



Appendix I

Water Resources Technical Report

Kimley»»Horn



Monterey Park Data Center

Water Resources Technical Report

Prepared for:

SDCF MONTEREY PARK, LLC

660 Steamboat Road

Greenwich, CT 06830

Project Manager: Andy Willrodt, PE

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FUSCOE ENGINEERING, INC.

600 Wilshire Blvd, Suite 1470
Los Angeles, California 90017

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

The Monterey Park Data Center Project (Project) is proposed to be developed with an approximately 218,400 square foot building footprint on an approximately 15.83-acre site (Project Site). The Project is located at the intersection of Saturn Street and Orange Avenue in the “Saturn Park” commercial district in the City of Monterey Park within the County of Los Angeles. The Project Site is comprised of the Assessor Parcel Number (APN) as summarized below:

Table 1 Project Description

APNs	PARCEL	ADDRESSES	LOT AREA (AC)
5265-026-054	Parcel 1 & 2	1977 Saturn St, Monterey Park, CA 91755	15.83

The Project site is currently occupied by a split-level building with surface parking, along with a utility building. The Project will entail the demolition and removal of the existing buildings and surface parking area. The proposed development is described in the following paragraph.

The proposed development consists of an approximately 218,400± square foot building fronting Saturn Street, with an adjacent equipment yard directly north of the building. Western and eastern entryways connecting the development to Saturn Street are proposed, with a fire lane wrapping around the building and equipment yard. Parking stalls are planned to be located north, east and west of the building and equipment yard. An electrical substation is also proposed, with the current location just north and east of the equipment yard. The proposed data center land usage is technology will be used to both house computer systems, and also for IT and associated staff to work on the systems. The Project is expected to provide 68 parking spaces.

1.2. SCOPE OF WORK

This report will address the existing and proposed surface water hydrology, surface water quality, and groundwater at the Project Site and immediate surrounding areas, as well as an analysis of the Project’s potential impacts on each of these water resources.

2. REGULATORY FRAMEWORK

2.1. SURFACE WATER HYDROLOGY

County of Los Angeles Hydrology Manual

As one of the cities within Los Angeles County, the City of Monterey Park uses the Los Angeles County (County) Department of Public Works Hydrology Manual as the basis of design for storm drainage facilities within the City. The Hydrology Manual requires that a storm drain conveyance system be designed for a 25-year storm event and that the combined capacity of a storm drain, and street flow system accommodate flow from a 50-year storm event.¹ Areas with sump conditions are required to have a storm drain conveyance system capable of conveying storm flows associated with a 50-year storm event. The County also limits the allowable discharges into existing storm drain facilities based on the Municipal Separate Storm Sewer System (MS4) Permit which is enforced on all new developments that discharge directly into the County's storm drain system. Any proposed drainage improvements of County-owned storm drain facilities such as catch basins and storm drain lines require the review/approval from the County Flood Control District department. The Project does not propose a direct County connection.

The proposed Project is required to utilize the Hydrology Manual and accompanying hydrologic tools including HydroCalc Calculator to calculate existing and proposed discharges and volumes from the Project. The proposed Project analyzes the 2-year, 10-year, 25-year, and 50-year storm events.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides flood insurance rates maps (FIRMS) for local and regional planners to promote sound land use and development practices by identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies, and FEMA engineers and cartographers delineate special flood hazard areas (SFHA) on FIRMs.

2.2. SURFACE WATER QUALITY

Clean Water Act

Controlling pollution of the nation's receiving water bodies has been a major environmental concern for more than three decades. Growing public awareness of the impacts of water pollution in the United States culminated in the establishment of the federal Clean Water Act² (CWA) in 1972, 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

¹ Los Angeles County Department of Public Works Hydrology Manual, January 2006. Found here: https://dpw.lacounty.gov/wrd/publication/engineering/2006_Hydrology_Manual.pdf.

² Also referred to as the Federal Water Pollution Control Act of 1972.

through permits under the National Pollutant Discharge Elimination System (NPDES).³ Rather than setting numeric effluent limitations for storm water and urban runoff, the 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.

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

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

Federal Anti-Degradation Policy

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

Porter-Cologne Water Quality Act

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

³ CWA Section 402(p).

California Anti-Degradation Policy

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

California Toxic Rule

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

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

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

NPDES Permit Program

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

The General Permit for Construction Activities

SWRCB Order No. 2022-0057-DWQ known as "General Permit" was adopted on September 8, 2022, and became effective on September 1, 2023. 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:

1. Reduce erosion
2. Minimize or eliminate sediment in stormwater discharges
3. Prevent materials used at a construction site from contacting stormwater
4. Implement a sampling and analysis program

5. Eliminate unauthorized non-stormwater discharges from construction sites
6. Implement appropriate measures to reduce potential impacts on waterways both during and after construction of Projects
7. Establish maintenance commitments on post-construction pollution control measures
8. Incorporates applicable Total Maximum Daily Loads (TMDL's) and modifies inspection oversight responsibilities

California mandates requirements for all construction activities disturbing more than one acre of land to develop and implement Stormwater Pollution Prevention Plans (SWPPP). The SWPPP documents the selection and implementation of BMPs for a specific construction Project, charging Owners with stormwater quality management responsibilities. A construction site subject to the General Permit must prepare and implement a SWPPP that meets the requirements of the General Permit.

As part of the Project, preparation, and implementation of a SWPPP will be required. In addition, the Project will be required to obtain a Waste Discharger Identification Number (WDID) through the State's Storm Water Multiple Application and Report Tracking System (S.M.A.R.T.S.).

Los Angeles County Municipal Storm Water System (MS4) Permit

As described previously, 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 California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) adopted Order No. 01-182 under the CWA and the Porter-Cologne Act. This Order is the NPDES Permit or MS4 permit for municipal stormwater and urban runoff discharges within Los Angeles County. The requirements of this Order (the "Permit") cover 84 cities and most of the unincorporated areas of Los Angeles County. Under the Permit, the Los Angeles County Flood Control District (LACFCD) is designated as the Principal Permittee. The Permittees are the 84 Los Angeles County cities (including the City of Monterey Park) and unincorporated areas within Los Angeles County. Collectively, these 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 California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) has adopted Order No. R4-2021-0105, as amended by State Water Board Order WQ 2020-0038 NPDES Permit No. CAS004004 on July 23, 2021. This current permit will expire on September 11, 2026.

The City of Monterey Park is a Permittee of the LARWQCB, and is therefore subject to the requirements set forth in Order No. R4-2021-0105, as amended by State Water Board Order WQ 2020-0038, NPDES Permit No. CAS004004.

City of Monterey Park Stormwater Program

The City of Monterey Park supports the policies of the General Permit for Construction Activities and the Los Angeles County NPDES permit through the Low Impact Development Standards Manual which was adopted in February 2014. The Manual provides guidance for developers in complying with the requirements of the NPDES MS4 Permit for stormwater and

non-stormwater discharges from the MS4 within the coastal watersheds of Los Angeles County (CAS004001, Order No. R4-2012-0175). The handbook and ordinances also have specific minimum BMP requirements for all construction activities and require dischargers whose construction Projects disturb one acre or more of soil to prepare a SWPPP and file a Notice of Intent (NOI) with SWRCB. The NOI informs the SWRCB of a particular Project and results in the issuance of a Waste Discharger Identification (WDID) number, which is needed to demonstrate compliance with the General Permit.

The City of Monterey Park implements the requirement to incorporate stormwater BMPs through the City's plan review and approval process. During the review process Projects are reviewed for compliance with the City's General Plan, zoning ordinances, and other applicable local ordinances and codes, including storm water requirements. Plans and specifications are reviewed to ensure that the appropriate BMPs are incorporated to address storm water pollution prevention goals.

Low Impact Development (LID)

LID is a stormwater strategy that is used to mitigate the impacts of runoff and stormwater pollution as close to its source as possible. Urban runoff discharged from municipal storm drain systems is one of the principal causes of water quality impacts in most urban areas. The stormwater may contain pollutants such as trash and debris, bacteria and viruses, oil and grease, sediments, nutrients, metals, and toxic chemicals that can negatively affect the ocean, rivers, plant and animal life, and public health.

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

Section 6.30 of the City of Monterey Park's Municipal Code includes requirements for stormwater and urban runoff pollution prevention controls. The code states that persons owning or operating facilities subject to best management practices; standard urban stormwater mitigation plans (SUSMP); or low impact development (LID) plan requirements must comply with such requirements including obtaining all necessary permits.

Section 6.30 of the City's code further states that all structural BMPs must be properly operated and maintained in accordance with product specifications and site characteristics to maintain effectiveness in reducing the discharge of pollutants. Documentation of proper structural BMP operation and maintenance activities must be retained on-site at all times, and made available upon request by an authorized enforcement officer.

The Project is subject to compliance with Order No. R4-2021-0105, which became effective on July 23, 2021. The main purpose of this law is to ensure that redevelopment projects mitigate runoff in a manner that captures or treats rainwater at its source, while utilizing natural resources where possible.

