PRELIMINARY
HYDROLOGY REPORT

FOR

7539 GARVEY AVE
ROSEMEAD, CA 91770

01/06/2022

TRITECH
ENGINEERING
ASSOCIATES

SUBDIVISION
LAND SURVEY
CIVIL ENGINEERING
& DESIGN

135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com

JOB. NO. 210515

PROJECT DESCRIPTION

Total Project Area (ft^2): 41,339

Total Project Area (Ac): 8.497

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	41,339	100
Impervious Area:	0	0

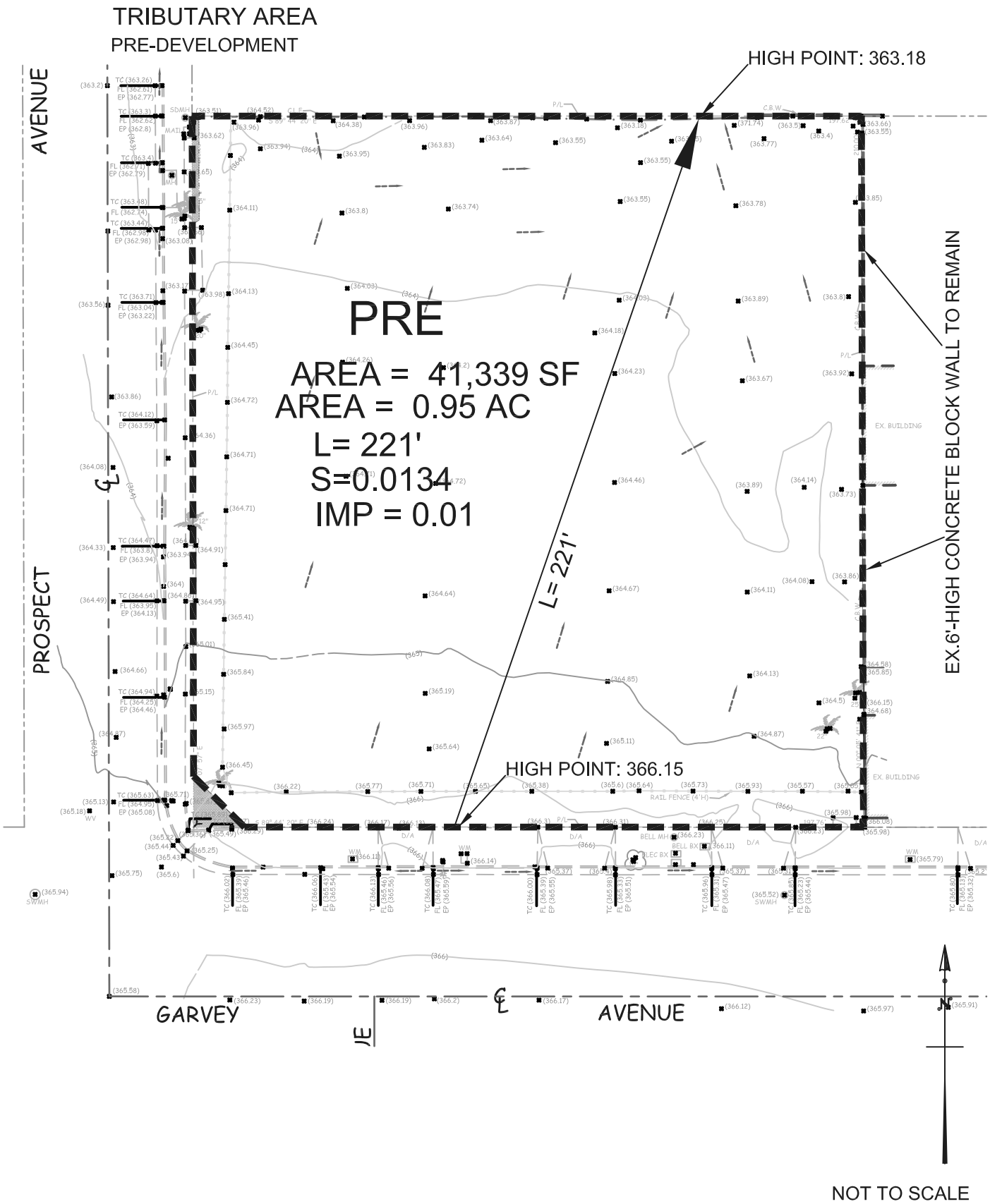
PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	147	0.4
Impervious Area:	41,192	99.6

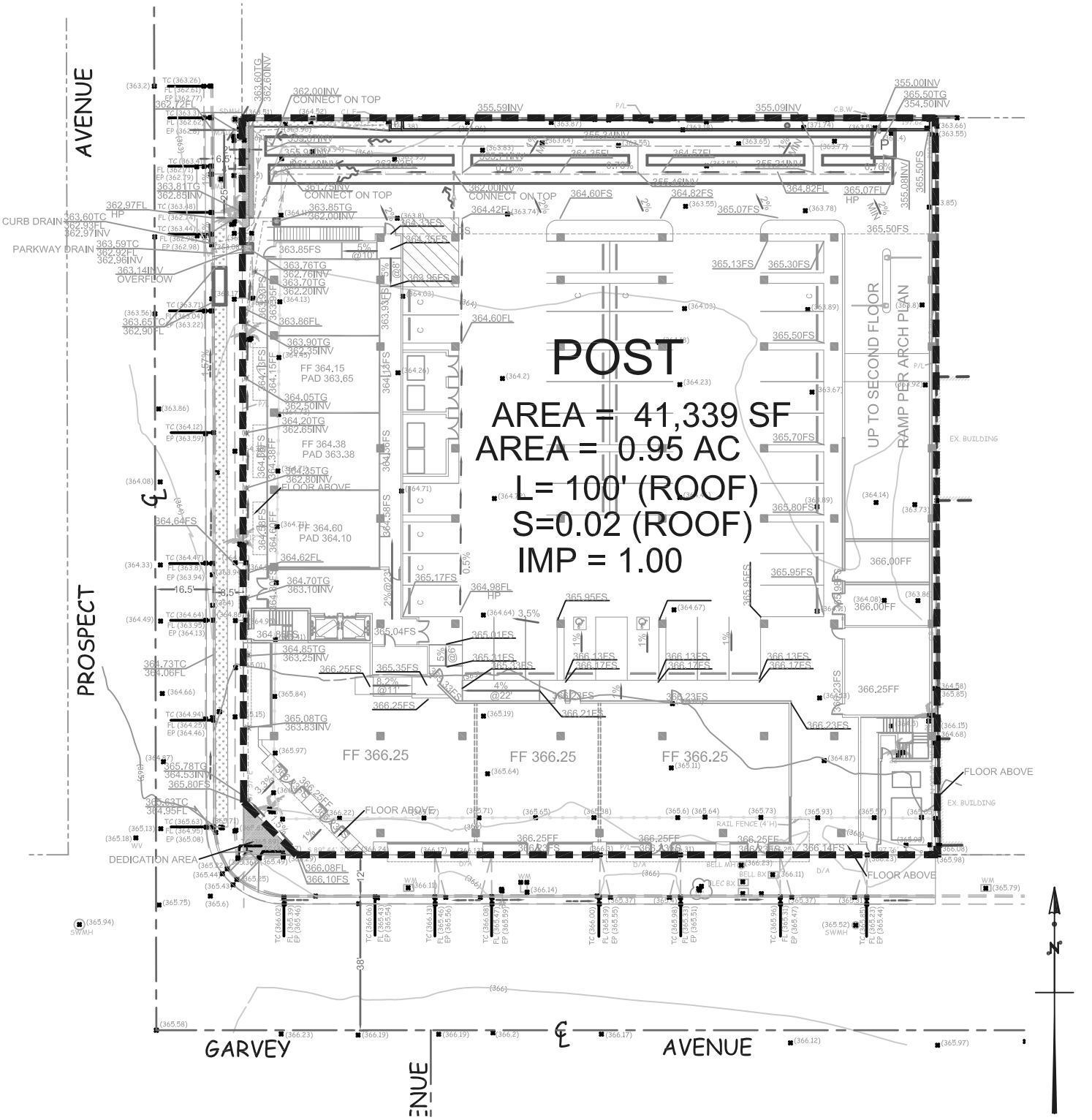
SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS	Existing: The existing project is vacant land. The drainage flows from south to north and drains into north adjacent property by gravity. The runoff from north adjacent property flows west and drains into Prospect Ave by gravity and be collected by the Public Stormdrain System (Open curb catch basin) at the front of property.
	Proposed: This project is a Mixed-Use project. More than 99% of lot area will be covered by the proposed building. The landscape area is approximately 147 SF. The Impervious surface is 99.6% of the lot area. (use 100%impervious surface for hydrology analysis) After development, the runoff will be collected by roof system, trench drain, area drains, and catch basins. All stormwater will be captured by 60”-dia storage pipe. The overflow from the storage pipe will directly drain to Prospect Ave via parkway drain. The stormwater in the 60”-dia storage pipe will be pumped to the Bio-filtration system for LID Purposes. The outflow and overflow from Bio-filtration system will be pumped to Prospect Ave via curb drain. The runoff from the project site will be captured by the Public Stormdrain System (Open-curb catch basin) at the northeast corner between Prospect Ave and Garvey Ave (front of project site).

