FUSCOE ENGINEERING

WATER RESOURCES TECHNICAL REPORT

# 1400 Vine Street

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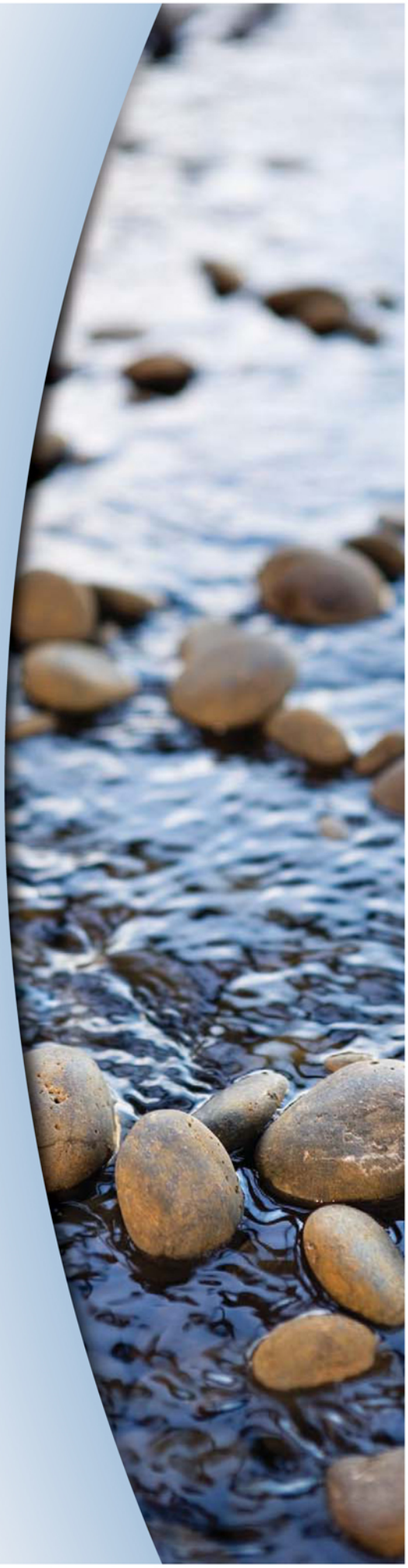

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# 1. INTRODUCTION

## 1.1. PROJECT DESCRIPTION

Tooley Interests, LLC (Applicant) is proposing to develop a new mixed-use development (Project) on an approximately 1.13-acre site (1.09-acres post-dedication), located at 1400 Vine Street (Project Site) in the City of Los Angeles. The Project proposes a 8-Story structure above three levels of subterranean parking. The Project will include six levels of residential housing (studio, 1-bedroom, and 2-bedroom units) above approximately 16,000 square feet of retail and restaurants on the ground level, and 278 parking stalls in three subterranean levels. Two existing commercial buildings, a Fedex Office to the north and a wine merchant to the south, and a shared surface parking lot shall be removed to accommodate the Project.

The Project Site is bounded by residential uses to the east, Leland Way to the north, Vine Street to the west, and De Longpre Ave to the south.


## 1.2. SCOPE OF WORK

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

# 2. REGULATORY FRAMEWORK

## 2.1. SURFACE WATER HYDROLOGY

### *County of Los Angeles Hydrology Manual*

The Project Site is located within the Ballona Creek Watershed, which covers approximately 130 square miles. The Los Angeles County Flood Control District (LACFCD) is responsible for providing flood protection, water conservation, recreation and aesthetic enhancement within this entire watershed. LACFCD is governed, as a separate entity, by the County of Los Angeles Board of Supervisors.

LACFCD consists of more than 3,000 square miles, 85 cities and approximately 2.1 million land parcels. It includes the vast majority of drainage infrastructure within incorporated and unincorporated areas in every watershed, including 500 miles of open channel, 2,800 miles of underground storm drain, and an estimated 120,000 catch basins. The Los Angeles County Department of Public Works (LACDPW) and LACFCD are responsible for the development of a hydrology manual for consistent hydrologic design throughout the County.

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

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

### *Los Angeles Municipal Code*

Any proposed drainage improvements within the street right-of-way or any other property owned by, to be owned by, or under the control of the City requires approval through the B-Permit process (Section 62.105, Los Angeles Municipal Code (LAMC)). Through the B-Permit process, storm drain installation plans which include any connections to the City's storm drain system from a property line to a catch basin or storm drain pipe, are subject to review and approval by the City of Los Angeles Department of Public Works, Bureau of Engineering.

## 2.2. SURFACE WATER QUALITY

### *Clean Water Act*

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

The United States Congress amended the CWA in 1987 to specifically regulate discharges to waters of the United States from public storm drain systems and storm water flows from industrial facilities, including construction sites, and require such discharges be regulated through permits under the National Pollutant Discharge Elimination System (NPDES).[2] Rather than setting numeric effluent limitations for storm water and urban runoff, CWA regulation calls for the implementation of Best Management Practices (BMPs) to reduce or prevent the discharge of pollutants from these activities to the Maximum Extent Practicable (MEP) for urban runoff and meeting the Best Available Technology Economically Achievable (BAT) and

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

Best Conventional Pollutant Control Technology (BCT) standards for construction storm water. Regulations and permits have been implemented at the federal, state, and local level to form a comprehensive regulatory framework to serve and protect the quality of the nation's surface water resources.

In addition to reducing pollution with the regulations described above, the CWA also seeks to maintain the integrity of clean waters of the United States – in other words, to keep clean waters clean and to prevent undue degradation of others. As part of the CWA, the Federal Anti-Degradation Policy [40 Code of Federal Regulations (CFR) Section 131.12] states that each state "shall develop and adopt a statewide anti-degradation policy and identify the methods for implementing such policy…" [40 CFR Section 131.12(a)]. Three levels of protection are defined by the federal regulations:

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

### *Federal Anti-Degradation Policy*

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

### *Porter-Cologne Water Quality Act*

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

### *California Anti-Degradation Policy*

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

### *California Toxic Rule*

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

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

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

### *NPDES Permit Program*

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

### *The General Permit for Construction Activities*

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

- 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. In addition, the Project will be required to obtain a Waste Discharger Identification Number (WDID) through the state's Storm Water Multiple Application and Report Tracking System (S.M.A.R.T.S.).

*Los Angeles County Municipal Storm Water System (MS4) Permit*

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

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

Since adoption of Order No. 01-182, the LARWQCB has adopted Order No. R4-2012-0175, as amended by State Water Board Order WQ 2015-0075 NPDES Permit No. CAS004001 on November 8, 2012. This current permit continues to serve as guiding documentation for the region while a new permit is developed. As a Co-Permittee, the City of Los Angeles is subject to the requirements set forth in Order No. R4-2012-0175, as amended by State Water Board Order WQ 2015-0075, NPDES Permit No. CAS004001.

*Los Angeles Municipal Code*

Section 64.70 of LAMC sets forth the City's Stormwater and Urban Runoff Pollution Control Ordinance. The ordinance prohibits the discharge of the following items into any storm drain systems:

- Any liquids, solids or gasses which by reason of their nature or quantity are flammable, reactive, explosive, corrosive, or radioactive, or by interaction with other materials could result in fire, explosion or injury.
- Any solid or viscous materials, which could cause obstruction to the flow or operation of the storm drain system.
- Any pollutant that injures or constitutes a hazard to human, animal, plant or fish life, or creates a public nuisance.
- Any noxious or malodorous liquid, gas, or solid in sufficient quantity, either singly or by interaction with other materials, which creates a public nuisance, hazard to life, or inhibits authorized entry of any person into the storm drain system.
- Any medical, infectious, toxic or hazardous material or waste.

Earthwork activities, including grading, are overseen by the Los Angeles Building Code, which is contained in LAMC, Chapter IX, Article 1. Section 91.7013 contains regulations pertaining to erosion control and drainage devices and Section 91.7014 provide requirements for flood, mudflow protection and general construction requirements.

*Standard Urban Stormwater Mitigation Plan (SUSMP)*

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

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

*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 from municipal storm drain systems is one of the principal causes of water quality impacts in most urban areas. The stormwater may contain pollutants such as trash and debris, bacteria and viruses, oil and grease, sediments, nutrients, metals, and toxic chemicals that can negatively affect the ocean, rivers, plant and animal life, and public health.

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

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

In accordance with Order No. R4-2012-0175, stormwater runoff shall be infiltrated, evapotranspired, captured and used, or treated through high removal efficiency BMPs, 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 City of Los Angeles also passed an LID Ordinance (#181899) on October 7, 2011 which provides mandates for LID BMPs within development and redevelopment projects.

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

*Hydromodification*

In addition to the LID requirements listed in the MS4 Permit, the Permit also addresses requirements for Hydromodification as pertaining to the project. Per Part VI.D.7.c.iv of the Permit:

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

However, per Part VI.D.7.c.iv.(1)(b)(iv) of the Permit, the Project is exempt from such requirements as runoff from the Project Site is discharged directly via storm drain to a receiving water that is not susceptible to hydromodification impacts. Specifically, the Project Site discharges via storm drain into Ballona Creek, which is categorized as not susceptible to hydromodification. Therefore, the Project is not required to implement hydrologic control measures as mitigation for hydromodification impacts.

*Ballona Creek Watershed Enhanced Watershed Management Program*

The County of Los Angeles, the City of Los Angeles and all other 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. A draft EWMP for the Ballona Creek Watershed (BC EWMP, July 2015), prepared with the City of Los Angeles as the lead coordinating agency, is in the process of review by the LARWQCB. The objective of the EWMP Plan is to determine the network of control measures (often referred to as best management practices [BMPs]) that will achieve required pollutant reductions while also providing multiple benefits to the community and leveraging sustainable green infrastructure practices (BC EWMP, July 2015).

The EWMP identifies a toolbox of distributed and regional watershed control measures to address applicable stormwater quality regulations including the following:

- LID at the individual parcels
- Green Streets features within the public right-of-way and privately maintained streets
- Regional projects that retain and treat runoff from large upstream areas
- Institutional control measures to prevent transport of pollutants in the watershed

The Project Site, located in the Ballona Creek watershed, falls within the BC EWMP and ultimately discharges into Reach 1 of Ballona Creek. The BC EWMP does not identify any regional BMP projects in the vicinity of the Project. Therefore, LID BMP's will be implemented at the individual parcels associated with the Project to meet the local MS4 Permit requirements and remain consistent with the objectives of the BC EWMP.