In accordance with Order No. R4-2021-0105, stormwater runoff shall be infiltrated, evapotranspired, captured and used, or treated through high removal efficiency BMPs, onsite, through stormwater management techniques that comply with provisions of the LA County LID standards Manual (February 2014). County of Los Angeles guidelines recommend that the corrected infiltration rate be equal to or greater than 0.3 inches per hour.

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; and
8. Any other information determined to be relevant by the Department.

The Project Site is located within the Coastal Plain of Los Angeles - Central Basin Subbasin. GSAs responsible for high-and medium-priority basins must adopt groundwater sustainability plans within five to seven years, depending on whether the basin is in critical overdraft. Agencies may adopt a single plan covering an entire basin or combine a number of plans created by multiple agencies. Preparation of groundwater sustainability plans is exempt from CEQA. Plans must include a physical description of the basin, including groundwater levels, groundwater quality, subsidence, information on groundwater-surface water interaction, data on historical and projected water demands and supplies, monitoring and management provisions, and a description of how the plan will affect other plans, including City and County general plans. Plans will be evaluated every five years.

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

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

The Basin Plan is a resource for the LARWQCB and others who use water and/or discharge wastewater in the Los Angeles Region. Other agencies and organizations involved in environmental permitting and resource management activities also use the Basin Plan.

Finally, the Basin Plan provides valuable information to the public about local water quality issues.

Safe Drinking Water Act (SDWA)

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

3. ENVIRONMENTAL SETTING

3.1. SURFACE WATER HYDROLOGY

3.1.1. Regional

The Project is located within the Los Angeles River Watershed in the County of Los Angeles which covers approximately 533,860 acres. Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the Verdugo Mountains). The Los Angeles River flows 55 miles from Canoga Park through the San Fernando Valley, Downtown Los Angeles, and the Gateway Cities to its mouth in Long Beach, where it flows into San Pedro Bay.

All runoff from the Project drains to the Los Angeles River through City and LACFCD storm drain lines.

3.1.2. Local

Stormwater from the Project site generally drains via surface flow, toward the adjacent roadways. The property is not bound by any natural bodies of water and is not subject to flooding. Drainage routes to Saturn Street and conveys via curb and gutter southwesterly to existing City owned public catch basins directly in front of the existing commercial building (storm drain as-built missing from City records) and public catch basins near the site's southerly drive entry.

Please refer to **Appendix A** for the existing condition and proposed condition hydrology maps.

3.1.3. On Site

The existing condition hydrology for the Project Site has been delineated into one Drainage Area (see **Appendix A** for exhibits). Existing drainage patterns for the Project is described as below:

The onsite drainage area flows southerly to Saturn Street. There is an existing 24" City owned storm drain in Orange Avenue flowing south to Saturn Street. At Saturn Street, the 24" storm drain routes southwest along the property frontage for about 700 feet to the midpoint of the commercial building until it upsizes to 39". The 39" storm drain then continues southwesterly to the property's southerly drive entry and upsizes again to 42". The 42" storm drain then continues southwesterly in Saturn Street to Atlas Avenue before routing due east through a nearby office park in an easement to Riggin Street.

Under the existing conditions, the entire Project Site area is fully built-out with high impervious conditions (approximately 66%) and the predominant land use being surface parking lot, portions of hillside, and commercial buildings. The topography of the site is relatively flat, draining via primarily surface flow toward the adjacent roadway. See **Appendix A** for the depiction of the drainage area and discharge points for existing and proposed conditions. There are no known drainage issues associated with the Project Site.

Table 2 below provides 10-year, 25-year, and 50-year storm frequency analysis for the Project Site’s existing conditions. These storm frequencies are required by Los Angeles County Public Works (10-year), Hydrology Manual for Urban Flood level of protection (25-year), and the State CEQA Guidelines requirements (50-year). Output calculations are provided in **Appendix B**.

Table 2 Existing Condition 10-year, 25-year, and 50-year Storm Event Hydrology

Existing Conditions 10-year Storm Frequency				
Drainage Sub-Area	Acreage	Time of Concentration (min)	% Imperviousness	Q ₁₀ (cfs)
A	16.0	12.0	66%	23.2
Existing Conditions 25-year Storm Frequency				
Drainage Sub-Area	Acreage	Time of Concentration (min)	% Imperviousness	Q ₂₅ (cfs)
A	16.0	10.0	66%	31.5
Existing Conditions 50-year Storm Frequency				
Drainage Sub-Area	Acreage	Time of Concentration (min)	% Imperviousness	Q ₅₀ (cfs)
A	16.0	10.0	66%	36.1
Notes: See Appendix A for the existing hydrology exhibit and Appendix B for existing hydrology calculations.				

3.1.4. FEMA

The Project is within Map Number 06037C1665F, dated September 26, 2008, on Federal Emergency Management Agency’s (FEMA’s) Flood Insurance Rate Map (FIRM). Based on the FIRM, the Project is within Zone X, which depicts areas determined to be outside of the 0.2% (500-year) annual chance floodplain and no coordination or permitting with FEMA is required.

3.2. SURFACE WATER QUALITY

3.2.1. Watershed Setting

As described previously, the Project is located within the Los Angeles River Watershed. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed.

The Los Angeles River and other selected water bodies in its watershed, including the Tujunga Wash, Burbank Western Channel, Verdugo Wash, and Rio Hondo are impaired by pollutants (i.e., trash, metals, bacteria, nutrients) mainly because of the watershed’s large, dense population and the amount of impervious ground surface that prevents large quantities of runoff from infiltrating into the soils.

3.2.1.1. Beneficial Uses in Los Angeles River Watersheds

The Los Angeles River Watershed consists of inland surface water uses from the Los Angeles River Estuary, Reach 1, Reach 2, Reach 3, Reach 4, Reach 5, and Reach 6. The existing and potential beneficial uses for the waters within the Los Angeles River Watershed where inland

surface water flows from the southeast portion of the Project and ultimately discharge to the San Pedro Bay are described below.

Table 3 Beneficial Uses of Inland Surface Waters in the Los Angeles River Watershed

MUN* - Municipal and Domestic Supply	WARM* - Warm Freshwater Habitat
COMM - Commercial and Sport Fishing	MAR - Marine Habitat
SPWN - Spawning, Reproduction, and/or Early Development	RARE - Rare, Threatened, or Endangered Species
MIGR - Migration or Aquatic Organisms	WILD - Wildlife Habitat
SPWN - Spawning, Reproduction, and/or Early Development	LREC-1 - Limited Water Contact Recreation
WET - Wetland Habitat	REC1 - Water Contact Recreation
SHELL - Shellfish Harvesting	REC2 - Non-contact Water Recreation
IND - Industrial Service Supply	PROC - Industrial Process Supply
GWR - Groundwater Recharge	
Notes: * Potential beneficial use Source: Los Angeles Regional Water Quality Control Board Beneficial Use Table, found here: http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Beneficial_Uses/ch2/Revised%20Beneficial%20Use%20Tables.pdf	

In addition to the beneficial uses of inland surface waters the Los Angeles River Watershed also includes beneficial coastal features within the Los Angeles River Estuary. Described below are the beneficial uses of these coastal waterbodies that receive storm drain discharges.

Table 4 Beneficial Uses of Coastal Features in the Los Angeles River Watershed

NAV - Navigation	COMM - Commercial and Sport Fishing
EST - Estuarine Habitat	MAR - Marine Habitat
WILD - Wildlife Habitat	MIGR - Migration or Aquatic Organisms
SPWN - Spawning, Reproduction, and/or Early Development	RARE - Rare, Threatened, or Endangered Species
SHELL - Shellfish Harvesting	WETb - Wetland Habitat
IND - Industrial Service Supply	
Notes : * Potential beneficial use Source: Los Angeles Regional Water Quality Control Board Beneficial Use Table, found here: http://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Beneficial_Uses/ch2/Revised%20Beneficial%20Use%20Tables.pdf	

3.2.1.2. Impairments and TMDL's in the Los Angeles River Watershed

CWA 303(d) List of Water Quality Limited Segments

Under Section 303(d) of the CWA, States are required to identify water bodies that do not meet their water quality standards. Biennially, the LARWQCB prepares a list of impaired waterbodies in the region, referred to as the 303(d) list. The 303(d) list outlines the impaired waterbody and the specific pollutant(s) for which it is impaired. All waterbodies on the 303(d) list are subject to the development of a TMDL.

Storm water runoff from the Project discharges to Rio Hondo, Los Angeles River Reach 2, Los Angeles River Reach 1, Los Angeles River Estuary, and then eventually to the San Pedro Bay. According to the 2018 303(d) list of Limited Water Quality Segments published by the SWRCB, the Rio Hondo, Los Angeles River Reach 2, Los Angeles River Reach 1, Los Angeles River Estuary, and San Pedro Bay are listed as impaired by the constituents in **Table 5** below.

