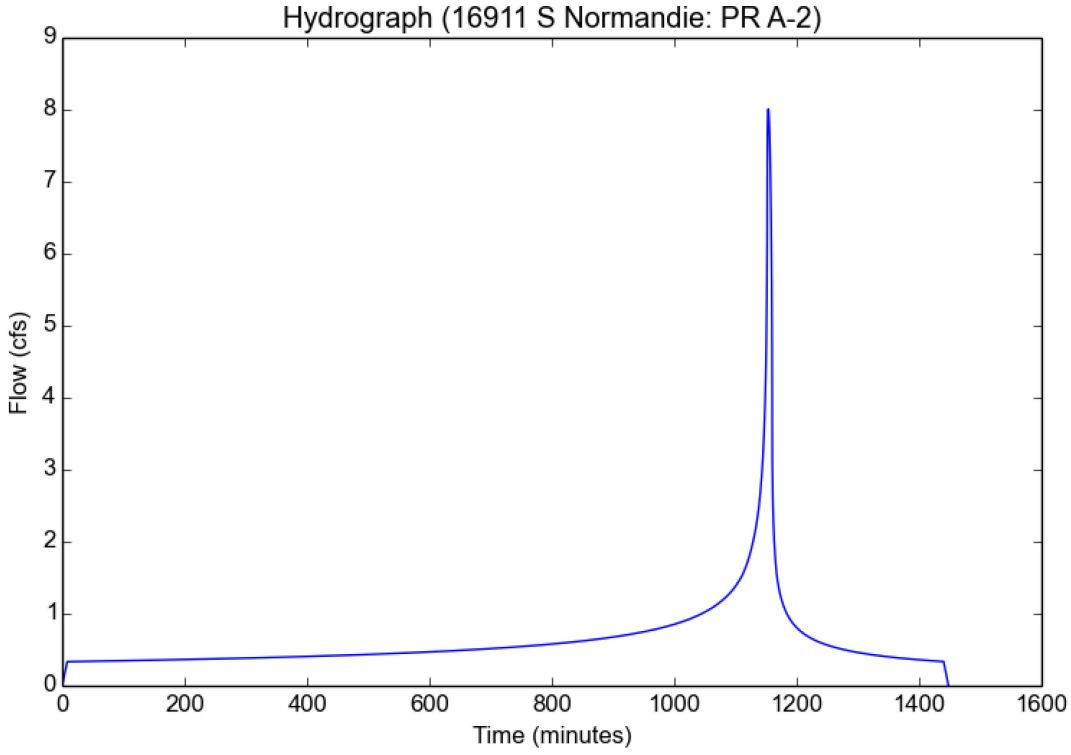
File location: F:/Projects/4047/002/_Support Files/Reports/Hydrology/Proposed HydroCalc/16911 S Normandie - PR A-2-50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	16911 S Normandie
Subarea ID	PR A-2
Area (ac)	3.12
Flow Path Length (ft)	660.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.95
Percent Impervious	0.891
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