## 2.3. GROUNDWATER

*California Groundwater Sustainability Act*

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

The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. The act provides substantial time – 20 years – for GSAs to implement plans and achieve long-term groundwater sustainability. It protects existing surface water and groundwater rights and does not impact current drought response measures.

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

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

The Project Site is not located within a high priority California Statewide Groundwater Elevation Monitoring groundwater basin. It is located within the Coastal Plain of Los Angeles basin, in the

Hollywood subbasin, which currently does not have any California Statewide Groundwater Elevation Monitoring System wells. The subbasin is under the Los Angeles GSA, but there are currently no GSPs which include this location.[3,4] GSAs responsible for high-and medium-priority basins must adopt groundwater sustainability plans within five to seven years. Plans must include a physical description of the basin, including groundwater levels, groundwater quality, subsidence, information on groundwater-surface water interaction, data on historical and projected water demands and supplies, monitoring and management provisions, and a description of how the plan will affect other plans, including city and county general plans. Plans will be evaluated every five years.

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

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

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

*Safe Drinking Water Act (SDWA)*

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

*California Water Plan*

The California Water Plan (The Plan) provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The Plan, which is updated every five years, presents basic data and information on California's water resources including water supply evaluations and assessments of agricultural, urban, and environmental water uses to quantify the gap between water supplies and uses. The Plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the state's water needs.

The goal for the California Water Plan Update is to meet CWC requirements, to receive broad support among those participating in California's water planning, and to be a useful document for the public, water planners throughout the state, and legislators and other decision-makers.

[3] https://sgma.water.ca.gov/portal/#gsa
[4] https://sgma.water.ca.gov/portal/#gsp

# 3. EXISTING CONDITION

## 3.1. SURFACE WATER HYDROLOGY

### 3.1.1. Regional

The Project Site is located within the Ballona Creek Watershed, which covers approximately 130 square miles. The watershed includes the cities of Beverly Hills, West Hollywood, portions of the cities of Los Angeles, Culver City, Inglewood and Santa Monica, unincorporated areas of Los Angeles County, and areas under the jurisdiction of Caltrans. Ballona Creek flows as an open channel for just under 10 miles from mid-Los Angeles (south of Hancock Park) through Culver City, reaching the Pacific Ocean at Playa del Rey (Marina del Rey Harbor). Ballona Creek watershed is highly developed with 49% of the watershed covered by impervious surfaces.

Major tributaries of Ballona Creek include Centinela Creek, Sepulveda Channel and Benedict Canyon Channel. The Project falls within the Ballona Creek sub-watershed.

Please refer to Attachment A for a map of the Ballona Creek Watershed.

### 3.1.2. Local

Stormwater runoff is collected from the Project Site and conveyed through an offsite storm drain facility along Vine Street, with excess stormwater flowing further down to El Centro Avenue. The 12-inch diameter storm drain on Vine Street and the 36-inch facility on El Centro are owned and maintained by the City of Los Angeles. This storm drain then connects to an 84-inch main line in Vine Street. The main line flows in a southwesterly direction and discharges into Ballona Creek Reach 1.

All of the stormwater runoff from the Project Site, which is within Ballona Creek watershed, is discharged into Ballona Creek Reach 1 and ultimately into the Pacific Ocean. Balllona Creek Reach 1 is approximately 2 miles long spanning from Cochran Avenue to National Boulevard and covering areas above National Boulevard. It includes the Los Angeles neighborhoods of West Hollywood and portions of other cities of Los Angeles County.

### 3.1.3. On Site

The existing Project Site consists of two commercial buildings with surface parking. Stormwater runoff is collected and conveyed on all adjacent streets, Leland Way, Vine Street and De Longpre Avenue fronting the Project Site, on the northerly, westerly and southerly edges of the project, respectively. The parking area sheet flows down sloped drive aisles into a catch basin along the easterly edge of Vine Street, or along Leland Way and De Longpre Avenue gravity flowing to a catch basin on El Centro Avenue. The city owned 12-inch storm drain line on Vine Street and 36-inch storm drain line on El Centro connect to an 84-inch main line in Vine Street.

Please refer to Attachment B for the existing drainage pattern and existing hydrology of the Project Site.

Table 1 below provides the 25-year and 50-year storm frequency analysis for the Project Site's existing conditions, using the post-dedication acreage. The existing imperviousness was obtained from Appendix D (Proportion Impervious Data) of the LACDPW Hydrology Manual (2006). Output calculations are provided in Attachment D.

Table 1 – Existing Drainage Conditions

| Drainage Area | Area (acres) | % Imperviousness | Q25 (cfs) | Q50 (cfs) |
|---|---|---|---|---|
| A-1 | 1.09 | 94 | 3.03 | 3.46 |

Under existing conditions, the Project Site discharges northerly into Leland Way, westerly into Vine Street and southerly into De Longpre Avenue. The total amount of runoff produced from the Project Site during a 25-year storm event is 3.03 cubic feet per second (cfs). For a 50-year event, the total project runoff is 3.46 cfs. A portion of the project runoff from the Project Site is captured by the catch basin located along Vine Street, a majority of the project site flows into De Longpre Avenue and Leland Way which converge into a catch basin in El Centro Avenue. These runoff values were calculated using the post-dedication acreage of 1.09 acres to more conservatively compare the total runoffs of the project. The pre-dedication acreage of 1.13 acres would produce a higher runoff, creating a greater reduction of runoff when comparing existing versus proposed, in favor of the Project. After discussions with the Los Angeles Bureau of Engineering and the Los Angeles Street Improvement and Stormwater Division, there are no known existing storm drain deficiencies or capacity issues within the storm drains that collect runoff from the Project Site. The Stormwater Division had also mentioned that if the Project is reducing the stormwater runoff, the City does not anticipate any conflicts.

### 3.1.4. FEMA

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) No. 06037C1605F, dated September 26, 2008, the Project Site is located within Zone X, which depicts areas determined to be outside the 0.2% (500-year) annual chance floodplain. Therefore, the processing of a letter of map revision or conditional letter of map revision (LOMR/CLOMR) through FEMA will not be required for the Project. See Attachment E for floodplain map.

## 3.2. SURFACE WATER QUALITY

### 3.2.1. Regional

As described above, the Project is located within the Ballona Creek watershed of the Ballona Creek watershed. This portion of the watershed drains directly into Reach 1 of the Ballona Creek. Ballona Creek Reach 1 is an impaired portion of the Ballona Creek and primarily includes the Los Angeles neighborhoods of West Hollywood and other portions of other cities of Los Angeles County. Ballona Creek consists of a concrete channel, with the water generally restricted to a central low-flow channel.

#### 3.2.1.1. Beneficial Uses in Ballona Creek Reach 1/Ballona Creek Watershed

Beneficial uses exist for Ballona Creek Reach 1. The existing and potential beneficial uses for the waters within the Ballona Creek Reach 1, where the majority of surface water flows from the Project ultimately discharge are described below.

Table 2 – Beneficial Uses

| Beneficial Uses, Ballona Creek Reach 1 | |
|---|---|
| MUN** - Municipal and Domestic Supply | WILD* - Wildlife Habitat |
| REC1** - Water Contact Recreation | REC2* - Non-Contact Water Recreation |
| WARM** - Warm Freshwater Habitat | |
| Notes:<br>* Existing beneficial use<br>** Potential beneficial use<br>Source: Los Angeles Regional Water Quality Control Board Beneficial Use Table, found here:<br>http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Beneficial_Uses/ch2/Revised%20Beneficial%20Use%20Tables.pdf | |

### 3.2.1.2. Impairments and TMDL's in Ballona Creek Reach 1/Ballona Creek 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 TMDL.

Table 3 – 303(d) Impairments

| Water Body | 303(d) Impairment |
|---|---|
| Ballona Creek | Copper, Cyanide, Indicator Bacteria, Lead, Toxicity, Trash, Viruses (enteric), Zinc |
| Ballona Creek Estuary | PCBs (Polychlorinated biphenyls), Zinc, Chlordane, Indicator Bacteria, DDT (Dichlorodiphenyltrichloroethane), Cadmium, PAHs (Polycyclic Aromatic Hydrocarbons), Silver, Toxicity, Copper, Lead |
| Santa Monica Bay Offshore/Nearshore | Arsenic, DDT, Mercury, PCBs, Trash |
| Notes:<br>Source: 2014 - 2016 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) – Statewide, found here:<br>https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml | |

The proposed Residential project will potentially add additional Nutrients, Copper, Lead, and Trash into the existing system. The proposed capture and use BMPs for the project, further mentioned in Section 6.2.2, shall adequately treat these additional pollutants. With the implemented BMPs, the additional pollutants will be treated and will not have a significant effect on the existing system.

#### *Total Maximum Daily Loads (TMDLs)*

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. TMDLs for water bodies tributary to the Project Site are listed in Table 4 below.

Table 4 – Total Maximum Daily Loads

| Water Body | 303(d) Impairment |
|---|---|
| Ballona Creek | Copper, Cyanide, Indicator Bacteria, Lead, Toxicity, Trash, Viruses (enteric), Zinc |
| Ballona Creek Estuary | PCBs, Zinc, Chlordane, Indicator Bacteria, DDT, Cadmium, PAHs, Silver, Toxicity, Copper, Lead |
| Santa Monica Bay Offshore/Nearshore | DDT, PCBs, Trash |
| Notes:<br>Source: 2014 - 2016 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) – Statewide, found here: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml | |

### 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.

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

### 3.2.3. On Site

Under existing conditions, the Project Site is commercial, with associated parking areas. Based on visual inspection, water quality treatment control BMPs are not currently present at the Project Site. Stormwater that leaves the Project Site is untreated and ultimately flows into curbside inlets on the easterly edge of Vine Street and on the westerly edge of El Centro Avenue, in the public right-of-way where it ultimately gets picked up by a public storm drain system. 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 City of Los Angeles overlies 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 Project Site is located within the Hollywood subbasin, which underlies along the northeastern part of the Los Angeles Coastal Plain Groundwater Basin. This subbasin reside in the Los Angeles GSA, which does not currently have a GSP for the basin. The subbasin is bounded on the north by Santa Monica

Mountains and the Hollywood fault, on the east by the Elysian Hills, on the west by the Inglewood fault zone, and on the south by the La Brea High, formed by an anticline that brings impermeable rocks close to the surface. Surface drainage flows southward to join Ballona Creek, then westward to the Pacific Ocean. Groundwater in the Hollywood Subbasin is mainly produced from Pleistocene age alluvial sands and gravels.[5]

According to the California Department of Water Resources, the annual precipitation throughout the Hollywood subbasin ranges from 12 to 14 inches with an average of around 13 inches. The Hollywood subbasin has a surface area of 10,500 acres and a groundwater storage capacity of approximately 200,000 acre/feet.[6,7] Historically, groundwater flow is generally westward through the subbasin toward the Inglewood fault. Recharge of the Hollywood Basin occurs primarily by percolation of precipitation and stream flow from the higher areas to the north. Subsurface inflow my take place to a limited extent from underflow through fractured rock of the Santa Monica Mountains and potentially from underflow around the La Brea High.