NARRATIVE PROJECT DESCRIPTION:	This project is located at the northeast corner between Prospect Ave and Garvey Ave in the city of Rosemead, County of Los Angeles, State of California. The net area of project site is 41,339 SF excluding dedication area. All area will be disturbed. This project has only one drainage area (DA). All runoff will be collected by roof system, area drain, catch basin and trench drain. All stormwater discharges to the proposed 60"-dia storage pipe located under driveway. The water in storage pipe is pumped to Bio-filtration System for LID and Hydromodification purposes. The volume of storage pipe is designed to capture the 2-year frequency runoff volume for reduce the peak flow rate lower than existing condition before discharge to the Public. The pump system has to design the flow rate lower than the treatment rate. Then the outflow from the Bio-filtration system will lower than the 2-year Pre-developed runoff. The overflow from storage pipe (in the case of storm more than 2-year frequency) directly drains into Prospect Ave by gravity via parkway drain. Per hydrology analysis, the 2-year frequency runoff has to detain onsite. The post-developed peak flow rate for 10-year, 25-year, 50-year, and 100-year will not more than the pre-developed peak flow rate. Therefore the runoff from the project site will not adversely impact to the downstream properties.
OFFSITE RUNOFF	There is no offsite runoff to project site.
PUBLIC UTILITY AND INFRASTRUCTURE INFORMATION	There is no public utility or public infrastructures onsite.
SIGNIFICANT ECOLOGICAL AREAS (SEAS)	This project site is not located in Significant Ecological Area. The runoff from the project site does not drain into the Significant Ecological Area.


TRIBUTARY AREA
PRE-DEVELOPMENT
HIGH POINT: 363.18
PRE
AREA = 41,339 SF
AREA = 0.95 AC
L= 221'
S=0.0134
IMP = 0.01
L= 221'
EX.6'-HIGH CONCRETE BLOCK WALL TO REMAIN
HIGH POINT: 366.15
PROSPECT AVENUE
GARVEY AVENUE
EX. BUILDING
RAIL FENCE (4'H)
NOT TO SCALE

TRIBUTARY AREA
POST-DEVELOPMENT



NOT TO SCALE

HYDROLOGY ANALYSIS

FROM L.A. HYDROLOGY MANUAL FIG. H1.20 AND http://dpw.lacounty.gov/wrd/hydrologygis/
SOIL CLASSIFICATION: 013
50 YEAR 24 HOUR ISOHYET = 6.2"
85TH PERCENTILE ISOHYET = 0.9"