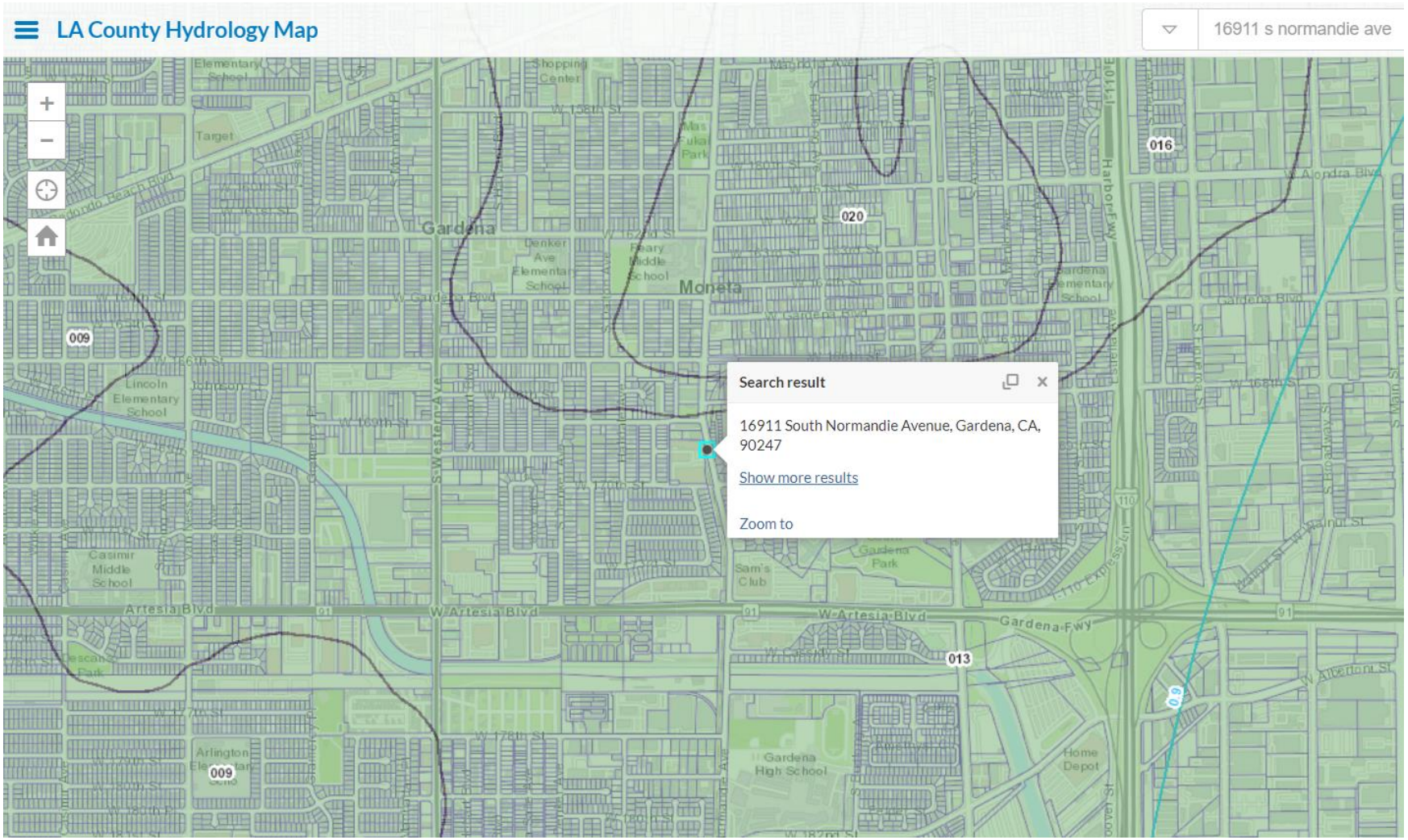
Output Results

Modeled (50-yr) Rainfall Depth (in)	5.95
Peak Intensity (in/hr)	2.8463
Undeveloped Runoff Coefficient (Cu)	0.9158
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	7.9925
Burned Peak Flow Rate (cfs)	7.9925
24-Hr Clear Runoff Volume (ac-ft)	1.2611
24-Hr Clear Runoff Volume (cu-ft)	54935.0469



ATTACHMENT I

LA COUNTY GIS 85TH PERCENTILE MAP


LA County Hydrology Map
16911 s normandie ave
Search result
16911 South Normandie Avenue, Gardena, CA, 90247
Show more results
Zoom to
Gardena
Moneta
W Artesia Blvd
Gardena Blvd
Gardena Park
Sam's Club
Gardena High School
Home Depot
Lincoln Elementary School
Casimir Middle School
Arlington Elementary School
Denker Ave Elementary School
Mas Fukai Park
Target
Shopping Center
Gardena Elementary School
Gardena-Fwy
Harbor Fwy
I-110 Express Lanes
009
016
020
013
091
110

July 10, 2023

To: Kimley-Horn – Sarah Miller

RE: 16911 S Normandie Water Resources Technical Report Updates requested from Kimley-Horn on June 26, 2023

Ms. Miller,

On June 26, 2023, it was brought to Fuscoe's attention that there are additional comments and questions in regard to the Water Resources Technical Report that Fuscoe prepared. It is our understanding that Kimley-Horn wants Fuscoe to prepare these changes in order to complete the Admin Draft EIR. As requested by Kimley-Horn, the updates to the Water Resources Technical Report will be presented through a Technical Memo Addendum instead of providing a revised updated report.

Presented at the initial request (via email): Kimley-Horn (Sarah Miller, Rita Garcia, and James Thomas), Fuscoe Engineering (Samson Kawjaree). Below are the responses to the Water Resources Technical Report revisions:

1. Residential, not commercial, exists north of Project site (across West 166th Street); see attached EIR Project Description. This development was under construction when TR and EIR analyses began but opened prior to NOP release). Please verify this is corrected.