Table 5 List of 303(d) Impairments

Water Body	Listed Pollutants with TMDL 303(d) Impairment
Rio Hondo Reach 2	Coliform Bacteria , Cyanide
Rio Hondo Reach 1	pH , Toxicity , Lead , Trash , Copper , Zinc , Indicator Bacteria
Los Angeles River Reach 2	Trash , Nutrients (Algae) , Ammonia , Indicator Bacteria , Oil , Copper , Lead
Los Angeles River Reach 1	Copper, Dissolved , Cadmium , Ammonia , Zinc, Dissolved , pH , Cyanide , Nutrients (Algae) , Indicator Bacteria , Trash , Lead
Los Angeles River Estuary	Chlordane, PCBs (Polychlorinated biphenyls) (sediment), Trash, DDT (sediment), Toxicity
San Pedro Bay	Total DDT (sum of 4,4'- and 2,4'- isomers of DDT, DDE, and DDD), PCBs (Polychlorinated biphenyls), Toxicity, Chlordane
Source: 2018 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) – Statewide, found here: https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=e2def63ccef54eedbee4ad726ab1552c	

Total Maximum Daily Loads (TMDLs)

Los Angeles River Watershed

Once a water body has been listed as impaired on the 303(d) list, a TMDL for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, non-point sources, and natural background conditions (including an appropriate margin of safety), without exceeding its water quality standard. Those facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL. In general terms, municipal, small MS4, and other dischargers within each watershed are collectively responsible for meeting the required reductions and other TMDL requirements by the assigned deadline.

The LARWQCB has adopted wet-weather TMDLs in the Los Angeles River. These TMDL pollutants include cadmium, copper, lead, and zinc.

3.2.2. On Site

There are no existing water quality BMPs associated with the existing conditions. There are no drainage issues associated with the Project site. Anticipated pollutants consistent with parking lots, building areas and landscaping include total suspended solids (TSS), oil/grease, heavy metals, nutrients, pesticides, and trash. See **Appendix A** for existing drainage areas and discharge points.

3.3. GROUNDWATER

3.3.1. Regional

The City of Monterey Park overlies the Los Angeles Coastal Plain Groundwater Basin (Basin), which is identified by SGMA as a very low priority basin. The Basin consists of four major subbasins: Hollywood, Santa Monica, Central and West Coast. Replenishment of the Basins occurs primarily through imported water from the Colorado River, Sacramento-San Joaquin River Delta, and the Eastern Sierras, spreading basins, recycled water, and local runoff. Injection wells are also used to pump fresh water 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 resides specifically within the Central Basin, which is located in the eastern part of the Los Angeles Coastal Plain Groundwater Basin.

Central Basin

The Central Basin (CB) covers approximately 270 square miles and is bounded on the north by the Hollywood Basin and the Elysian, Repetto, Merced, and Puente hills, to the east by the Los Angeles County/Orange County line, and to the south and west by the Newport-Inglewood Uplift (NIU). The California Department of Water Resources (1961) divided the Central Basin into three sections: the Los Angeles Forebay, the Montebello Forebay, and the Whittier Area. The two forebays represent areas of unconfined aquifers (water table aquifers) that allow percolation of surface water down into the deeper aquifers to replenish the basins. The Whittier Area is a confined aquifer system that receives relatively minimal recharge from surface water. It is replenished from the up-gradient forebays and from adjacent groundwater basins.

3.3.3. On Site

Leighton Consulting, INC has prepared a planning-level preliminary geotechnical investigation (March 27, 2024) for the Project Site. The information below is in regard to the document.

Field exploration was performed on December 5, 2023, and consisted of drilling, sampling, and logging of five (5) hollow-stem auger borings (designated LB-1 through LB-5). Borings were excavated to depths ranging from approximately 10 feet to 36.5 feet below existing ground surface (bgs) within the footprint of the proposed building as well as the preferred substation location.

Prior to its current development, the site was previously rough-graded under the geotechnical observation and testing of Leighton and Associates, Inc. (1978). The fill material is locally derived from canyon alluvium and weathered bedrock of the Fernando Formation. These materials are characterized as Silty Sand (SM) with traces of gravel, to Sandy Clayey Silt (CL-ML) to Sandy Clay (CL) with fine to coarse sand to poorly graded Sand with Clay and gravels (SP-CL). Maximum density (Leighton, 1978) and optimum moisture for the fill placed during 1978 indicate optimum moisture content ranging from 8 to 10% and maximum dry density ranging from 125 to 129 pounds per cubic feet (pcf).

Groundwater was not encountered during the current exploration drilled to exploration depths of 36.5 feet bgs. Groundwater is not expected to pose a constraint to construction for the Project as currently planned.

In-situ percolation testing was not performed at the site. However due to shallow bedrock and clayey low permeability engineered fill below the site, infiltration is not considered geotechnically feasible and is therefore not recommended.

Review of both the Earthquake Zones of Required Investigation El Monte Quadrangle, California Geological Survey Zone Map (CGS, 2014) indicate the site is not within an area potentially susceptible to liquefaction (Figure 5, Seismic Hazard Map). With groundwater at a depth greater than 50 feet below grade and relatively medium dense to dense engineered fill overlying hard bedrock below the site, the potential for liquefaction and related lateral spreading effects on the site is considered very low.

4. SIGNIFICANCE THRESHOLD

4.1. SURFACE WATER HYDROLOGY

With respect to the surface water hydrology, the CEQA Guidelines inquire whether the Project would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - Result in substantial erosion or siltation on- or off-site;
 - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - Impede or redirect flood flows
 - In instances of flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation

4.2. SURFACE WATER QUALITY

With respect to surface water quality, the CEQA Guidelines (Appendix G) inquire whether the Project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- In instances of flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The CEQA Guidelines include the following relevant definitions:

“Pollution” means an alteration of the quality of the waters of the State to a degree which unreasonably affects either of the following: 1) the waters for beneficial uses or 2) facilities which serve these beneficial uses. “Pollution” may include “Contamination”.

“Contamination” means an impairment of the quality of the waters of the State by waste to a degree, which creates a hazard to the public health through poisoning or through the spread of disease. “Contamination” includes any equivalent effect resulting from the disposal of waste, whether or not waters of the State are affected.

“Nuisance” means anything which meets all of the following requirements: 1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and 3) occurs during, or as a result of, the treatment or disposal of wastes.

4.3. GROUNDWATER

With respect to groundwater quality, the CEQA Guidelines (Appendix G) inquire whether the Project would:

- o Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
- o Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin
- o Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

5. METHODOLOGY

5.1. SURFACE WATER HYDROLOGY

The Project site is located within Los Angeles County Flood Control District (LACFD) jurisdiction therefore, the City of Monterey Park has adopted the County Department of Public Works (LACDPW) Hydrology Manual as its basis of design for storm drainage facilities. The LACDPW Hydrology Manual requires Projects to have drainage facilities that meet the Urban Flood level of protection. The Urban Flood is 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, or 4-percent, of being equaled or exceeded in any year. To provide a more conservative analysis, this report analyzed a larger storm event threshold, i.e., the 50-year frequency design storm event. However, the City of Monterey Park's CEQA Threshold Guide, establishes the 50-year frequency hydrology as a result of development. This is in part because the City of Monterey Park uses the 50-year storm event to plan the existing and planned storm water drainage systems. Consequently, the use of the 50-year frequency design storm event in this analysis is in-line with the CEQA threshold to determine if the Project exceeds the capacity of existing or planned storm water drainage systems or provides additional sources of polluted runoff.

The Modified Rational Method was used to calculate storm water runoff. The "peak" (maximum value) runoff for a drainage area is calculated using the formula, $Q=CIA$

Where,

Q = Volumetric flow rate (cfs)

C = Runoff coefficient (dimensionless)

I = Rainfall Intensity at a given point in time (in/hr)

A = Basin area (acres)

The Modified Rational Method assumes that a steady, uniform rainfall rate will produce maximum runoff when all parts of the basin area are contributing to outflow. This occurs when the storm event lasts longer than the time of concentration. The time of concentration (Tc) is the time it takes for rain in the most hydrologically remote part of the basin area to reach the outlet. The method assumes that the runoff coefficient (C) remains constant during a storm. The runoff coefficient is a function of both the soil characteristics and the percentage of impervious surfaces in the drainage area.

Calculations were performed utilizing the hydrologic calculator (HydroCalc) developed by the Los Angeles County Department of Public Works. HydroCalc completes the full Modified Rational Method (MODRAT) calculation process and produces the peak stormwater runoff flow rates and volumes for single subareas. The existing and proposed hydrology exhibits are provided in **Appendix A**. Detailed calculations for the existing and proposed conditions, based on the HydroCalc tool, are provided in **Appendix B**.

5.2. SURFACE WATER QUALITY

5.2.1. Construction

Prior to the issuance of grading permits, the applicant is required by The City to provide of a Notice of Intent (NOI) and WDID Number issued from the SWRCB in accordance with the requirements of the General Permit to ensure the potential for soil erosion and construction impacts are minimized. In accordance with the updated General Permit (Order No 2022-0057-

DWQ), the following Permit Registration Documents (PRD's) are required to be submitted to the SWRCB prior to commencement of construction activities:

- Notice of Intent (NOI);
- Risk Assessment (Standard or Site-Specific);
- Particle Size Analysis (if site-specific risk assessment is performed);
- Site Map;
- SWPPP;
- Annual Fee & Certification.