### 3.3.3. On Site

As noted by Geotechnologies, Incs' geotechnical report for the Project dated May 29, 2018, the California Geological Survey Seismic Hazard Report for the Hollywood Quadrangle indicates that the historically high groundwater level in the area is approximately 45 feet below the ground surface. Groundwater was encountered at depths between 46 and 49.5 feet below the existing site grade in the exploratory borings.

The closest neighboring active monitoring wells to the project site is Well Number 2671A with a groundwater depth of 23.20 ft and water surface elevation of 260.40 ft (recorded 08.22.2018), located approximately 0.8 miles southeast of the project site.

There is not a high potential for contaminated soils or groundwater to be encountered, but 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.

# 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, surface water quality, and groundwater.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would impact any of the items listed below.

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;

[5] California's Groundwater, Bulletin 118. Department of Water Resources. February 2004.
[6] California's Groundwater, Bulletin 118. Department of Water Resources. February 2004.
[7] California's Groundwater, Bulletin 118. Department of Water Resources. February 2004

(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.

## 4.1. SURFACE WATER HYDROLOGY

The City of Los Angeles, as the lead agency, utilizes a set of city-specific criteria to evaluate impacts. The *L.A. CEQA Thresholds Guide* states that a project would normally have a significant impact on surface water hydrology if it would:

- Cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources;
- Substantially reduce or increase the amount of surface water in a water body; or
- Result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

## 4.2. SURFACE WATER QUALITY

The *L.A. CEQA Thresholds Guide* states that a project would normally have a significant impact on surface water quality if discharges associated with the project would create pollution, contamination or nuisance, as defined in Section 13050 of the (CWC) or that cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for the receiving water body.

The *L.A. CEQA Thresholds Guide* and CWC include the following relevant definitions:

- "Pollution" means an alteration of the quality of the waters of the state to a degree which unreasonably affects either of the following: 1) the waters for beneficial uses or 2) facilities which serve these beneficial uses. "Pollution" may include "Contamination".
- "Contamination" means an impairment 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 though the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.
- "Nuisance" means anything which meets all of the following requirements: 1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and 3) occurs during, or as a result of, the treatment or disposal of wastes.

## 4.3. GROUNDWATER

According to the *L.A. CEQA Thresholds Guide*, a project would normally have a significant impact on groundwater quality and groundwater level if it would:

- Affect the rate or change the direction of movement of existing contaminants;
- Expand the area affected by contaminants;
- Result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or

- Cause regulatory water quality standards at an existing production well to be violated, as defined in the CCR, Title 22, Division 4, and Chapter 15 and in the SDWA.
- Change potable water levels sufficiently to:
    - Reduce the ability of a water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/ winter peaking, or to respond to emergencies and drought;
    - Reduce yields of adjacent wells or well fields (public or private);
    - Adversely change the rate or direction of flow of groundwater;
- Result in demonstrable and sustained reduction of groundwater recharge capacity.

# 5. METHODOLOGY

## 5.1. SURFACE WATER HYDROLOGY

In December 3, 1999, the City of Los Angeles issued Special Order No. 007-1299 which adopted the Los Angeles County Department of Public Works' Hydrology Manual to be used for hydrology studies within the City of Los Angeles. 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.

However, the *L.A. CEQA Thresholds Guide* has determined that a 50-year storm frequency analysis is required when determining flood hazards impacts and changes in the amount or movement of surface water. To analyze the Project's potential impacts under both thresholds, runoff for both 25- and 50-year frequency design storms was calculated for this report.

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 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 50-year isohyet rainfall frequency as well as relevant soil type. The data collected is then used in the HydroCalc program to calculate peak stormwater runoff values.

## 5.2. SURFACE WATER QUALITY

### 5.2.1. Construction

Prior to the issuance of grading permits, the applicant is required by the City to provide 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 (PRDs) are required to be submitted to the SWRCB prior to commencement of construction activities:

- NOI;
- Risk Assessment (Standard or Site-Specific);
- Particle Size Analysis (if site-specific risk assessment is performed);

- Site Map;
- SWPPP;
- Annual Fee & Certification.

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

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

### 5.2.2. Operation

The Project will comply with the City's LID Manual,[8] 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. The 85th percentile storm event for the Project is 0.99" and this depth is used for all sizing calculations.

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 Geotechnologies' geotechnical report dated May 29, 2018, percolation testing was not performed as part of the geotechnical investigation at the aforementioned property. The report states that a 'due to the depth of the proposed subterranean levels and foundation elements, and the depth of the groundwater level, it is the opinion of this firm that stormwater infiltration will not be feasible for the proposed development.

It is anticipated that the proposed Project provides inadequate conditions for infiltration, due to the groundwater of 46 to 49.5 feet below ground surface (bgs), and proposed building subterranean depths of 30 to 35 feet bgs. Therefore, a capture and use system is proposed to be implemented to satisfy the water quality requirements of the Project Site. The minimum planting area required for a capture and use scenario shall be met or exceeded.

[8] Planning and Land Development Handbook for Low Impact Development, Part B Planning Activities, 5th Edition; adopted by the City of Los Angeles, Board of Public Works on May 9, 2016.

Capture and Use BMPs utilize a cistern for capturing the minimum required stormwater runoff volume. The captured stormwater is utilized through the 7-month wet period for irrigation on the project site. High flows beyond the LID capture volume will bypass entering the cistern and will discharge directly to the public storm drain system. The planting areas shall be appropriately sized in conformance with the LID manual.

## 5.3. GROUNDWATER

The significance of the Project Site as it relates to the condition of the underlying groundwater table included a review of the following existing considerations:

- Identification of the Hollywood 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);

The analysis of the Project's impacts on groundwater conditions included a review of the following proposed considerations:

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

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

# 6. PROJECT IMPACTS

## 6.1. CONSTRUCTION

### 6.1.1. 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 over-excavation of existing soils. It is anticipated that the Project would result in the excavation of approximately 50,000 cubic yards of soil, of which approximately 4,000 cubic yards will be used for on-site fill and approximately 46,000 cubic yards will be exported. The remaining excavated materials will be hauled via the nearby 10 Freeway with the ultimate destination at the NuWay Arrow Landfill in the city of Irwindale.

Construction activities have the potential to temporarily alter the existing drainage patterns of the Project Site and also increase the permeability of the site based on increased pervious surface coverage during construction. 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. This may include but not be limited to increasing the size of existing BMPs, adding more BMPs to the drainage area, additional filtering, and/or a reduction in active grading area.

*Construction Best Management Practices (BMPs)*

Prior to commencement of construction activities, the General Permit requires the Project SWPPP to be prepared in accordance with the site-specific information including grading limits, BMP's for each phase, schedule and sediment risk analyses. In accordance with the General Permit, the construction 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. 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 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.

The phases of construction will define the maximum amount of soil disturbed, the appropriate sized sediment basins, and other control measures to accommodate all active soil disturbance areas and the appropriate monitoring and sampling plans.

## Potential Surface Water Hydrology and Quality Effects

Through compliance with the General Permit including the preparation of a SWPPP, implementation of BMPs appropriate for each major phase of construction, and compliance with applicable City grading regulations, construction of the Project would not cause flooding, substantially increase or decrease the amount of surface water in a water body, or result in a permanent, adverse change to flow direction. The construction of the Project would also not result in discharges that would cause: (1) pollution that would effect the quality of waters of the state to a degree which negatively effects 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 effects within Ballona Creek. Therefore, effects to surface water hydrology and water quality during construction would be less than significant.

### 6.1.2. Groundwater Hydrology

Construction of the Project is not anticipated to impact any water supply wells, as no 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. Construction of the Project will include excavation depths of up to 35 feet bgs in some of the elevated areas. Based on Geotechnologies, Incs' Geotechnical Report (May 29, 2018), the historical high groundwater level in the area is 45 feet bgs. Groundwater was encountered with boring samples explored between 46 ft and 49.5 ft below grade, estimated at elevation 294 feet above sea level (based on ALTA surface elevations ranging from 337 to 343.5, dated 4/26/2016). Since most of the structure will be above an elevation of 307 feet, it is not expected that groundwater would be encountered during construction that would require temporary or permanent dewatering operations. In the event perched groundwater is encountered, the Project would be required to obtain a temporary dewatering permit from the City of Los Angeles. If dewatering were to occur on the site, the water quality must first be assessed and the California State Warning Center (CSWC) should be contacted for assistance. Depending on the quality of water and with the CSWC's assistance, the dewatered water may be managed within this project site, discharged to a sanitary sewer, transported for off-site treatment, used at a separate facility, used on adjacent land, or additional BMPs may be required and the treated water would be discharged into a storm drain or nearing water body. Accordingly, construction of the Project would not adversely effect rate or direction of flow of groundwater, and the Project would not result in a significant effect on groundwater hydrology during construction.

### 6.1.3. Groundwater Quality

As previously noted above, construction of the Project will include mass excavation of up to 35 feet bgs. The Project will also result in a net export of existing soil material. There is not a high potential for contaminated soils or groundwater to be encountered, but 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.

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, construction of the Project would not result in a significant increase in groundwater contamination through hazardous materials releases, and effects on groundwater quality would be less than significant.

## 6.2. OPERATION

### 6.2.1. Surface Water Hydrology

Development of the Project would result in an increase in the landscaped areas throughout the Project Site and would reduce the amount of impervious surfaces from 94 percent (post-dedication percentage) to 90 percent. This increase in pervious surfaces would result in a slight reduction in stormwater runoff. Table 5 below provides an analysis of a 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) | % Imperviousness | Q25 (cfs) | Q50(cfs) |
|---|---|---|---|---|
| **Total** | 1.09 | 90% | 3.02 | 3.45 |

Table 6 provides a comparison of the existing and proposed peak flows for the 25-year and 50-year storm events. These values provide the basis for the LID design.

