FUSCOE ENGINEERING

WATER RESOURCES TECHNICAL REPORT

1200 Vine Street

1200 – 1218 N Vine Street
6245 – 6247 W Lexington Avenue
Los Angeles, California 90038

Prepared For

Vine Street Los Angeles Apartments, LLC
4601 Park Road, Suite 450
Charlotte, NC 28209

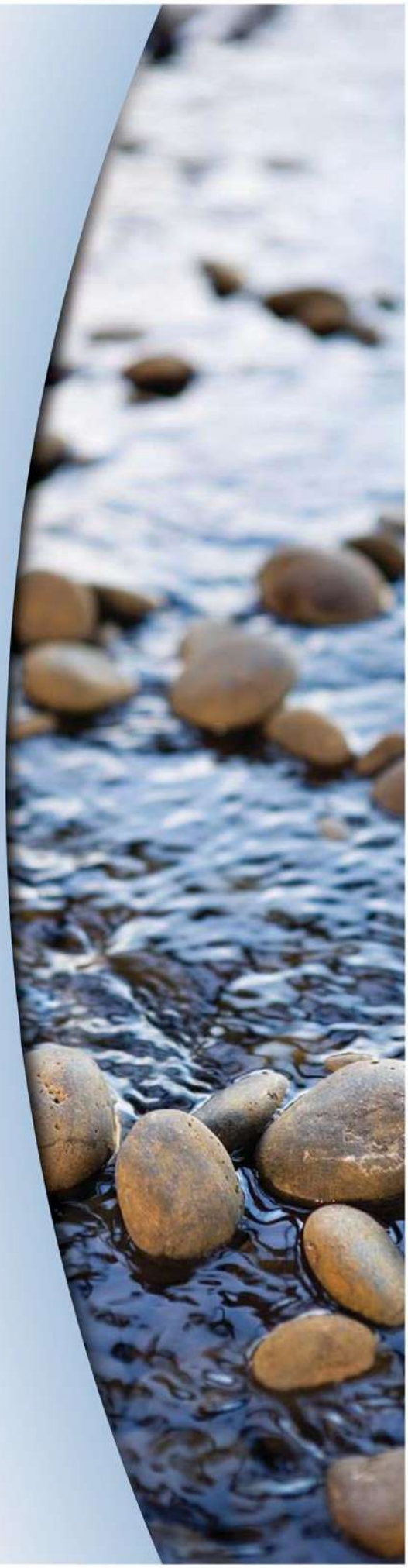
Prepared By

Fuscoe Engineering, Inc.
600 Wilshire Blvd., Ste. 1470
Los Angeles, California 90017
213.988.8802
www.fuscoe.com

Project Manager:
Samson E. Kawjaree, PE
C-83863

Date Prepared: October 25, 2022

Job Number: 4103.001



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1.INTRODUCTION

1.1 PROJECT DESCRIPTION

Vine Street Los Angeles Apartments, LLC (Applicant) is proposing to develop a new mixed-use residential development (Project) on an approximate 0.94-acre site, located at 1200 – 1218 N Vine Street and 6245 – 6247 W Lexington Avenue in the City of Los Angeles. The Project proposes an 8 – story structure with two levels of above ground parking. The Project will include 153 residential units (21 – Studio, 89 – 1 Bedroom, 43 – 2 Bedroom) on six levels of residential housing, 7,000 square feet of high-turnover sit-down restaurant areas, 13,919 square feet of amenity areas (indoor and outdoor open spaces and gym/fitness facility), and parking areas (78 – Residential Spaces, 15 – Commercial Spaces).

The existing Project Site consists of two, 1 – story concrete buildings with the remainder of the site being a paved surface parking lot. There are also existing concrete masonry unit perimeter walls and fencing that run along the entire western, and southern perimeters of the paved parking. Based upon the proposed building program, the existing building structure, foundations, parking lot surface, fencing, walls, gates, and all existing flatwork will need to be demolished. This includes the existing signs, guard post, handrails, ramps, and light fixtures within the parking lot area of the Project Site. The Project will consist of a redevelopment of the existing parking lot and commercial building into a multi-family mixed-use apartment and commercial building.

The project is bounded by a Commercial Development that continues to La Mirada Avenue to the North, Commercial and Residential Developments that continue to El Centro Avenue to the East, Lexington Avenue to the South, and Vine Street to the West.

Project Site: Thomas Grid - Page 593 – Grid F5

1.2 SCOPE OF WORK

As part of the California Environmental Quality Act (CEQA) analysis , this report will examine surface water quality, hydrology, and groundwater in both existing and Project buildout scenarios. The ultimate goal of this report is to determine the capacity of existing utilities to serve the Project area, and 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. 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.

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 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 drainpipe, 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

In 1972, the federal Clean Water Act[1] (CWA) was established, 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] CWA regulation calls for the implementation of Best Management Practices (BMPs) to reduce or prevent the discharge of pollutants from these activities to the Maximum Extent Practicable (MEP) for urban runoff and meeting the Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) standards for construction storm water. Regulations and permits have been implemented at the federal, state, and local level to form a comprehensive regulatory framework to serve and protect the quality of the nation's surface water resources.

The CWA Federal Anti-Degradation Policy [40 Code of Federal Regulations (CFR) Section 131.12] requires states to develop statewide anti-degradation policies and identify methods for implementing them.

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

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 water 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.

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.

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 not be required, as the Project Site is under one acre (lot area is 0.936 acres).

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. 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.

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 isthe 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. In addition, 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.

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. An EWMP for the Ballona Creek Watershed was approved on April 20, 2016 (BC EWMP, January 2016), 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, January 2016).

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 the Ballona Creek Estuary. 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 Groundwater 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

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

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.

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.

3. ENVIRONMENTAL SETTING

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 Watershed (See **Attachment A – Ballona Creek Watershed Map**) for a map of the 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. Existing city records per NavigateLA, and per a Project Site visitation, indicate that there is one (1) existing 7-foot diameter storm drain in Vine St resides west of the Project. The storm drain on Vine Street is owned and maintained by the City of Los Angeles. This 84-inch (7-foot) main line in Vine Street flows in a southwesterly direction and discharges into Ballona Creek Reach 1.

There are two (2) existing catch basins at the southwest corner of the project site, the intersection between Vine Street and Lexington Avenue (one on each respective street). Excess flows from Vine Street and along Lexington Avenue discharge towards these catch basins. The two catch basins connect to the 84-inch storm drain pipe along Vine Street through a 12-inch storm drain pipe, which ultimately flow south. These drains eventually discharge into Ballona Creek Reach 1 (See **Attachment B – Local Storm Drain System Exhibit**).

All the stormwater runoff from the Project Site, which is within Ballona Creek watershed, is discharged into Ballona Creek Reach 1 which makes its way to the Ballona Creek Estuary and ultimately into the Pacific Ocean. Ballona 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 one (1) retail/commercial structure with the remainder of the site being mostly paved as a surface parking lot. Stormwater runoff is collected and conveyed on all adjacent streets, Vine Street and Lexington Avenue fronting the Project Site, on the westerly and southerly edges of the project, respectively. The parking area sheet flows down sloped drive aisles and gravity flow into

a catch basin along the easterly edge of Vine Street, or to the catch basin along Lexington Avenue. There is no known drain located in the parking lot area. The city owned 12-inch storm drain line from the catch basins on Vine Street and Lexington Avenue connect and discharge into a city owned 84-inch main line in Vine Street. The existing drainage pattern and existing hydrology of the Project Site have been mapped out (See **Attachment C – Existing On-Site Hydrology Map**).

Table 1 provides the 10-year, 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).

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 conditions. See **Table 1** below for the existing conditions hydrology analysis results. Output hydrology calculations are provided (See **Attachment C – HydroCalc Hydrology Results for Existing Site**). The existing hydrology calculations were based on the gross area of the existing project site, which includes any dedications and or easements within the property. For an analysis comparing existing peak flows to proposed peak flows refer to Section 4.2.1.

Table 1 – Existing Drainage Conditions

Drainage Area	Area (acres)	% Imperviousness	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
A-1 (Vine Street)	0.33	100	0.68	0.91	1.04
A-2 (Vine Street)	0.44	97.3	0.89	1.10	1.25
A-3 (Lexington Avenue)	0.28	100	0.63	0.77	0.88
TOTAL	1.01	99.1	2.20	2.78	3.17

Under existing conditions, the Project Site discharges southerly into Lexington Avenue and westerly into Vine Street. The Vine Street runoff (Drainage Area A-1 and A-2) discharges into a 3.5-foot wide curbside catch basin approximately 15-feet west of the project site. The Lexington Avenue runoff (Drainage Area A-3) discharges into a a 3.5-foot wide curbside catch basins approximately 12-feet south of the project site. A portion of the project runoff from the Project Site is captured by the catch basin located along Lexington Avenue and a majority of the project site flows into Vine Street which both converge into a catch basin along Vine Street. These runoff values were calculated using the gross area of the project site as the pervious areas were both inside and outside the project's property line.

The total amount of runoff produced from the Drainage Area A-1 during 10-year, 25-year, and 50-year storm events are 0.68 cfs, 0.91 cfs, and 1.04 cfs respectively. The total amount of runoff produced from the Drainage Area A-2 during 10-year, 25-year, and 50-year storm events are 0.89 cfs, 1.10 cfs, and 1.25 cfs respectively. The total amount of runoff produced from the Drainage Area A-3 during 10-year, 25-year, and 50-year storm events are 0.63 cfs, 0.77 cfs, and 0.88 cfs respectively. The gross area was used to calculate the runoff values in the existing conditions to compare the pervious areas more conservatively against the proposed conditions. Using the net area of the project site would produce a lower pervious area, creating a greater increase in pervious areas when compared to proposed conditions. This would result in a greater reduction of runoff when comparing existing versus proposed,

in favor of the proposed Project. 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 has mentioned that if the project is reducing the stormwater runoff, the City of Los Angeles does not anticipate conflicts. There are no known existing storm drain deficiencies or capacity issues within the storm drains that collect runoff from the Project Site. If the Project is reducing the stormwater runoff, the City does not anticipate any conflicts.

3.1.4 FEMA

According to the Federal 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 outside of the 0.2% chance of flooding. Zone X 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 – FEMA Floodplain Map**).

3.2 SURFACE WATER QUALITY

3.2.1 REGIONAL

As described above, the Project Site is located within 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: * Existing beneficial use ** 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 Ballona Creek Reach 1 that the Project ultimately discharges into downstream.

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 total maximum daily loads (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: 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	

The proposed capture and use BMPs for the project shall adequately treat any additional source of pollutants associated with the project. With the implemented BMPs, the additional pollutants will be treated and will not have a significant effect on the downstream receiving waters.

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.

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: Source: 2020 - 2022 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), found here: https://www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/impaired_waters_list/	

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 BMP's 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 southernly edge Lexington Avenue or the westerly edge of Vine Street where it gets picked up by the 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 salt water. 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. 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] Historically, groundwater flow is generally westward through the subbasin toward the Inglewood fault. Recharge of the Hollywood Subbasin occurs primarily by percolation of precipitation and stream flow from the higher areas to the north. Subsurface inflow may 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 December 9, 2021, the California Geological Survey Seismic Hazard Evaluation Report 026 Plate 1.2 entitled "Historically Highest Ground Water Contours" indicates that the historically high groundwater level in the area is approximately 37 feet below the ground surface. Groundwater was encountered at depths between 20 and 21.5 feet below the ambient site grade in exploratory excavations.

The closest neighboring active monitoring wells to the project site is Well Number 2671A with a groundwater depth of 22 ft and a water surface elevation of 261.60 ft (recorded 01.24.2022), located approximately 0.6 miles southeast of the project site.

There is not a high potential for contaminated soils to be encountered, but if the 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.

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

4. PROJECT METHODOLOGY AND IMPLEMENTATIONS

4.1 CONSTRUCTION

4.1.1 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 import of 0 cubic yards and the excavation of approximately 10,000 cubic yards of soil. The excavated materials will be hauled via the nearby 101 Freeway with the ultimate destination at the Azusa Land Reclamation CO. Landfill in the City of Azusa.

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 following Permit Registration documents:

- 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.