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

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

5.2.2. Operation

The Project must comply with the requirements of the City of Monterey Park. The LID requirements, approved by the LARWQCB, call for the treatment of the peak mitigation flow rate or volume of runoff produced either by a 0.75" 24-hr rainfall event or the 85th percentile rainfall event, whichever is greater. Under section 3.2.2 of the LID Manual, this post construction stormwater runoff from the new development shall be infiltrated, evapotranspired, captured and used, and/or treated through high efficiency BMPs onsite. The rainfall depth of the 85th percentile rainfall for the Project Site's location is 0.9 inches; therefore, the 85th percentile rainfall event governs.

The LID Manual establishes an order of priority, as specified below. Each type of BMP shall be implemented to the maximum extent feasible when determining the appropriate BMPs for a Project.

1. Infiltration Systems
2. Stormwater Capture and Use
3. High Efficiency Biofiltration/Bioretenion Systems
4. Combination of Any of the Above

Feasibility screening as described in the LID Manual is to be applied to determine which BMP is best suited for a proposed development Project.

5.3. GROUNDWATER

This report discusses the impact of the Project as it relates to the underlying groundwater conditions of the Central Basin of the Los Angeles Coastal Groundwater Basin. The significance of the Project as it relates to the condition of the underlying groundwater table included a review of the following existing considerations:

- Identification of the Central Basin of the Los Angeles Coastal Groundwater Basin as the underlying groundwater basin, and description of the level, quality, direction of flow, and existing uses for the groundwater
- Description of the location, existing uses, production capacity, quality, and other pertinent data for spreading grounds and potable water wells in the vicinity (typically within a one-mile radius) and

The analysis of the proposed Project impacts on groundwater conditions includes 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

Project construction and operation would comply with local, State, and federal regulations, including the LARWQCB, Construction General Permit, Basin Plan, and the Section 6.30 of the City's Municipal Code. Commonly practiced BMPs, as required by these regulations, would be implemented to control construction site runoff and reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. As part of compliance with permit requirements during ground-disturbing or construction activities, implementation of water quality control measures and BMPs would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as shall be defined in the Water Quality Control Plan for the Project.

Construction runoff would also have to comply with the appropriate water quality objectives for the region. The permits listed above require stormwater discharges not to contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Therefore, the Project would not obstruct implementation of a water quality control plan.

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

Thus, for the reasons specified above, construction and operation of the Project would not conflict with or obstruct implementation of a CEQA environmental checklist implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

6. PROJECT IMPACT ANALYSIS

6.1. CONSTRUCTION

6.1.1. Surface Water Hydrology and Quality

Implementation of the Project would result in construction activities that includes demolition of the existing parking lots and buildings on-site and excavation of existing soils.

Construction activities have the potential to temporarily alter the existing drainage patterns of the Project site and also increase the permeability of a 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 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.

Construction Best Management Practices (BMPs)

In accordance with the existing and updated General Permit, a construction SWPPP must be prepared and implemented for the Project site, and revised as necessary, as administrative or physical conditions change. The SWPPP must be made available for review upon request, shall describe construction BMPs that address pollutant source reduction, and provide measures/controls necessary to mitigate potential pollutant sources. These measures/controls include, but are not limited to: erosion controls, sediment controls, tracking controls, non-storm water management, materials & waste management, and good housekeeping practices including the following:

- Erosion control BMPs, such as hydraulic mulch, soil binders, and geotextiles and mats, protect the soil surface by covering and/or binding the soil particles. Temporary earth dikes or drainage swales may also be employed to divert runoff away from exposed areas and into more suitable locations. When implemented correctly, erosion controls will effectively reduce the sediment loads entrained in storm water runoff from construction sites.
- Sediment controls are designed to intercept and filter out soil particles that have been detached and transported by the force of water. All storm drain inlets on the Project site or within the Project vicinity (i.e., along streets immediately adjacent to the Project boundary) should be adequately protected with an impoundment (i.e., gravel bags) around the inlet and equipped with a sediment filter (i.e., fiber roll). Bags should also be placed around areas of soil disturbing activities, such as grading or clearing.
- Stabilize all construction entrance/exit points to reduce the tracking of sediments onto adjacent streets. Wind erosion controls should be employed in conjunction with tracking controls.
- Non-storm water management BMPs prohibit the discharge of materials other than storm water, as well as reduce the potential for pollutants from discharging at their source. Examples include avoiding paving and grinding operations during the rainy season (i.e., October 1 through April 30 each year) where feasible, and performing any vehicle equipment cleaning, fueling and maintenance in designated areas that are adequately protected and contained.

- Waste management consists of implementing procedural and structural BMPs for collecting, handling, storing, and disposing of wastes generated by a construction Project to prevent the release of waste materials into storm water discharges.

Prior to commencement of construction activities, the General Permit requires the Project SWPPP to be prepared in accordance with the site-specific sediment risk analyses based on the grading plans, with erosion and sediment controls proposed for each phase of construction for the Project. 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. Major phases of the construction for the Project are described below.

Mass & Rough Grading

During mass and/or rough grading, a substantial amount of soil disturbing activities or earthwork will occur. As a consequence, soil loss potential will be at its highest risk level to exceed NALs/NELs specified in the General Permit. Therefore, an effective combination of erosion and sediment controls will be implemented during this phase of construction.

This region requires the use of sediment basins or sediment traps to control the amount of sediment discharged off-site during the rainy season. Sediment basins or sediment traps generally act as primary sediment control facilities at downstream locations that provide final polish of runoff prior to discharging off-site. Therefore, they are a major element in a Project's erosion and sediment control design.

Utility and Road Installation

In addition to the erosion and sediment control BMP requirements for the grading phase, the utility and road installation phase will introduce materials to the Project site that may cause or contribute to exceedances of NALs specified in the General Permit. Materials include, but are not limited to hydrated lime, concrete, mortar, Portland cement treated base, and fly ash. For this reason, pH levels shall be controlled at this stage through non-storm water management and waste and materials management BMPs.

Vertical Construction

Once utilities and roads are in place, sediment controls (such as sediment/desilting basins) found in the rough grade phase may no longer be applicable as previously designed, due to the installment of curb and gutter, catch basins, and storm drain infrastructure to convey runoff off-site per the post-construction condition. BMPs at this stage will thus be more focused on on-site sediment control BMPs and at discharge points (i.e., catch basin inlet protection). During vertical construction, a substantial amount of construction materials will be delivered to the site, and wastes generated from the site have the potential to negatively impact pH levels. Therefore, non-storm water management and waste and materials management BMPs shall be employed regularly.

Final Stabilization and Landscaping

During final stabilization and landscaping, minimal construction will be taking place and the majority of the Project site will be stabilized. The majority of activities will involve planting and

landscaping lots and common areas. Sediment control at discharge locations and stockpile management will be of primary concern. Good housekeeping practices will continue in this phase of construction.

Through compliance with the General Permit including the preparation of a SWPPP, implementation of BMPs, 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 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.

At this stage in the proposed Project, a detailed, site-specific Risk Assessment cannot be performed. However, based on the Project's location and known site conditions, a preliminary erosion calculation can be performed. The Project is located in a low-risk watershed and at this stage of the Project the construction schedule is not identified. See **Table 6** below highlighting the various requirements for Risk Levels 1-3 due to the unknown Risk Factor of the Project at this stage.

Table 6 Risk Level Requirements

Risk Level	Visual Inspection					Sample Collection	
	Quarterly Non-Storm Water Discharge	Baseline	REAP	Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
1	X	X		X	X		
2	X	X	X	X	X	X	
3	X	X	X	X	X	X	X ¹
Notes							
¹ When numeric effluent level (NEL) exceeded.							
REAP (Rain Event Action Plan)							

Through compliance with applicable regulatory requirements, including compliance with an approved SWPPP and conformance with the Project's assessed Risk Level, construction of the Project would not result in discharges that would cause surface water hydrology or water quality regulatory impacts within the Los Angeles River Watershed. Therefore, impacts to surface water hydrology and water quality during construction would be less than significant.

6.1.2. Groundwater Hydrology

Construction of the Project is not anticipated to impact any water supply wells. No water supply wells are located at or within one thousand feet of the Project and the Project will not include the construction of any water supply wells. In addition, recharge of groundwater will not be impacted. Water for construction would come from the City's Water Department and would not affect the groundwater hydrology. Dewatering is not anticipated for this Project.

6.1.3. Groundwater Quality

If dewatering were to occur, to protect groundwater quality, the General NPDES Permit No CAC004004 (Order No. R4-2021-0105) covers discharges to surface waters of groundwater from dewatering operations. 40 CFR section 122.48 of the Permit requires that all NPDES permits specify requirements for recording and reporting water quality monitoring results. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The LARWQCB evaluates the test results to determine if the water can be discharged under an NPDES dewatering permit, and if so, any treatment required to remove pollutants prior to discharge. As mentioned, the Project will acquire a dewatering permit from the LARWQCB and discharges will either go to the sewer (with separate authorization from Los Angeles City Sanitation) or to the storm drain system after water quality testing of the groundwater to ensure the quality of the water is sufficient to discharge to the adjacent storm drain system. All monitoring requirements and other provisions of the Permit will be followed.