Table 6 – Existing vs. Proposed Drainage Conditions

| Condition | Area (acres) | Q25 (cfs) | Q50 (cfs) |
|---|---|---|---|
| **Existing** | 1.09* | 3.03 | 3.46 |
| **Proposed** | 1.09 | 3.02 | 3.45 |
| **Difference** | 0 | -0.01 | -0.01 |
| **% Increase or Decrease from Existing to Proposed Conditions** | -- | -0.3% | -0.3% |

*Following proposed setback dedication.

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 6, the increase in permeable surfaces on the Project Site would result in a slight reduction of flows under the 25-year storm and 50-year storm events for the Project.

Based on the above, operation of the Project would not result in flooding, impact the capacity of the existing storm drain system, or worsen an existing flood condition. In addition, 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 pattern that would result in an incremental effect on the capacity of the existing storm drain system. As flow are predicted to decrease, it is not anticipated that any deficiencies will be created or exacerbated by the Project on the existing 12-inch storm drain line on Vine Street and 36-inch storm drain line on El Centro Avenue. Therefore, operation of the Project should result in a less than significant effect on surface water hydrology.

### 6.2.2. 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 7 below.

Table 7 – Potential Pollutants

| Potential Pollutants | Source of Pollutants |
|---|---|
| Sediment | Parking lots, driveways, building rooftops, landscape areas, road |
| Nutrients | Landscape areas, lawns |
| Pesticides | Landscape areas, lawns |
| Pathogens | Landscape areas, lawns, building rooftops |
| Trash/Debris | Parking lots, driveways, roadways, parks |
| Oil/Grease | Parking lots, driveways, roadways |
| Metals | Parking lots, driveways, roadways |

To meet the local MS4 Permit and LID requirements consistent with the City's 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.

As infiltration is deemed infeasible due to the proposed structure and groundwater table conditions, mentioned previously, a capture and use feasibility screening was performed following the criteria in the City of Los Angeles Low Impact Development (LID) Manual. After analyzing the landscaping type and coverage (approximately 10% pervious) and the Estimated Total Water Use (ETWU) at the Project Site, it was determined that capture and use BMPs are feasible and may be designed and maintained to ensure adequate capacity to capture and disperse the stormwater design volume within the allotted time for capture.

The existing Project Site does not have any structural or LID BMPs to treat or infiltrate 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 85$^{th}$ 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 (Ballona Creek) to a degree which unreasonably affects beneficial uses of the waters; (2) an 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 Ballona Creek. Thus, the Project's operational effects on surface water quality would be less than significant.

### 6.2.3. 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 the LADWP for water. 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's LID BMP

design is for capture and reuse, treated runoff is stored within a cistern, and if to be utilized within the 7-month wet season period (October to April). Therefore, operational effects to groundwater hydrology are considered less than significant.

### 6.2.4. Groundwater Quality

The SWRCB's Geotracker website indicates there are no significant sources of soil or groundwater pollution within the project area. The proposed LID BMP systems are designed to safely convey stormwater runoff into the sub-surface soil without the threat of contaminant mobilization. Based on the design of the Project's capture and use system utilizing the stored stormwater for irrigation, operational effects to groundwater quality are considered less than significant.

## 6.3. CUMULATIVE IMPACTS

### 6.3.1. Surface Water Hydrology

The context for the cumulative impact analysis on surface water hydrology is the Ballona Creek watershed. The Project is forecasted to reduce peak flows below those under existing development conditions for the 25-year and 50-year storm events. As demonstrated above, the Project is not expected to have an adverse impact on quality stormwater flows. In accordance with City requirements, related projects and other future development projects would be required to implement BMPs to manage stormwater in accordance with LID guidelines. Furthermore, the City of Los Angeles Department of Public Works would review each future development project on a case-by-case basis to ensure sufficient local and regional storm drain infrastructure is available to accommodate stormwater runoff. Therefore, cumulative impacts on surface water hydrology would be less than significant.

### 6.3.2. Surface Water Quality

Future growth in the Ballona Creek watershed would be subject to NPDES requirements regarding water quality for both construction and operation. All future redevelopment and infill projects as a result of Project implementation would also be subject to SWPPP, LID and other implementation measures to comply with regional TMDL requirements which will generally result in water quality improvements over existing conditions. In addition, implementation of regional BMPs, not a part of this project, to improve water quality within the Ballona Creek watershed would improve regional water quality over time. Therefore, through compliance with applicable laws, rules and regulations, cumulative impacts to surface water quality would be less than significant.

### 6.3.3. Groundwater Hydrology

Cumulative groundwater hydrology impacts could result from an increased use of the groundwater basins located in the proximity of the Project and other related projects. As previously noted, implementation of the Project would not result in the temporary or permanent extraction of groundwater from the Project or otherwise utilize the groundwater.

Implementation of the Project would result in a slight decrease in impervious conditions. Redevelopment projects within the Ballona Creek watershed will also change existing pervious and impervious conditions for each project. With the high built-out condition of the watershed, cumulative increases in impervious conditions are not as likely as increases in pervious conditions due to existing LID requirements for redevelopment projects. Potential cumulative impacts associated with the Project on groundwater hydrology would be less than significant.

### 6.3.4. Groundwater Quality

Compliance with applicable regulations would prevent the Project from negatively impacting or expanding any potential areas affected by contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated as defined in the CCR, Title 22, Division 4, Chapter 15 and SDWA. Additionally, related and future projects would be unlikely to cause or increase groundwater contamination because compliance with existing regulations would similarly prevent these projects from affecting or expanding any potential areas of contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated. Therefore, cumulative impacts to groundwater quality would be less than significant.

# 7. LEVEL OF SIGNIFICANCE

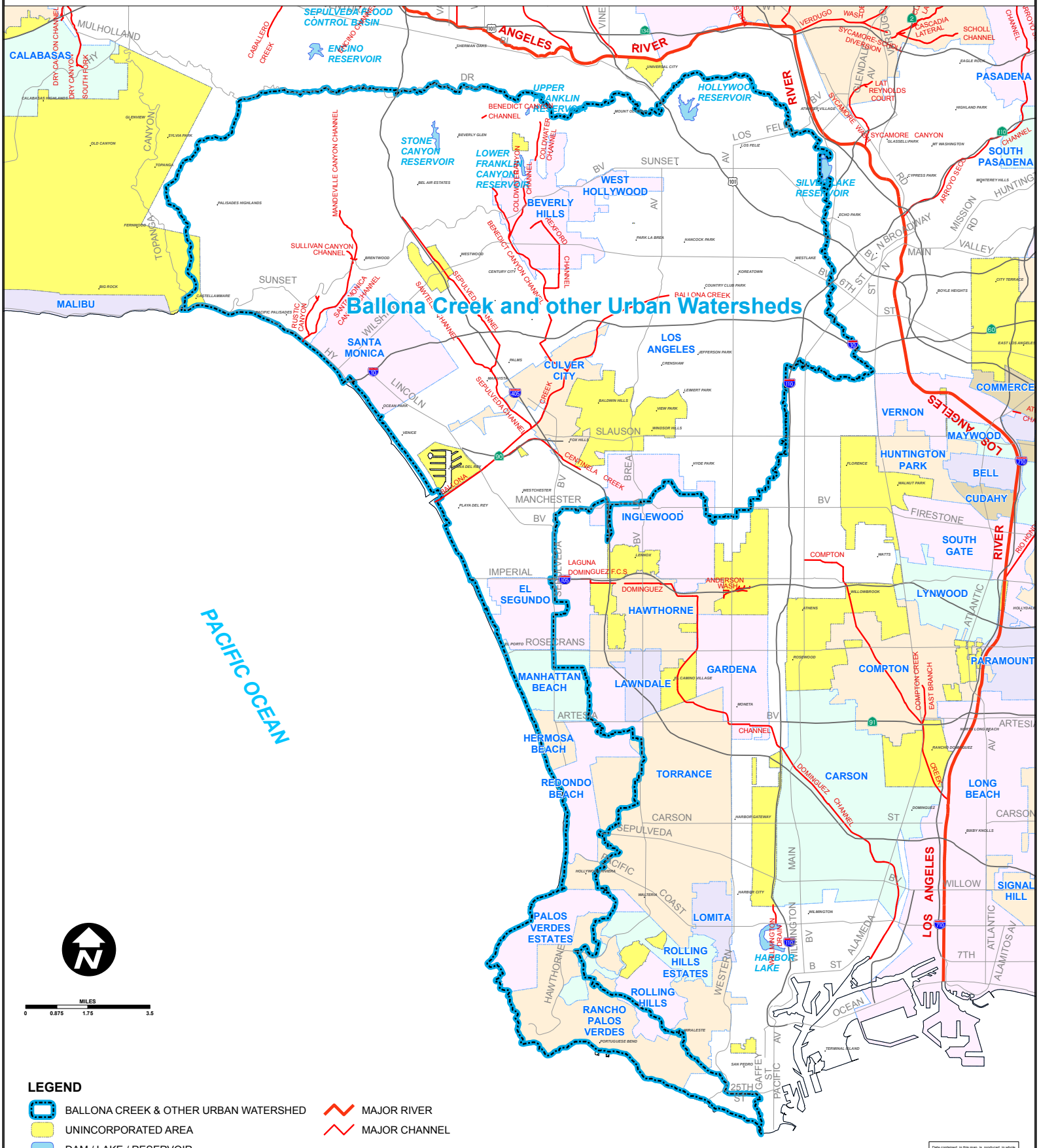
Based on the analysis contained in this report, less than significant effects have been identified for surface water hydrology, surface water quality, or groundwater for this project.