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 applicant is not required by the City to provide a Notice of Intent, WDID issued from the SWRCB, or SWPPP to ensure the potential for soil erosion and construction are minimized, due to the Project disturbing less than one (1) acre of land (lot area is 0.936 acres)..

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.

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 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 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 Ballona Creek. Therefore, it is anticipated that surface water hydrology and water quality during construction will be properly accounted for. Additionally, effects to surface water hydrology and water quality during construction would therefore be less than significant.

4.1.2 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 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. Construction of the Project will include excavation depths of approximately 5 to 7 feet bgs in some of the elevated areas. Based on Geotechnologies' Geotechnical Report (December 9, 2021), the historical high groundwater level in the area is 37 feet bgs. Groundwater was encountered during exploration with boring samples explored between 20 ft and 21.5 ft below grade. Since most of the structure will be above a surface elevation of 311 to 316 feet (based on ALTA surface elevations, dated 10/21/2021), 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 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.

4.1.3 GROUNDWATER QUALITY

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 regarding soils and shallow groundwater exposure to construction materials, wastes, and spilled materials will be accounted for and the site will deploy proper housekeeping measures.

As previously noted above, construction of the Project will include excavation of approximately 5 to 7 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, groundwater contamination through hazardous materials releases, and impacts on groundwater quality have been taken into consideration, and should have no issues.

4.2 OPERATION

4.2.1 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.

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.

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 increase the impervious surfaces from 99.1 percent to 85.3 percent. This increase in pervious surfaces would result in maintaining in stormwater runoff. The proposed drainage pattern and proposed hydrology of the Project Site have been mapped out (See **Attachment G – Proposed On-Site Hydrology Map**).

See Table 5 for the proposed conditions hydrology analysis results. Output hydrology calculations are provided (See **Attachment H – HydroCalc Hydrology Results for Proposed Site**). Table 5 below provides an analysis of a 10-year, 25-year and 50-year frequency design storm events following construction of the Project. For an analysis comparing existing peak flows to proposed peak flows refer to Table 6.

Table 5 – Proposed Drainage Conditions

Drainage Area	Area (acres)	% Imperviousness	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
A-1 (Vine Street)	0.93	85.3	2.05	2.53	2.90

Table 5 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 less landscaped area shall be added within the property, thereby decreasing the pervious area of the Project Site. As shown in Table 5, the decrease in the permeable surfaces on the Project site would result in similar flows under a 10-year storm, under a 25-year storm, as well as under a 50-year storm event.

Table 6 – Existing vs. Proposed Drainage Conditions

Drainage Area Condition	Area (acres)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
Existing	1.01	2.20	2.78	3.17
Proposed	0.93	2.05	2.53	2.90
Difference	-0.08	-0.15	-0.23	-0.27
% Change from Existing to Proposed Conditions	-7.9%	-6.8%	-8.9%	-8.5%

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 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 of 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 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 open catch basins and the main 84-inch storm drain line on Vine Street. The capacity of the storm drain facilities, which the Project contributes to, will not be adversely impacted by the proposed change in flows. Therefore, operation of the Project should result in a less than significant effect on surface water hydrology.

4.2.2 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.

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.

Based on Geotechnologies' Geotechnical Report (December 9, 2021), infiltration is not recommended. It is deemed infeasible due to the proposed structure, poor infiltration capabilities of the soils found within the project site, 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 may be 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 Project will comply with the City's 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 0.98". 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. The project will develop a LID plan to be submitted to the City as part of the final engineering of the project to satisfy water quality requirements of the Project Site. Infiltration will be implemented if feasible, otherwise capture and use will be assessed. If capture/use is infeasible, biotreatment BMPs will be implemented.

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

[7] 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.

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 (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 the Ballona Creek. Thus, the Project's operational effects on surface water quality would be less than significant.

4.2.3 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 is anticipated to implement LID BMPs to treat the required volume of runoff, the Project shall improve the existing groundwater hydrology. 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.

4.2.4 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, and will assist in improving the groundwater quality. 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.

5. CONCLUSIONS

The proposed Project will implement best management practices and will maximize landscaping in order 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. 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

Ballona Creek and other Urban Watersheds

PROJECT SITE

PACIFIC OCEAN

MILES
0 0.875 1.75 3.5

LEGEND

- BALLONA CREEK & OTHER URBAN WATERSHED
- UNINCORPORATED AREA
- DAM / LAKE / RESERVOIR
- MAJOR RIVER
- MAJOR CHANNEL

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\ballonacreeketc_wtrsheds.mxd DATE: 08/22/07

Mapping & Property Management Division, Mapping & GIS Services Section

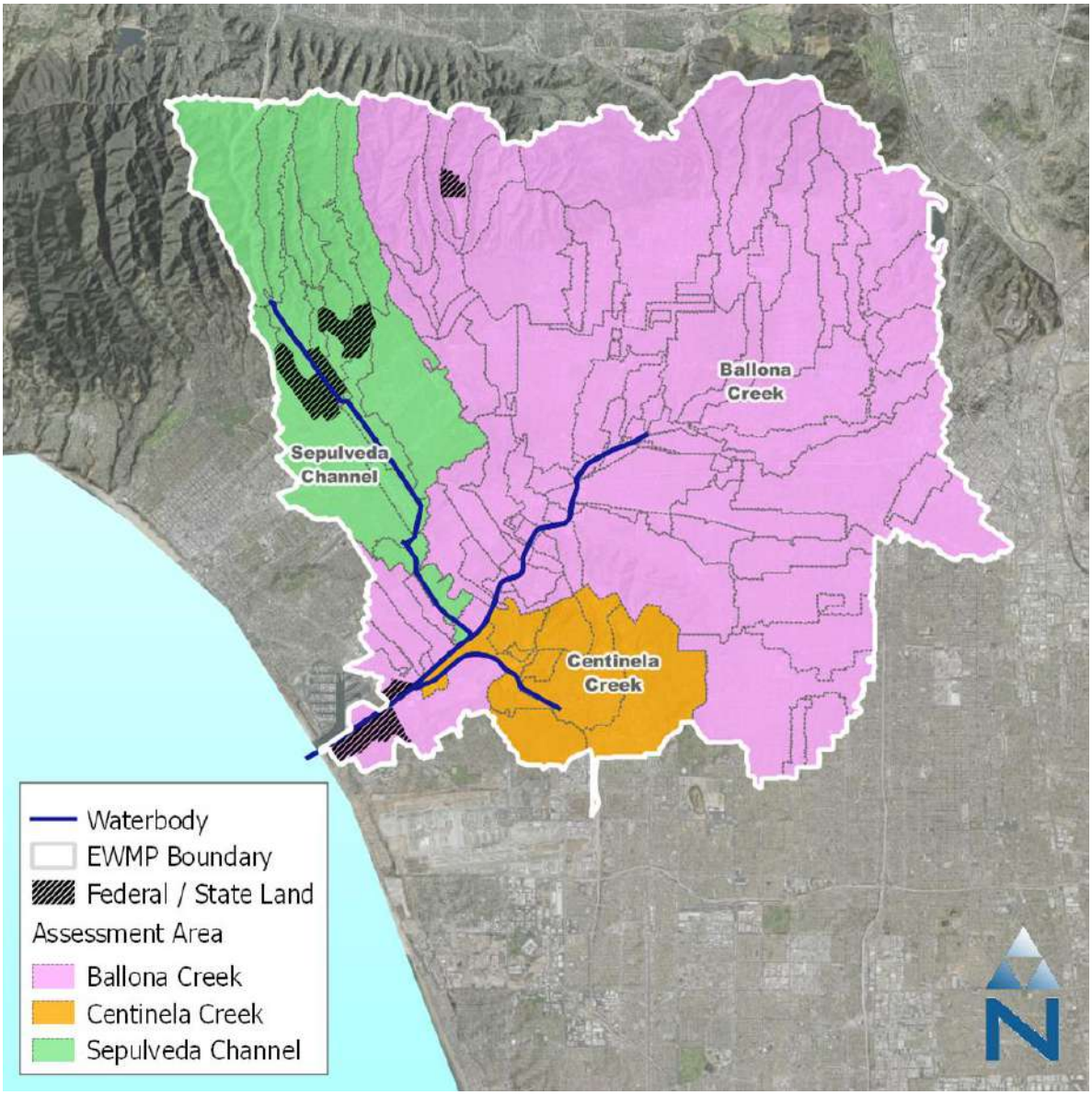


Figure 6-1 BCWMA and 180 Subwatersheds Represented by WMMS

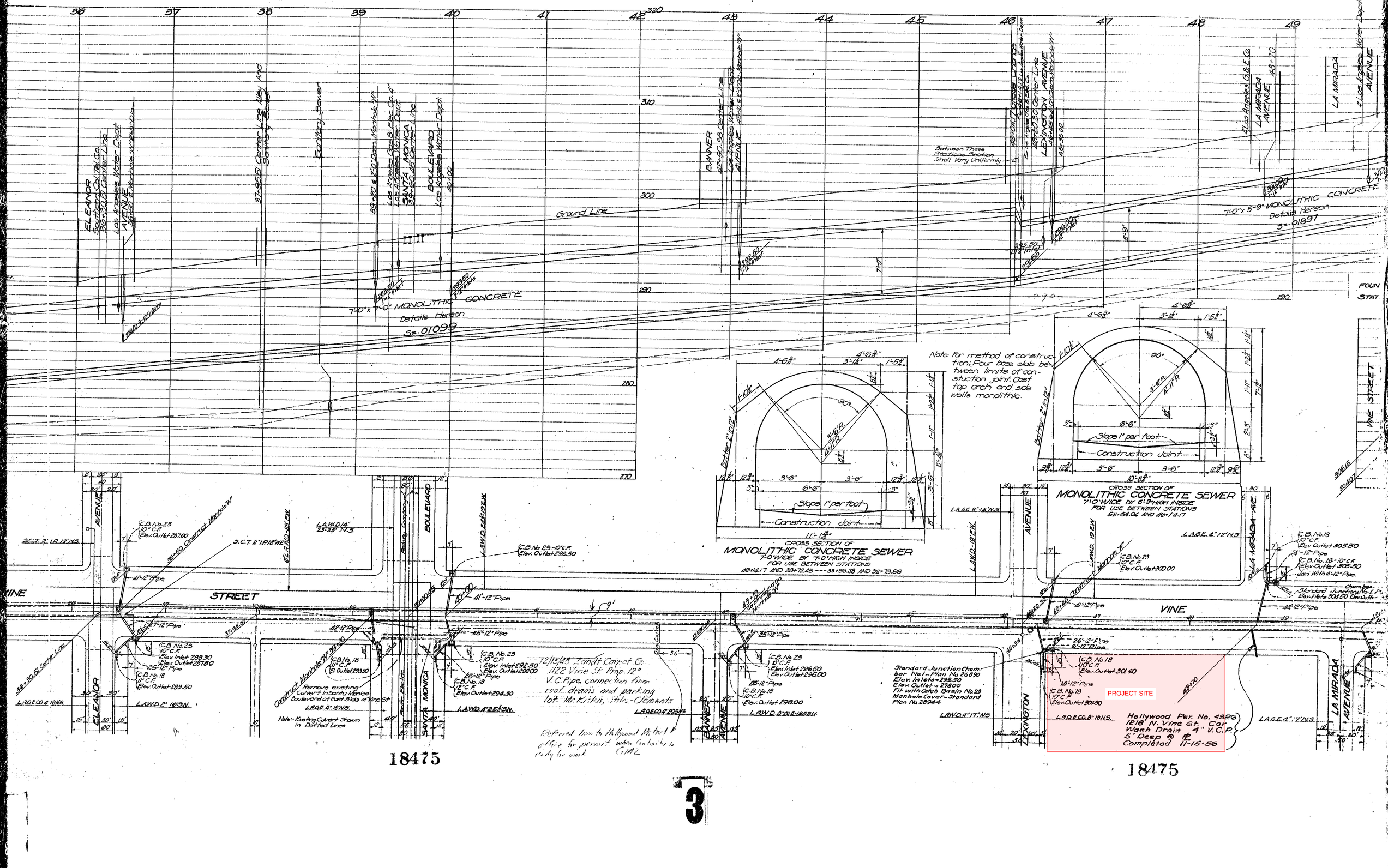
6.1.2 SUSTAIN

SUSTAIN was developed by the USEPA to support practitioners in developing cost-effective management plans for municipal stormwater programs and evaluating and selecting BMPs to achieve water quality goals (USEPA, 2009; http://www2.epa.gov/water-research/system-urban-stormwater-treatment-and-analysis-integration-sustain). SUSTAIN was specifically developed as a decision-support system for selection and placement of BMPs at strategic locations in urban watersheds (see Figure 6-2). It includes a process-based continuous simulation BMP module for representing flow and pollutant transport routing through various types of structural BMPs. This simulation provides the *primary application* of SUSTAIN – simulating the performance of selected stormwater control measures.