PRE-DEVELOPMENT

AREA (ACRE)	LENGTH (FT)	SLOPE	%IMP
0.95	221'	0.0134	0.01

POST-DEVELOPMENT

AREA (ACRE)	LENGTH (FT)	SLOPE	%IMP
0.95	100' (ROOF)	0.02(ROOF)	1.00

NOTE: DUE TO VERY SMALL LANDSCAPE ON GROUND, THEN USE 100%IMPERVIOUS

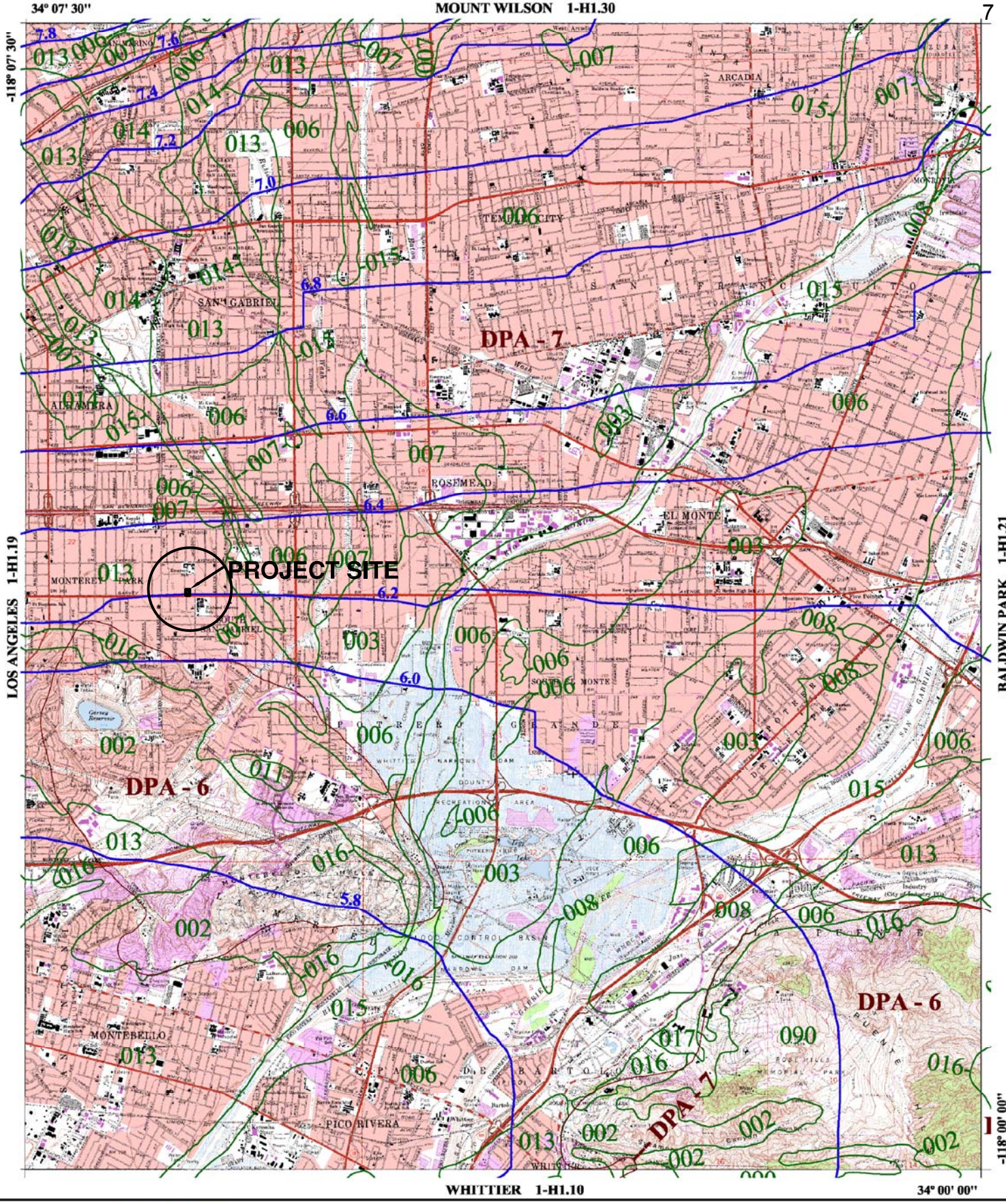
USE HydroCalc CACULATOR PROGRAM

FREQUENCY	PRE-DEVELOPMENT		POST-DEVELOPMENT	
	Q (CFS)	VOLUME (CU.FT.)	Q (CFS)	VOLUME (CU.FT.)
2-YEAR	0.3943	1,052.69	1.2240	7,385.36
10-YEAR	2.2582	2,542.42	2.2582	13,625.69
25-YEAR	2.7769	3,395.76	2.7769	16,755.41
50-YEAR	3.1627	4,098.31	3.1627	19,083.61
100-YEAR	3.5486	4,864.10	3.5486	21,411.81
85th PERCENTILE			0.3681	2,770.20

FROM HYDROLOGY ANALYSIS, THE POST-DEVELOPED PEAK FLOW RATE ARE NOT MORE THAN THE PRE-DEVELOPED PEAK FLOW RATE IN 10-YEAR, 25-YEAR, 50-YEAR, AND 100-YEAR FREQUENCY.

DUE TO THE 2-YEAR PEAK FLOW RATE AFTER DEVELOPMENT WILL BE MORE THAN THE EXISTING. THE RUNOFF VOLUME FOR 2-YEAR FREQUENCY WILL BE DETAINED ONSITE, THEN THE 2-YEAR PEAK FLOW AFTER DEVELOPMENT WILL BE LESS THAN THE PRE-DEVELOPED PEAK FLOW RATE.

THEREFORE THE PEAK FLOW RATE FROM PROJECT SITE IS NOT ADVERSELY IMPACT TO THE DOWNSTREAM DRAINAGE ELEMENTS.