   FEI Response: We believe the street you are inquiring about is 169th Street and not 166th Street. If so, according to the City of Gardena Zoning 2023 Map the area located north of the project site across 169th street is marked under Zone M1 (Industrial Zone). The Water Resource Technical Report is specific to the areas within the limits of the project site (property line and right – of – ways), therefore, there is no reference to the development across the street within the report.

2. Verify number of existing buildings discussed totals 6. Onsite: Please update the Project description (number of buildings, etc.) using the attached EIR PD.

   FEI Response: Confirmed with client and ALTAs that there are 6 existing buildings onsite.

3. If there is a cumulative analysis, please use the Updated cumulative projects list; see attached.

   FEI Response: The meeting, via zoom, that took place on March 08, 2023 concluded that no cumulative analysis was needed for the Water Resource Technical Report. Present at the meeting: City of Gardena, Kimley-Horn, Client, and Fuscoe Engineering. No cumulative analysis was conducted, therefore, no updates were made to the cumulative projects list.

4. If there is a cumulative analysis, please use the Updated cumulative projects list; see attached.

   FEI Response: The meeting, via zoom, that took place on March 08, 2023 concluded that no cumulative analysis was needed for the Water Resource Technical Report. Present at the meeting: City of Gardena, Kimley-Horn, Client, and Fuscoe Engineering. No cumulative analysis was conducted, therefore, no updates were made to the cumulative projects list.

5. Need confirmation that #1 and #2 would not require edits throughout TR analyses.

   FEI Response: Updates to the report are need regarding item number 2. The project description of the Water Resource Technical Report will need to be revised to reflect correct number of existing buildings.

6. Confirm analysis considers the "Proposed 2022 Construction Stormwater Permit" (see Pg. 7 of your TR)

   FEI Response: The recent Water Resource Technical Report refers to the 2009 Construction General Permit. There is a new Construction Stormwater General Permit Order 2022-0057-DWQ (adopted September 8, 2022) and will go into effect on September 1, 2023. The California State Water Resources Control Board (SWRCB) Order No. 2022-0057-DWQ known as the "Construction General Permit" was adopted on September 8, 2022. This Order supersedes Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ on February 14, 2011 and Order No 2012-0006-DWQ which became effective on July 17, 2012.

7. Existing Drainage Conditions: The TR did not report where the water goes after Brighton Way, we need them to elaborate and connect to the system in vicinity (see Pg. 14 of your TR).

   FEI Response: Section 3.1.3 On Site from the Water Resource Technical Report discusses the existing drainage conditions. Regarding where the water goes after Brighton Way, the technical report mentions that the water sheet flows south into a catch basin located on Brighton Way. The water gutter flows south to a catch basin that is owned by the City of Gardena.

8. Please provide a narrative of the proposed drainage conditions. There was no narrative of the proposed conditions, only a map provided in the appendices.

   FEI Response: In the proposed condition, the Project Site will be developed with a proposed 7-story structure with two levels of above ground parking, 3-story townhouses, and a paved access road throughout. The proposed Project Site consists of one structure with the remainder of the site being surrounded by the 75 townhomes. The proposed Project site runoff sheet flows similarly to the existing drainage conditions+. In the proposed conditions water will sheet flow to a catch basin near the intersection between 169th Street and Normandie Avenue as well as a catch basin on Normandie Avenue. The catch basin on 169th Street and Normandie Avenue discharge into an LA County stormdrain system which flows southerly. Water also discharges southerly, flowing towards Brighton Way, sheeting flowing through the gutter and discharging into a City

of Gardena catch basin location on Brighton Way. Sub-areas A-1 thru A-4 in the existing conditions discharge similarly to sub-area A-1 in the proposed conditions. The Q10 in the proposed A-1 sub-area is 4.11 CFS, whereas, in the existing A-1 thru A-4 sub-areas, the Q10 equals 5.32 CFS which represents a 1.21 CFS decrease in water discharge. Sub-area A-5 in the existing conditions discharge similarly to sub-area A-2 in the proposed conditions. The Q10 in the proposed A-2 sub-area is 5.07 CFS, whereas, in the existing A-5 sub-area, the Q10 equals 5.29 CFS which represents a 0.22 CFS decrease. Please refer to Appendix G in the Water Resource Technical Report for the proposed drainage pattern of the site.

FUSCOE ENGINEERING, INC.

07.10.2023

Samson Kawjaree, PE