

Appendix IS-4

Drainage Technical Report

DRAINAGE TECHNICAL REPORT

FOR

**New Beatrice West
12575 Beatrice Street
Los Angeles, CA**

**Date: May 7, 2020
Revised September 5, 2020**

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PURPOSE

The purpose of the Drainage Technical Report is to determine the volume of runoff from the New Beatrice West Project (Project) site in both the existing and proposed project conditions and determine any impacts to the existing public storm drain system. This report also includes Preliminary Low Impact Development Calculations (LID) for compliance with the current MS4 Permit.

EXISTING CONDITIONS

The proposed New Beatrice West Project (Project) project site is located within the City of Los Angeles in the Palms-Mar Vista-Del Rey Community Plan Area. The project is located at the north east corner of Beatrice and Jandy. The project addresses are 12575 W. Beatrice Street, 12553–12575 W. Beatrice Street, and 5410–5454 South Jandy Place.

Existing zoning for this site is M2-1, and the General Plan Land Use Designation is Light Industrial. Existing facilities at the site include an existing 23,072 SF office building, an existing 87,881 SF office building, two accessory structures (2,144 SF and 5,044 SF respectively), 84,600 square feet of parking area, and 13,780 square feet of landscape. Public infrastructure is presently in place to provide storm drainage services to the project site.

A geotechnical report was prepared for the proposed project, entitled Geotechnical Engineering Investigation, Proposed Office Building 12575 Beatrice Street, Los Angeles - File Number: 21194, prepared by Geotechnologies, Inc. Subsurface exploration was performed between March 17, 2016 and December 20, 2017, which included drilling three (3) exploratory borings to a maximum depth of approximately one hundred-twenty (120) feet and four (4) Cone Penetration Test Soundings (CPTs) between depths of 53.5 and 56.25 feet below existing grade. Earth materials encountered were classified in accordance with the visual-manual procedures of the Unified Soil Classification System. The material encountered in the boreholes consisted of 12.5 feet of fill primarily sandy to silty clays. Upper native material consists of stratified younger alluvium soil of silts, clays, silty sands, and gravelly sands. Groundwater was encountered at depths between 22.5 and 30 feet below the existing grade. Historic high ground water level for the site was approximately 7 feet below ground surface. It should be noted that the site elevations for this vicinity of Playa Del Rey had been raised by past grading activities. It has been the policy of the Los Angeles Department of Building and Safety (LADBS) to establish the historic high water surface elevation in the Playa Vista area to be at an elevation of 9.0 feet above MSL, which corresponds to an approximate depth of 15 feet below the existing ground surface. The project site is located inside the seismically induced liquefaction zone.

The project site is also in a Methane Zone. A Methane Survey Report was prepared by Citadel Environmental, Project Number 1257.1001.0, dated April 12, 2018 and updated April 9, 2020.

The properties surrounding the Project Site are fully developed commercial sites and are characterized by gently sloping topography. The Project Site's topography slopes gradually from the north to south, generally towards Beatrice. The northerly portion of the west side of the site drains to Jandy. Runoff from the west parking area drains both north and west and south via sheet flow to existing driveways and out to Beatrice Street on the south or Jandy Street to the west. Runoff from the existing buildings drain via scuppers and downspouts to the parking lots. The east parking lot drains directly south to Beatrice.

The Project Site is tributary to the Centinela Creek, which is north of the project site and is fully improved. A City of Los Angeles storm drain exists in Jandy Street which conveys runoff from this site to the Centinela Creek.

A review of the Federal Emergency Management Agency flood insurance rate maps (FEMA MAP NUMBER 06037C1760F, effective on 09/26/2008) indicates that the Project is located within Zone X, area of minimal flood hazard. A FEMA Firmette map documenting this condition can be found in Appendix B.

PROPOSED PROJECT

The Project proposes construction of a new building totaling 199,500 square feet. The building will have 196,100 square feet of office space, 3,400 square feet of ground floor commercial space. In addition, the project provides 811 parking spaces on two subterranean parking levels and three above ground parking levels. The project will be developed in one phase. Twenty surface parking stalls will be provided outside of the structure.

The site work consists of 54,583 Square feet of new hardscape and 38,033 square feet of landscaping throughout the project site and on new terraces on the upper levels of the building.

The existing 87,881 square foot office building located on the site at 12541 Beatrice will remain and will be incorporated into the project. New site landscape and hardscape improvements are proposed around the existing building which are coordinated with the new structure and improvements.

Existing drainage patterns will be preserved by the proposed project. Runoff from the project building roofs and surface improvements will be intercepted by the site storm drainage system for conveyance to the two proposed cistern systems, one at 12575 Beatrice and the other at 12541 Beatrice. Overflow from the cistern systems will be directed to the public street and ultimately discharged to Jandy Place or Beatrice.

HYDROLOGY

Hydrology Method

The City of Los Angeles defers to the County of Los Angeles methodology for storm water calculations. The methodology described in the Los Angeles County Department of Public Works (LACDPW) Hydrology Manual (2006) was used to compute the 10-year, 25-year and 50-year stormwater runoff flows from the project site to the existing drainage system. The hydrologic methods used in this study were based on procedures described in the 2006 LACDPW Hydrology Manual. Calculations for the existing and proposed conditions are provided in Appendix A. In accordance with LACDPW requirements, the 50 year and 25-year and 10-year (24-hour) storm events were used in this analysis.

Calculations to determine the storm water runoff from the proposed site were performed using the HydroCalc program, developed by the LACDPW, and the 2006 LACDPW Hydrology Manual. The HydroCalc program may be used to compute runoff volume and flow rate for small area watersheds (less than 10 acres). The program uses the 50-year 24 hour isohyet to compute storm intensity. To compute runoff for the 10- year and 25-year storm events, the 50-year isohyet value is adjusted using a standard reduction factor. The HydroCalc program automatically adjusts the 50-year isohyet value based on the storm event to be calculated. This information, along with other pertinent site information, is used to compute storm runoff flow rate for the required storm event.

Hydrology Results

Rainfall and soil characteristics for the Project site are shown on the Venice Quad Isohyetal Map included in Appendix A. The 50-year (24-hour) rainfall Isohyet nearest the project area is approximately 5.22 inches. The 25-year (24-hour) Isohyet reduction factor from the 50-year is 0.878, and thus, the 25-year (24-hour) rainfall Isohyet is 4.58 inches for this project area. The 10-year (24-hour) rainfall Isohyet reduction factor from the 50-year event is 0.714, and thus, the 10-year (24-hour) rainfall Isohyet is 3.73 inches. The reduction factors can be found in Table 5.3.1 of the LACPWD Hydrology Manual. As shown on the Venice Quad Isohyetal Map, the soil classification of the project site falls within LACDPW defined soil classification type 017. The project area to be disturbed is approximately 4.519 acres. The project is divided into two major subareas for the purposes of calculating the LID Vm and stormwater runoff, Area 1 of 3.225 acres and Area 2 of 1.294 acres. The percentage impervious for the pre-development condition is calculated to be 0.9044 (90.44%) for Area 1 and 0.9938 (99.38%) for Area 2. The percentage impervious for the post-development condition is calculated to be 0.9562 (95.62%) for Area 1 and 0.9348 (93.48%) for Area 2.

The maps showing the Hydrology and LID Pre-Development and Post-Development, Pervious and Impervious Areas are included as Appendix C. The results of the calculations can be found in Table

1. A system overflow sized for the 25-year storm will be discharged to the existing street when the proposed LID BMP is at capacity.

Table 1: Comparison of Existing and Proposed Hydrology, 50-year & 25-year Storm Events

Sub-Area	Area (Acres)	50-year Flow Rate, Q (cfs)		25-year Flow Rate, Q (cfs)		10-year Flow Rate, Q (cfs)	
		Existing	Proposed	Existing	Proposed	Existing	Proposed
1	3.225	8.286	8.292	7.265	7.276	5.131	5.492
2	1.294	3.329	3.326	2.923	2.917	2.210	2.200
Total	4.519	11.615	11.618	10.188	10.913	7.341	7.692

Conclusion:

A comparison of the existing and proposed stormwater runoff conditions shows no significant increase in the peak flow rate for the 10-year, 25- year and 50-year storm events with the proposed development. With a small reduction in the percent impervious in the proposed condition, the proposed flow either remains the same or decreases, and no mitigation measure is required. Runoff is further reduced by implementation of capture and reuse of the 85th percentile stormwater runoff required by the LID ordinance. Therefore, existing public infrastructure can accommodate the proposed development and impacts would be less than significant.

WATER QUALITY

Water Quality Method

Per the new MS4 requirements incorporated in the recently updated City of Los Angeles Low Impact Development Ordinance, LID calculations must be performed using either 0.75-inch storm event or the 85th Percentile storm, whichever is greater, for the given site. The depth of the 85th percentile storm was determined using the County of Los Angeles Department of Public Works Website and the geographical information system (GIS) found there. Maps of the County showing the 85th percentile isohyet contours can be found at <http://dpw.lacounty.gov/wrd/hydrologygis/>. A copy of the contour map for this site can be found in Appendix A. The 85th percentile isohyet for the project site, taken from the County website, is 1.1 inches. For this project site, the 85th percentile storm event governs. As previously stated, the project is located on the USGS Venice Quad Isohyetal Map, Soil Type 017, a copy of which is included in Appendix A.

Calculations to determine LID storm water runoff volume for the proposed site were performed using the HydroCalc program developed by the LACDPW and the 2006 LACDPW Hydrology Manual. The HydroCalc program may be used to compute runoff volume and flow rate for small area watersheds (less than 10 acres). The program uses either 0.75-inch storm event or 85th percentile storm data, along with other pertinent site information, to determine LID storm water runoff volume and other relevant hydrology data. The 85th percentile, 24-hour rain event of rainfall is 1.1 inches and will be used for design of the proposed LID BMP.

Water Quality Results

Table 2 shows the estimated required peak mitigation flow rates (QPM) and mitigation volumes (VM) for the proposed site two areas, and these peak mitigation quantities represent the treatment flows and volumes evaluated for the site. Detailed flow and volume calculations are given in Appendix A.

The presence of two levels of basement level parking and the location of the site within a liquefaction zone, precludes the use of infiltration BMPs. Therefore, the proposed project will be using green roof and capture and reuse for the BMPs to mitigate Low Impact Development requirements (LID).

The project LID Maps are included as Appendix C. The Project will incorporate a capture and reuse system for mitigation of the City of Los Angeles Low Impact Development Ordinance (LID). A cistern system that would satisfy the requirements for capture and reuse of stormwater for irrigation use is proposed. This BMP captures and stores the Vm for use in irrigating planter areas. The irrigation system is pressurized by a pump unit which also filters the stored water. Make-up water is supplied by potable water system during periods where stormwater is not available for use.

Table 2: LID Calculations, 85th Percentile Storm Event

Sub-Area	Area (Acres)	Peak Mitigation Flow Rate Qpm (cfs)		Mitigation Volume Vm (cf)	
		Existing	Proposed	Existing	Proposed
1	3.225	0.9666	1.0082	10,524	11,050
2	1.294	0.4280	0.3976	4,587	4,346
Total	4.519	1.3946	1.4058	15,111	15,396

The total volume of 15,396 cubic feet is required to be captured for reuse as irrigation water through site specific BMPs.