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

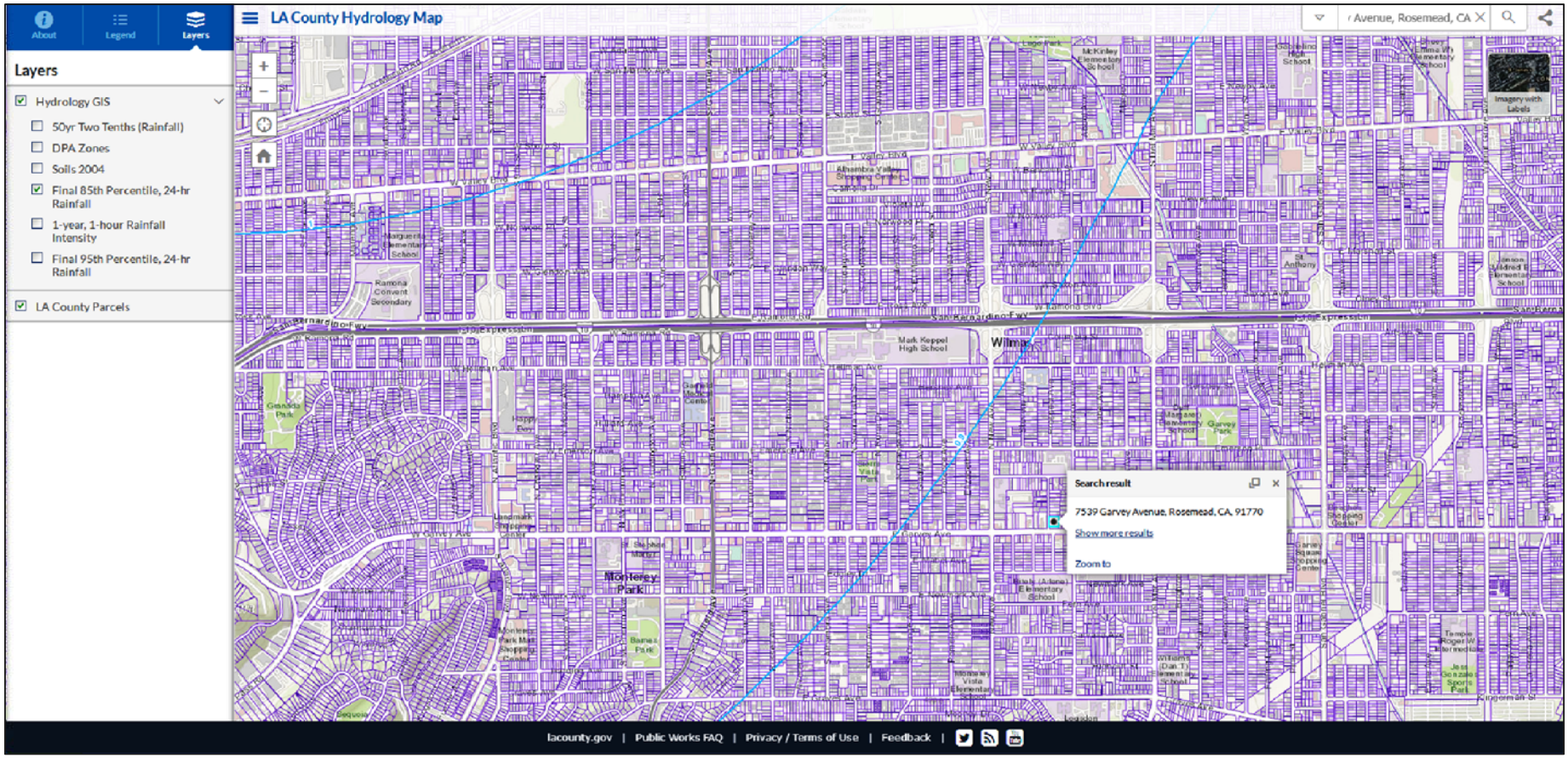
1 0 1 2 Miles

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

EL MONTE
50-YEAR 24-HOUR ISOHYET

1-H1.20

LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works


About
Legend
Layers
LA County Hydrology Map
Layers
Hydrology GIS
50yr Two Tenths (Rainfall)
DPA Zones
Soils 2004
Final 85th Percentile, 24-hr Rainfall
1-year, 1-hour Rainfall Intensity
Final 95th Percentile, 24-hr Rainfall
LA County Parcels
Search result
7539 Garvey Avenue, Rosemead, CA 91770
Show more results
Zoom to
Monterey Park
Mark Keppel High School
lacounty.gov | Public Works FAQ | Privacy / Terms of Use | Feedback

Peak Flow Hydrologic Analysis

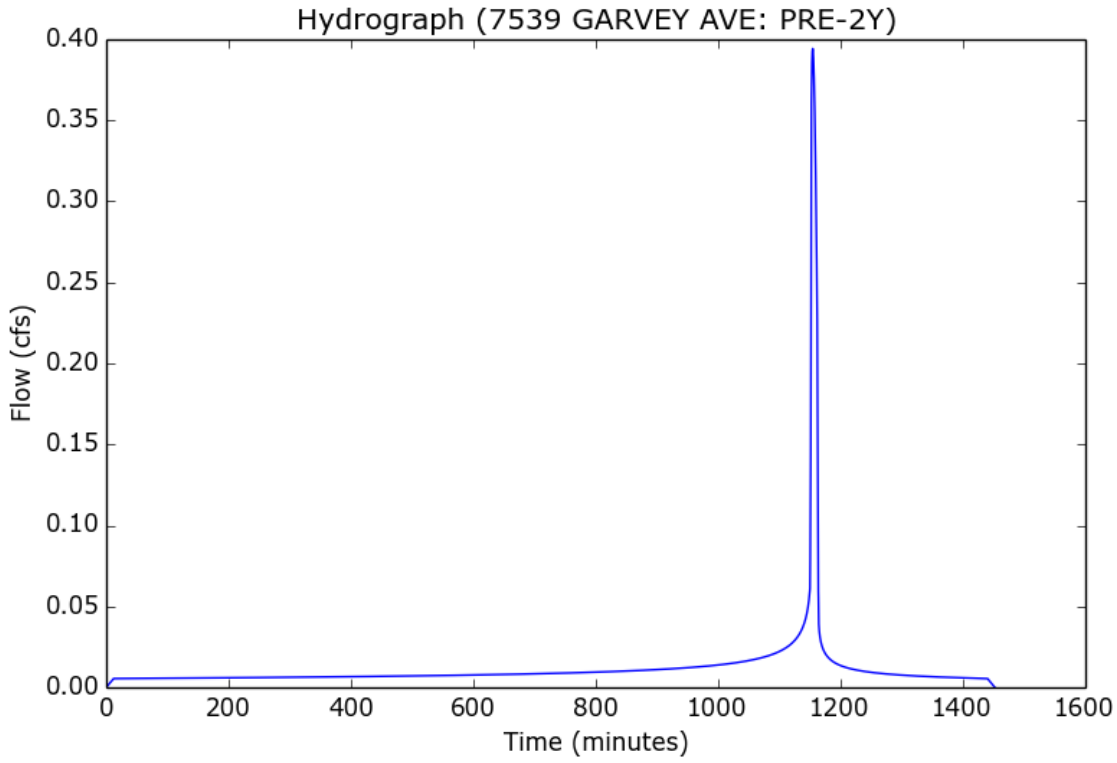
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	PRE-2Y
Area (ac)	0.95
Flow Path Length (ft)	221.0
Flow Path Slope (vft/hft)	0.0134
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	13
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.3994
Peak Intensity (in/hr)	0.9487
Undeveloped Runoff Coefficient (Cu)	0.4329
Developed Runoff Coefficient (Cd)	0.4375
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	0.3943
Burned Peak Flow Rate (cfs)	0.3943
24-Hr Clear Runoff Volume (ac-ft)	0.0242
24-Hr Clear Runoff Volume (cu-ft)	1052.6878



Peak Flow Hydrologic Analysis

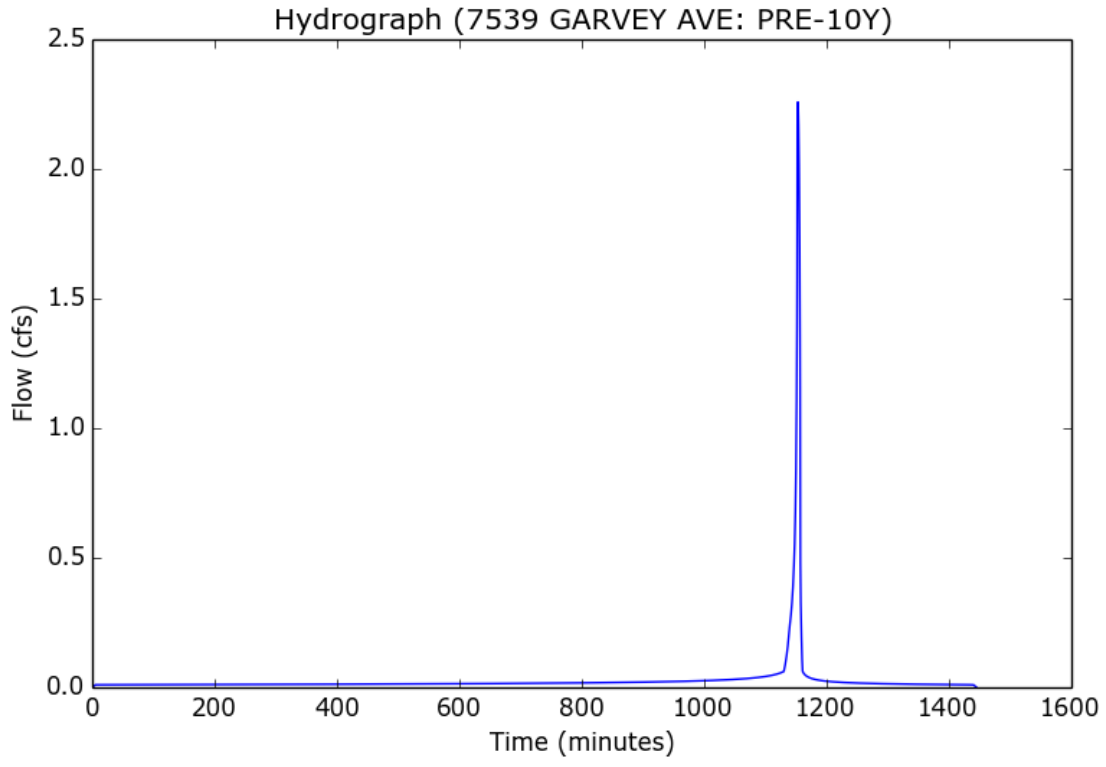
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	PRE-10Y
Area (ac)	0.95
Flow Path Length (ft)	221.0
Flow Path Slope (vft/hft)	0.0134
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.4268
Peak Intensity (in/hr)	2.6412
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.2582
Burned Peak Flow Rate (cfs)	2.2582
24-Hr Clear Runoff Volume (ac-ft)	0.0584
24-Hr Clear Runoff Volume (cu-ft)	2542.4217