During on-site grading and building activities, hazardous materials such as fuels, paints, solvents, and concrete additives could be used and require proper management and containment during construction activities. 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 all 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, the Project would not result in a significant increase in groundwater contamination though hazardous materials releases and impacts on groundwater quality during Project construction would be less than significant.

6.2. OPERATION

6.2.1. Surface Water Hydrology

Development of the Project would result in the addition of landscaped areas and building areas throughout the Project Site and would decrease the amount of impervious surfaces from 66 percent to 62 percent. **Table 7** below provides an analysis of the 10-year, 25-year, and 50-year frequency design storm events following construction of the Project. Hydrology exhibits are provided in **Appendix A**. Output calculations are provided in **Appendix B**.

Table 7 Proposed Condition 10-year, 25-year, and 50-year Storm Event Hydrology

10-year Storm Event			
Area	Acreage	% Imperviousness	Q ₁₀ (cfs)
Total Site	16.0	62%	21.4
25-year Storm Event			
Area	Acreage	% Imperviousness	Q ₂₅ (cfs)
Total Site	16.0	62%	28.8
50-year Storm Event			
Area	Acreage	% Imperviousness	Q ₅₀ (cfs)
Total Site	16.0	62%	34.4
Notes: Calculations included in Appendix B .			

Table 8 provides a comparison of the existing and proposed peak flows for the 10-year, 25-year, and 50-year storm events.

Table 8 Existing versus Proposed Condition for the 10-year, 25-year, and 50-year Storm Event Hydrology

10-year Storm Event		
Condition	% Imperviousness	Q ₁₀ (cfs)
Existing Total Site	66%	23.2
Proposed Total Site	62%	21.4
25-year Storm Event		
Condition	% Imperviousness	Q ₂₅ (cfs)
Existing Total Site	66%	31.5
Proposed Total Site	62%	28.8
50-year Storm Event		
Condition	% Imperviousness	Q ₅₀ (cfs)
Existing Total Site	66%	36.1
Proposed Total Site	62%	34.4
Notes: Calculations included in Appendix B .		

Based on the above, implementation of the Project would decrease the peak flow discharge for the 10-year, 25-year, and 50-year events as compared to the existing condition.

Accordingly, based on the hydrology analysis, the Project would not result in on-site or off-site flooding, impact the capacity of the existing storm drain system or street conveyance system, or worsen an existing condition flood condition. In addition, the Project would not substantially reduce or increase the amount of surface water in the local water body or result in a permanent adverse change in the drainage pattern that would result in an incremental effect on the capacity of the storm existing storm drain system. Therefore, operation of the Project would result in less than significant impact on surface water hydrology.

All storm drain infrastructure onsite connects to the existing City public 24” or 39” storm drain lines in Saturn Street.

6.2.2. Surface Water Quality

Stormwater runoff from the Project has the potential to discharge pollutants into the City and County storm drain systems. Anticipated pollutants and typical source areas include the following:

Table 9 Potential Stormwater Pollutants and Sources

Pollutant	Source
Sediment (coarse and fine)	Parking lots, driveways, building rooftops, landscape areas, roads
Nutrients (dissolved and particulates)	Landscape areas, lawns
Pesticides	Landscape areas, lawns
Pathogens	Landscape areas, lawns, building rooftops, food serving areas
Trash/debris	Parking lots, driveways, roadways, parks
Oil/grease	Parking lots, driveways, roadways, food serving areas
Metals (dissolved and particulate)	Parking lots, driveways, roadways

To meet the local MS4 Permit and LID requirements consistent with the County’s LID Ordinance and the LID Development BMP Handbook (February 2014), stormwater management strategies will be implemented throughout the Project Site. As discussed above, a feasibility analysis of BMP strategies has been conducted for the Project Site.

Per the Geotechnical Investigation by Leighton Consulting, Inc. on March 27, 2024, “due to shallow bedrock and clayey low permeability engineered fill below the site, infiltration is not considered geotechnically feasible and is therefore not recommended.”

The next BMP strategy on the County list, Capture and Use, would next be evaluated if infiltration were deemed infeasible. Capture and use, commonly referred to as rainwater harvesting, collects and stores stormwater for later use, thereby offsetting potable water demand and reducing pollutant loading to the storm drain system. Therefore, sufficient landscaped area with appropriate water demand is needed for the captured runoff to be directed to. In the County of Los Angeles, the use of collected stormwater is primarily limited to irrigation of landscaped surfaces. Similar to infiltration BMPs, there are several restrictions and site constraints that can limit the use of harvesting and reuse of stormwater, including if

the contemplated use of harvested stormwater would violate existing codes or ordinances, such as for those that overlap with use of reclaimed water or xeriscaping, if the demands of the Project are not supported by the reuse system, and if it conflicts with any other downstream water rights or poses a significant risk to human health or environmental degradation.

The next BMP strategy studied would be the use of a high removal efficiency biofiltration/bioretention BMP. Biofiltration BMPs are landscaped facilities that capture and treat stormwater runoff through a variety of physical and biological treatment processes. These facilities, also called Bioretention Planter Boxes, provide multiple benefits, including pollutant control, peak flow control, and low amounts of volume reduction through infiltration and evapotranspiration.

Due to the Project's unsuitable infiltration conditions, harvest and reuse will need to be analyzed for feasibility. The condition for reuse is likely not practical due to the low water demand of the proposed land use, thus not being able to meet drawdown requirements. As a result, stormwater treatment via biofiltration will be studied.

Refer to **Appendix C** for calculations and plan on biofiltration sizing and location. See **Table 10** below for the BMP sizing summary.

Table 10 Biofiltration LID Summary

Drainage Area ID	Tributary Area (ft ²)	Tributary Area (ac)	Percent Impervious	SWQDQ Required (cfs)	BMP
A	696,960	16.0	62%	1.92 x 1.5 = 2.88	Six (6) 8x20 Filterras

As noted in the existing conditions description, the existing site does not have any structural or LID BMPs onsite. Therefore, implementation of the LID features proposed as part of the Project would result in a significant improvement in surface water quality runoff as compared to existing conditions. Water quality (LID) hydrologic calculations are included in **Appendix C**.

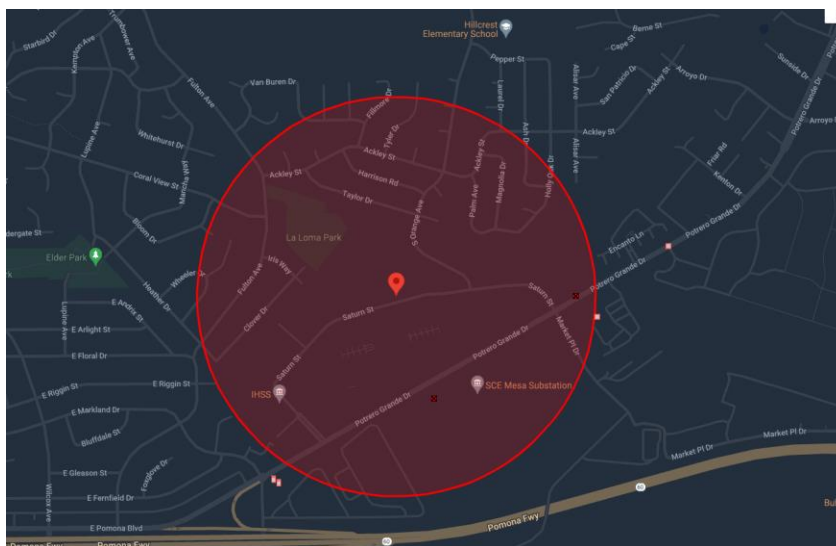
Based on the required compliance with applicable LID requirements, operation of the Project would not result in discharges that would cause: (1) an incremental increase in pollution which would alter the quality of the waters of the State (Los Angeles River Watershed) to a degree which unreasonably affects 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 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 Los Angeles River Watershed. Thus, operational impacts on surface water quality would be less than significant.

6.2.3. Groundwater Hydrology

Under the proposed conditions, region and local potable water levels and adjacent wells or well fields will not be impacted by the Project. The post-developed Project does not include any groundwater pumping and relies on the local water purveyor for water. In addition, the Project is not anticipated to adversely change the rate or direction of flow of groundwater. Accordingly, potential groundwater hydrology impacts during Project operation would be less than significant.

6.2.4. Groundwater Quality

The Geotracker website (State Water Resources Control Board) indicates there are no significant sources of soil or groundwater pollution within the Project area. There are two Leaking Underground Storage Tank (LUST) sites within a 2000 ft radius of the Project area. All LUST sites have been cleaned and removed. The main contaminants from the site includes diesel and gasoline. Accordingly, potential groundwater quality impacts during Project operation would be less than significant. See screenshot below from Geotracker.