Conclusion:

Permanent water quality BMPs are required by the City of Los Angeles LID Ordinance to be implemented for the proposed project. The proposed cistern systems reduce the runoff from the project by intercepting runoff from the 85th percentile storm event for reuse in irrigating the landscaping on the site and terraces. Intercepting the first flush stormwater runoff removes contaminants from the runoff that would otherwise enter the storm drain system and downstream waterways. Water quality is improved by implementing permanent BMPs.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

A project is considered to have a significant impact on hydrology or water quality if the proposed project will have any of the following effects, according to CEQA Guidelines Appendix G:

Threshold	Impact
a. Violate any water quality standards or waste discharge requirements.	No Impact
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	No Impact
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site. Thresholds which could result in substantial erosion or siltation are increases in storm water velocity above the baseline condition.	No Impact
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of storm water runoff in a manner which would result in flooding on- or off-site. Thresholds which could result in an increased rate or amount of storm water runoff are increases in the flow rate or duration above the baseline condition.	No Impact
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	Less than significant

f. Otherwise substantially degrade water quality. Thresholds which could result in degradation are water quality that it is unable to attain mandatory health-related standards for City water services established by the State of California Department of Health Services.	No Impact
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.	No Impact

The proposed project does not impact the above

Mitigation

Based on the results of this study, detention facilities are not required for the proposed project to address hydrology. However, compliance with the City of Los Angeles LID Ordinance requires the capture of runoff from the 85th percentile storm to mitigate stormwater runoff quality and quantity.

The project incorporates two cistern systems which will capture stormwater for reuse as irrigation water. Construction Document level LID calculations are required to be prepared and reviewed and approved by the City of Los Angeles before project construction permits can be issued.

Compliance with the Statewide Construction General Permit is required for this project, which disturbs more than 1 acre of land. This includes preparation and implementation of a project specific Stormwater Pollution Prevention Plan (SWPPP) and Wet Weather Erosion Control Plan in accordance with the Statewide permit requirements. Contractor is required to control erosion and runoff as necessary using site appropriate grading practices. Specifically, the contractor shall plan for and implement Best Management Practice (BMP) during construction to the satisfaction of the City of Los Angeles Bureau of Sanitation, and/or other designated responsible agencies/departments. This is expected to occur during each phase of the project.

Through compliance with these mandatory regulations, drainage and water quality impacts are less than significant. No additional mitigation measures are required.

Appendix A: Hydrology & LID Calculations

34° 00' 00"

BEVERLY HILLS 1-H1.17

-118° 30' 00"

Project Site:

12575 Beatrice Street,
Los Angeles, CA

50 yr Isohyet = 5.22 inches

Soil Type 017

85th Percentile Isohyet = 1.1 inches

INGLEWOOD 1-H1.8

-118° 22' 30"

REDONDO BEACH 1-H1.3

33° 52' 30"



016

SOIL
CLASSIFICATION
AREA

7.2

INCHES OF
RAINFALL

DPA - 6

DEBRIS
POTENTIAL
AREA

1 0 1 2 Miles

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

V E N I C E

50-YEAR 24-HOUR ISOHYET

1-H1.7

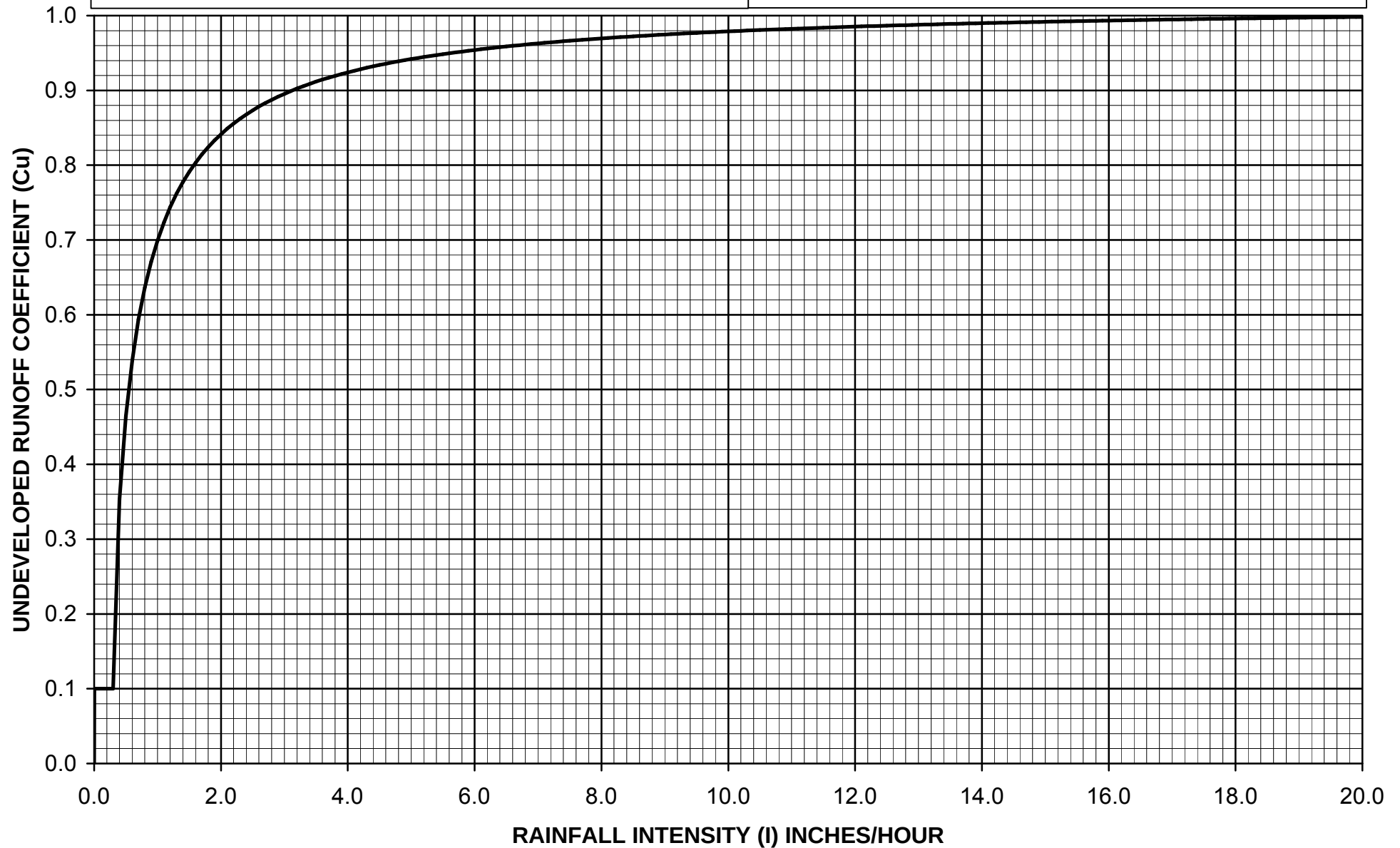


$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$
 Where: C_D = Developed Runoff Coefficient
 IMP = Proportion Impervious
 C_U = Undeveloped runoff coefficient



Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE SOIL TYPE NO. 017





Hydrology Map

A GIS viewer application to view the data for the hydrology manual.

LAYERS

- ☒ 50yr Two Tenths (Rainfall)
- ☐ DPA Zones
- ☒ Soils 2004
- ☒ Final 85th Percentile, 24-hr Rainfall
- ☐ Final 95th Percentile, 24-hr Rainfall
- ☐ 1-year, 1-hour Rainfall Intensity

SEARCH

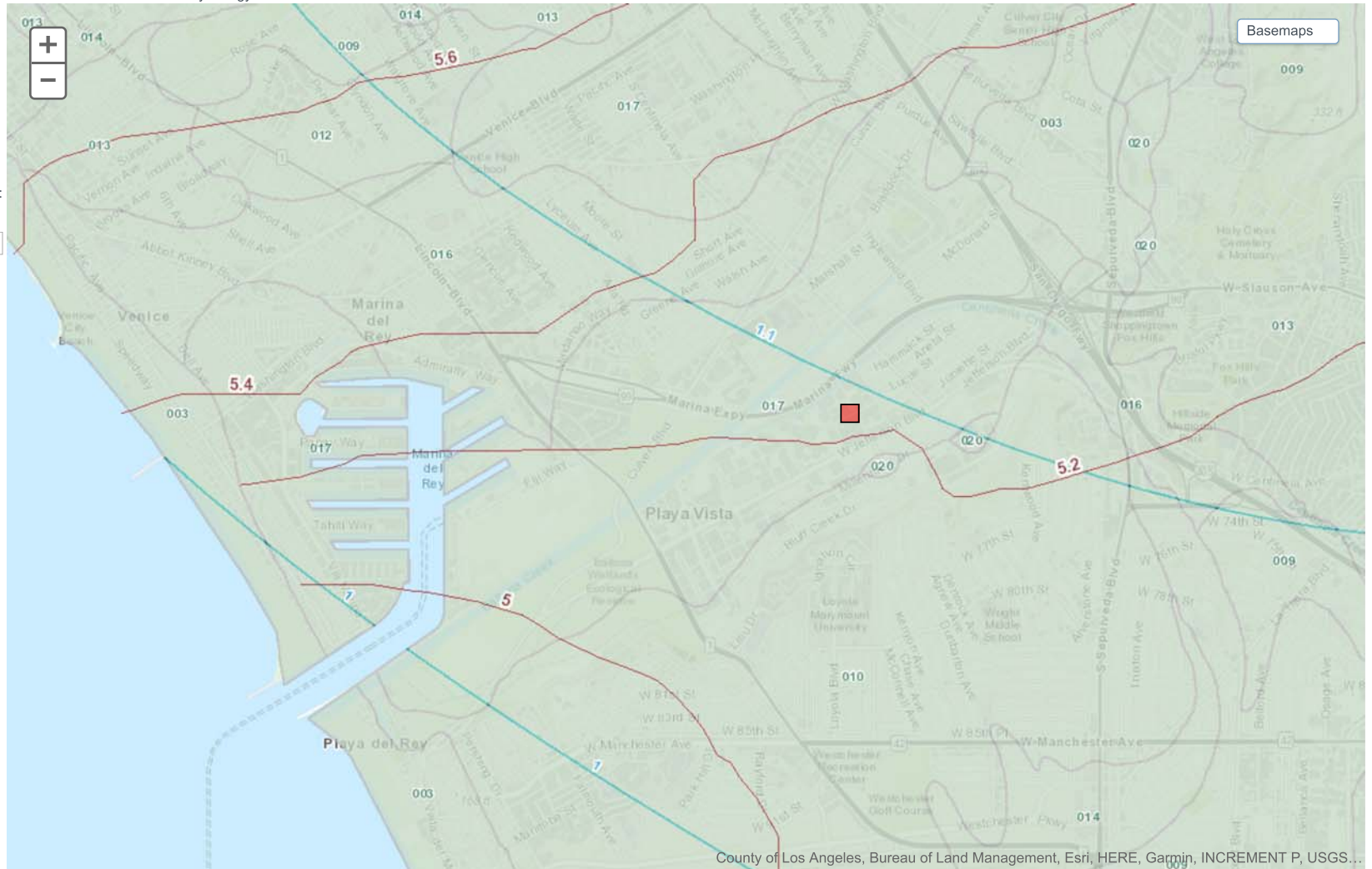
Enter Address, Cross Street, or Parcel No.:
 (ex: 900 S. Fremont Ave., Fremont@Valley,
 5342005904)

12575 Beatrice St, Los Angeles, CA

Search

Address Search Results:

12575 Beatrice St Los Angeles CA



County of Los Angeles, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS...