ATTACHMENT B

LOCAL STORM DRAIN SYSTEM EXHIBIT

PROFILE
FOUNTAIN AVENUE LATERAL
From
STATION 0+00 TO STATION 0+59.73
Vertical Scale 1"=4'
Horizontal Scale 1"=40'
7'-0" x 5'-9" MONOLITHIC CONCRETE
Details Hereon
S-21897
7'-0" x 5'-6" MONOLITHIC CONCRETE
Details Hereon
S-02237
Ground Line
Between These Stations Section Shall Vary Uniformly
LA MIRADA AVENUE
FOUNTAIN AVE.
AFTON PLACE
DE LONGPRE AVENUE
Sanitary Sewer
39" REINFORCED CONCRETE PIPE
S-00471
Construct 8" Brick Wall At End Of Pipe
Curb Grade
VINE STREET
CROSS SECTION OF
MONOLITHIC CONCRETE SEWER
Slope 1" per foot
Construction Joint
PLAN
Scale 1"=40'
Note: Junction Chamber To Be Fitted With Catch Basin No. 23 Manhole Cover Standard Plan No. 28944
JUNCTION STRUCTURE "A"
Standard Plan No. 27162
Construct Manhole "W"
Remove Existing Pipe And Catch Basin
Remove Existing Structure And 18" V.P.
Construct Lateral To Here Only. Build 8" Brick Wall At End Of Pipe
Fountain Ave. Lateral 39" R.C.P. Continued On Plan No.
Continued on Plan No. 29140
De Longpre Ave Lateral Continued On Plan No. 29140
PROFILE
DE LONGPRE AVENUE
PROJECT SITE
Hollywood Per. No. 4326
1218 N. Vine St. Car Wash Drain 4" V.C.P.
5' Deep @ P
Completed 11-15-56


ELEANOR AVENUE
Southern Cal. Edison Co.
Los Angeles Water Dept.
Sanitary Sewer
SANTA MONICA BOULEVARD
Los Angeles Gas & Elec. Co.
Los Angeles Water Dept.
Ground Line
7'-0" x 7'-0" MONOLITHIC CONCRETE SEWER
Details Hereon
Sz.01099
BANNER AVENUE
LEXINGTON AVENUE
LA MIRADA AVENUE
7'-0" x 5'-9" MONOLITHIC CONCRETE SEWER
Details Hereon
Sz.01897
CROSS SECTION OF MONOLITHIC CONCRETE SEWER
7'-0" WIDE BY 7'-0" HIGH INSIDE
FOR USE BETWEEN STATIONS
46+14.17 AND 33+72.45 --- 33+30.38 AND 32+73.96
CROSS SECTION OF MONOLITHIC CONCRETE SEWER
7'-0" WIDE BY 6'-9" HIGH INSIDE
FOR USE BETWEEN STATIONS
52+54.04 AND 46+14.17
Note: for method of construction; Pour base slab between limits of construction joint. Cast top arch and side walls monolithic.
Construction Joint
Slope 1" per foot
VINE STREET
ELEANOR AVENUE
SANTA MONICA BOULEVARD
BANNER AVENUE
LEXINGTON AVENUE
LA MIRADA AVENUE
C.B. No. 23 10'C.F. Elev. Inlet 287.00 Elev. Outlet 287.00
C.B. No. 18 11'C.F. Elev. Outlet 289.50
C.B. No. 25 10'C.F. Elev. Inlet 288.30 Elev. Outlet 287.80
C.B. No. 18 12'C.F. Elev. Outlet 294.30
C.B. No. 25 10'C.F. Elev. Inlet 292.50 Elev. Outlet 292.00
C.B. No. 18 11'C.F. Elev. Outlet 293.90
C.B. No. 25-10'C.F. Elev. Outlet 292.50
C.B. No. 23 10'C.F. Elev. Inlet 296.50 Elev. Outlet 296.00
C.B. No. 18 10'C.F. Elev. Outlet 298.00
C.B. No. 23 10'C.F. Elev. Outlet 300.00
C.B. No. 18 10'C.F. Elev. Outlet 301.60
C.B. No. 18 10'C.F. Elev. Outlet 901.50
C.B. No. 18 10'C.F. Elev. Outlet 905.50
18"-12" Pipe
C.B. No. 18-10'C.F. Elev. Outlet 905.50 Join With 6-12" Pipe.
Standard Junction Chamber No. 1 - Plan No. 26890 Elev. Inlets 298.50 Elev. Outlet - 298.00 Fit with Catch Basin No. 23 Manhole Cover - Standard Plan No. 28944
Standard Junction Chamber No. 1 - Elev. Inlets 901.50 Elev. Outlet
L.A.G.E. 8'-16 N.S.
L.A.G.E. 4'-12 N.S.
L.A.G.E. 4'-18 N.S.
L.A.G.E. 6'-18 N.S.
L.A.G.E. 4'-7 N.S.
L.A.W.D. 14" - 23.25° N.S.
L.A.W.D. 2'-16 N.S.
L.A.W.D. 4'-28.5° S.N.
L.A.W.D. 4'-11.5° N.S.
L.A.W.D. 4'-11.5° S.N.
L.A.W.D. 4'-11° N.S.
L.A.W.D. 4'-11° S.N.
L.A.W.D. 4'-10.5° N.S.
L.A.W.D. 4'-10.5° S.N.
L.A.W.D. 4'-10° N.S.
L.A.W.D. 4'-10° S.N.
L.A.W.D. 4'-9.5° N.S.
L.A.W.D. 4'-9.5° S.N.
L.A.W.D. 4'-9° N.S.
L.A.W.D. 4'-9° S.N.
L.A.W.D. 4'-8.5° N.S.
L.A.W.D. 4'-8.5° S.N.
L.A.W.D. 4'-8° N.S.
L.A.W.D. 4'-8° S.N.
L.A.W.D. 4'-7.5° N.S.
L.A.W.D. 4'-7.5° S.N.
L.A.W.D. 4'-7° N.S.
L.A.W.D. 4'-7° S.N.
L.A.W.D. 4'-6.5° N.S.
L.A.W.D. 4'-6.5° S.N.
L.A.W.D. 4'-6° N.S.
L.A.W.D. 4'-6° S.N.
L.A.W.D. 4'-5.5° N.S.
L.A.W.D. 4'-5.5° S.N.
L.A.W.D. 4'-5° N.S.
L.A.W.D. 4'-5° S.N.
L.A.W.D. 4'-4.5° N.S.
L.A.W.D. 4'-4.5° S.N.
L.A.W.D. 4'-4° N.S.
L.A.W.D. 4'-4° S.N.
L.A.W.D. 4'-3.5° N.S.
L.A.W.D. 4'-3.5° S.N.
L.A.W.D. 4'-3° N.S.
L.A.W.D. 4'-3° S.N.
L.A.W.D. 4'-2.5° N.S.
L.A.W.D. 4'-2.5° S.N.
L.A.W.D. 4'-2° N.S.
L.A.W.D. 4'-2° S.N.
L.A.W.D. 4'-1.5° N.S.
L.A.W.D. 4'-1.5° S.N.
L.A.W.D. 4'-1° N.S.
L.A.W.D. 4'-1° S.N.
L.A.W.D. 4'-0.5° N.S.
L.A.W.D. 4'-0.5° S.N.
L.A.W.D. 4'-0° N.S.
L.A.W.D. 4'-0° S.N.
L.A.W.D. 3'-11.5° N.S.
L.A.W.D. 3'-11.5° S.N.
L.A.W.D. 3'-11° N.S.
L.A.W.D. 3'-11° S.N.
L.A.W.D. 3'-10.5° N.S.
L.A.W.D. 3'-10.5° S.N.
L.A.W.D. 3'-10° N.S.
L.A.W.D. 3'-10° S.N.
L.A.W.D. 3'-9.5° N.S.
L.A.W.D. 3'-9.5° S.N.
L.A.W.D. 3'-9° N.S.
L.A.W.D. 3'-9° S.N.
L.A.W.D. 3'-8.5° N.S.
L.A.W.D. 3'-8.5° S.N.
L.A.W.D. 3'-8° N.S.
L.A.W.D. 3'-8° S.N.
L.A.W.D. 3'-7.5° N.S.
L.A.W.D. 3'-7.5° S.N.
L.A.W.D. 3'-7° N.S.
L.A.W.D. 3'-7° S.N.
L.A.W.D. 3'-6.5° N.S.
L.A.W.D. 3'-6.5° S.N.
L.A.W.D. 3'-6° N.S.
L.A.W.D. 3'-6° S.N.
L.A.W.D. 3'-5.5° N.S.
L.A.W.D. 3'-5.5° S.N.
L.A.W.D. 3'-5° N.S.
L.A.W.D. 3'-5° S.N.
L.A.W.D. 3'-4.5° N.S.
L.A.W.D. 3'-4.5° S.N.
L.A.W.D. 3'-4° N.S.
L.A.W.D. 3'-4° S.N.
L.A.W.D. 3'-3.5° N.S.
L.A.W.D. 3'-3.5° S.N.
L.A.W.D. 3'-3° N.S.
L.A.W.D. 3'-3° S.N.
L.A.W.D. 3'-2.5° N.S.
L.A.W.D. 3'-2.5° S.N.
L.A.W.D. 3'-2° N.S.
L.A.W.D. 3'-2° S.N.
L.A.W.D. 3'-1.5° N.S.
L.A.W.D. 3'-1.5° S.N.
L.A.W.D. 3'-1° N.S.
L.A.W.D. 3'-1° S.N.
L.A.W.D. 3'-0.5° N.S.
L.A.W.D. 3'-0.5° S.N.
L.A.W.D. 3'-0° N.S.
L.A.W.D. 3'-0° S.N.
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L.A.W.D. 2'-11.5° S.N.
L.A.W.D. 2'-11° N.S.
L.A.W.D. 2'-11° S.N.
L.A.W.D. 2'-10.5° N.S.
L.A.W.D. 2'-10.5° S.N.
L.A.W.D. 2'-10° N.S.
L.A.W.D. 2'-10° S.N.
L.A.W.D. 2'-9.5° N.S.
L.A.W.D. 2'-9.5° S.N.
L.A.W.D. 2'-9° N.S.
L.A.W.D. 2'-9° S.N.
L.A.W.D. 2'-8.5° N.S.
L.A.W.D. 2'-8.5° S.N.
L.A.W.D. 2'-8° N.S.
L.A.W.D. 2'-8° S.N.
L.A.W.D. 2'-7.5° N.S.
L.A.W.D. 2'-7.5° S.N.
L.A.W.D. 2'-7° N.S.
L.A.W.D. 2'-7° S.N.
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L.A.W.D. 2'-6.5° S.N.
L.A.W.D. 2'-6° N.S.
L.A.W.D. 2'-6° S.N.
L.A.W.D. 2'-5.5° N.S.
L.A.W.D. 2'-5.5° S.N.
L.A.W.D. 2'-5° N.S.
L.A.W.D. 2'-5° S.N.
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L.A.W.D. 2'-4.5° S.N.
L.A.W.D. 2'-4° N.S.
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L.A.W.D. 2'-3° S.N.
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L.A.W.D. 2'-2.5° S.N.
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L.A.W.D. 2'-2° S.N.
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L.A.W.D. 2'-1.5° S.N.
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L.A.W.D. 2'-1° S.N.
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L.A.W.D. 2'-0° S.N.
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L.A.W.D. 1'-11.5° S.N.
L.A.W.D. 1'-11° N.S.
L.A.W.D. 1'-11° S.N.
L.A.W.D. 1'-10.5° N.S.
L.A.W.D. 1'-10.5° S.N.
L.A.W.D. 1'-10° N.S.
L.A.W.D. 1'-10° S.N.
L.A.W.D. 1'-9.5° N.S.
L.A.W.D. 1'-9.5° S.N.
L.A.W.D. 1'-9° N.S.
L.A.W.D. 1'-9° S.N.
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L.A.W.D. 1'-8.5° S.N.
L.A.W.D. 1'-8° N.S.
L.A.W.D. 1'-8° S.N.
L.A.W.D. 1'-7.5° N.S.
L.A.W.D. 1'-7.5° S.N.
L.A.W.D. 1'-7° N.S.
L.A.W.D. 1'-7° S.N.
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L.A.W.D. 1'-6.5° S.N.
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L.A.W.D. 1'-6° S.N.
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L.A.W.D. 1'-5° N.S.
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L.A.W.D. 1'-4° N.S.
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L.A.W.D. 1'-3.5° S.N.
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L.A.W.D. 1'-3° S.N.
L.A.W.D. 1'-2.5° N.S.
L.A.W.D. 1'-2.5° S.N.
L.A.W.D. 1'-2° N.S.
L.A.W.D. 1'-2° S.N.
L.A.W.D. 1'-1.5° N.S.
L.A.W.D. 1'-1.5° S.N.
L.A.W.D. 1'-1° N.S.
L.A.W.D. 1'-1° S.N.
L.A.W.D. 1'-0.5° N.S.
L.A.W.D. 1'-0.5° S.N.
L.A.W.D. 1'-0° N.S.
L.A.W.D. 1'-0° S.N.
L.A.W.D. 0'-11.5° N.S.
L.A.W.D. 0'-11.5° S.N.
L.A.W.D. 0'-11° N.S.
L.A.W.D. 0'-11° S.N.
L.A.W.D. 0'-10.5° N.S.
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L.A.W.D. 0'-10° S.N.
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L.A.W.D. 0'-9° N.S.
L.A.W.D. 0'-9° S.N.
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L.A.W.D. 0'-8.5° S.N.
L.A.W.D. 0'-8° N.S.
L.A.W.D. 0'-8° S.N.
L.A.W.D. 0'-7.5° N.S.
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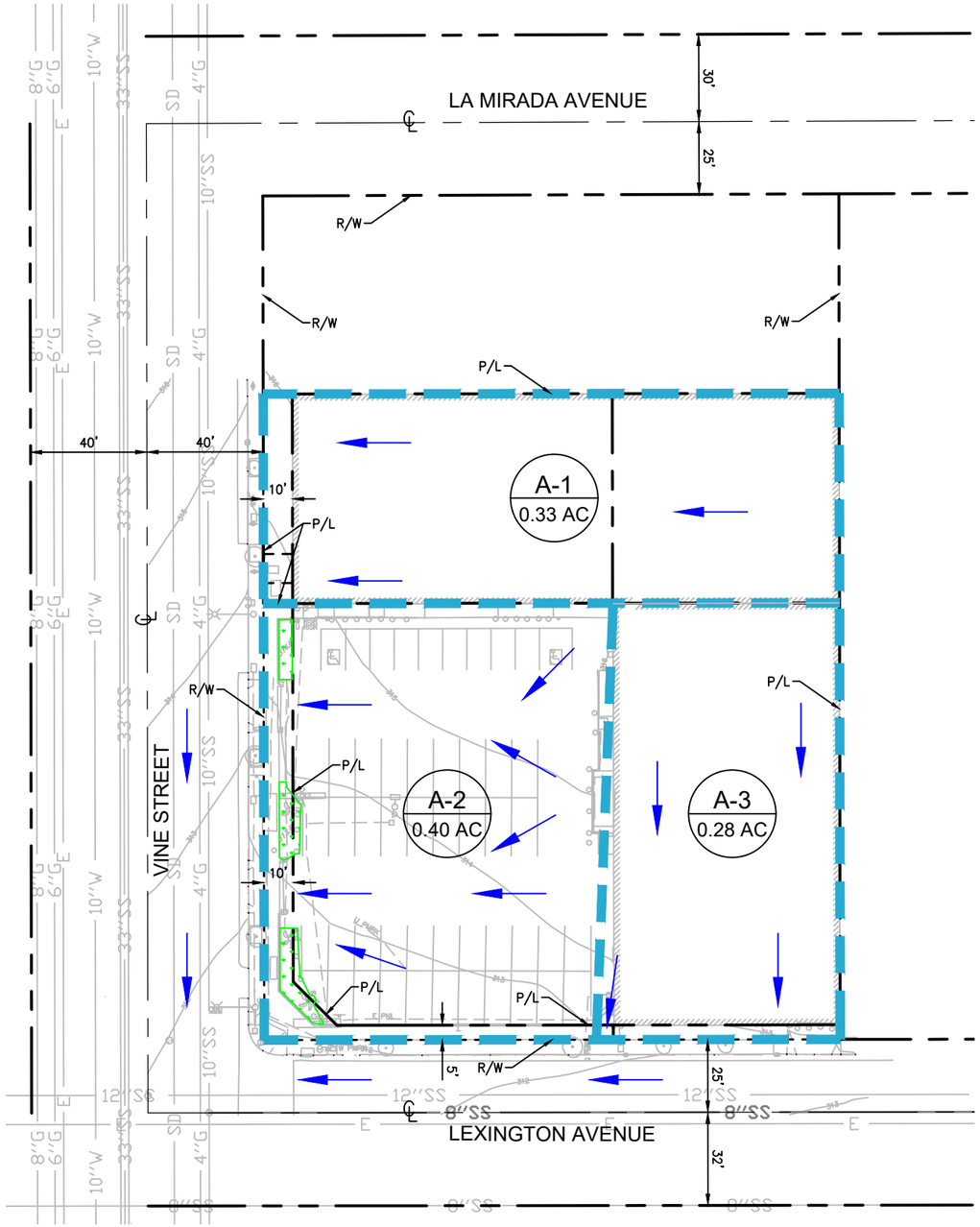
L.A.W.D. 0'-7° N.S.
L.A.W.D. 0'-7° S.N.
L.A.W.D. 0'-6.5° N.S.
L.A.W.D. 0'-6.5° S.N.
L.A.W.D. 0'-6° N.S.
L.A.W.D. 0'-6° S.N.
L.A.W.D. 0'-5.5° N.S.
L.A.W.D. 0'-5.5° S.N.
L.A.W.D. 0'-5° N.S.
L.A.W.D. 0'-5° S.N.
L.A.W.D. 0'-4.5° N.S.
L.A.W.D. 0'-4.5° S.N.
L.A.W.D. 0'-4° N.S.
L.A.W.D. 0'-4° S.N.
L.A.W.D. 0'-3.5° N.S.
L.A.W.D. 0'-3.5° S.N.
L.A.W.D. 0'-3° N.S.
L.A.W.D. 0'-3° S.N.
L.A.W.D. 0'-2.5° N.S.
L.A.W.D. 0'-2.5° S.N.
L.A.W.D. 0'-2° N.S.
L.A.W.D. 0'-2° S.N.
L.A.W.D. 0'-1.5° N.S.
L.A.W.D. 0'-1.5° S.N.
L.A.W.D. 0'-1° N.S.
L.A.W.D. 0'-1° S.N.
L.A.W.D. 0'-0.5° N.S.
L.A.W.D. 0'-0.5° S.N.
L.A.W.D. 0'-0° N.S.
L.A.W.D. 0'-0° S.N.
12/15/48 Zondt Carpet Co. 1122 Vine St. Prop. 12" V.C. Pipe connection from roof drains and parking lot. Mr. Krikii, Stilo-Clements
Referred him to Hollywood District office for permit when Contractor is ready for work. GMZ
Hollywood Per. No. 43P6 1218 N. Vine St. Cor. Wash Drain 4" V.C.P. 5' Deep @ ft Completed 11-15-56
PROJECT SITE
18475
18475
3