6.3. CUMULATIVE IMPACTS

6.3.1. Surface Water Hydrology

The regional geographic context for the cumulative impact analysis on surface water hydrology is the Los Angeles River Watershed. The Project will reduce flows to this watershed due to increased perviousness as compared to the existing conditions. BMPs will be implemented during the construction phase of the Project to ensure against erosion or negative impacts to surface water hydrology. In accordance with City and County requirements, related Projects and other future development Projects would be required to implement BMPs to manage stormwater in accordance with applicable LID guidelines. Local and regional infrastructure is available to accommodate stormwater runoff. Therefore, potential cumulative impacts associated with the Project on surface water hydrology would be less than significant.

6.3.2. Surface Water Quality

No significant impacts are anticipated regarding surface water quality during the construction or operational phases of the Project. Construction of the Project will not result in discharges that would cause regulatory water quality impacts within the Los Angeles River Watershed. In accordance with City and County requirements, related Projects and other future development Projects would be required to implement LID strategies and BMPs to address site runoff and prevent contaminants from entering Los Angeles River Estuary, Reach 1, Reach 2, Reach 3, Reach 4, Reach 5, and Reach 6. Therefore, potential cumulative impacts associated with the Project on surface water quality would be less than significant.

6.3.3. Groundwater Hydrology

Groundwater hydrology at the Project Site is not anticipated to be impacted. In accordance with City and County requirements, related Projects and other future development Projects would be required to assess existing groundwater hydrology conditions and implement measures to avoid potential groundwater impacts. Therefore, potential cumulative impacts associated with the Project on groundwater hydrology would be less than significant.

6.3.4. Groundwater Quality

Groundwater quality at the Project Site is not anticipated to be impacted. The Geotracker website (State Water Resources Control Board) indicates there are no significant sources of soil or groundwater pollution within the Project area and local vicinity. In accordance with City and County requirements, related Projects and other future development Projects would be required to assess existing groundwater quality conditions and implement measures to avoid potential impacts. Therefore, potential cumulative impacts associated with the Project on groundwater quality would be less than significant.

7. LEVEL OF SIGNIFICANCE

Based on the analysis contained in this report no significant impacts have been identified for surface water hydrology, surface water quality, or groundwater for this Project.

8. APPENDICES

Appendix A – Existing and Proposed Hydrology Exhibits

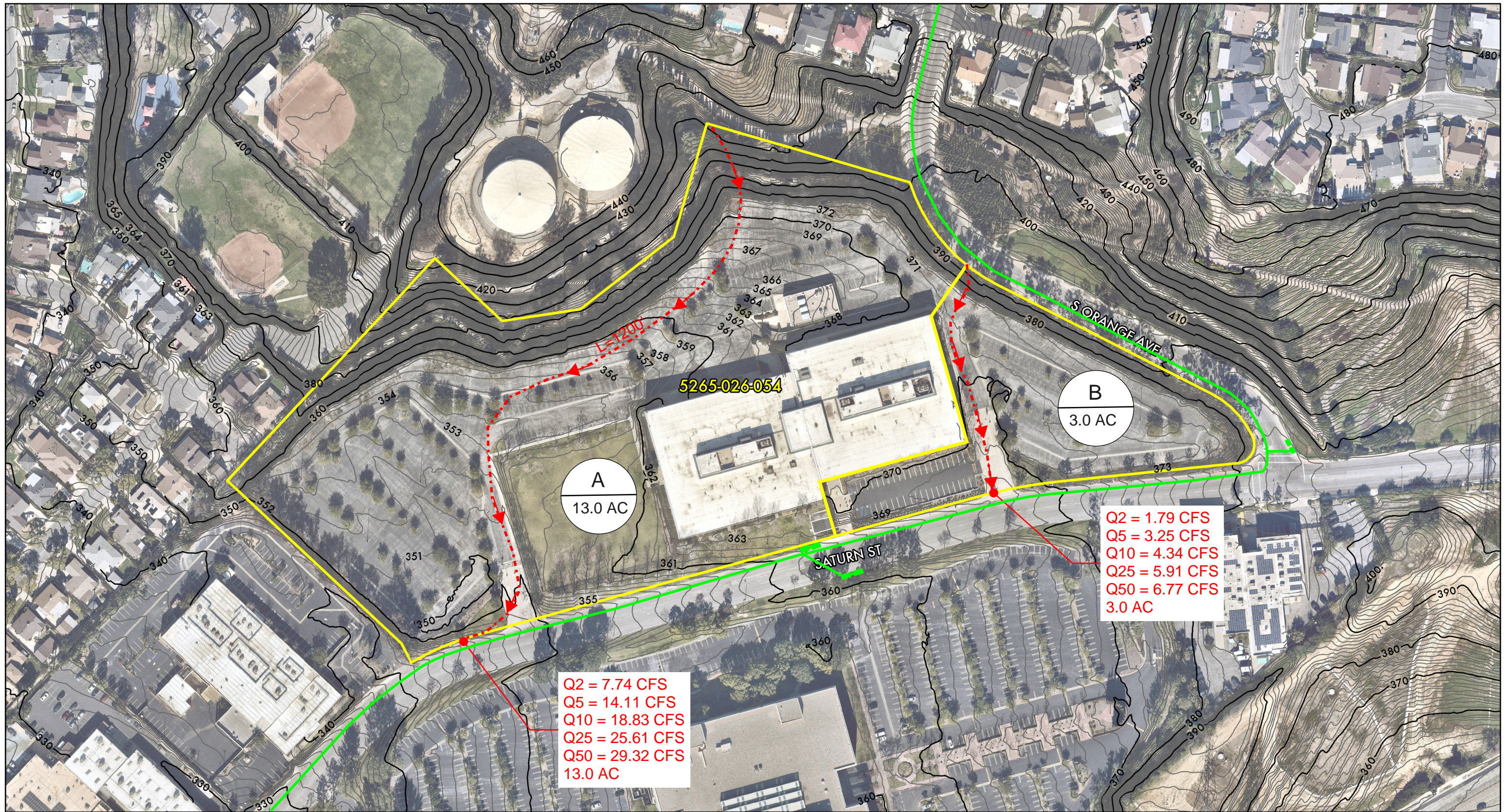
Appendix B – Existing and Proposed Hydrology Calculations

Appendix C – Water Quality Calculations

Appendix D – FEMA Map

APPENDIX A

EXISTING AND PROPOSED HYDROLOGY EXHIBITS



Topo: 2016 USGS Aerial Date: 01/26/2023

1977 Saturn St

Monterey Park, CA

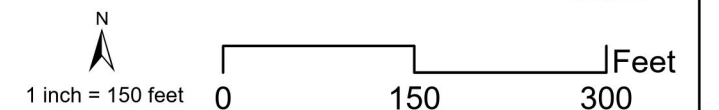


- Existing Storm Drain
- Existing Catch Basin

Existing Condition Hydrology Map

Exhibit 1

3/28/2023

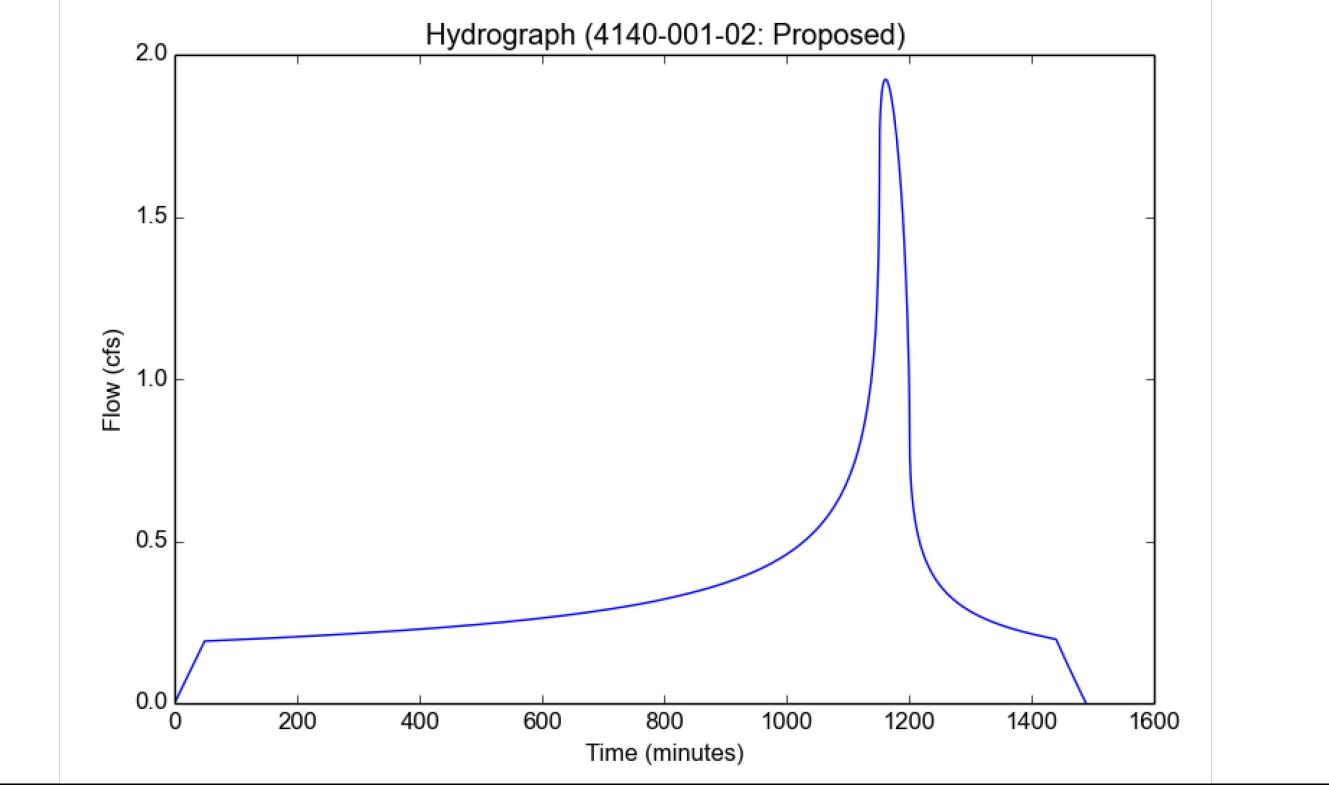


Peak Flow Hydrologic Analysis

File location: F:\Projects\4140001\Support Files\Reports\Hydrology\Preliminary Hydrology\LID Hydrology\85th - 4140-001-02 - Proposed.pdf
Version: HydroCAD 1.0.2