Map Tips

Peak Flow Hydrologic Analysis

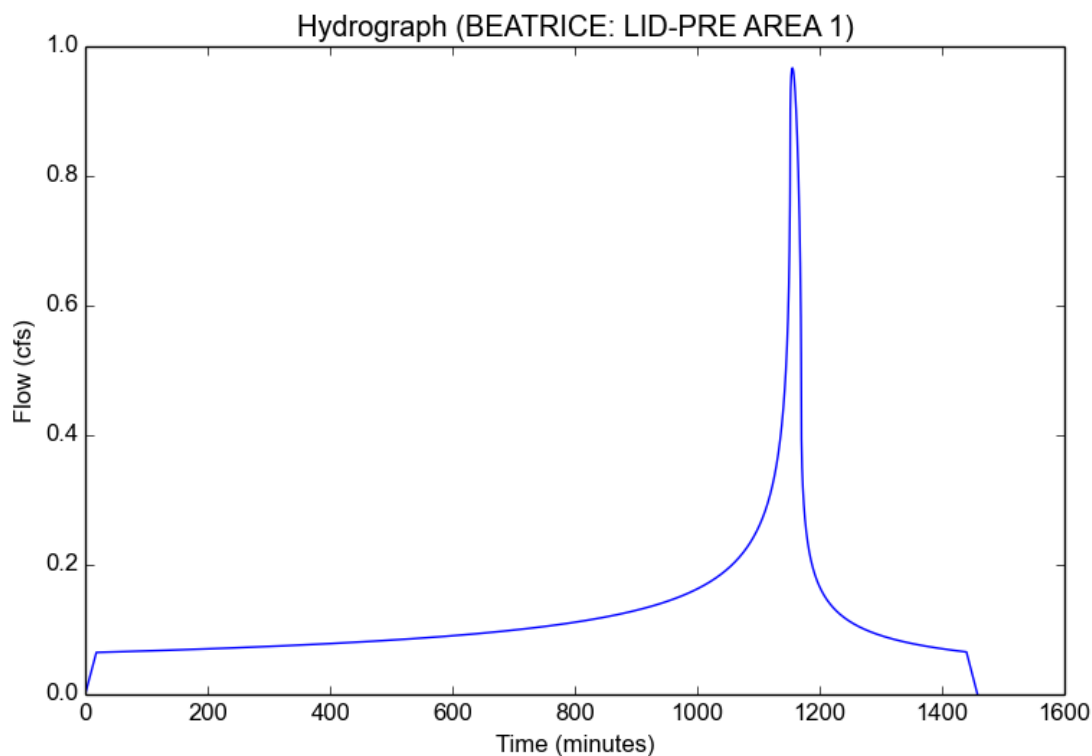
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	LID-PRE AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.1
Percent Impervious	0.9044
Soil Type	17
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.1
Peak Intensity (in/hr)	0.3594
Undeveloped Runoff Coefficient (Cu)	0.2084
Developed Runoff Coefficient (Cd)	0.8339
Time of Concentration (min)	18.0
Clear Peak Flow Rate (cfs)	0.9666
Burned Peak Flow Rate (cfs)	0.9666
24-Hr Clear Runoff Volume (ac-ft)	0.2416
24-Hr Clear Runoff Volume (cu-ft)	10524.0607



Peak Flow Hydrologic Analysis

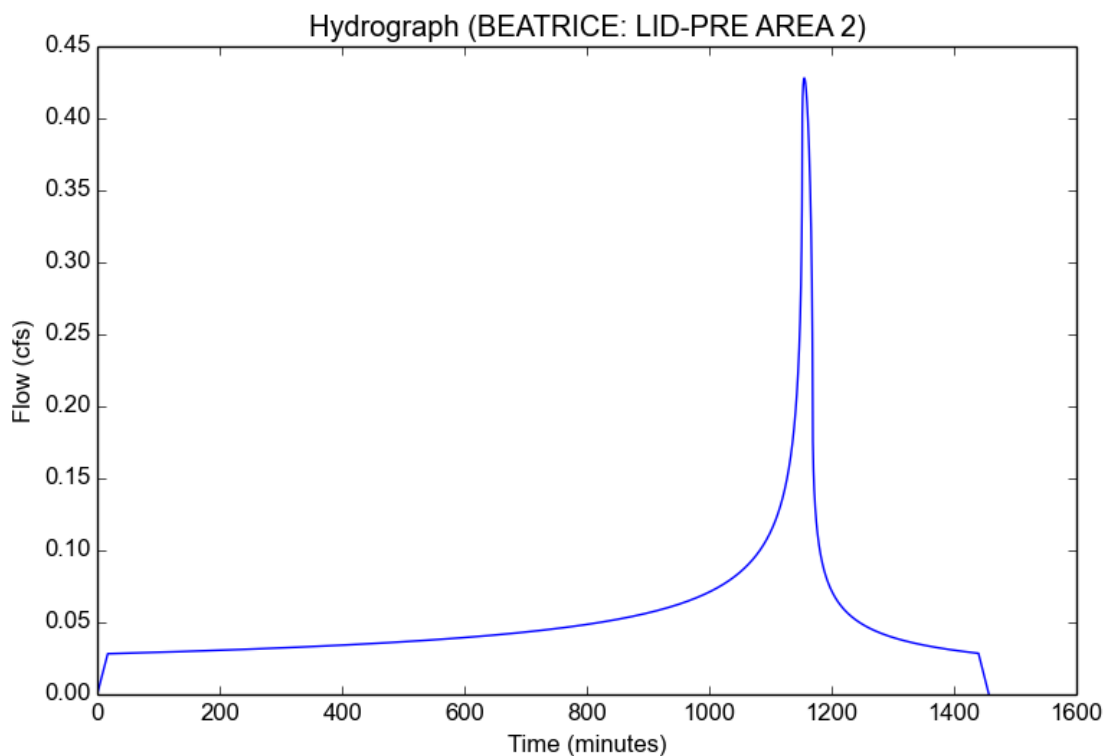
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Input Parameters

Project Name	BEATRICE
Subarea ID	LID-PRE AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.1
Percent Impervious	0.9938
Soil Type	17
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.1
Peak Intensity (in/hr)	0.3692
Undeveloped Runoff Coefficient (Cu)	0.2262
Developed Runoff Coefficient (Cd)	0.8958
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	0.428
Burned Peak Flow Rate (cfs)	0.428
24-Hr Clear Runoff Volume (ac-ft)	0.1053
24-Hr Clear Runoff Volume (cu-ft)	4586.6273



Peak Flow Hydrologic Analysis

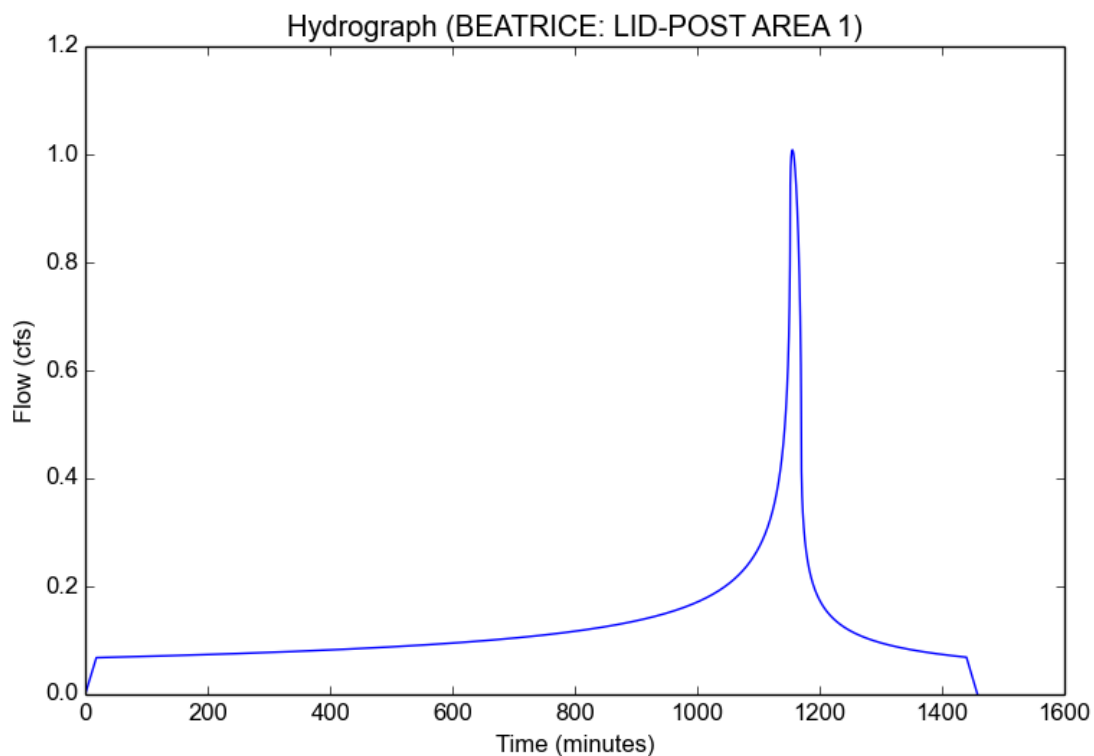
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Input Parameters

Project Name	BEATRICE
Subarea ID	LID-POST AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.1
Percent Impervious	0.9562
Soil Type	17
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.1
Peak Intensity (in/hr)	0.3594
Undeveloped Runoff Coefficient (Cu)	0.2084
Developed Runoff Coefficient (Cd)	0.8697
Time of Concentration (min)	18.0
Clear Peak Flow Rate (cfs)	1.0082
Burned Peak Flow Rate (cfs)	1.0082
24-Hr Clear Runoff Volume (ac-ft)	0.2537
24-Hr Clear Runoff Volume (cu-ft)	11049.5849



Peak Flow Hydrologic Analysis

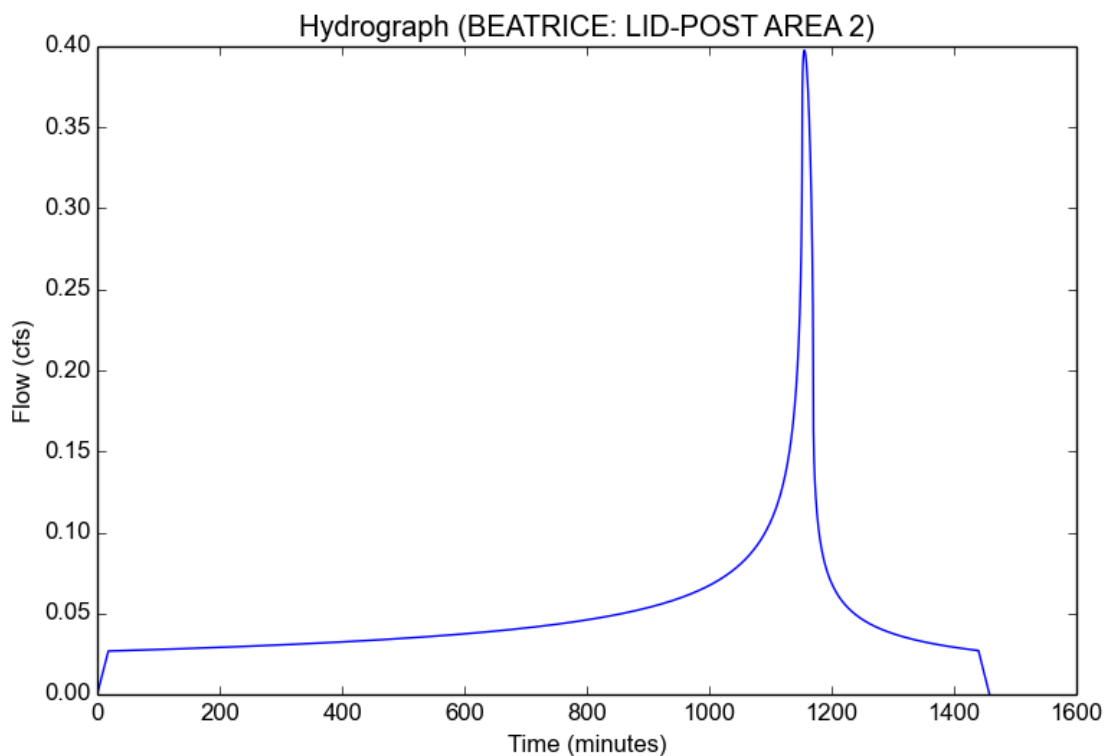
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Input Parameters