ATTACHMENT C

EXISTING ON-SITE HYDROLOGY



EXISTING HYDROLOGY MAP

1200 VINE STREET
LOS ANGELES, CA 90038

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	14,256/0.33	14,256/0.33	0	100	0.68	0.91	1.04
A–2	17,575/0.40	17,098/0.39	477/0.01	97.3	0.89	1.10	1.25
A–3	12,125/0.28	12,125/0.28	0	100	0.63	0.77	0.88
TOTAL	43,956/1.01	43,479/1.00	477/0.01	99.1	2.20	2.78	3.17

NOTE:

SOIL TYPE – 6
50TH YR RAINFALL DEPTH – 5.85 IN
85TH PERCENTILE, RAINFALL DEPTH – 0.98 IN

CACLUATIONS BASED ON GROSS AREA

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

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

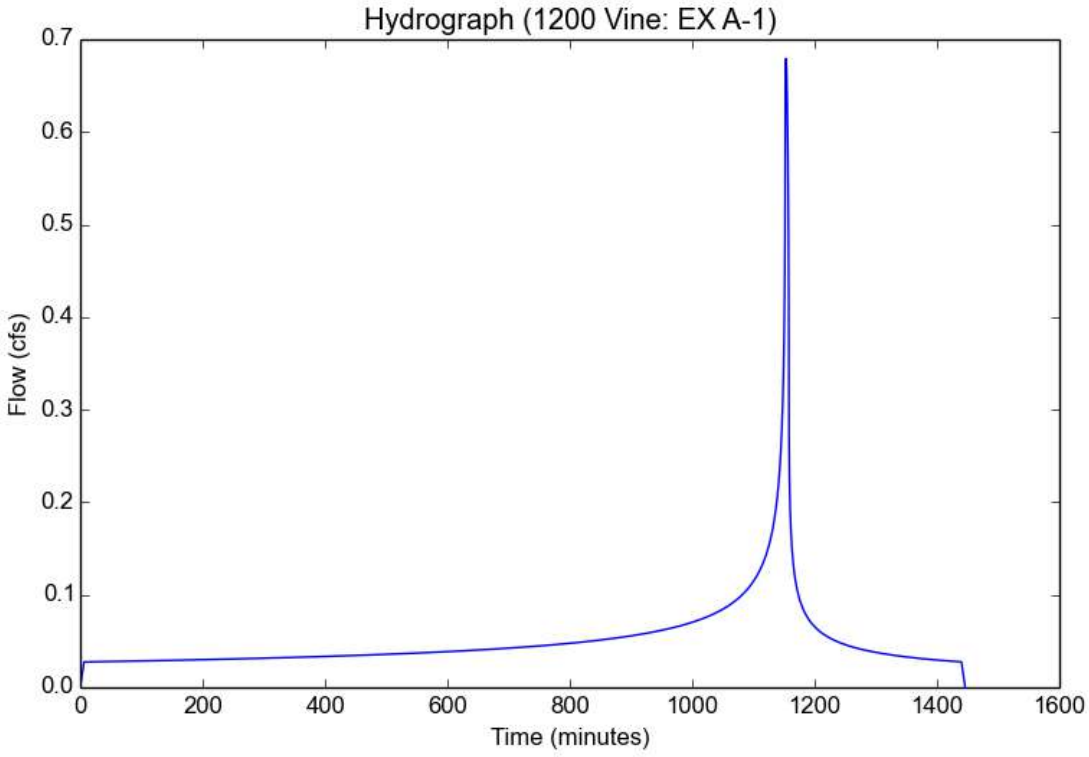
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-1 - 10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-1
Area (ac)	0.33
Flow Path Length (ft)	210.62
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.1769
Peak Intensity (in/hr)	2.2874
Undeveloped Runoff Coefficient (Cu)	0.7638
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.6794
Burned Peak Flow Rate (cfs)	0.6794
24-Hr Clear Runoff Volume (ac-ft)	0.1025
24-Hr Clear Runoff Volume (cu-ft)	4465.9435