Input Parameters	
Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (v/h/ft)	0.02
85th Percentile Rainfall Depth (in)	0.9
Percent Impervious	0.62
Soil Type	2
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)	0.1837
Undeveloped Runoff Coefficient (Cu)	0.2541
Developed Runoff Coefficient (Cd)	0.6546
Time of Concentration (min)	49.0
Clear Peak Flow Rate (cfs)	1.9237
Burned Peak Flow Rate (cfs)	1.9237
24-Hr Clear Runoff Volume (ac-ft)	0.7174
24-Hr Clear Runoff Volume (cu-ft)	31248.2689



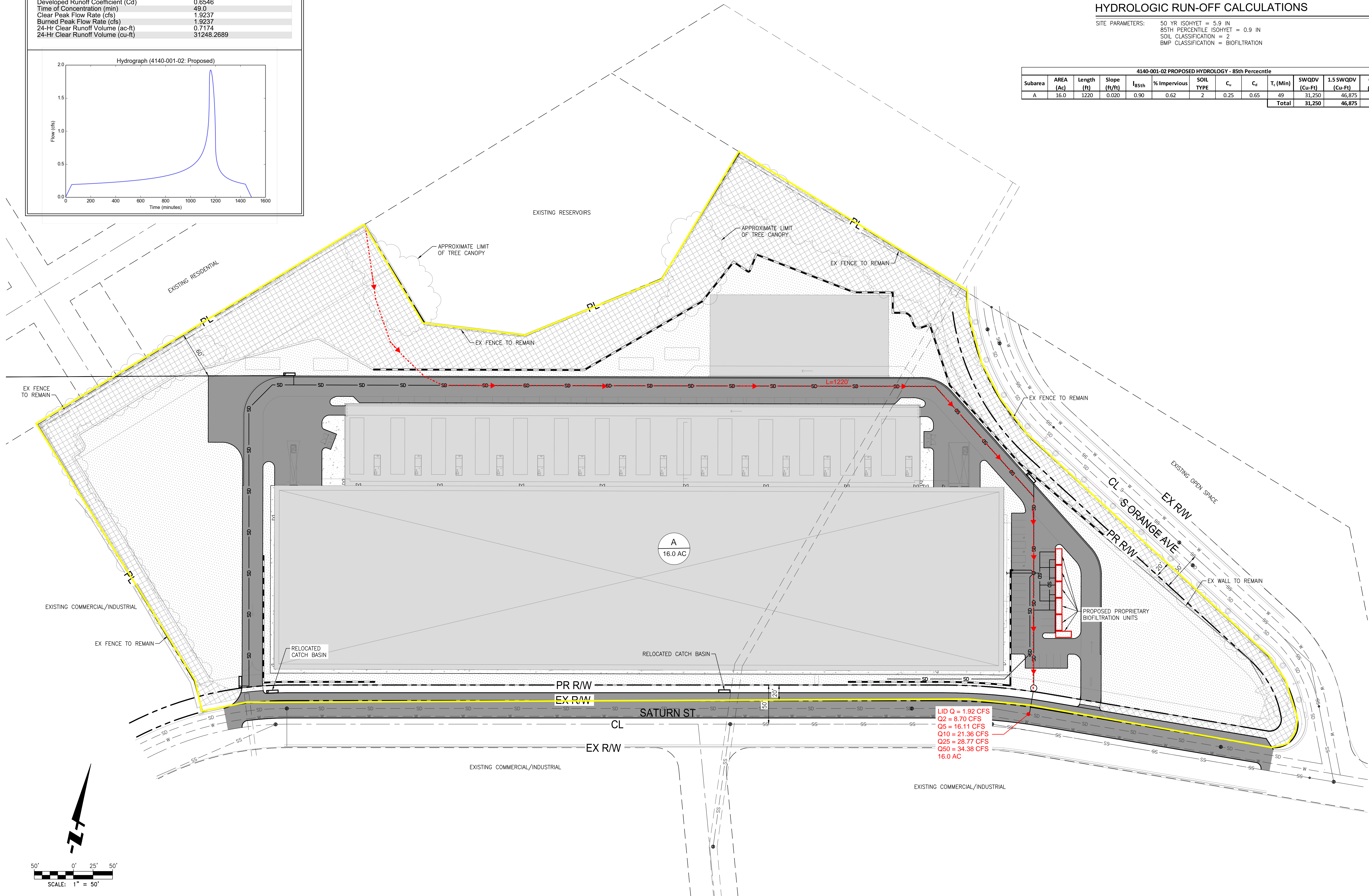
LEGEND AND ABBREVIATIONS

- PROPERTY LINE
- - - CENTERLINE
- - - EASEMENT LINE
- - - PROJECT WATERSHED AREA
- X SUB AREA NUMBER
- X.XX ACREAGE

HYDROLOGIC RUN-OFF CALCULATIONS

SITE PARAMETERS: 50 YR ISOHYET = 5.9 IN
85TH PERCENTILE ISOHYET = 0.9 IN
SOIL CLASSIFICATION = 2
BMP CLASSIFICATION = BIOFILTRATION

4140-001-02 PROPOSED HYDROLOGY - 85th Percentile												
Subarea	AREA (Ac)	Length (ft)	Slope (ft/ft)	I _{85th}	% Impervious	SOIL TYPE	C _u	C _d	T _c (Min)	SWQDV (Cu-Ft)	1.5 SWQDV (Cu-Ft)	Q _{pk} (cfs)
A	16.0	1220	0.020	0.90	0.62	2	0.25	0.65	49	31,250	46,875	1.9
Total										31,250	46,875	1.9

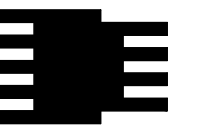


LID Q = 1.92 CFS
Q2 = 8.70 CFS
Q5 = 16.11 CFS
Q10 = 21.36 CFS
Q25 = 28.77 CFS
Q50 = 34.38 CFS
16.0 AC

STRATCAP
1977 SATURN STREET
MONTEREY PARK, CA 91755

Gensler

5005 Greenville Avenue
Dallas, TX 75206
United States
Tel 214.273.1500
Fax 214.273.1505



DFW Consulting Group, Inc.



CFLA
LANDSCAPE ARCHITECT
74 Dudley Avenue
Piedmont, CA 94611
Tel 510.601.8022

DFW CONSULTING GROUP
MEP ENGINEER
1616 Corporate Court
Suite 100
Irving, TX 75038
Tel 972.929.1199



FUSCOE ENGINEERING
CIVIL ENGINEER
600 Wilshire Boulevard
Suite 1470
Los Angeles, CA 90017
Tel 213.988.8802



EDCI
REGISTERED PROFESSIONAL ENGINEER
818 Stewart Street
Suite 1000
Seattle, WA 98101
Tel 206.332.1900

Date	Description

Seal / Signature

NOT FOR CONSTRUCTION

Project Name
STRATCAP 1977 SATURN STREET ANALYSIS
Project Number
4140.001.02
Description
CONCEPTUAL LID PLAN