# ATTACHMENT A

## BALLONA CREEK WATERSHED MAP

# COUNTY OF LOS ANGELES

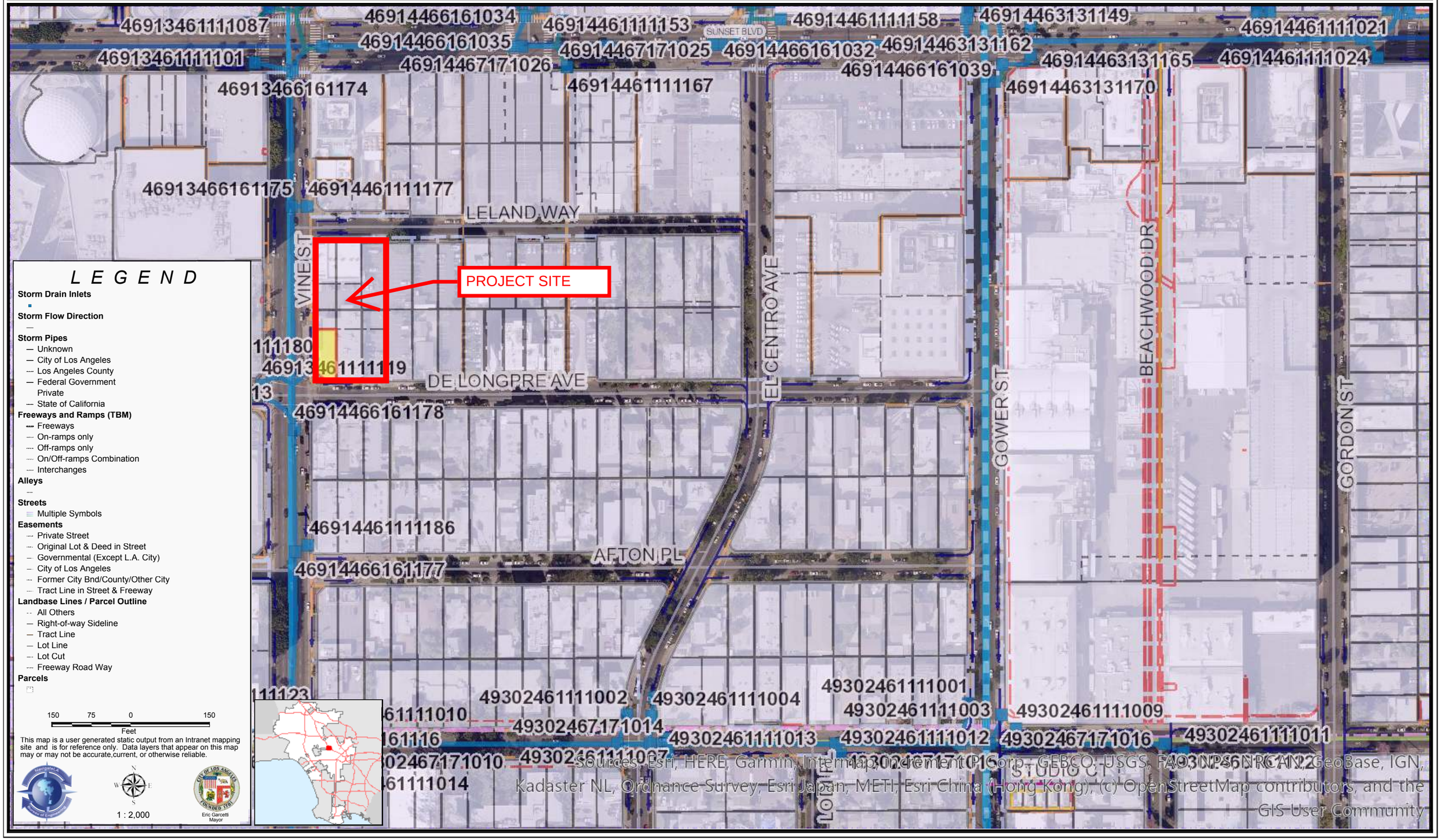
# BALLONA CREEK & OTHER URBAN WATERSHEDS



# ATTACHMENT B

## LOCAL STORM DRAIN SYSTEM EXHIBIT

# *1400 Vine Storm Drain*




## *L E G E N D*

**Storm Drain Inlets**

**Storm Flow Direction**

**Storm Pipes**
- Unknown
- City of Los Angeles
- Los Angeles County
- Federal Government
- Private
- State of California

**Freeways and Ramps (TBM)**
- Freeways
- On-ramps only
- Off-ramps only
- On/Off-ramps Combination
- Interchanges

**Alleys**

**Streets**
- Multiple Symbols

**Easements**
- Private Street
- Original Lot & Deed in Street
- Governmental (Except L.A. City)
- City of Los Angeles
- Former City Bnd/County/Other City
- Tract Line in Street & Freeway

**Landbase Lines / Parcel Outline**
- All Others
- Right-of-way Sideline
- Tract Line
- Lot Line
- Lot Cut
- Freeway Road Way

**Parcels**

150 75 0 150
Feet

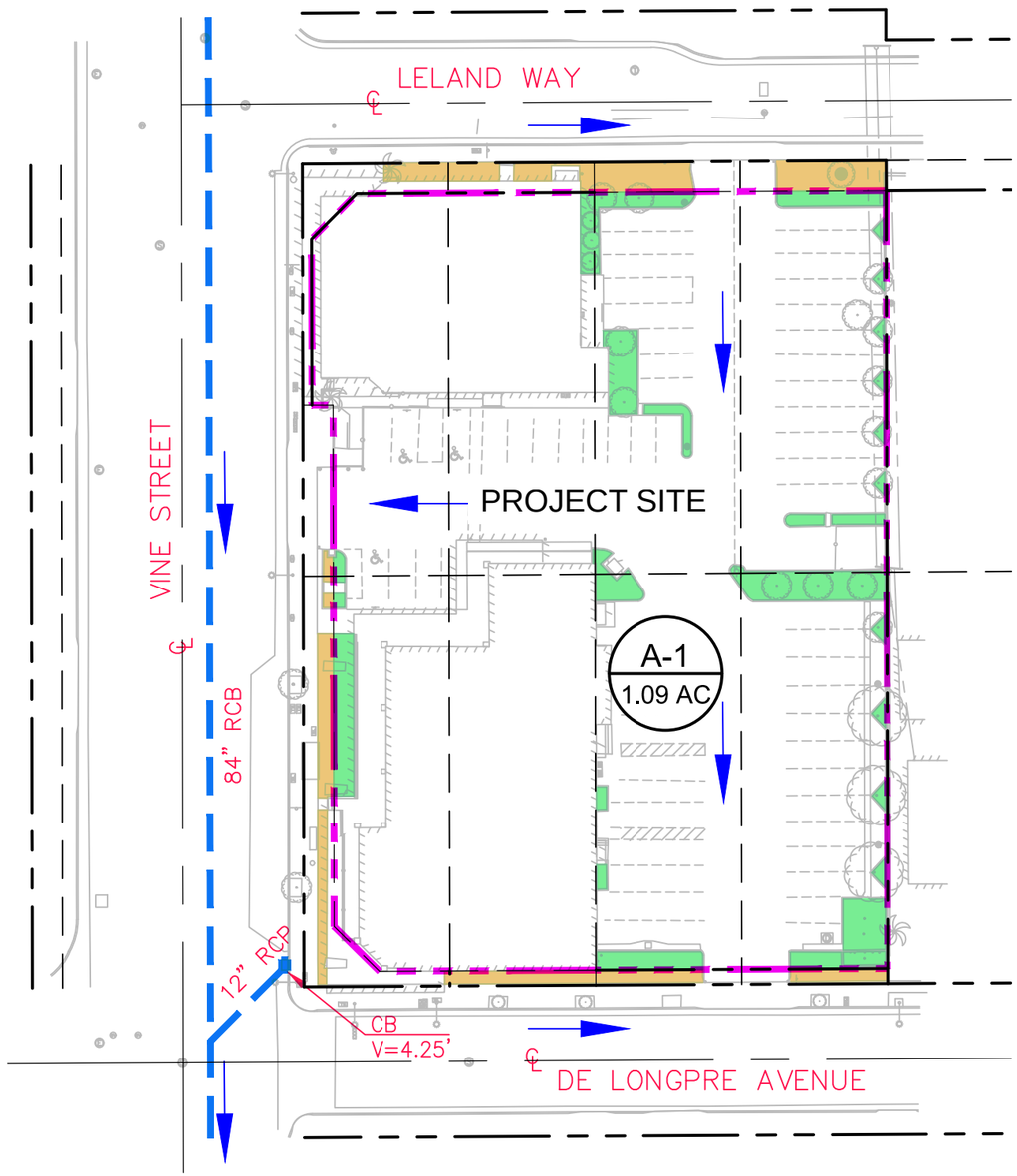
This map is a user generated static output from an Intranet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate,current, or otherwise reliable.

1 : 2,000

Eric Garcetti
Mayor

# ATTACHMENT C

## EXISTING ON-SITE HYDROLOGY MAP




## LEGEND

- EXISTING STORM DRAIN
- SITE HYDROLOGIC BOUNDARY
- EXISTING
- A-# / 1.09 — DRAINAGE AREA DESIGNATION PER ACRE
- PROPERTY LINE / RIGHT OF WAY
- CENTER LINE
- DIRECTION OF FLOW
- EXISTING PERVIOUS AREAS IN PROPOSED PROJECT SITE [2775 SF]
- EXISTING PERVIOUS AREAS OUTSIDE OF PROPOSED PROJECT SITE (POST DEDICATIONS) [2036 SF]

| FLOW RATE | |
|---|---|
| | CFS |
| $Q_{25}$ | 3.03 |
| $Q_{50}$ | 3.46 |

| 24-HR CLEAR RUNOFF | |
|---|---|
| | CF |
| $Q_{25}$ | 17,557 |
| $Q_{50}$ | 20,018 |

| AREA | PERVIOUS | | IMPERVIOUS | |
|---|---|---|---|---|
| | AC | % | AC | % |
| A-1 | 0.06 | 5.8 | 1.03 | 94.2 |

50' 0' 25' 50'
SCALE: 1" = 50'