Peak Flow Hydrologic Analysis

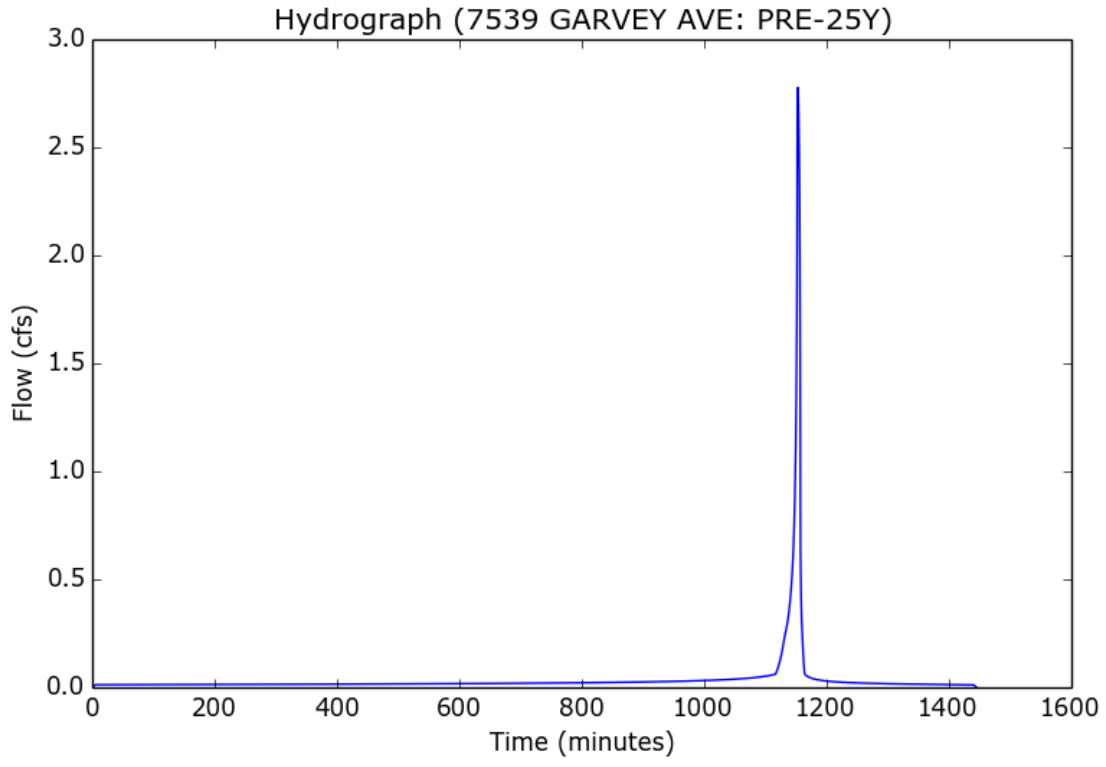
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	PRE-25Y
Area (ac)	0.95
Flow Path Length (ft)	221.0
Flow Path Slope (vft/hft)	0.0134
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	3.2478
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.7769
Burned Peak Flow Rate (cfs)	2.7769
24-Hr Clear Runoff Volume (ac-ft)	0.078
24-Hr Clear Runoff Volume (cu-ft)	3395.7594



Peak Flow Hydrologic Analysis

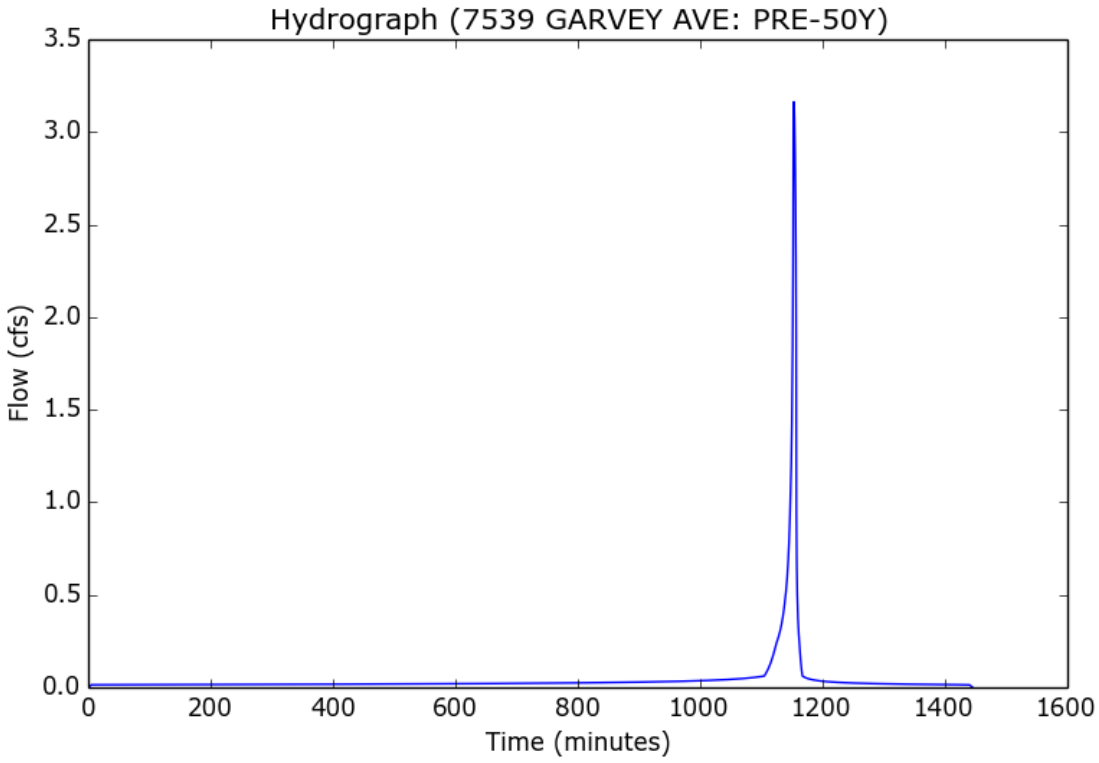
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	PRE-50Y
Area (ac)	0.95
Flow Path Length (ft)	221.0
Flow Path Slope (vft/hft)	0.0134
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.2
Peak Intensity (in/hr)	3.6991
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.1627
Burned Peak Flow Rate (cfs)	3.1627
24-Hr Clear Runoff Volume (ac-ft)	0.0941
24-Hr Clear Runoff Volume (cu-ft)	4098.318