Peak Flow Hydrologic Analysis

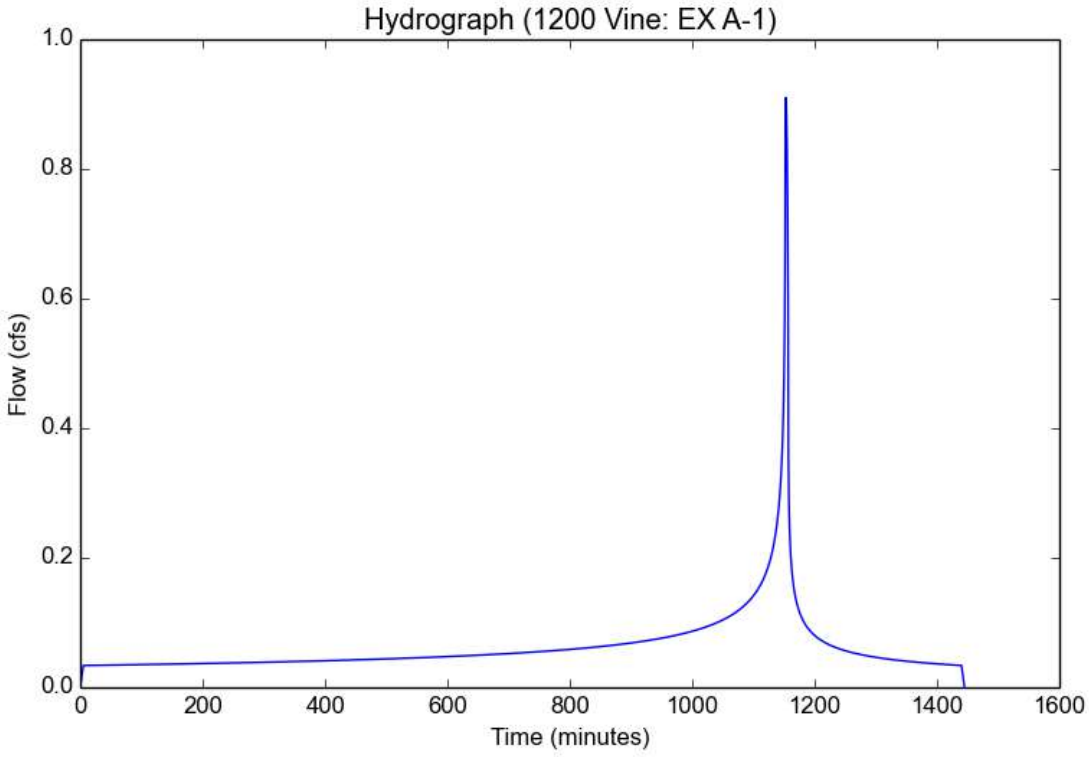
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-1 - 25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-1
Area (ac)	0.33
Flow Path Length (ft)	210.62
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1363
Peak Intensity (in/hr)	3.0645
Undeveloped Runoff Coefficient (Cu)	0.8268
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.9101
Burned Peak Flow Rate (cfs)	0.9101
24-Hr Clear Runoff Volume (ac-ft)	0.1261
24-Hr Clear Runoff Volume (cu-ft)	5491.7337



Peak Flow Hydrologic Analysis

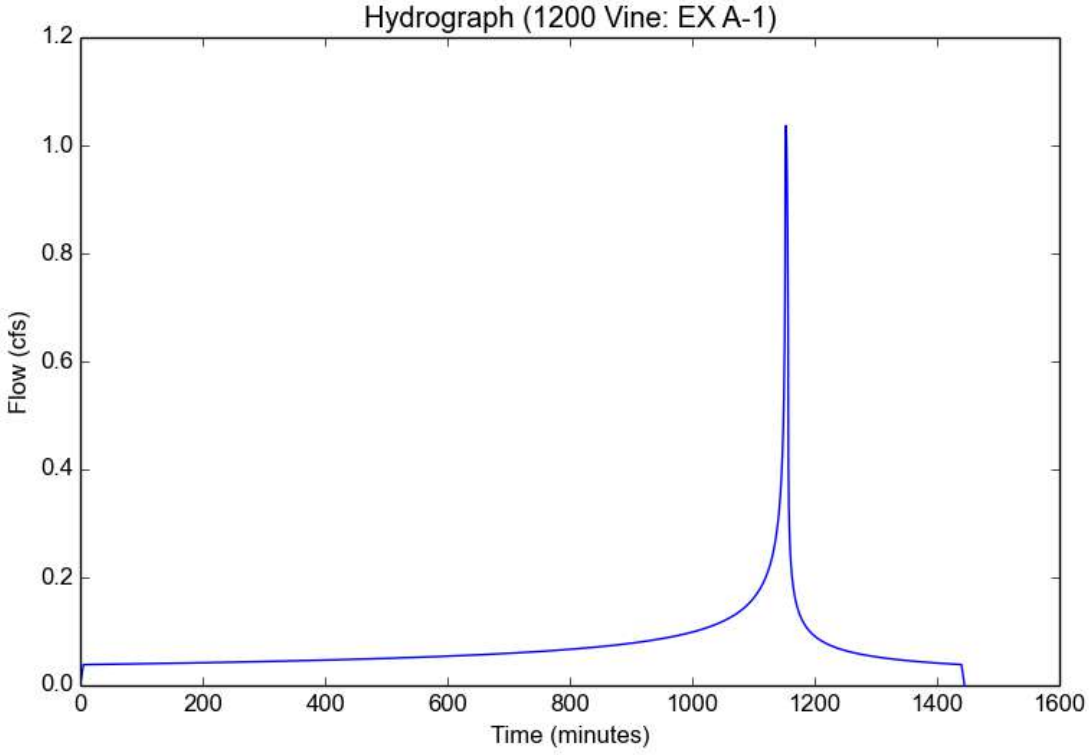
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-1 - 50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-1
Area (ac)	0.33
Flow Path Length (ft)	210.62
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.85
Peak Intensity (in/hr)	3.4903
Undeveloped Runoff Coefficient (Cu)	0.8567
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0366
Burned Peak Flow Rate (cfs)	1.0366
24-Hr Clear Runoff Volume (ac-ft)	0.1436
24-Hr Clear Runoff Volume (cu-ft)	6254.822



Peak Flow Hydrologic Analysis

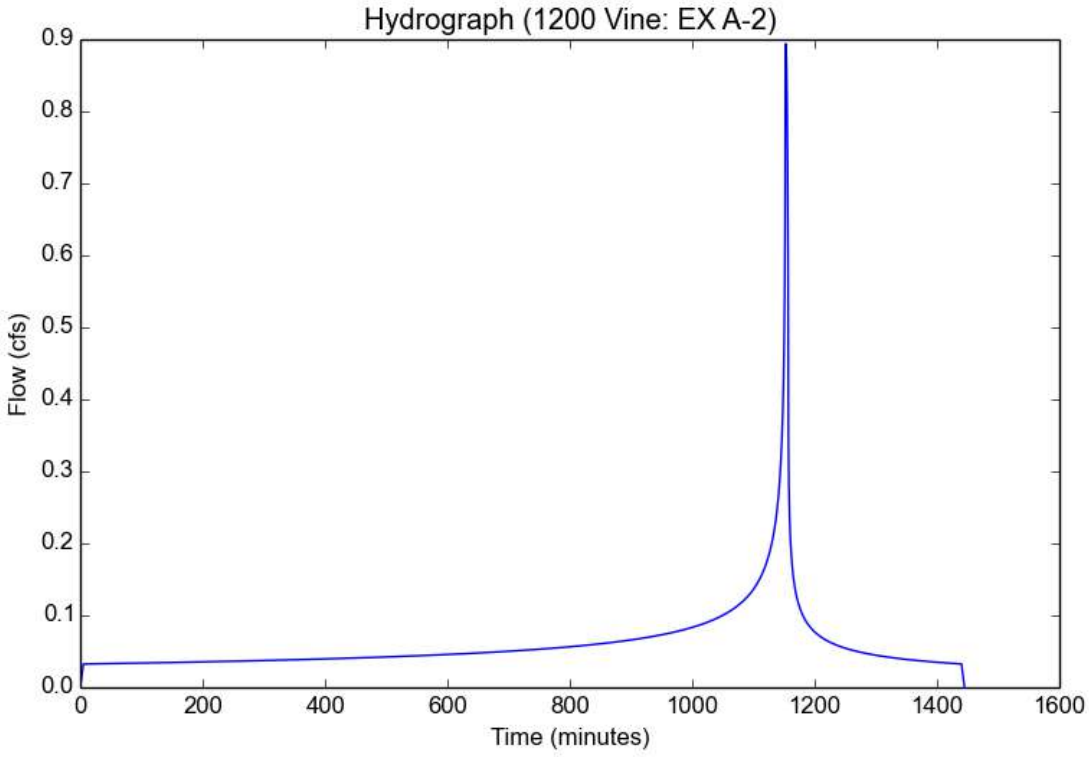
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-2 - 10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-2
Area (ac)	0.4
Flow Path Length (ft)	126.27
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.973
Soil Type	6
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.1769
Peak Intensity (in/hr)	2.4921
Undeveloped Runoff Coefficient (Cu)	0.7863
Developed Runoff Coefficient (Cd)	0.8969
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8941
Burned Peak Flow Rate (cfs)	0.8941
24-Hr Clear Runoff Volume (ac-ft)	0.1216
24-Hr Clear Runoff Volume (cu-ft)	5295.7735



Peak Flow Hydrologic Analysis

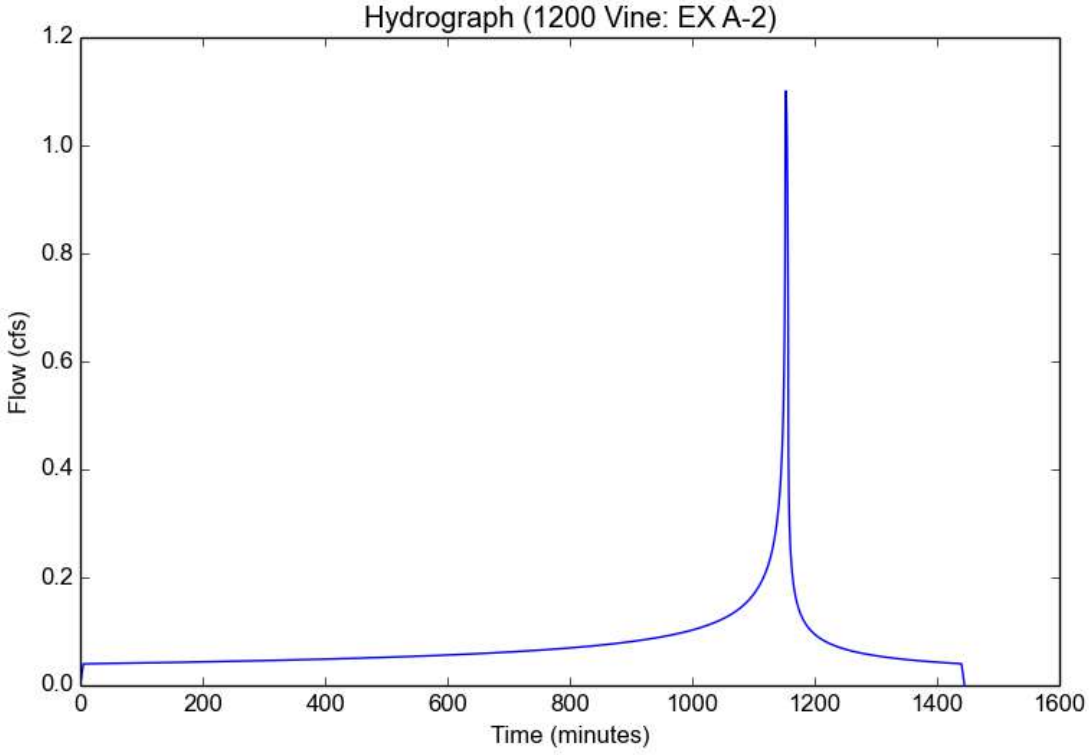
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-2 - 25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-2
Area (ac)	0.4
Flow Path Length (ft)	126.27
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.973
Soil Type	6
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1363
Peak Intensity (in/hr)	3.0645
Undeveloped Runoff Coefficient (Cu)	0.8268
Developed Runoff Coefficient (Cd)	0.898
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.1008
Burned Peak Flow Rate (cfs)	1.1008
24-Hr Clear Runoff Volume (ac-ft)	0.1496
24-Hr Clear Runoff Volume (cu-ft)	6516.3303