# 1400 VINE - EXISTING ON-SITE HYDROLOGY MAP

1400-1440 N VINE STREET, 6266-6270 W LELAND WAY AND 6271-6275 DE LONGPRE AVENUE
LOS ANGELES, CALIFORNIA 90028

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

# ATTACHMENT D

## HydroCalc Hydrology Results for Existing Site

# Peak Flow Hydrologic Analysis

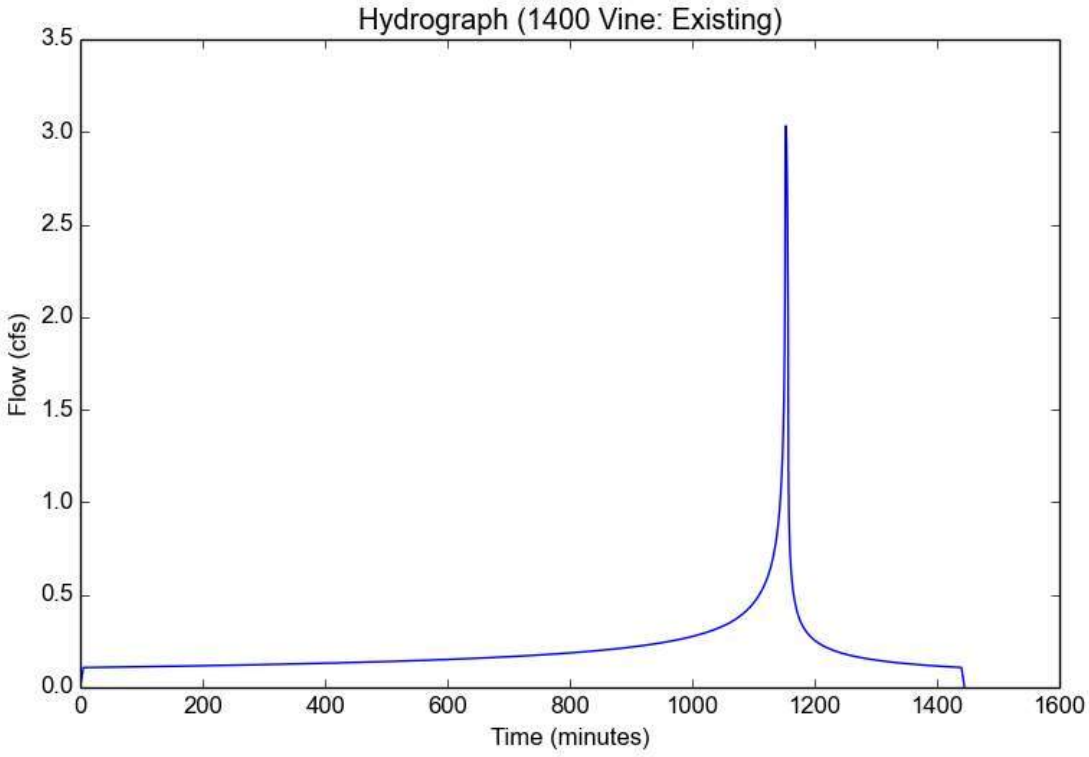
File location: F:/Projects/1906/001/_Support Files/Reports/Hydrology/1400 Vine - Existing (25-YR).pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | 1400 Vine |
| Subarea ID | Existing |
| Area (ac) | 1.09 |
| Flow Path Length (ft) | 260.0 |
| Flow Path Slope (vft/hft) | 0.02 |
| 50-yr Rainfall Depth (in) | 5.93 |
| Percent Impervious | 0.942 |
| Soil Type | 6 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 5.2065 |
| Peak Intensity (in/hr) | 3.1064 |
| Undeveloped Runoff Coefficient (Cu) | 0.8297 |
| Developed Runoff Coefficient (Cd) | 0.8959 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 3.0335 |
| Burned Peak Flow Rate (cfs) | 3.0335 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.403 |
| 24-Hr Clear Runoff Volume (cu-ft) | 17556.6544 |



# Peak Flow Hydrologic Analysis

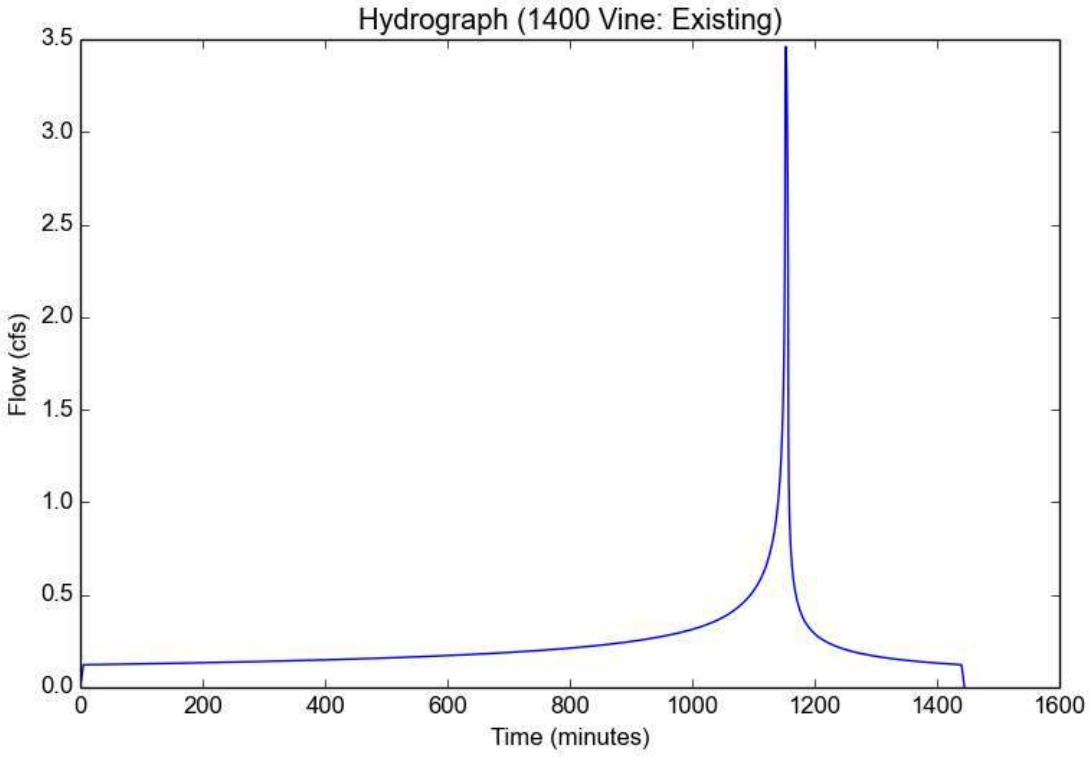
File location: F:/Projects/1906/001/_Support Files/Reports/Hydrology/1400 Vine - Existing (50-YR).pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | 1400 Vine |
| Subarea ID | Existing |
| Area (ac) | 1.09 |
| Flow Path Length (ft) | 260.0 |
| Flow Path Slope (vft/hft) | 0.02 |
| 50-yr Rainfall Depth (in) | 5.93 |
| Percent Impervious | 0.942 |
| Soil Type | 6 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 5.93 |
| Peak Intensity (in/hr) | 3.538 |
| Undeveloped Runoff Coefficient (Cu) | 0.8588 |
| Developed Runoff Coefficient (Cd) | 0.8976 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 3.4616 |
| Burned Peak Flow Rate (cfs) | 3.4616 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.4596 |
| 24-Hr Clear Runoff Volume (cu-ft) | 20018.0013 |

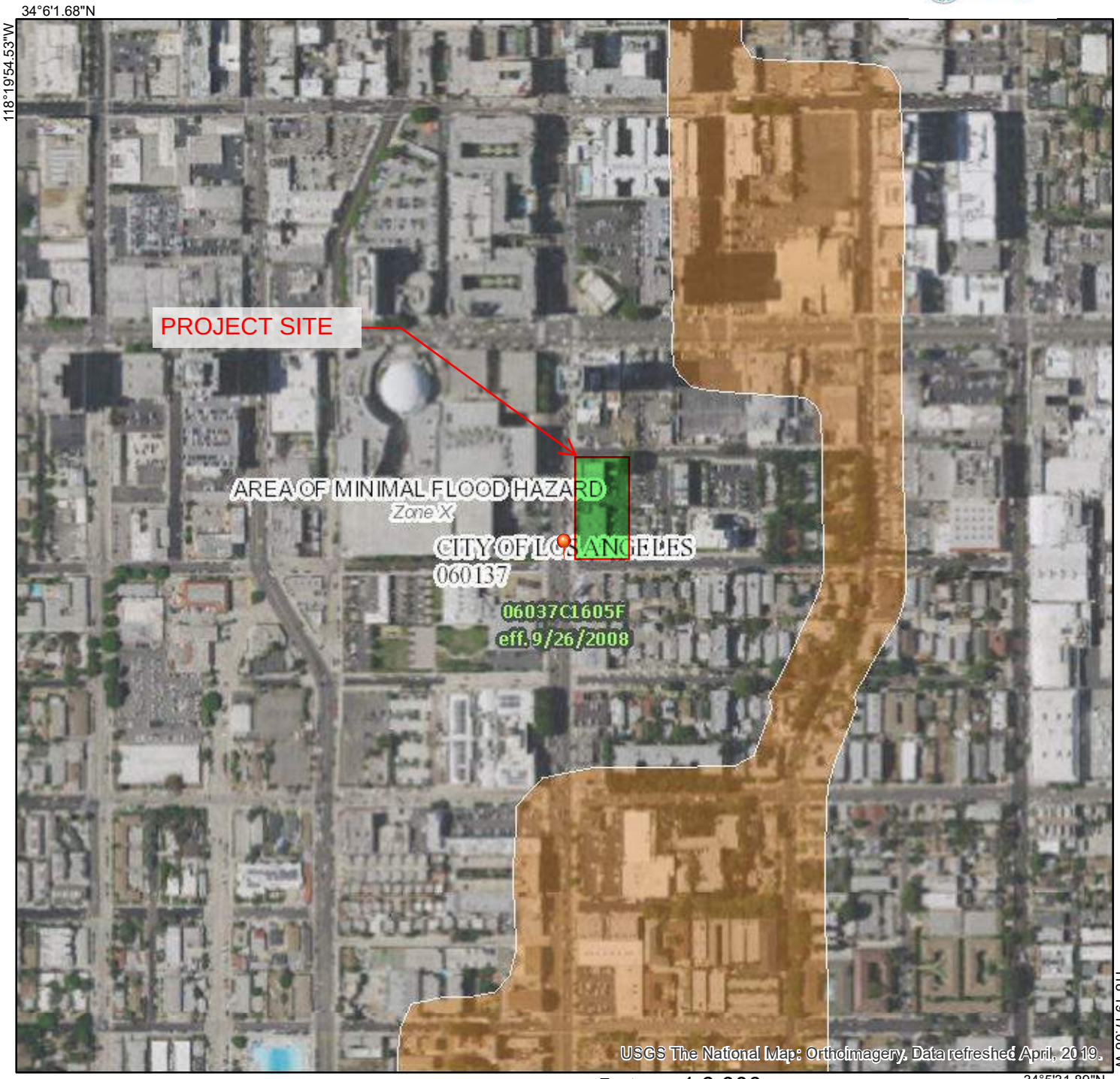


# ATTACHMENT E

## FEMA FLOODPLAIN MAP

# National Flood Hazard Layer FIRMette

FEMA




## Legend

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

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 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 2/11/2020 at 1:00:36 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.