Peak Flow Hydrologic Analysis

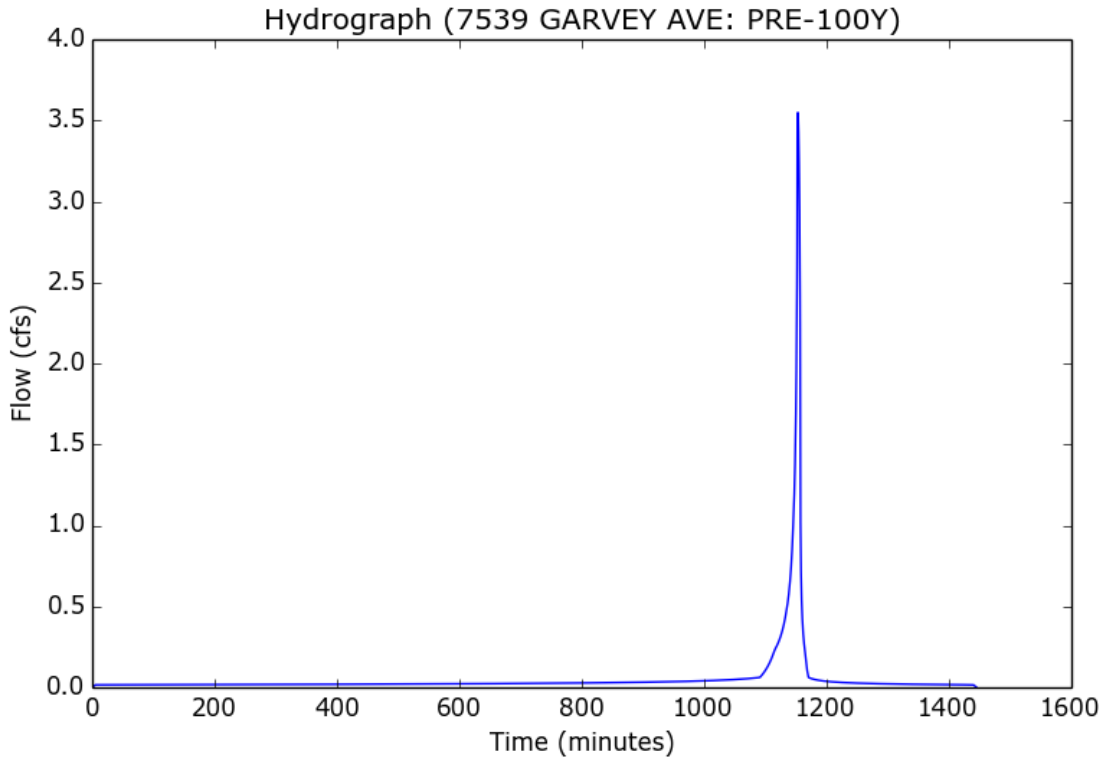
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	PRE-100Y
Area (ac)	0.95
Flow Path Length (ft)	221.0
Flow Path Slope (vft/hft)	0.0134
50-yr Rainfall Depth (in)	6.2
Percent Impervious	0.01
Soil Type	13
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	6.9564
Peak Intensity (in/hr)	4.1504
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.5486
Burned Peak Flow Rate (cfs)	3.5486
24-Hr Clear Runoff Volume (ac-ft)	0.1117
24-Hr Clear Runoff Volume (cu-ft)	4864.098



Peak Flow Hydrologic Analysis

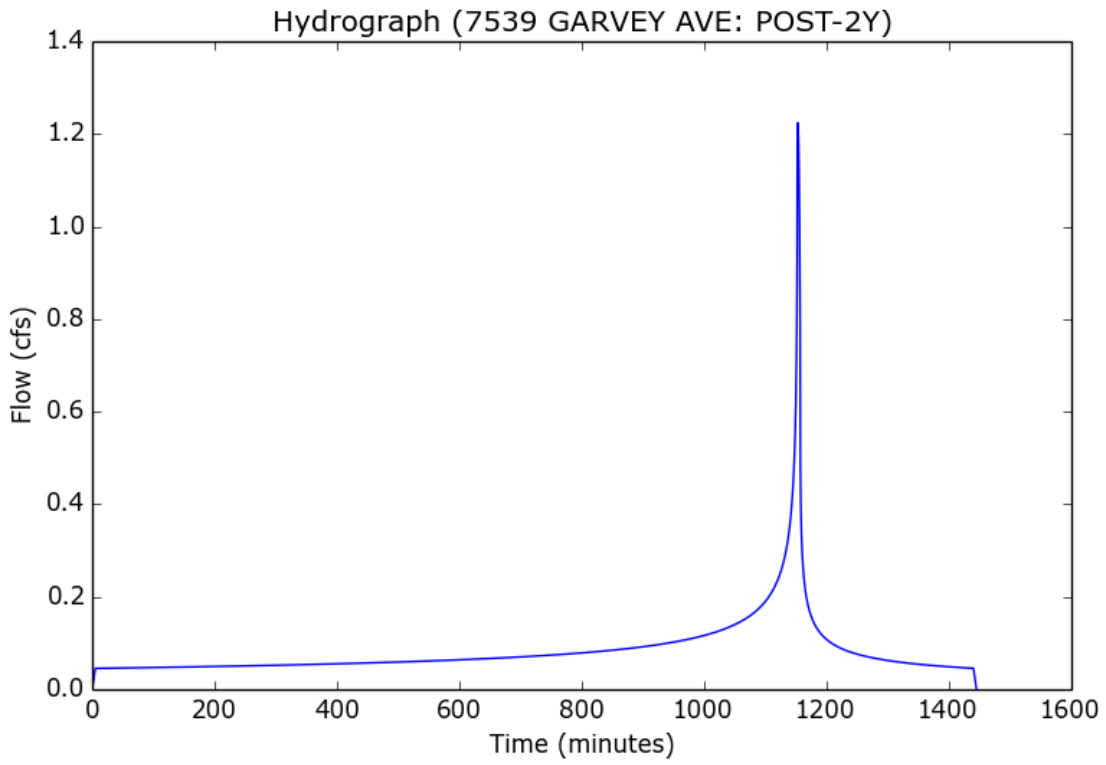
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-2Y
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.3994
Peak Intensity (in/hr)	1.4315
Undeveloped Runoff Coefficient (Cu)	0.6658
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.224
Burned Peak Flow Rate (cfs)	1.224
24-Hr Clear Runoff Volume (ac-ft)	0.1695
24-Hr Clear Runoff Volume (cu-ft)	7385.3555