Project Name	BEATRICE
Subarea ID	LID-POST AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.1
Percent Impervious	0.9348
Soil Type	17
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.1
Peak Intensity (in/hr)	0.3594
Undeveloped Runoff Coefficient (Cu)	0.2084
Developed Runoff Coefficient (Cd)	0.8549
Time of Concentration (min)	18.0
Clear Peak Flow Rate (cfs)	0.3976
Burned Peak Flow Rate (cfs)	0.3976
24-Hr Clear Runoff Volume (ac-ft)	0.0998
24-Hr Clear Runoff Volume (cu-ft)	4346.4262



Peak Flow Hydrologic Analysis

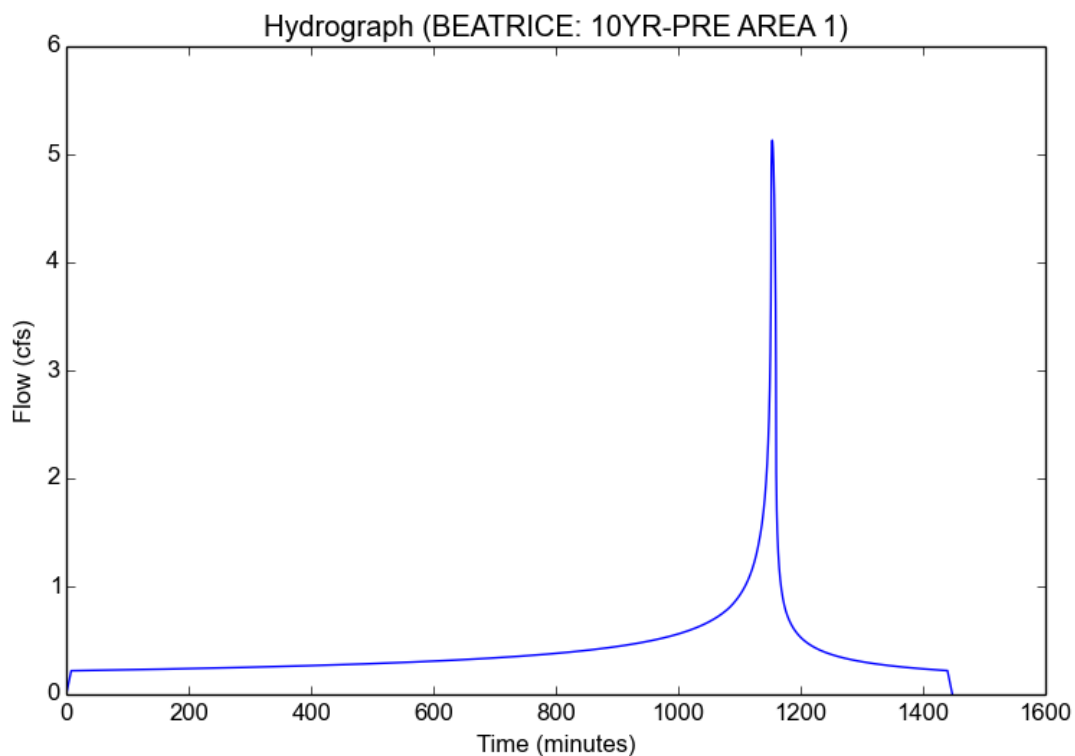
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Input Parameters

Project Name	BEATRICE
Subarea ID	10YR-PRE AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9044
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7271
Peak Intensity (in/hr)	1.7829
Undeveloped Runoff Coefficient (Cu)	0.8196
Developed Runoff Coefficient (Cd)	0.8923
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	5.1308
Burned Peak Flow Rate (cfs)	5.1308
24-Hr Clear Runoff Volume (ac-ft)	0.8268
24-Hr Clear Runoff Volume (cu-ft)	36014.6954



Peak Flow Hydrologic Analysis

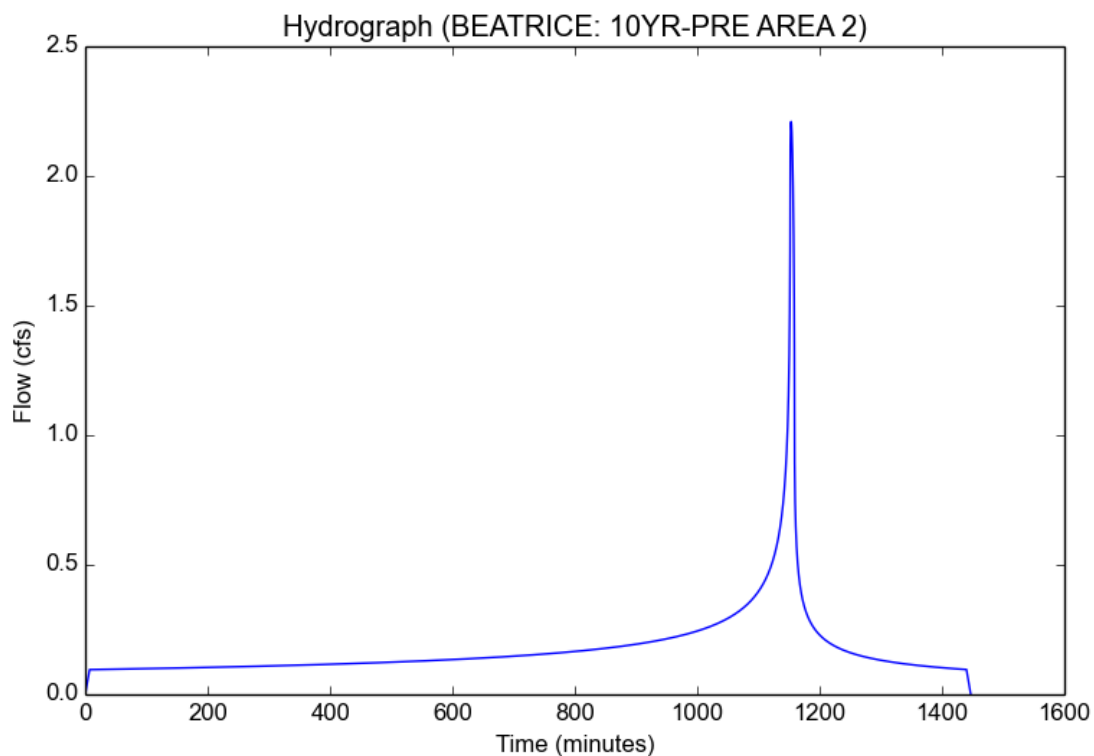
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Input Parameters

Project Name	BEATRICE
Subarea ID	10YR-PRE AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9938
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7271
Peak Intensity (in/hr)	1.8984
Undeveloped Runoff Coefficient (Cu)	0.8312
Developed Runoff Coefficient (Cd)	0.8996
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.2098
Burned Peak Flow Rate (cfs)	2.2098
24-Hr Clear Runoff Volume (ac-ft)	0.357
24-Hr Clear Runoff Volume (cu-ft)	15549.7943



Peak Flow Hydrologic Analysis

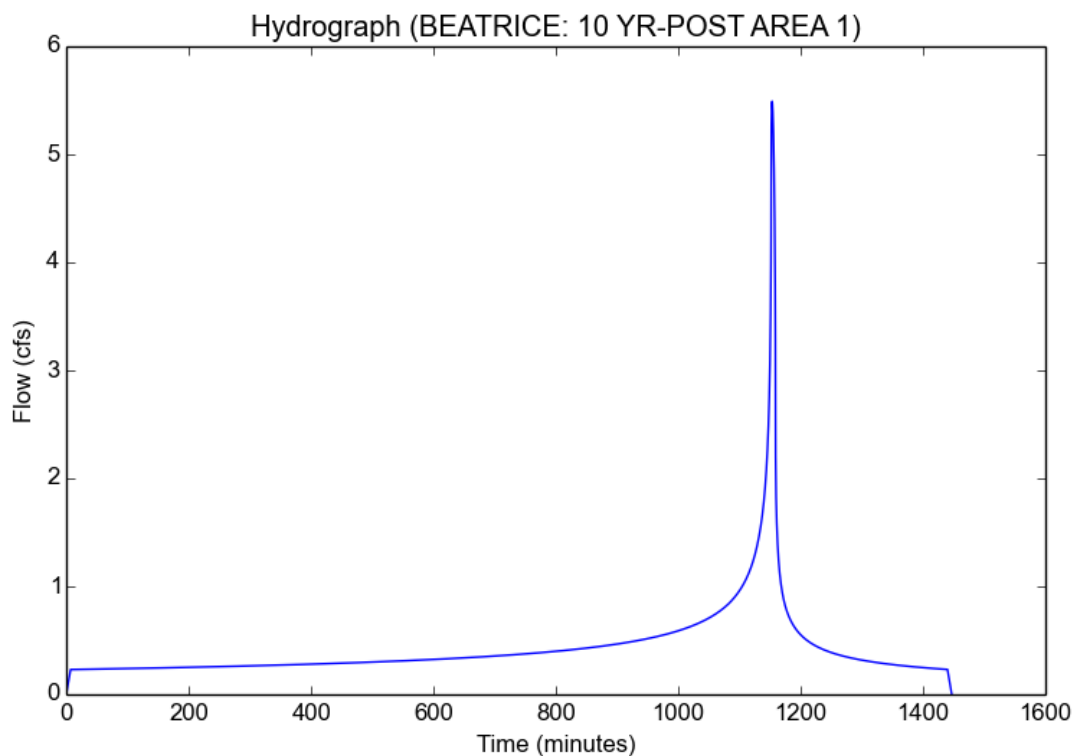
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	10 YR-POST AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9562
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7271
Peak Intensity (in/hr)	1.8984
Undeveloped Runoff Coefficient (Cu)	0.8312
Developed Runoff Coefficient (Cd)	0.897
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	5.4917
Burned Peak Flow Rate (cfs)	5.4917
24-Hr Clear Runoff Volume (ac-ft)	0.8632
24-Hr Clear Runoff Volume (cu-ft)	37602.2683



Peak Flow Hydrologic Analysis

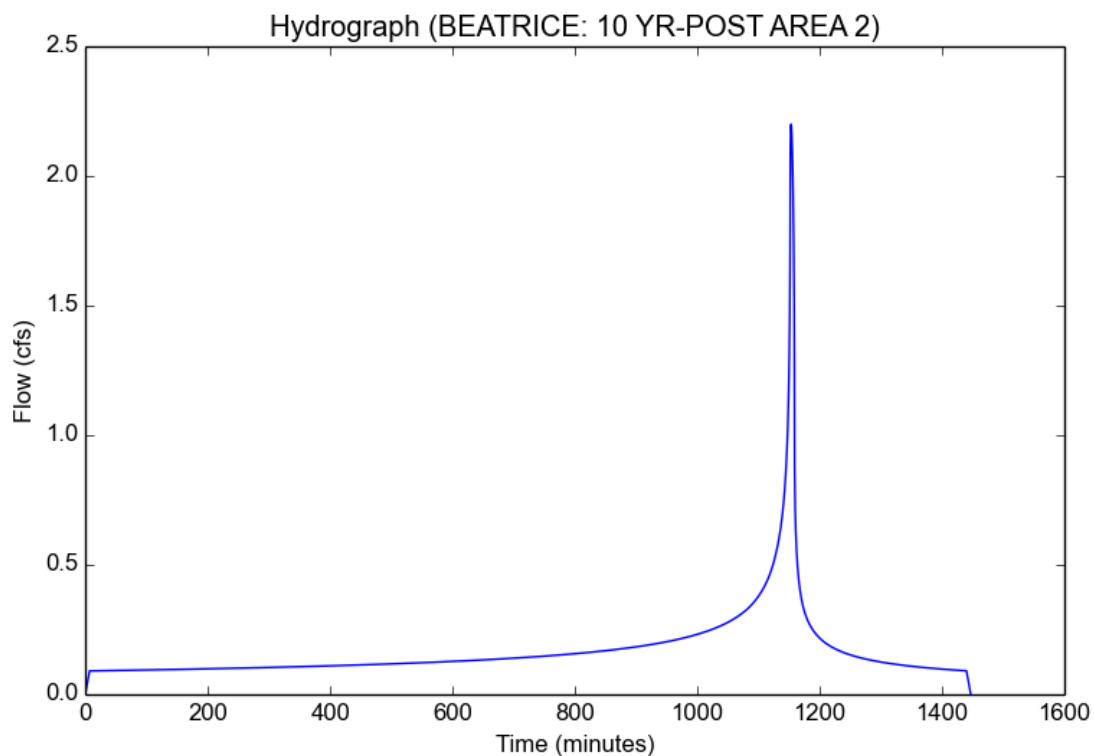
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	10 YR-POST AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9348
Soil Type	17
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	3.7271
Peak Intensity (in/hr)	1.8984
Undeveloped Runoff Coefficient (Cu)	0.8312
Developed Runoff Coefficient (Cd)	0.8955
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.1999
Burned Peak Flow Rate (cfs)	2.1999
24-Hr Clear Runoff Volume (ac-ft)	0.3403
24-Hr Clear Runoff Volume (cu-ft)	14824.4575