Peak Flow Hydrologic Analysis

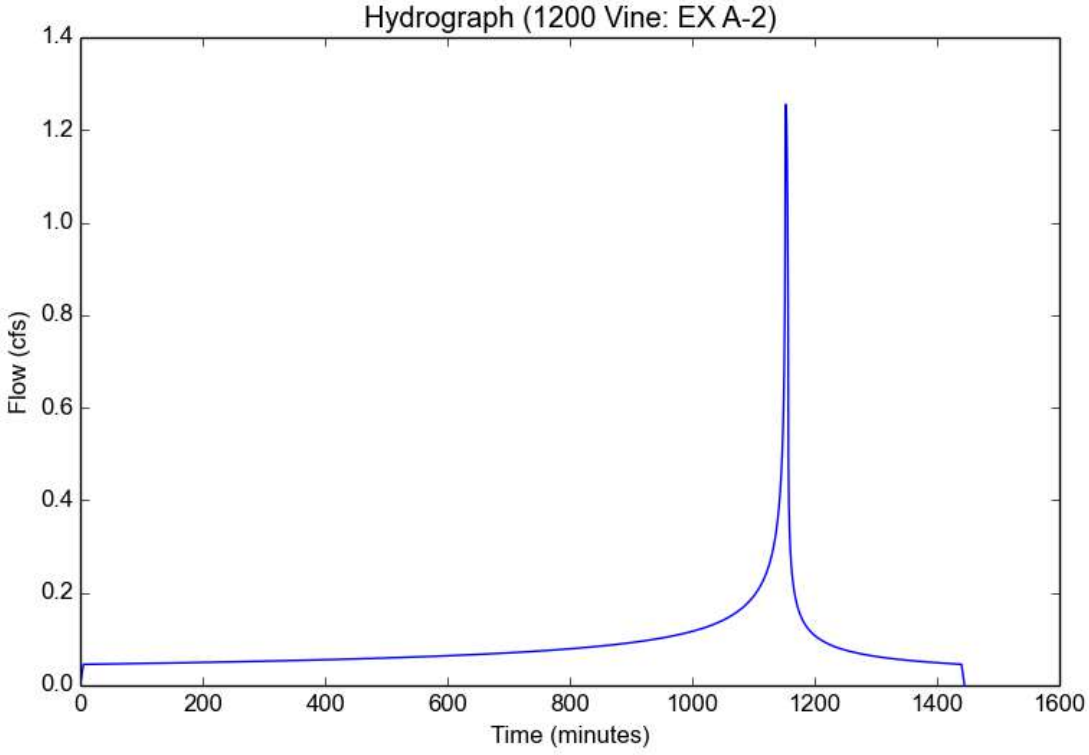
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-2 - 50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-2
Area (ac)	0.4
Flow Path Length (ft)	126.27
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.973
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.85
Peak Intensity (in/hr)	3.4903
Undeveloped Runoff Coefficient (Cu)	0.8567
Developed Runoff Coefficient (Cd)	0.8988
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2549
Burned Peak Flow Rate (cfs)	1.2549
24-Hr Clear Runoff Volume (ac-ft)	0.1705
24-Hr Clear Runoff Volume (cu-ft)	7425.4079



Peak Flow Hydrologic Analysis

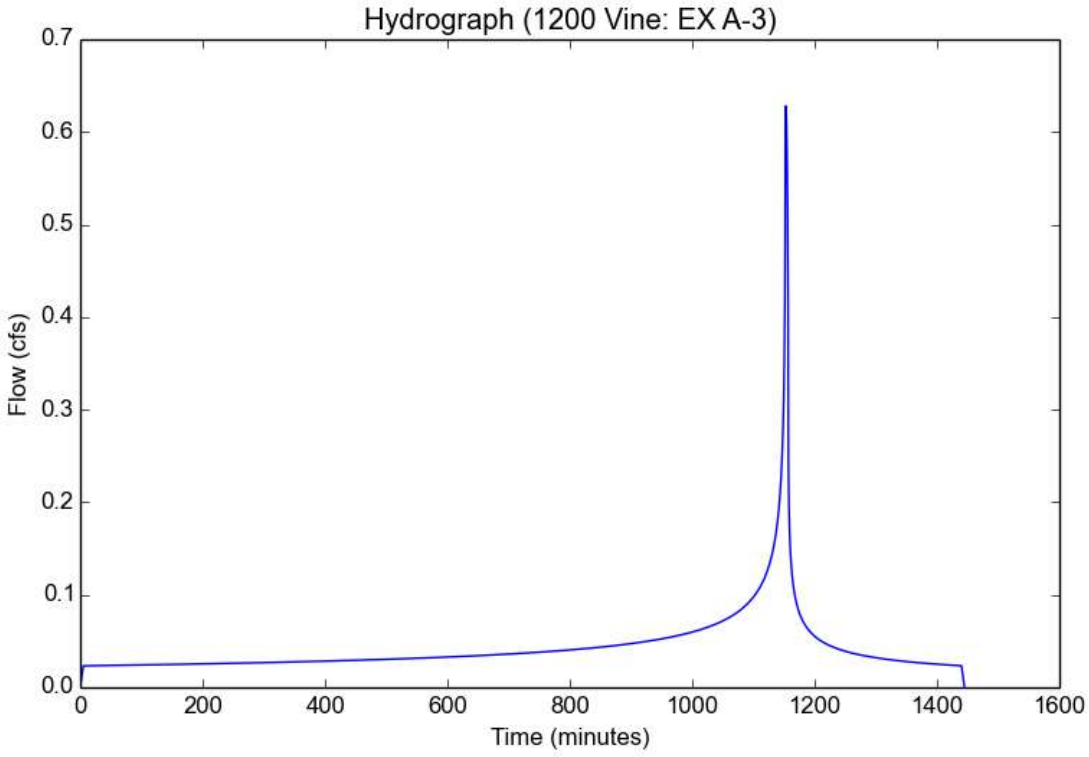
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-3 - 10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-3
Area (ac)	0.28
Flow Path Length (ft)	163.41
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.1769
Peak Intensity (in/hr)	2.4921
Undeveloped Runoff Coefficient (Cu)	0.7863
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.628
Burned Peak Flow Rate (cfs)	0.628
24-Hr Clear Runoff Volume (ac-ft)	0.087
24-Hr Clear Runoff Volume (cu-ft)	3789.2849



Peak Flow Hydrologic Analysis

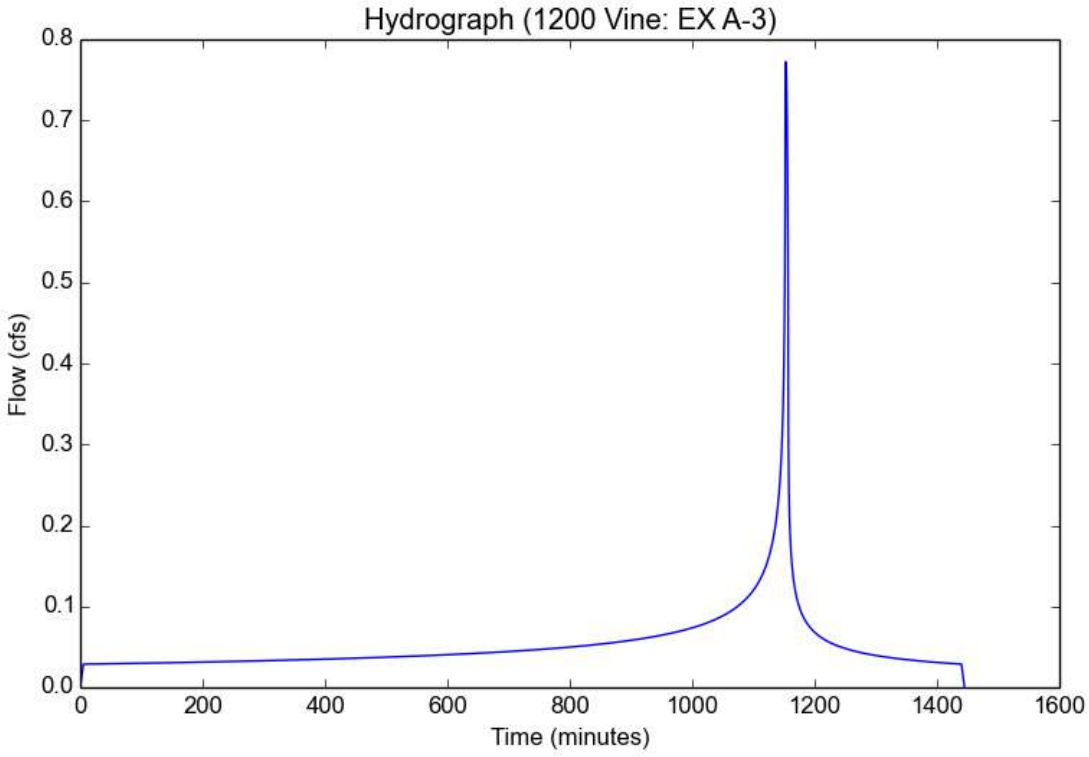
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-3 - 25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-3
Area (ac)	0.28
Flow Path Length (ft)	163.41
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1363
Peak Intensity (in/hr)	3.0645
Undeveloped Runoff Coefficient (Cu)	0.8268
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.7722
Burned Peak Flow Rate (cfs)	0.7722
24-Hr Clear Runoff Volume (ac-ft)	0.107
24-Hr Clear Runoff Volume (cu-ft)	4659.6528



Peak Flow Hydrologic Analysis

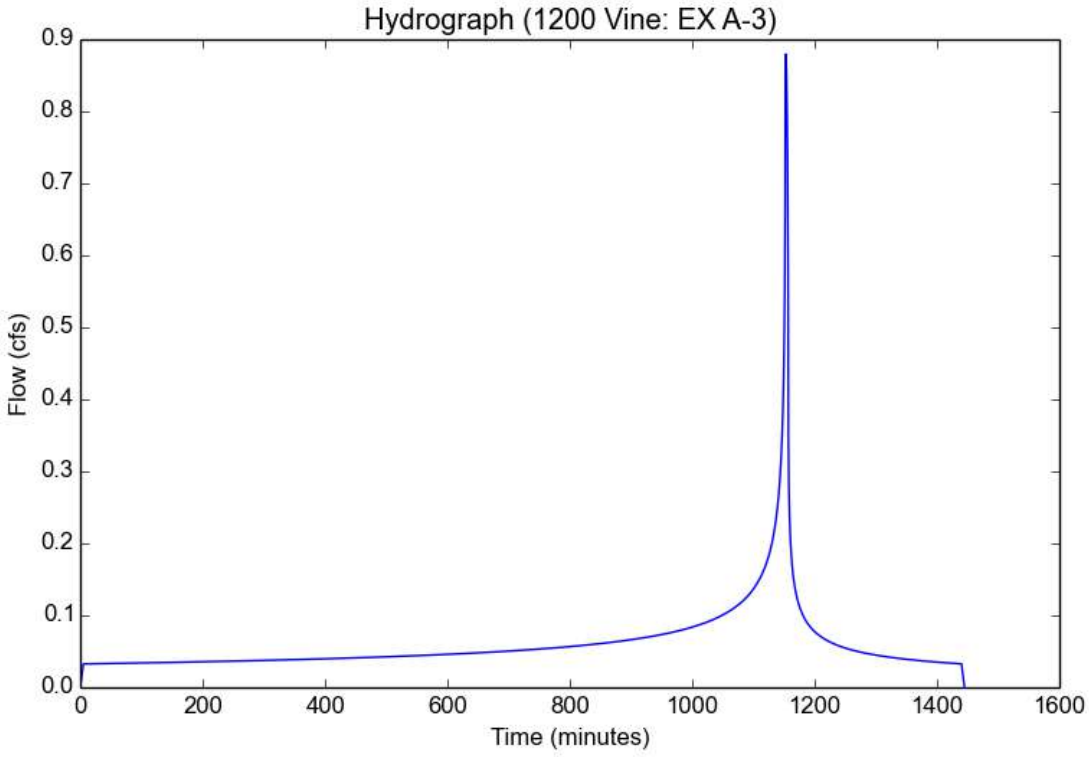
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Existing HydroCalc/1200 Vine - EX A-3 - 50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	EX A-3
Area (ac)	0.28
Flow Path Length (ft)	163.41
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.85
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.85
Peak Intensity (in/hr)	3.4903
Undeveloped Runoff Coefficient (Cu)	0.8567
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8795
Burned Peak Flow Rate (cfs)	0.8795
24-Hr Clear Runoff Volume (ac-ft)	0.1218
24-Hr Clear Runoff Volume (cu-ft)	5307.1217