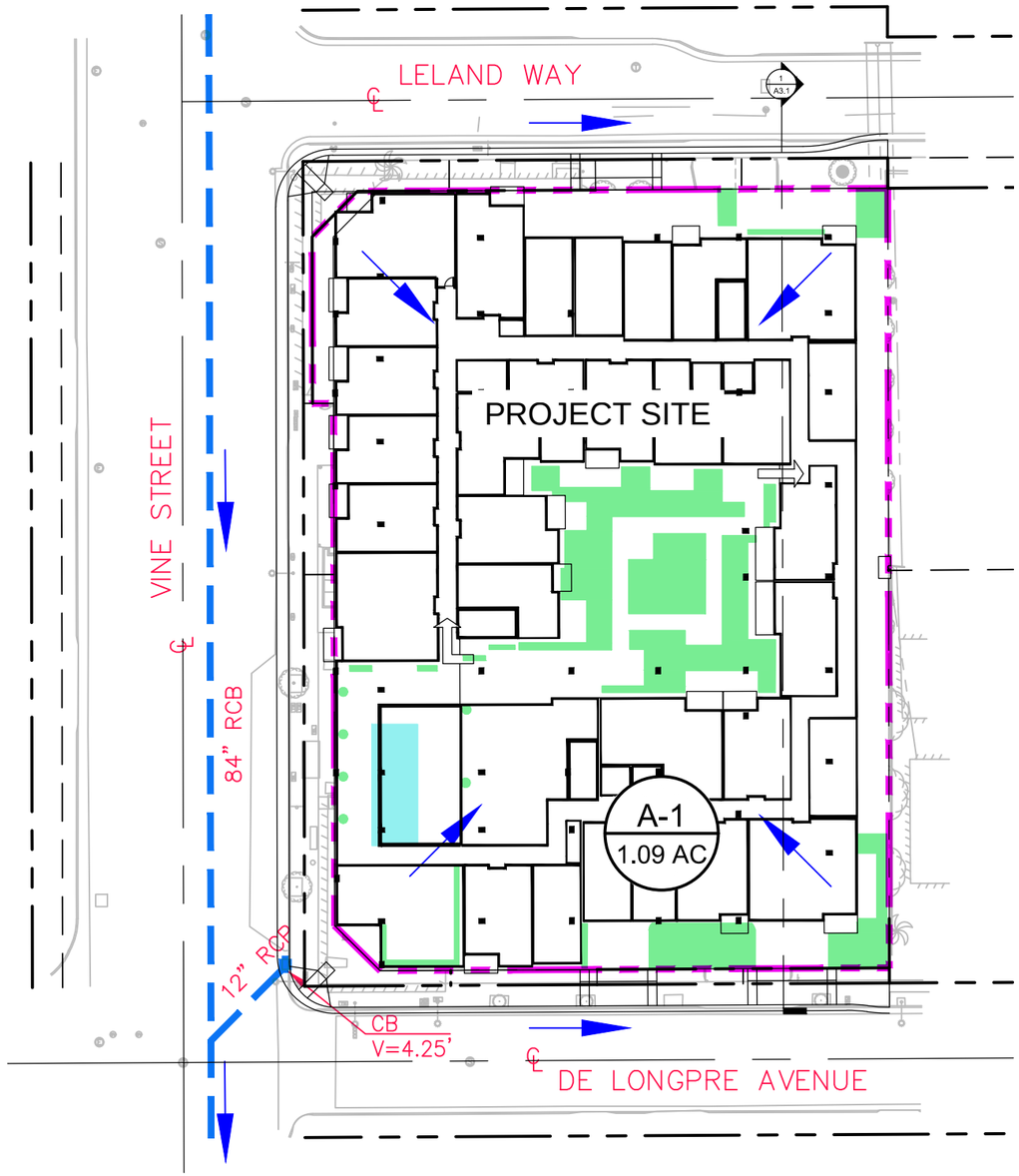
# ATTACHMENT F

## 2016 CALIFORNIA 303(D) LIST

| REGION | WATER BODY NAME | WATER TYPE | WATERSHED* CALWATER / USGS HUC | • POLLUTANT<br>○ POTENTIAL SOURCES<br>*Relevant Notes* | ESTIMATED AREA ASSESSED | FIRST YEAR LISTED | TMDL REQUIREMENT STATUS** | TMDL REQUIREMENT DATE*** |
|---|---|---|---|---|---|---|---|---|
| 4 | Artesia-Norwalk Drain | River & Stream | 40515010 / 18070104 | • Indicator Bacteria<br>○ Source Unknown | 2.5 Miles | 2010 | 5B | 2016 |
| | | | | • Selenium<br>○ Source Unknown | 2.5 Miles | 2010 | 5A | 2021 |
| 4 | Arundell Barranca (Ventura County) | River & Stream | 40311000 / 18070103 | • Indicator Bacteria<br>○ Source Unknown | 4.9 Miles | 2014 | 5A | 2027 |
| 4 | Balboa Lake | Lake & Reservoir | 40521000 / 18070105 | • Ammonia<br>○ Source Unknown | 27 Acres | 2014 | 5B | 2004 |
| | | | | • Oxygen, Dissolved<br>○ Source Unknown | 27 Acres | 2014 | 5A | 2027 |
| | | | | • Toxicity<br>○ Source Unknown | 27 Acres | 2014 | 5A | 2027 |
| 4 | Ballona Creek | River & Stream | 40513000 / 18070104 | • Copper<br>○ Source Unknown | 6.5 Miles | 1800 | 5B | 2005 |
| | | | | • Cyanide<br>○ Source Unknown | 6.5 Miles | 1996 | 5A | 2019 |
| | | | | • Indicator Bacteria<br>○ Nonpoint Source<br>○ Point Source | 6.5 Miles | 2014 | 5B | 2007 |
| | | | | • Lead<br>○ Source Unknown | 6.5 Miles | 2002 | 5B | 2005 |
| | | | | • Toxicity<br>○ Source Unknown<br>*The sediment toxicity collected to support this listing decision were collected from Reach 2 of Ballona Creek as identified in the Los Angeles Regional Basin Plan.* | 6.5 Miles | 1996 | 5B | 2005 |
| | | | | • Trash<br>○ Source Unknown | 6.5 Miles | 1996 | 5B | 2001 |
| | | | | • Viruses (enteric)<br>○ Nonpoint Source<br>○ Point Source | 6.5 Miles | 1996 | 5B | 2007 |
| | | | | • Zinc<br>○ Source Unknown | 6.5 Miles | 1996 | 5B | 2005 |
| 4 | Boulder Creek (Ventura County) | River & Stream | 40331000 / 18070102 | • Bifenthrin<br>○ Source Unknown | 6.5 Miles | 2014 | 5A | 2027 |

# ATTACHMENT G

## PROPOSED ON-SITE HYDROLOGY MAP




## LEGEND

- EXISTING STORM DRAIN
- SITE HYDROLOGIC BOUNDARY
- EXISTING
- PROPOSED
- A-# / 1.09 — DRAINAGE AREA DESIGNATION PER ACRE
- PROPERTY LINE / RIGHT OF WAY
- CENTER LINE
- DIRECTION OF FLOW
- PROPOSED PERVIOUS AREAS (ON-SITE) [4200 SF]
- PROPOSED POOL [600 SF]

| FLOW RATE | |
|---|---|
| | CFS |
| $Q_{25}$ | 3.02 |
| $Q_{50}$ | 3.45 |
| $Q_{LID}$ | 0.32 |

| 24-HR CLEAR RUNOFF | |
|---|---|
| | CF |
| $Q_{25}$ | 16,955 |
| $Q_{50}$ | 19,349 |
| $Q_{LID}$ | 3,186 |

| AREA | PERVIOUS | | IMPERVIOUS | |
|---|---|---|---|---|
| | AC | % | AC | % |
| A-1 | 0.11 | 10 | 1.03 | 90 |

N

50' 0' 25' 50'
SCALE: 1" = 50'