Peak Flow Hydrologic Analysis

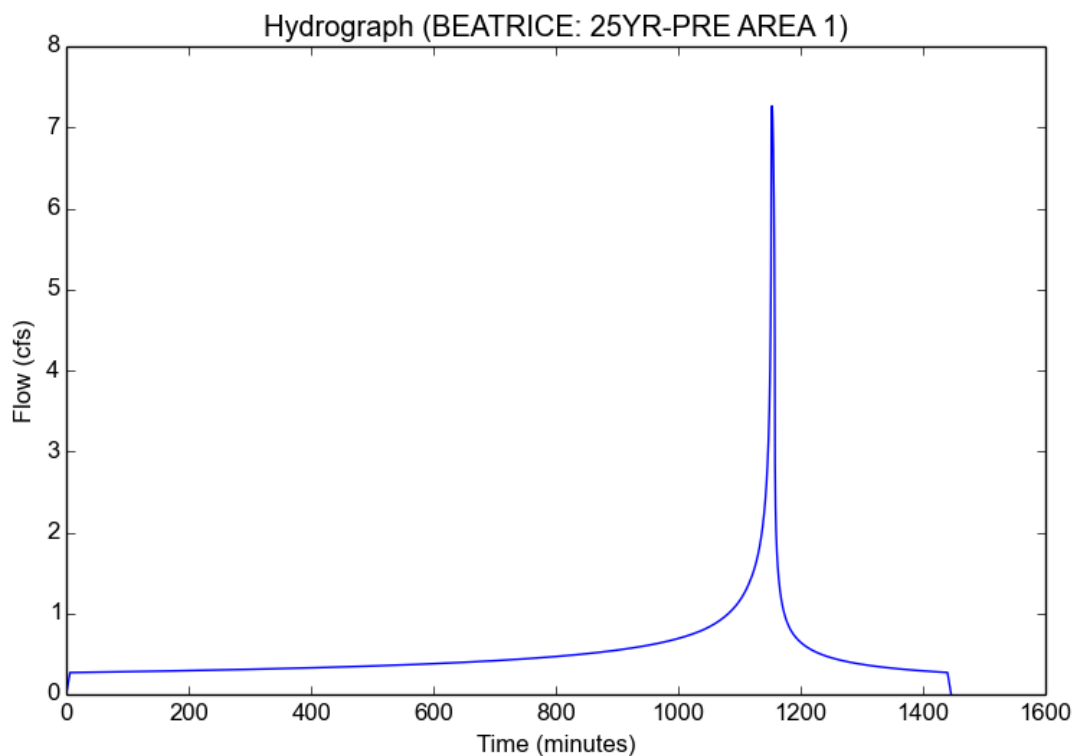
File location: P:/Shared/Projects/Chait Company/18523 - Beatrice/DOC/CEQA REPORTS/DRAINAGE TECHNICAL REPORT/APPENDIX A-CALCULATIONS
Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	25YR-PRE AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9044
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.5832
Peak Intensity (in/hr)	2.5099
Undeveloped Runoff Coefficient (Cu)	0.8737
Developed Runoff Coefficient (Cd)	0.8975
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	7.2646
Burned Peak Flow Rate (cfs)	7.2646
24-Hr Clear Runoff Volume (ac-ft)	1.0196
24-Hr Clear Runoff Volume (cu-ft)	44412.453



Peak Flow Hydrologic Analysis

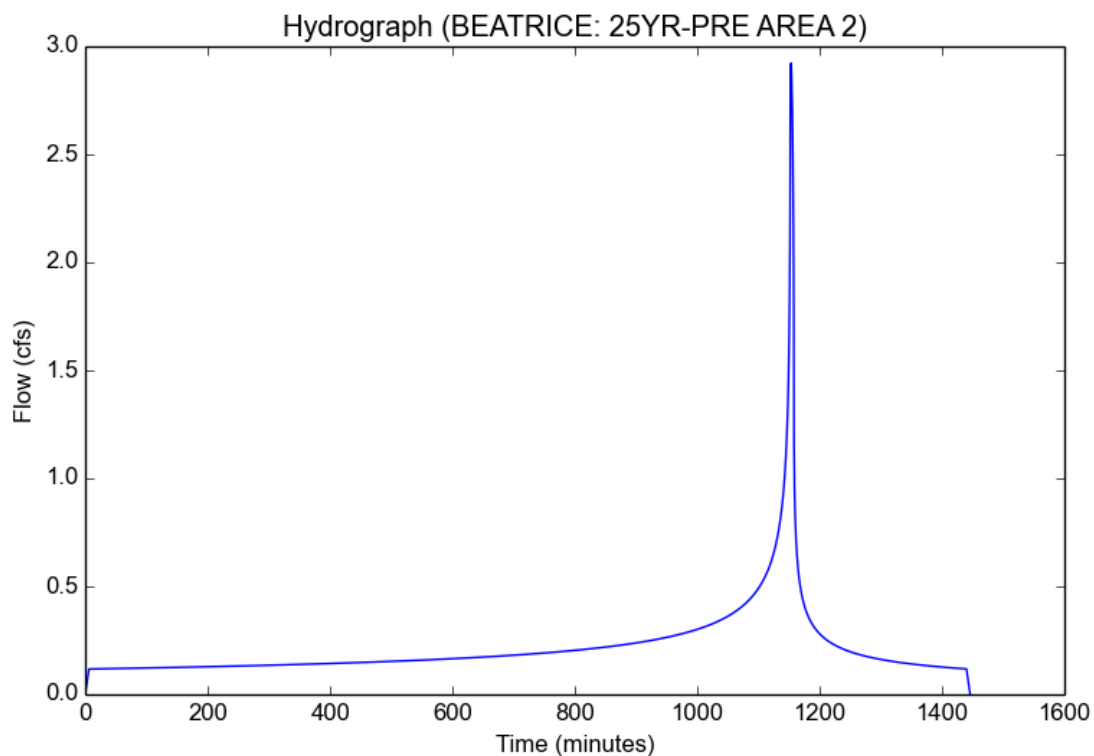
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	25YR-PRE AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9938
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.5832
Peak Intensity (in/hr)	2.5099
Undeveloped Runoff Coefficient (Cu)	0.8737
Developed Runoff Coefficient (Cd)	0.8998
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.9225
Burned Peak Flow Rate (cfs)	2.9225
24-Hr Clear Runoff Volume (ac-ft)	0.439
24-Hr Clear Runoff Volume (cu-ft)	19124.7038



Peak Flow Hydrologic Analysis

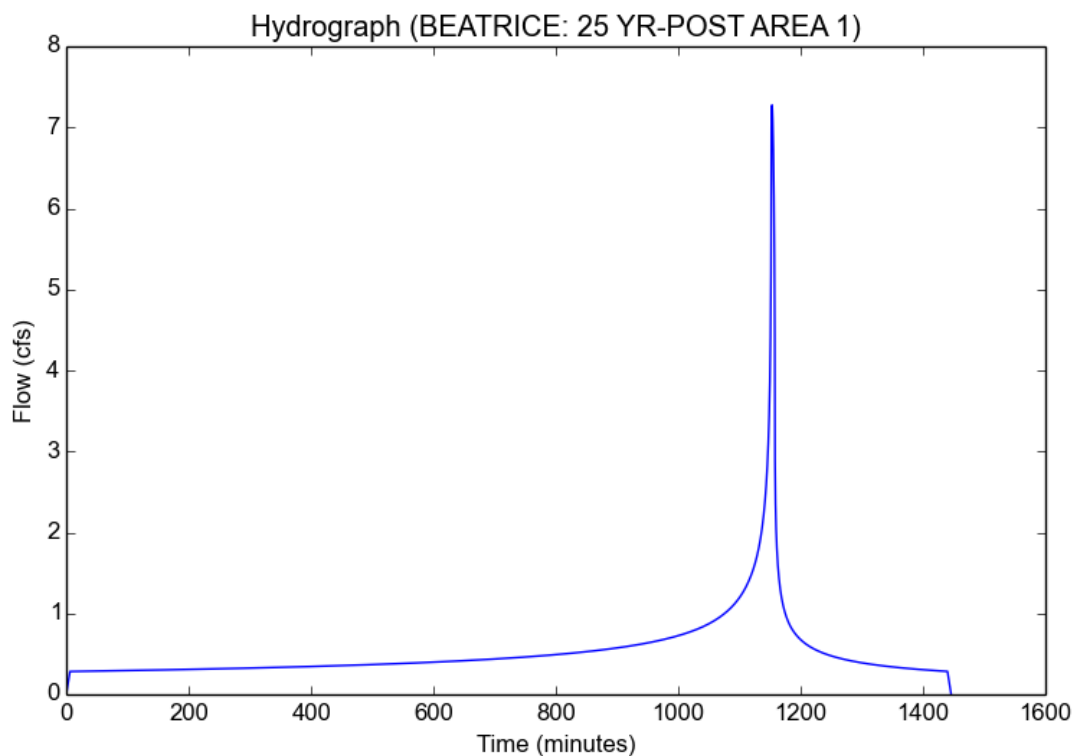
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	25 YR-POST AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9562
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.5832
Peak Intensity (in/hr)	2.5099
Undeveloped Runoff Coefficient (Cu)	0.8737
Developed Runoff Coefficient (Cd)	0.8989
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	7.2756
Burned Peak Flow Rate (cfs)	7.2756
24-Hr Clear Runoff Volume (ac-ft)	1.0628
24-Hr Clear Runoff Volume (cu-ft)	46296.4382