ATTACHMENT E

FEMA FLOODPLAIN MAP

National Flood Hazard Layer FIRMette

FEMA

118°19'53"W 34°5'49"N

118°19'15"W 34°5'19"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 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/15/2022 at 3:04 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

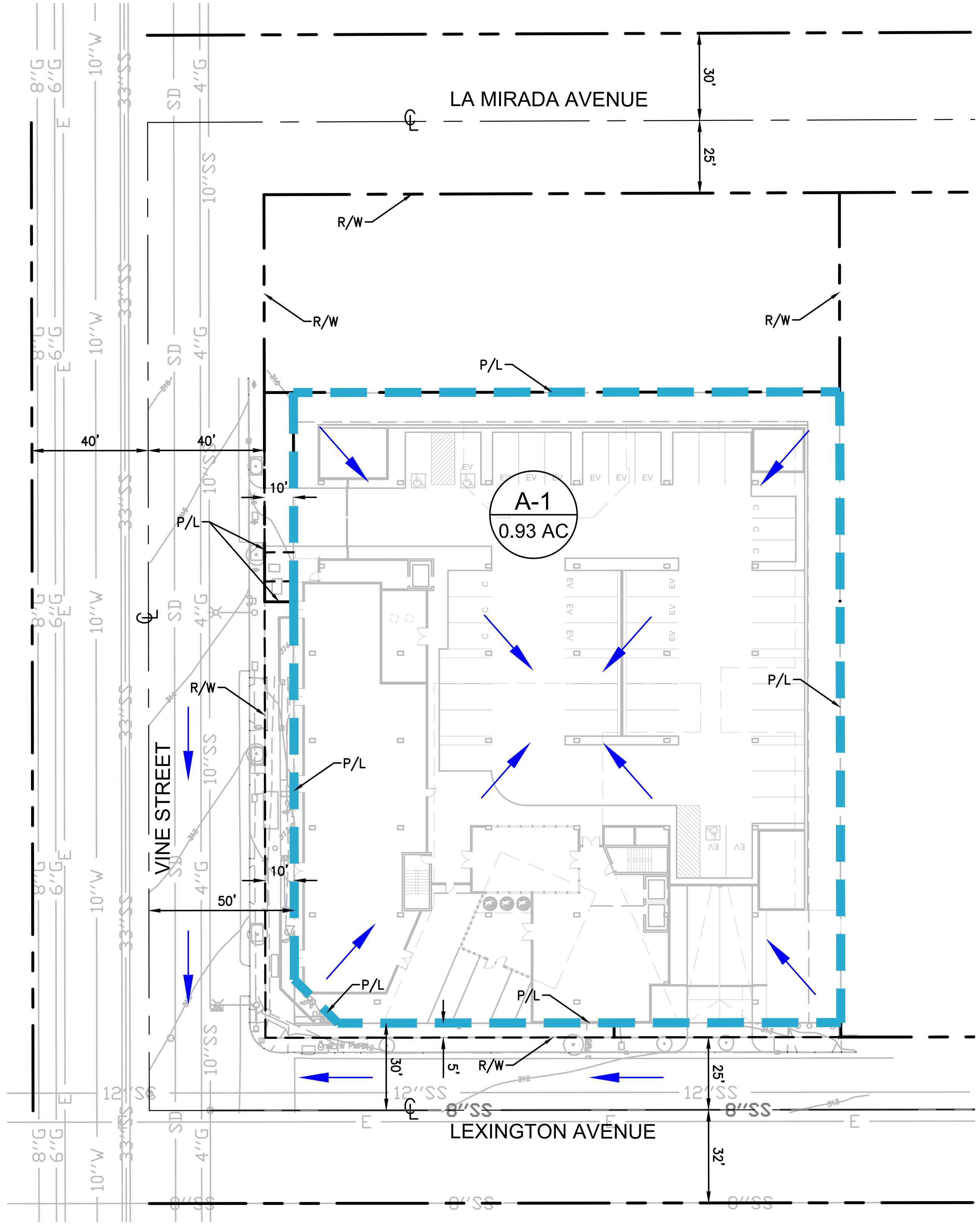
REGION	WATER BODY NAME	WATER TYPE	WATERSHED* CALWATER / USGS HUC	POLLUTANT / POTENTIAL SOURCES / *Relevant Notes*	ESTIMATED AREA ASSESSED	FIRST YEAR LISTED	TMDL REQUIREMENT STATUS**	TMDL DATE***
Region 1	Big River Beach at Mendocino Bay	Coastal & Bay Shoreline	1113.300405 / 18010108	Indicator Bacteria 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**	TMDL REQUIREMENT DATE***
Region 3	Zayante Creek	River & Stream	3304.120202,3304.120401,3304.120402 / 18060001	Chlorpyrifos A Source Unknown	9.3 Miles	2010	5B	2015
				Sedimentation/Siltation Channel Erosion Habitat Modification Other Urban Runoff Removal of Riparian Vegetation Road Construction	9.3 Miles	2002	5B	2004
				Toxicity No Source Analysis Available	9.3 Miles	2014	5A	2035
Region 4	Alamitos Bay	Bay & Harbor	40512000 / 18070104	Indicator Bacteria A Source Unknown	328 Acres	2006	5A	2019
				Oxygen, Dissolved A Source Unknown	328 Acres	2014	5A	2027
Region 4	Alhambra Wash	River & Stream	40531000 / 18070105	Ammonia Other	6.9 Miles	2014	5A	2027
Region 4	Artesia-Norwalk Drain	River & Stream	40515010 / 18070104	Indicator Bacteria A Source Unknown	2.5 Miles	2010	5B	2016
				Selenium A Source Unknown	2.5 Miles	2010	5A	2021
Region 4	Arundell Barranca (Ventura County)	River & Stream	40311000 / 18070103	Indicator Bacteria A Source Unknown	4.9 Miles	2014	5A	2027
Region 4	Balboa Lake	Lake & Reservoir	4412.210000 / 18070105	Ammonia A Source Unknown	28 Acres	2014	5B	2004
				Oxygen, Dissolved A Source Unknown	28 Acres	2014	5A	2027
				Toxicity A Source Unknown	28 Acres	2014	5A	2027
Region 4	Ballona Creek	River & Stream	40513000 / 18070104	Copper A Source Unknown	6.5 Miles	1800	5B	2005
				Cyanide A Source Unknown	6.5 Miles	1996	5A	2019
				Indicator Bacteria Nonpoint Source Point Source	6.5 Miles	2014	5B	2007
				Lead A Source Unknown	6.5 Miles	2002	5B	2005

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***
				Toxicity A Source Unknown *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 A Source Unknown	6.5 Miles	1996	5B	2001
				Viruses (enteric) Nonpoint Source Point Source	6.5 Miles	1996	5B	2007
				Zinc A Source Unknown	6.5 Miles	1996	5B	2005
Region 4	Boulder Creek (Ventura County)	River & Stream	40331000 / 18070102	**Bifenthrin** A Source Unknown	6.5 Miles	2014	5A	2027
				Toxicity A Source Unknown	6.5 Miles	2014	5A	2027
Region 4	Bouquet Canyon Creek (below Bouqet Reservoir)	River & Stream	40352000 / 18070102	**Temperature, water** A Source Unknown	14 Miles	2014	5A	2029
Region 4	Bull Creek (Los Angeles County)	River & Stream	40521000 / 18070105	**Ammonia** A Source Unknown	6.5 Miles	2014	5B	2004
				Toxicity A Source Unknown	6.5 Miles	2014	5A	2027
Region 4	Burbank Western Channel	River & Stream	40521000 / 18070105	**Copper** A Source Unknown	13 Miles	2006	5B	2005
				Cyanide A Source Unknown	13 Miles	2006	5A	2019
				Indicator Bacteria A Source Unknown	13 Miles	2010	5B	2012
				Lead A Source Unknown	13 Miles	2006	5B	2005
				Selenium A Source Unknown	13 Miles	2010	5A	2021
				Trash Nonpoint Source Surface Runoff Urban Runoff/Storm Sewers	13 Miles	1996	5B	2008

ATTACHMENT G

PROPOSED ON-SITE HYDROLOGY MAP



LEGEND & ABBREVIATIONS:

(blue dashed line)	DRAINAGE AREA LIMIT
AC	ACRE
CFS	CUBIC FEET PER SECOND
SF	SQUARE FEET
P/L	PROPERTY LINE
R/W	RIGHT OF WAY
(blue arrow)	FLOW DIRECTION
X	SUB-AREA ID
X.XX	ACREAGE
(green dotted box)	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	40,683/0.93	34,722/0.80	5,961/0.13	85.3	2.05	2.53	2.90

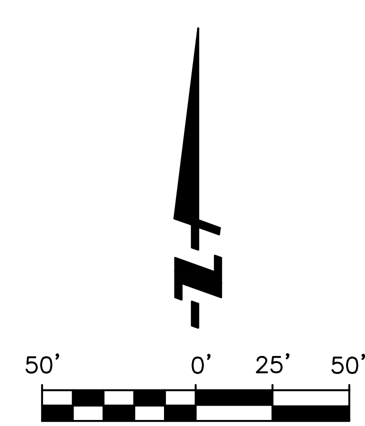
NOTE:

SOIL TYPE – 6
50TH YR RAINFALL DEPTH – 5.85 IN
85TH PERCENTILE, RAINFALL DEPTH – 0.98 IN

CACLUATIONS BASED ON NET AREA
PROPOSED PERVIOUS AREAS ARE NOT SHOWN

PROPOSED HYDROLOGY MAP

1200 VINE STREET
LOS ANGELES, CA 90038



SCALE: 1" = 50'

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tel 213.988.8802 ∘ fax 213.988.8803 ∘ www.fuscoe.com

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ATTACHMENT H

HydroCalc Hydrology Results For Proposed Site

Peak Flow Hydrologic Analysis

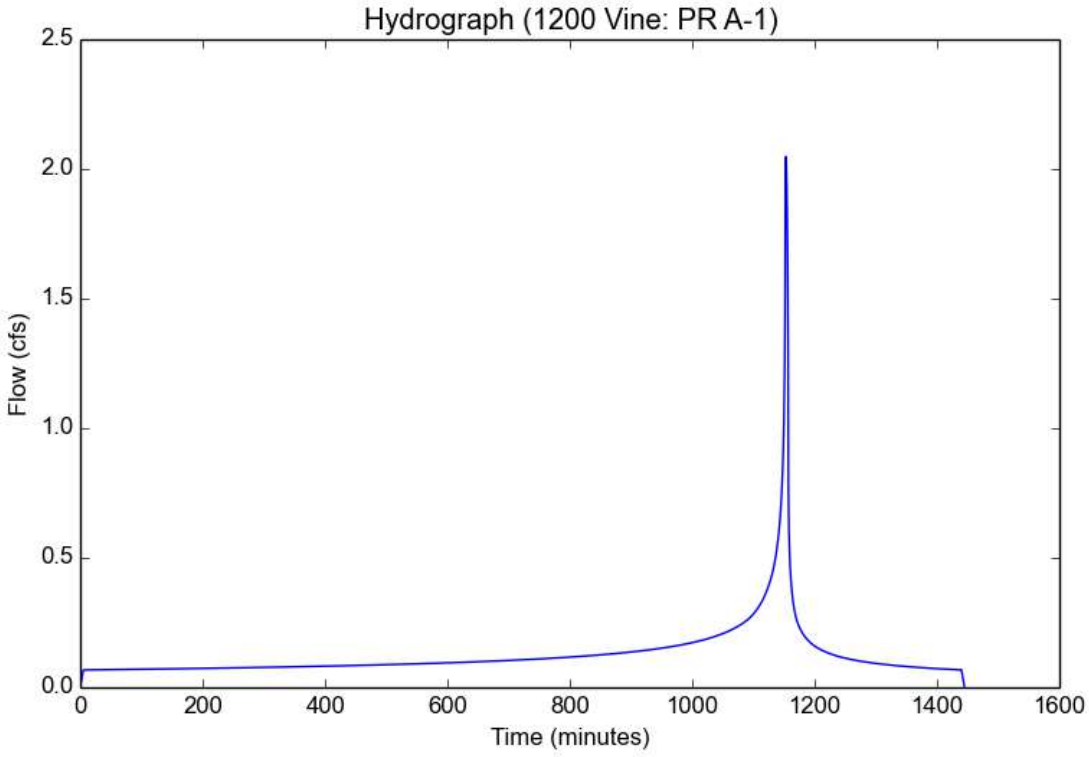
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Proposed HydroCalc/1200 Vine - PR A-1 - 10yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	PR A-1
Area (ac)	0.93
Flow Path Length (ft)	144.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.853
Soil Type	6
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.1769
Peak Intensity (in/hr)	2.4921
Undeveloped Runoff Coefficient (Cu)	0.7863
Developed Runoff Coefficient (Cd)	0.8833
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.0471
Burned Peak Flow Rate (cfs)	2.0471
24-Hr Clear Runoff Volume (ac-ft)	0.2548
24-Hr Clear Runoff Volume (cu-ft)	11098.6044