# 1400 VINE - PROPOSED ON-SITE HYDROLOGY MAP

1400-1440 N VINE STREET, 6266-6270 W LELAND WAY AND 6271-6275 DE LONGPRE AVENUE
LOS ANGELES, CALIFORNIA 90028

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

# ATTACHMENT H

## HydroCalc Hydrology Results for Proposed Site

# Peak Flow Hydrologic Analysis

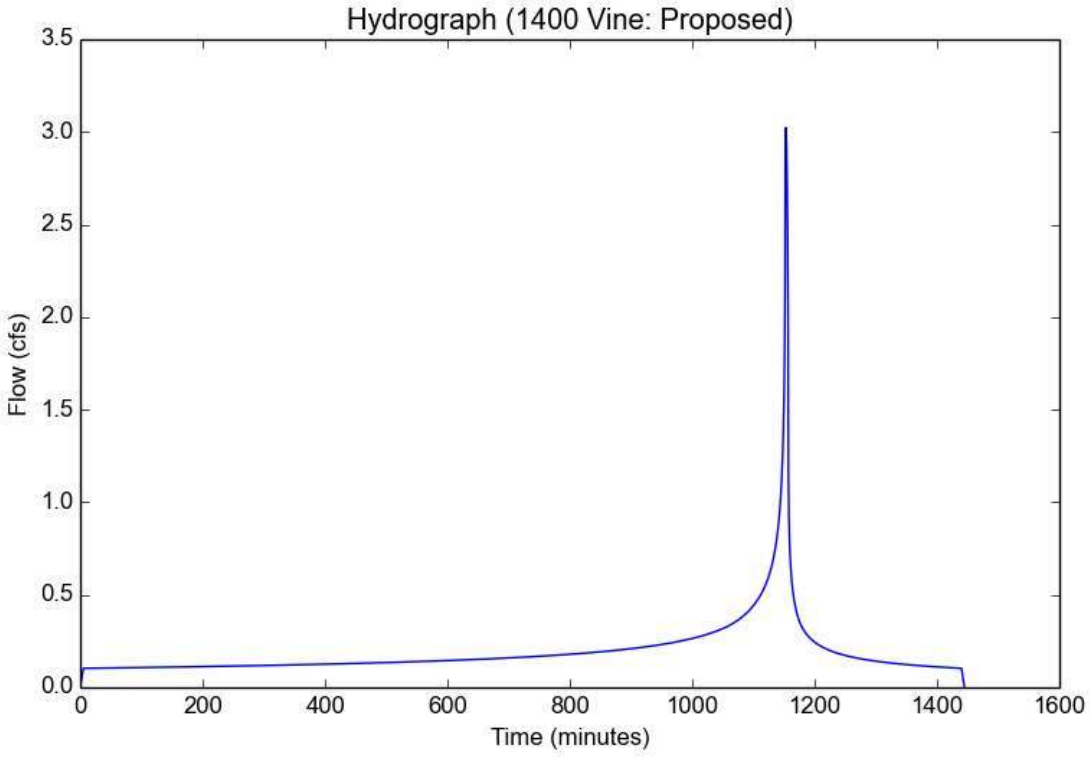
File location: F:/Projects/1906/001/_Support Files/Reports/Hydrology/1400 Vine - Proposed (25-YR).pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | 1400 Vine |
| Subarea ID | Proposed |
| Area (ac) | 1.09 |
| Flow Path Length (ft) | 260.0 |
| Flow Path Slope (vft/hft) | 0.02 |
| 50-yr Rainfall Depth (in) | 5.93 |
| Percent Impervious | 0.9 |
| Soil Type | 6 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 5.2065 |
| Peak Intensity (in/hr) | 3.1064 |
| Undeveloped Runoff Coefficient (Cu) | 0.8297 |
| Developed Runoff Coefficient (Cd) | 0.893 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 3.0236 |
| Burned Peak Flow Rate (cfs) | 3.0236 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.3892 |
| 24-Hr Clear Runoff Volume (cu-ft) | 16955.0638 |



# Peak Flow Hydrologic Analysis

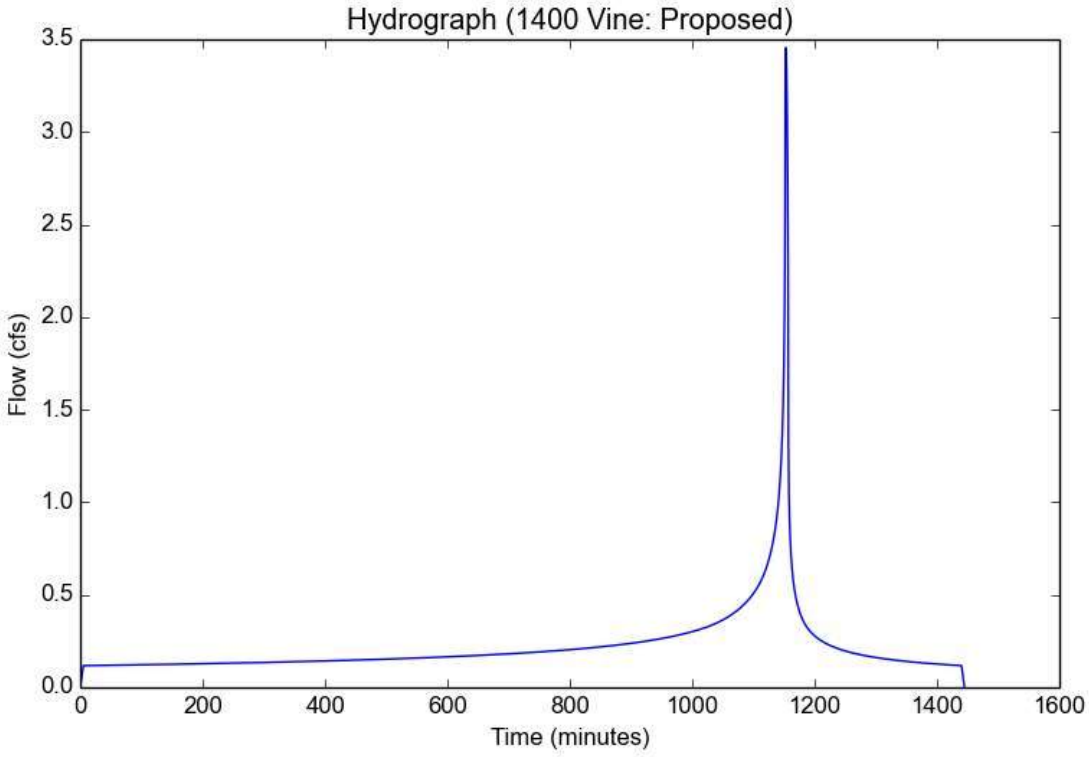
File location: F:/Projects/1906/001/_Support Files/Reports/Hydrology/1400 Vine - Proposed (50-YR).pdf
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | 1400 Vine |
| Subarea ID | Proposed |
| Area (ac) | 1.09 |
| Flow Path Length (ft) | 260.0 |
| Flow Path Slope (vft/hft) | 0.02 |
| 50-yr Rainfall Depth (in) | 5.93 |
| Percent Impervious | 0.9 |
| Soil Type | 6 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

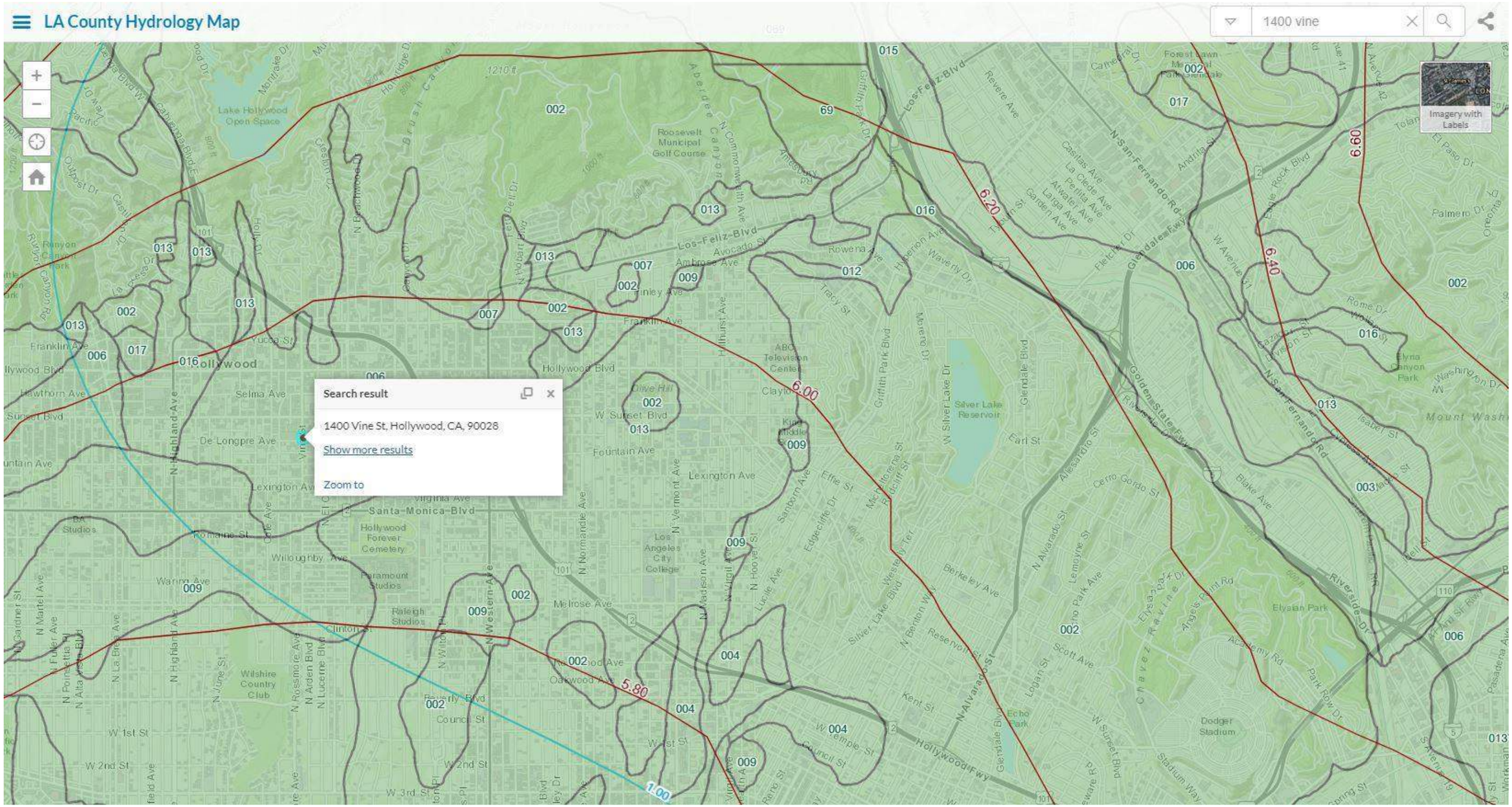
## Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 5.93 |
| Peak Intensity (in/hr) | 3.538 |
| Undeveloped Runoff Coefficient (Cu) | 0.8588 |
| Developed Runoff Coefficient (Cd) | 0.8959 |
| Time of Concentration (min) | 5.0 |
| Clear Peak Flow Rate (cfs) | 3.4549 |
| Burned Peak Flow Rate (cfs) | 3.4549 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.4442 |
| 24-Hr Clear Runoff Volume (cu-ft) | 19348.6131 |



# ATTACHMENT I

## LA COUNTY GIS 85TH PERCENTILE MAP


LA County Hydrology Map
1400 vine
Search result
1400 Vine St, Hollywood, CA, 90028
Show more results
Zoom to
Imagery with Labels
Hollywood
Los-Feliz-Blvd
Santa-Monica-Blvd
Hollywood Blvd
W Sunset Blvd
Fountain Ave
Lexington Ave
Melrose Ave
Franklin Ave
Silver Lake Reservoir
Dodger Stadium
Elysian Park
Lake Hollywood Open Space
Roosevelt Municipal Golf Course
Hollywood Forever Cemetery
Los Angeles City College
Wilshire Country Club
Paramount Studios
Raleigh Studios
6.60
6.40
6.20
6.00
5.80
1.00