Peak Flow Hydrologic Analysis

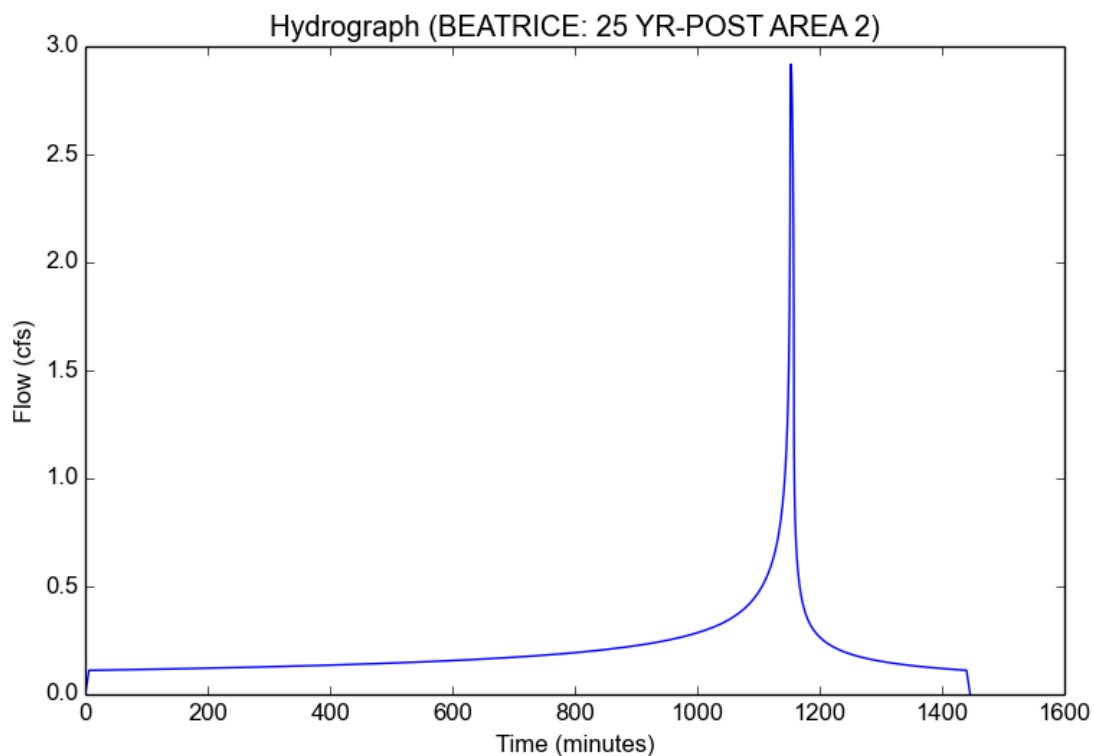
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	25 YR-POST AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9348
Soil Type	17
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	4.5832
Peak Intensity (in/hr)	2.5099
Undeveloped Runoff Coefficient (Cu)	0.8737
Developed Runoff Coefficient (Cd)	0.8983
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.9174
Burned Peak Flow Rate (cfs)	2.9174
24-Hr Clear Runoff Volume (ac-ft)	0.4193
24-Hr Clear Runoff Volume (cu-ft)	18263.7015



Peak Flow Hydrologic Analysis

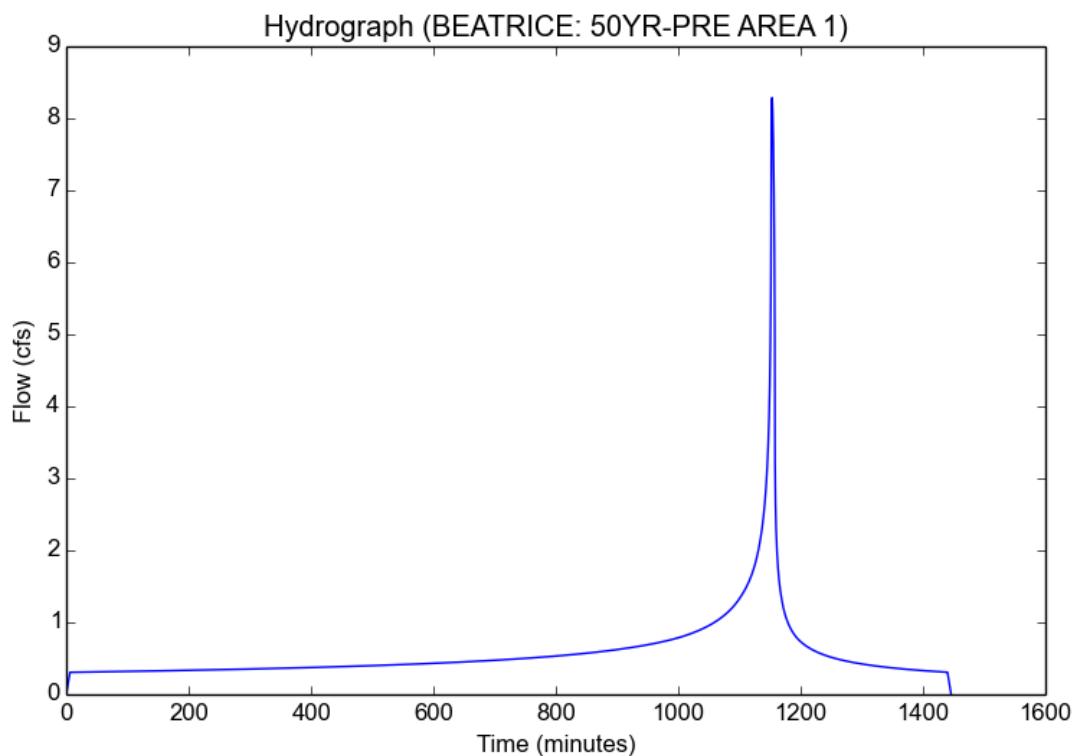
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	50YR-PRE AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9044
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.22
Peak Intensity (in/hr)	2.8586
Undeveloped Runoff Coefficient (Cu)	0.8871
Developed Runoff Coefficient (Cd)	0.8988
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	8.2858
Burned Peak Flow Rate (cfs)	8.2858
24-Hr Clear Runoff Volume (ac-ft)	1.1637
24-Hr Clear Runoff Volume (cu-ft)	50690.5853



Peak Flow Hydrologic Analysis

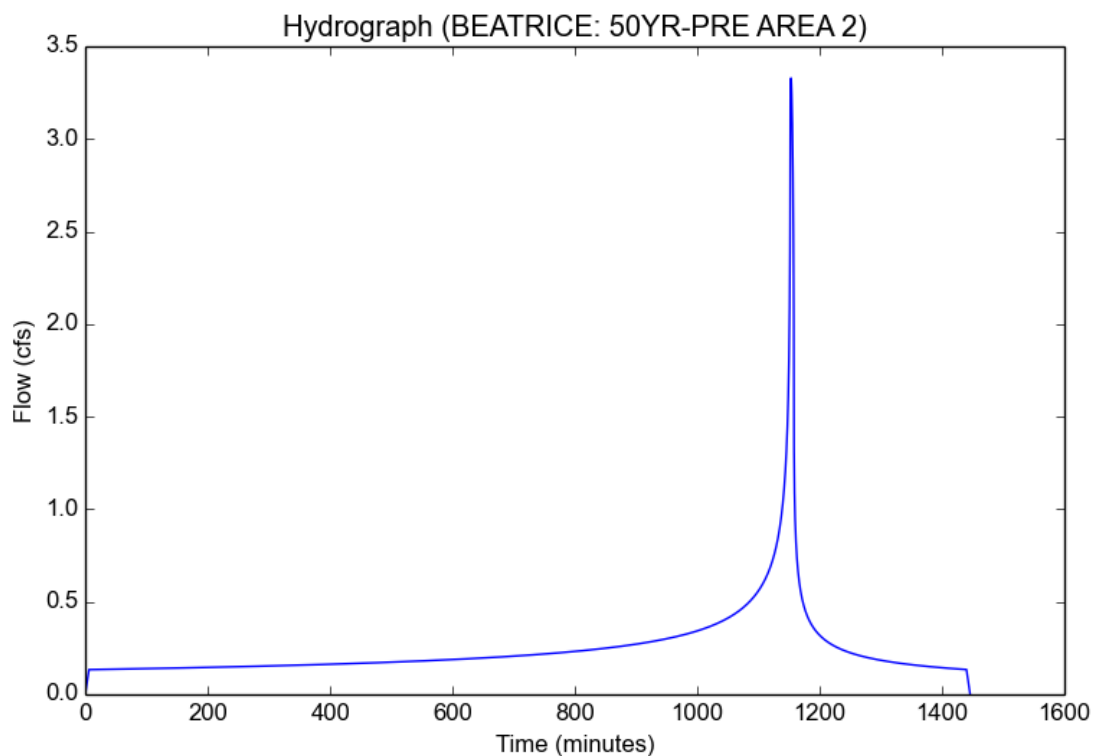
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	50YR-PRE AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9938
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.22
Peak Intensity (in/hr)	2.8586
Undeveloped Runoff Coefficient (Cu)	0.8871
Developed Runoff Coefficient (Cd)	0.8999
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	3.3289
Burned Peak Flow Rate (cfs)	3.3289
24-Hr Clear Runoff Volume (ac-ft)	0.5001
24-Hr Clear Runoff Volume (cu-ft)	21784.9051



Peak Flow Hydrologic Analysis

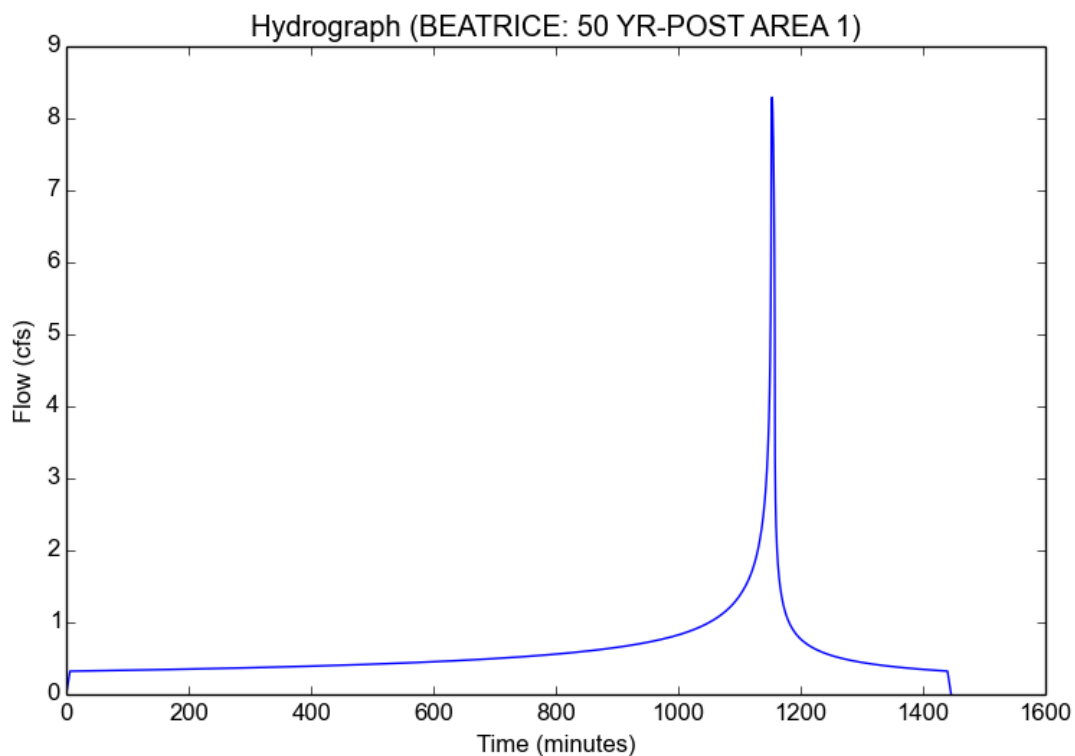
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	50 YR-POST AREA 1
Area (ac)	3.225
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9562
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.22
Peak Intensity (in/hr)	2.8586
Undeveloped Runoff Coefficient (Cu)	0.8871
Developed Runoff Coefficient (Cd)	0.8994
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	8.292
Burned Peak Flow Rate (cfs)	8.292
24-Hr Clear Runoff Volume (ac-ft)	1.2116
24-Hr Clear Runoff Volume (cu-ft)	52778.4175