Peak Flow Hydrologic Analysis

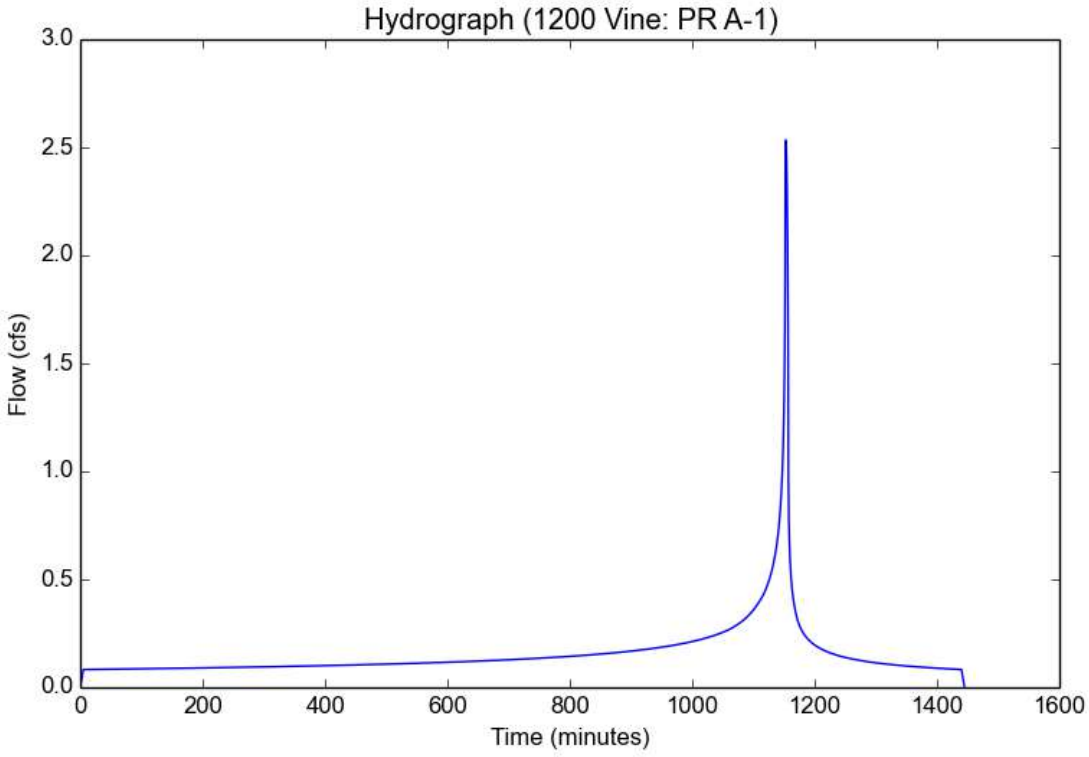
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Proposed HydroCalc/1200 Vine - PR A-1 - 25yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	PR A-1
Area (ac)	0.93
Flow Path Length (ft)	144.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.853
Soil Type	6
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1363
Peak Intensity (in/hr)	3.0645
Undeveloped Runoff Coefficient (Cu)	0.8268
Developed Runoff Coefficient (Cd)	0.8892
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.5343
Burned Peak Flow Rate (cfs)	2.5343
24-Hr Clear Runoff Volume (ac-ft)	0.3145
24-Hr Clear Runoff Volume (cu-ft)	13700.5299



Peak Flow Hydrologic Analysis

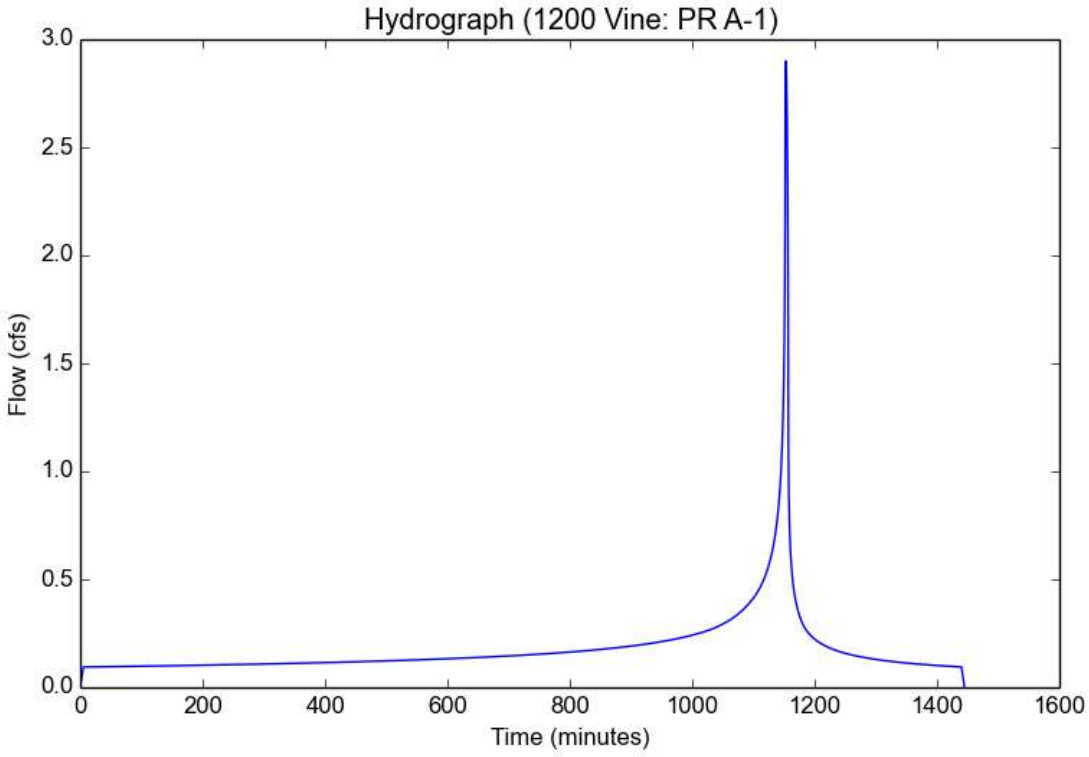
File location: F:/Projects/4103/001/_Support Files/Reports/Hydrology/Proposed HydroCalc/1200 Vine - PR A-1 - 50yr.pdf
Version: HydroCalc 1.0.2

Input Parameters

Project Name	1200 Vine
Subarea ID	PR A-1
Area (ac)	0.93
Flow Path Length (ft)	144.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.85
Percent Impervious	0.853
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

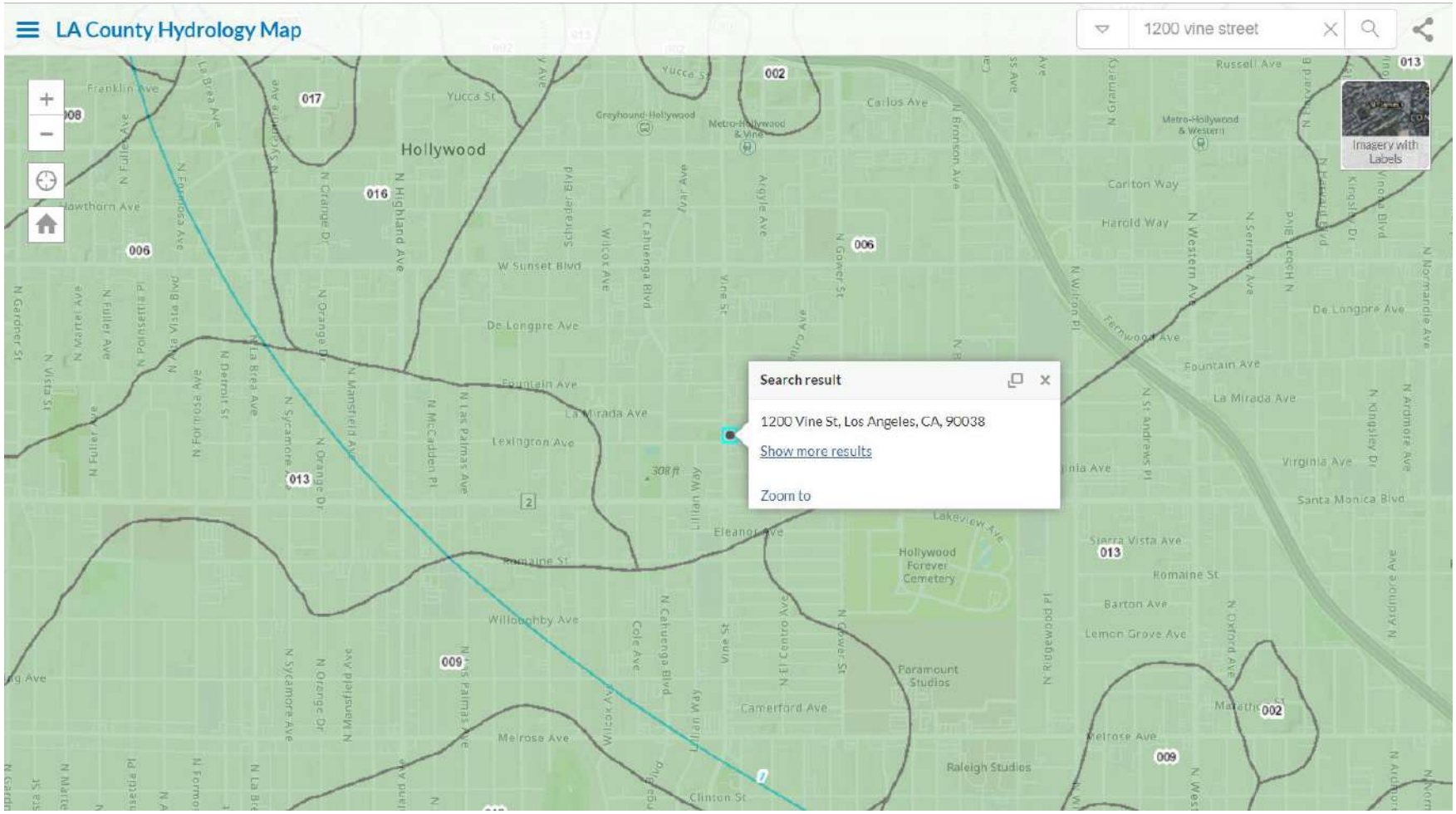
Output Results

Modeled (50-yr) Rainfall Depth (in)	5.85
Peak Intensity (in/hr)	3.4903
Undeveloped Runoff Coefficient (Cu)	0.8567
Developed Runoff Coefficient (Cd)	0.8936
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.9007
Burned Peak Flow Rate (cfs)	2.9007
24-Hr Clear Runoff Volume (ac-ft)	0.3593
24-Hr Clear Runoff Volume (cu-ft)	15650.0641



ATTACHMENT I

LA COUNTY GIS 85TH PERCENTILE MAP


LA County Hydrology Map
1200 vine street
Search result
1200 Vine St, Los Angeles, CA, 90038
Show more results
Zoom to
Hollywood
Imagery with Labels