Peak Flow Hydrologic Analysis

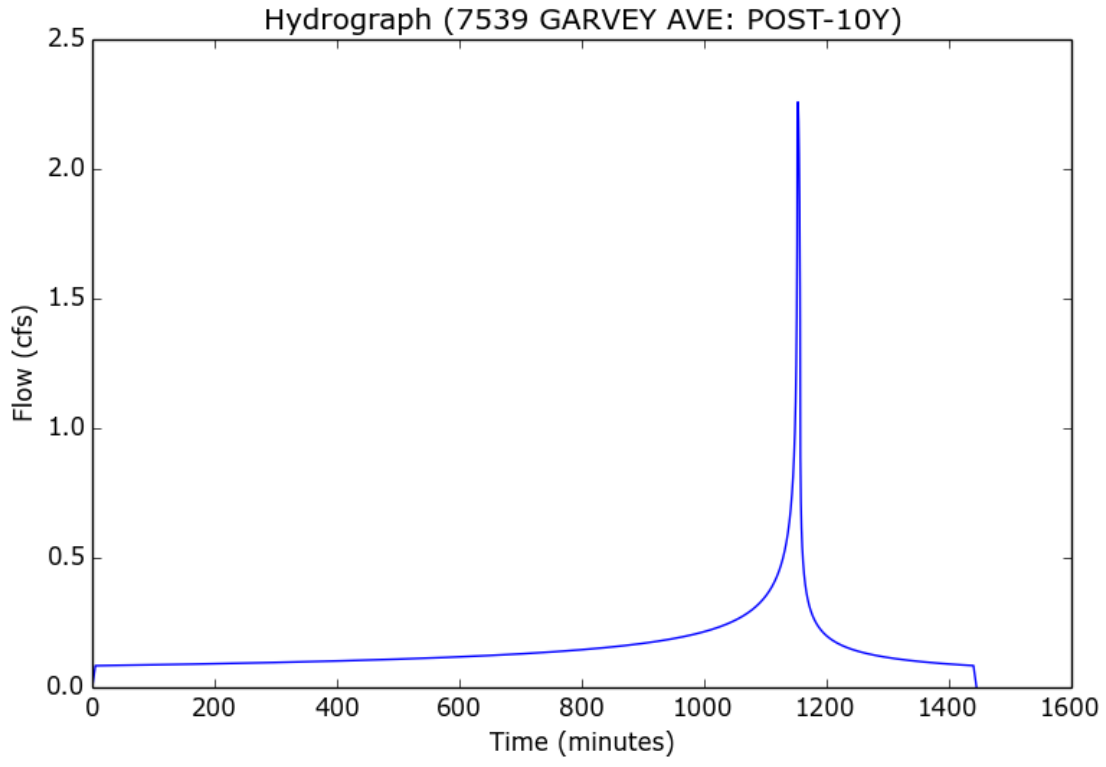
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-10Y
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.4268
Peak Intensity (in/hr)	2.6412
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.2582
Burned Peak Flow Rate (cfs)	2.2582
24-Hr Clear Runoff Volume (ac-ft)	0.3128
24-Hr Clear Runoff Volume (cu-ft)	13625.6947



Peak Flow Hydrologic Analysis

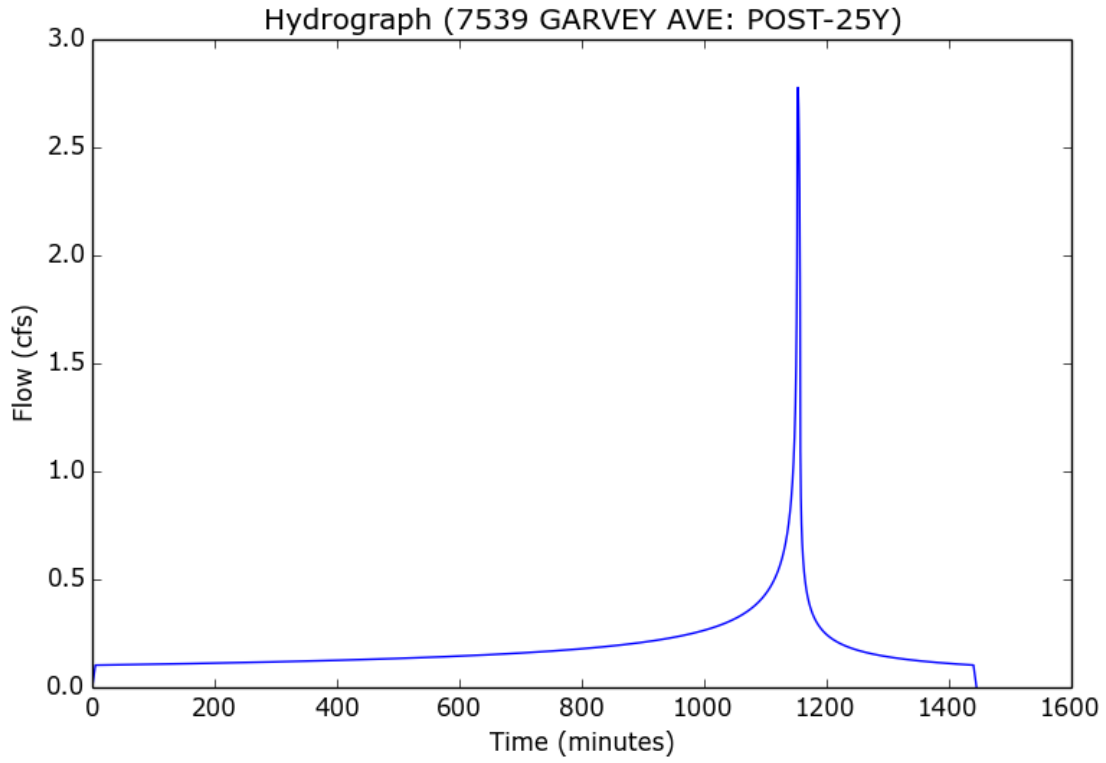
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-25Y
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.4436
Peak Intensity (in/hr)	3.2478
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.7769
Burned Peak Flow Rate (cfs)	2.7769
24-Hr Clear Runoff Volume (ac-ft)	0.3847
24-Hr Clear Runoff Volume (cu-ft)	16755.4061