Peak Flow Hydrologic Analysis

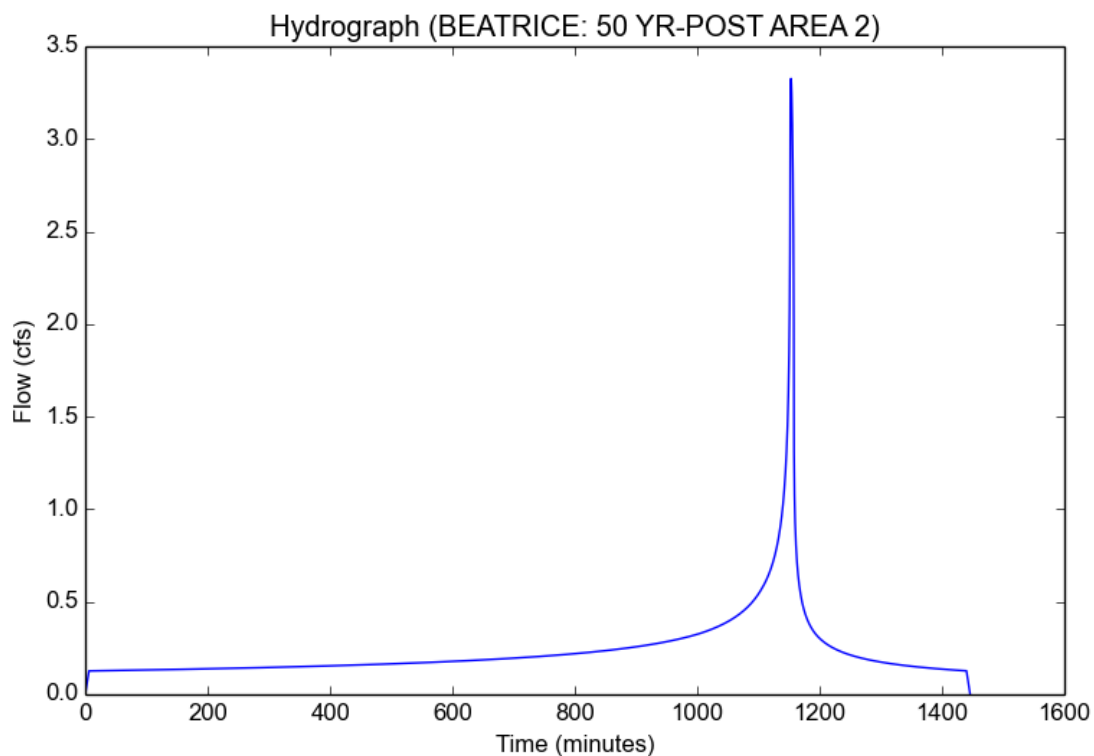
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	BEATRICE
Subarea ID	50 YR-POST AREA 2
Area (ac)	1.294
Flow Path Length (ft)	345.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.22
Percent Impervious	0.9348
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.22
Peak Intensity (in/hr)	2.8586
Undeveloped Runoff Coefficient (Cu)	0.8871
Developed Runoff Coefficient (Cd)	0.8992
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	3.3261
Burned Peak Flow Rate (cfs)	3.3261
24-Hr Clear Runoff Volume (ac-ft)	0.4782
24-Hr Clear Runoff Volume (cu-ft)	20830.7425



1997

200'

PART OF THE RANCHO LA BALLONA ALLOTTED
TO THE HEIRS OF AUGUSTINA MACHADO

M.R. 3-204-209

RANCHO LA BALLONA D.C.C. 965, C.F. 16

TRACT NO. 1100 M.B. 18-66-67

TRACT NO. 8966 M.B. 158-48-49

TRACT NO. 30549 M.B. 779-67-70

TRACT NO. 23270 M.B. 786-36-37

TRACT NO. 27691 M.B. 786-38-39

TRACT NO. 23098 M.B. 799-64-65

TRACT NO. 42277 M.B. 1008-25-26

TRACT NO. 34297 M.B. 1024-61-62

BK.
4221

RTE. 90

JOSE JUAN MACHADO
17.99 ACS.

DOMINGO MACHADO
18 ACS.

GEORGE ADDISON SANFORD
14.11 ACS. ALLOT
BERNARDINO MACHADO
19.18 ACS.

McCONNELL
AVE.

CENTINELA
CREEK

FRWY.

CREEK

HAMMACK
ST.

GROSVENOR

ANETA
ST.

LUCILE
ST.

WESTLAWN
AVE.

BEATRICE

JANDY
PL.

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9.59 AC.

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72,750.4'

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-

Enter Address, Cross Street, or Parcel No.:
(ex: 900 S. Fremont Ave., Fremont@Valley, 5342005904)

12575 beatrice street, los angeles

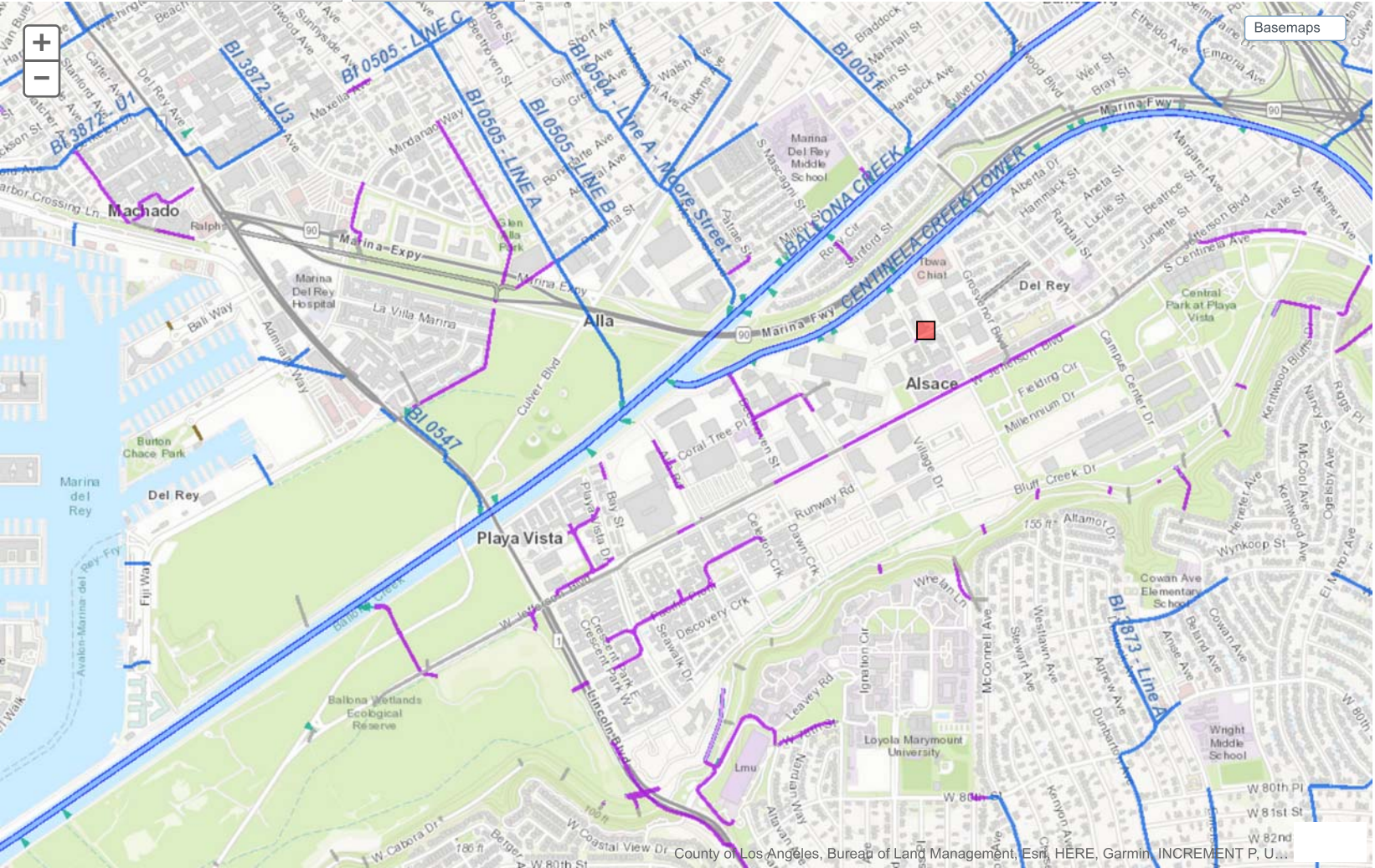
Search

Search Results:
12575 beatrice street los angeles

Enter Channel, Drain, or Old Drawing No.:
(ex: Coyote Creek, MTD 359, 275-416-D2, CC 2650)

Search

Basemaps





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http://dpw.lacounty.gov/fcd/stormdrain/index.cfm

1/1

Appendix B: FEMA Map

National Flood Hazard Layer FIRMette



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 Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

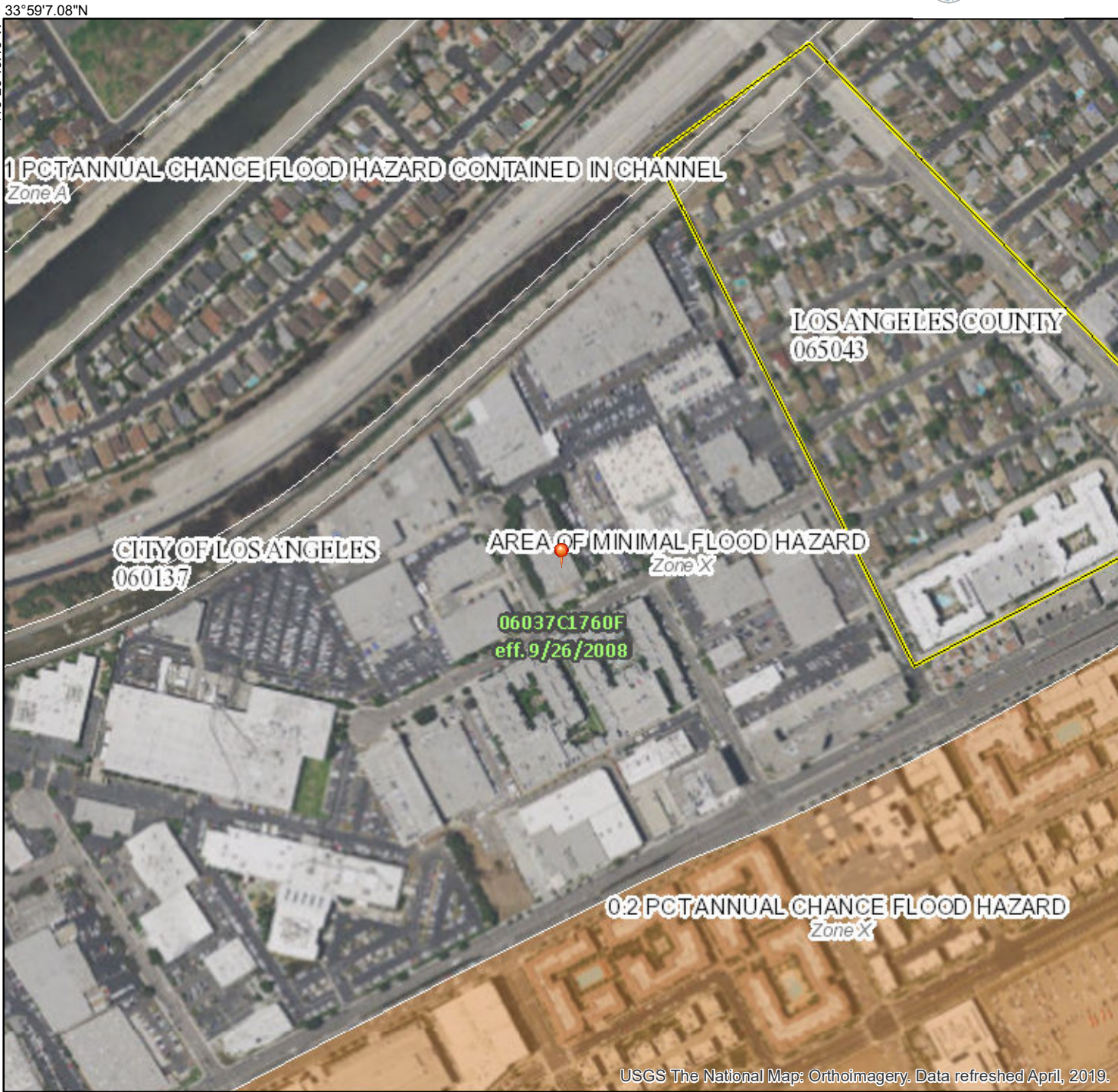


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

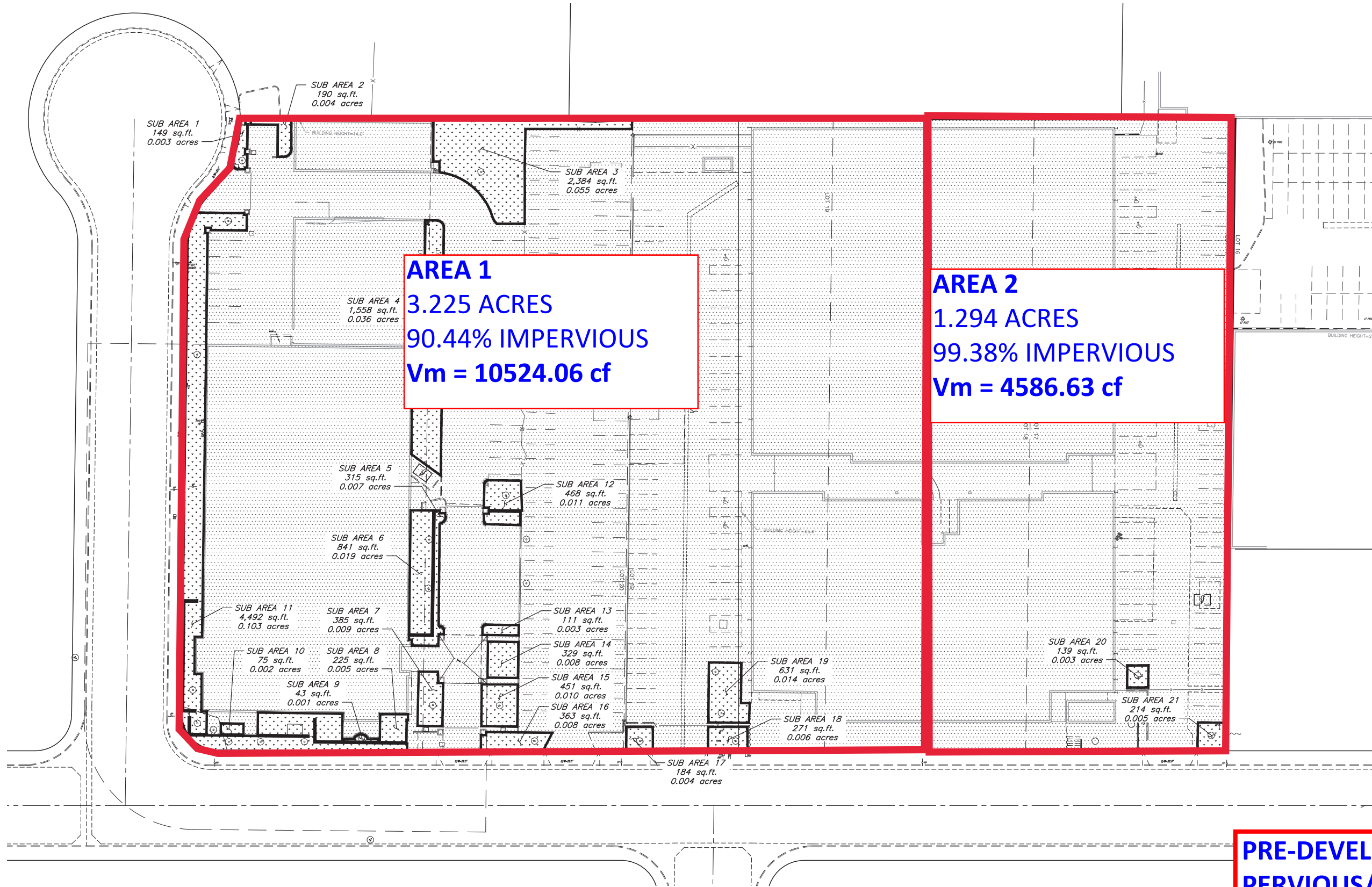
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/8/2020 at 9:39:32 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



Appendix C: Area Maps – Pre and Post Development



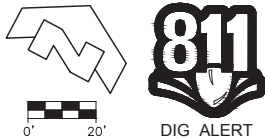
LEGEND:

PERVIOUS AREA
IMPERVIOUS AREA

AREA CALCULATIONS

AREA No.	AREA (ACRES)	PERVIOUS (ACRES)	IMPERVIOUS (ACRES)
1	0.003	0.003	0
2	0.004	0.004	0
3	0.055	0.055	0
4	0.036	0.036	0
5	0.007	0.007	0
6	0.019	0.019	0
7	0.009	0.009	0
8	0.005	0.005	0
9	0.001	0.001	0
10	0.002	0.002	0
11	0.103	0.103	0
12	0.011	0.011	0
13	0.003	0.003	0
14	0.008	0.008	0
15	0.010	0.010	0
16	0.008	0.008	0
17	0.004	0.004	0
18	0.006	0.006	0
19	0.014	0.014	0
20	0.003	0.003	0
21	0.005	0.005	0
22	4.203	0	4.203
TOTAL	4.519	0.316	4.203
PERVIOUS AREA	= 0.316 ACRES (7%)		
IMPERVIOUS AREA	= 4.203 ACRES (93%)		
TOTAL SITE	= 4.519 ACRES		

**PRE-DEVELOPMENT
PERVIOUS/IMPERVIOUS
AREAS**



BENCHMARK NO. 8Y9245 EL. 16.617 FT
FD. "LACE" MONUMENT IN WEST END OF CB. AT NW CORNER OF JEFFERSON BLVD. AND WESTLAWN AVENUE.
NAVD 1988 2005 ADJ.

EXECUTIVE ARCHITECT
CHAIT
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CONSULTANT
Barbara L. Hall, P.E., Inc.
318 West Evergreen Avenue
Monrovia, CA 91016
Phone: (626) 256-3220
Fax: (626) 256-3218



NOTES

PROJECT
NEW BEATRICE WEST
12575 BEATRICE STREET

PROJECT NO.
KEY PLAN

REVISIONS / ISSUES

NO.	BY	DESCRIPTION	DATE
1	PLAN CHECK	88% CD SET	02/11/18
2	100% CD SET		12/21/18
3			09/11/18

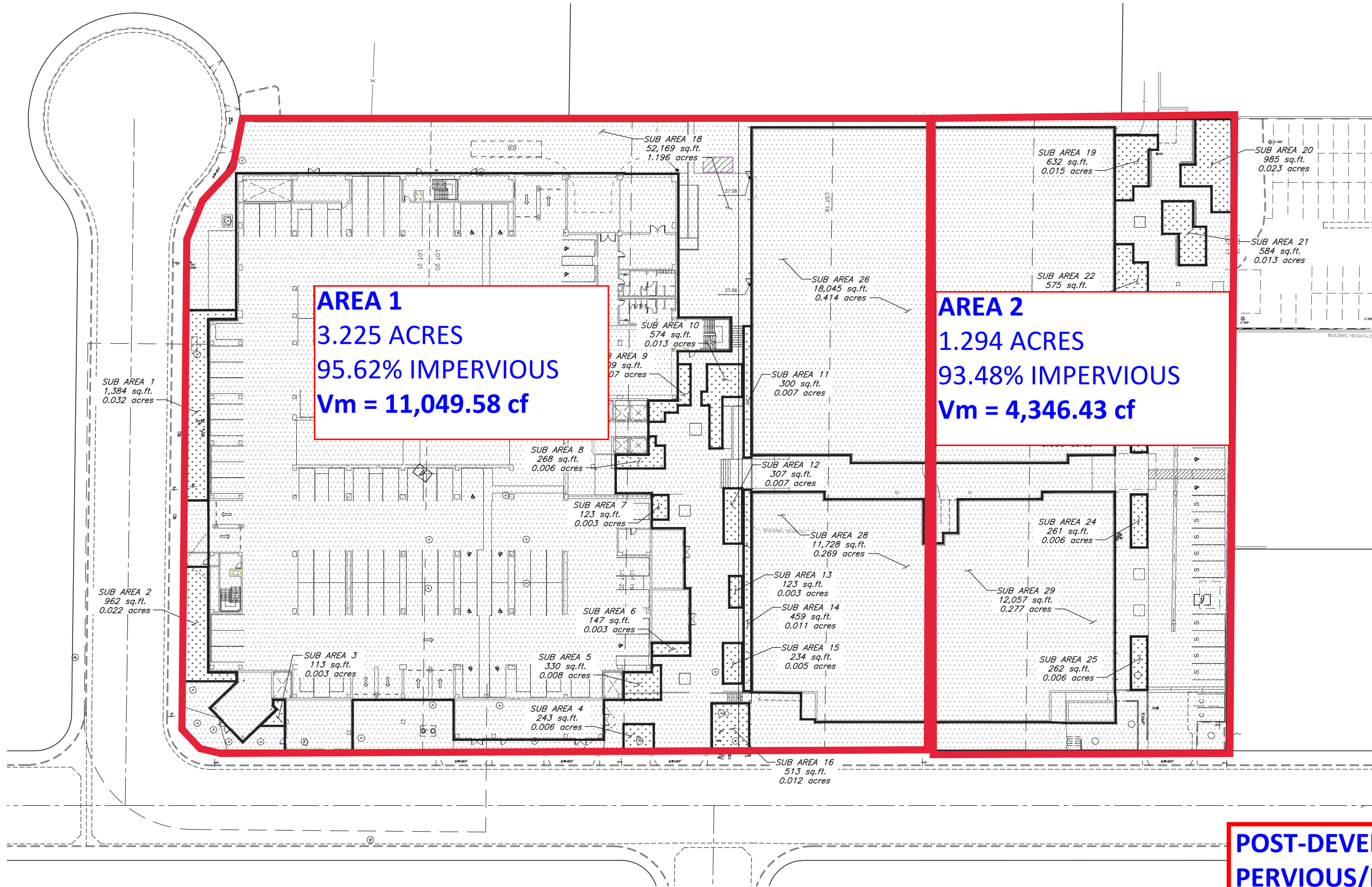
LID
**PRE-DEVELOPMENT:
PERVIOUS AND
IMPERVIOUS AREAS**

SCALE AS SHOWN
PHASE
DD LID-1

DATE: 09/11/18
DRAWN BY: DS

IF THIS SHEET DOES NOT MEASURE 30" x 40", IT HAS BEEN REDUCED AND IS NOT TO SCALE

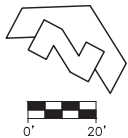
© CHAIT COMPANY, INC.



AREA 1
3.225 ACRES
95.62% IMPERVIOUS
Vm = 11,049.58 cf

AREA 2
1.294 ACRES
93.48% IMPERVIOUS
Vm = 4,346.43 cf

**POST-DEVELOPMENT
PERVIOUS/IMPERVIOUS
AREAS**



BENCHMARK NO. 8Y9245 EL. 16.617 FT
FD. "LACE" MONUMENT IN WEST END OF CB. AT NW CORNER OF JEFFERSON BLVD. AND WESTLAWN AVENUE.
NAVD 1988 2005 ADJ.

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Phone: (626) 256-3220
Fax: (626) 256-3218



NOTES

PROJECT
NEW BEATRICE WEST
12575 BEATRICE STREET

PROJECT NO.
KEY PLAN

REVISIONS / ISSUES

NO.	BY	DESCRIPTION	DATE
1	PLAN CHECK	88% CD SET	02/11/18
2	100% CD SET		12/21/18

DRAWING NAME
**LID
POST-DEVELOPMENT:
PERVIOUS AND
IMPERVIOUS AREAS**

SCALE AS SHOWN
PHASE
DD LID-2

DATE: 09/11/18 DRAWN BY: DS

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