Peak Flow Hydrologic Analysis

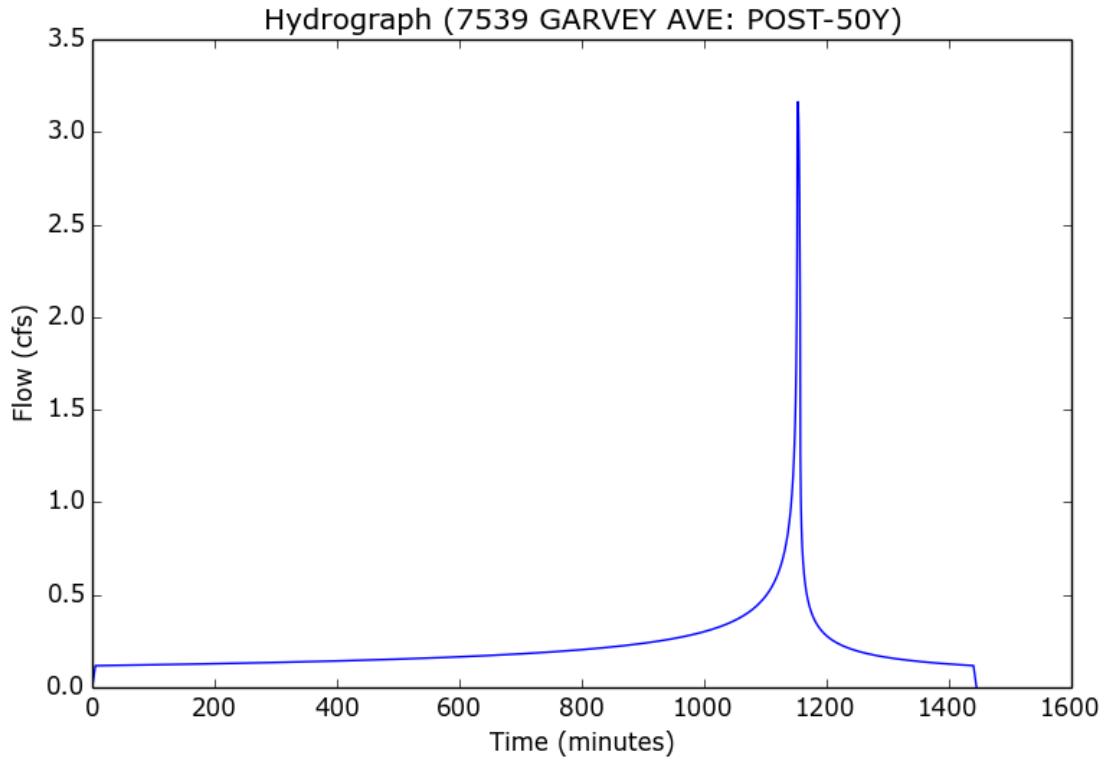
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-50Y
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.2
Peak Intensity (in/hr)	3.6991
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.1627
Burned Peak Flow Rate (cfs)	3.1627
24-Hr Clear Runoff Volume (ac-ft)	0.4381
24-Hr Clear Runoff Volume (cu-ft)	19083.606



Peak Flow Hydrologic Analysis

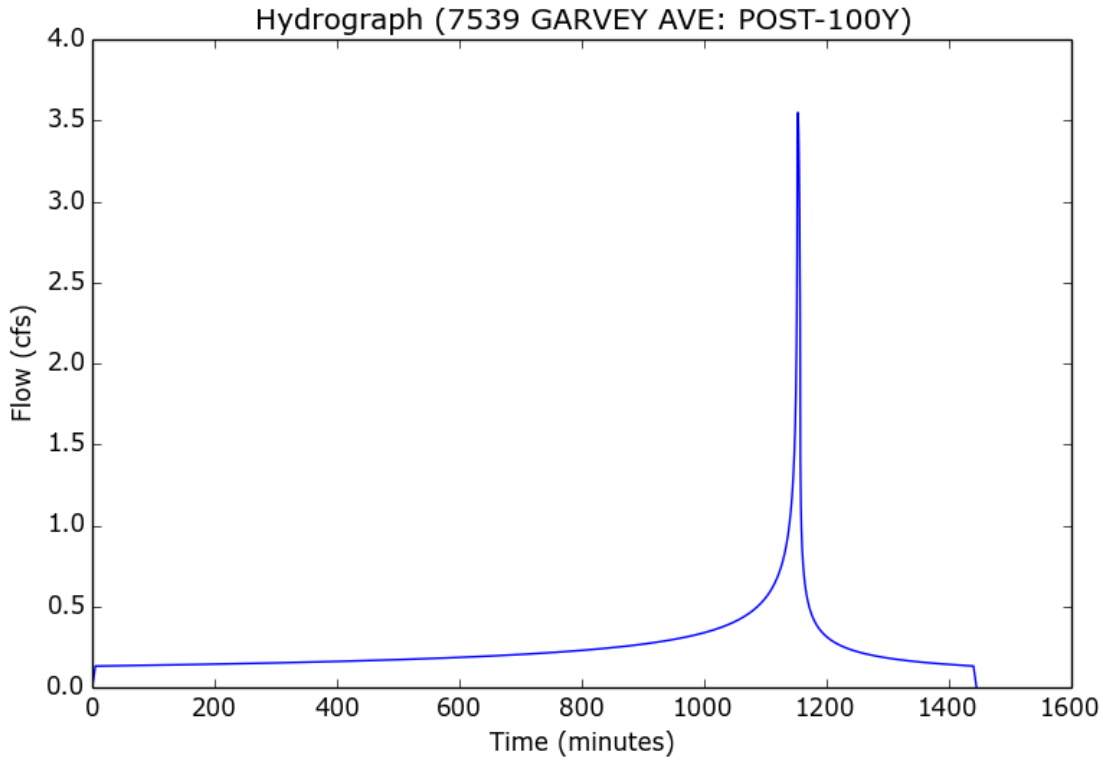
File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-100Y
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	6.2
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	6.9564
Peak Intensity (in/hr)	4.1504
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.5486
Burned Peak Flow Rate (cfs)	3.5486
24-Hr Clear Runoff Volume (ac-ft)	0.4915
24-Hr Clear Runoff Volume (cu-ft)	21411.8059



Peak Flow Hydrologic Analysis

File location: D:/Smith/210515 (7539 Garvey Ave., Rosemead, CA 91770)-11-15-21++/Grading/LID -11-
Version: HydroCalc 1.0.3

Input Parameters

Project Name	7539 GARVEY AVE
Subarea ID	POST-85TH
Area (ac)	0.95
Flow Path Length (ft)	100.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	0.9
Percent Impervious	1.0
Soil Type	13
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.9
Peak Intensity (in/hr)	0.4305
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.3681
Burned Peak Flow Rate (cfs)	0.3681
24-Hr Clear Runoff Volume (ac-ft)	0.0636
24-Hr Clear Runoff Volume (cu-ft)	2770.2022