Scale

C3.0

Proposed Condition Hydrology Map

APPENDIX B

EXISTING AND PROPOSED HYDROLOGY CALCULATIONS

Peak Flow Hydrologic Analysis

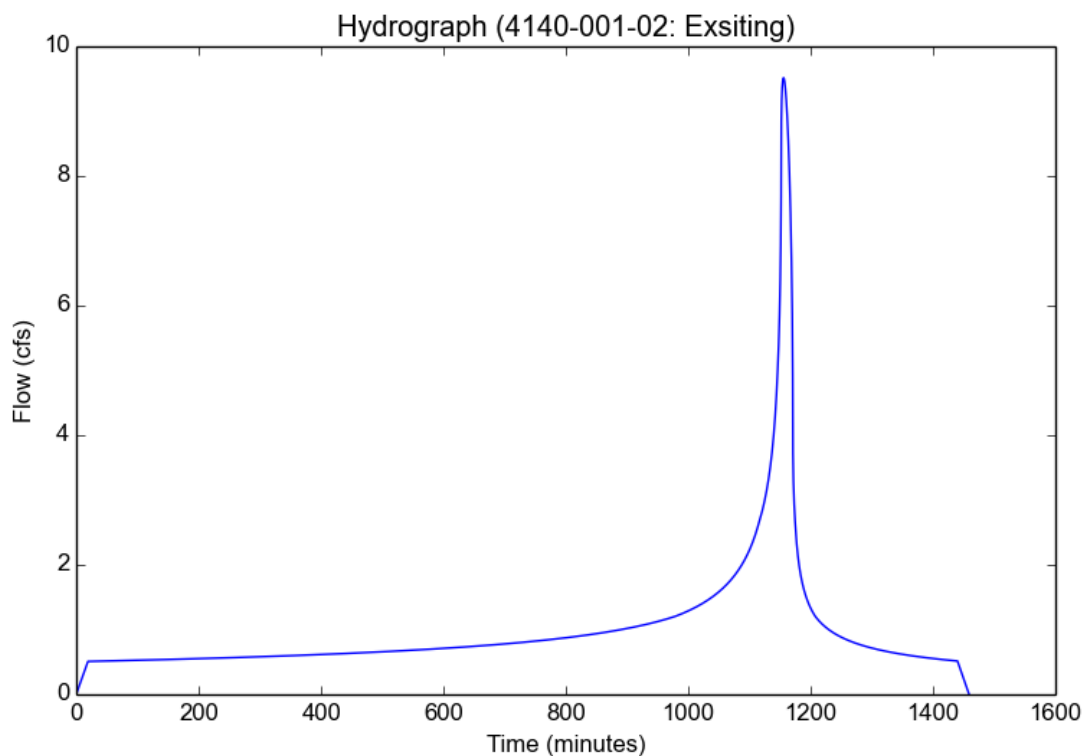
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Exsiting
Area (ac)	16.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.04
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.66
Soil Type	2
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.2833	
Peak Intensity (in/hr)	0.7274	
Undeveloped Runoff Coefficient (Cu)	0.6576	
Developed Runoff Coefficient (Cd)	0.8176	
Time of Concentration (min)	19.0	DMA A:
Clear Peak Flow Rate (cfs)	9.5151	$9.52 * (13/16 \text{ ac}) = 7.74 \text{ cfs}$
Burned Peak Flow Rate (cfs)	9.5151	
24-Hr Clear Runoff Volume (ac-ft)	1.9995	DMA B:
24-Hr Clear Runoff Volume (cu-ft)	87099.0442	$9.52 * (3/16 \text{ ac}) = 1.79 \text{ cfs}$



Peak Flow Hydrologic Analysis

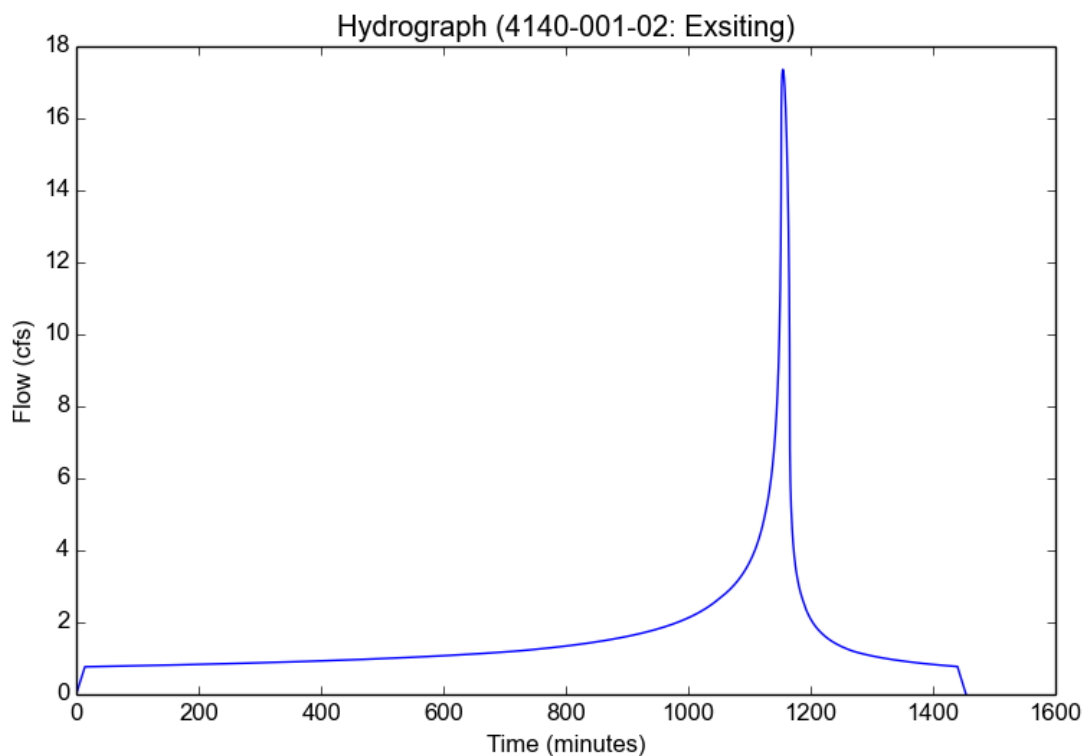
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Exsiting
Area (ac)	16.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.04
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.66
Soil Type	2
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.4456	
Peak Intensity (in/hr)	1.2671	
Undeveloped Runoff Coefficient (Cu)	0.7714	
Developed Runoff Coefficient (Cd)	0.8563	
Time of Concentration (min)	14.0	
Clear Peak Flow Rate (cfs)	17.3597	DMA A: $17.75 * (13/16 \text{ ac}) = 14.11 \text{ cfs}$
Burned Peak Flow Rate (cfs)	17.3597	
24-Hr Clear Runoff Volume (ac-ft)	3.1163	DMA B: $17.75 * (3/16 \text{ ac}) = 3.25 \text{ cfs}$
24-Hr Clear Runoff Volume (cu-ft)	135745.2929	



Peak Flow Hydrologic Analysis

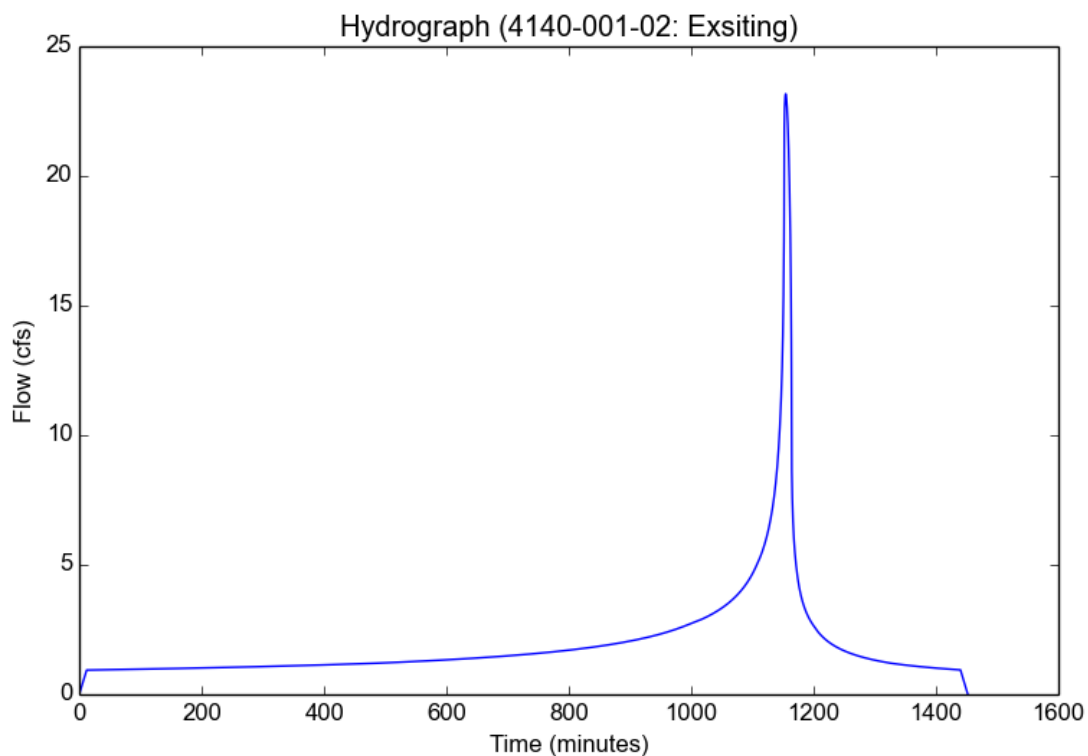
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Exsiting
Area (ac)	16.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.04
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.66
Soil Type	2
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2126	
Peak Intensity (in/hr)	1.6655	
Undeveloped Runoff Coefficient (Cu)	0.8098	
Developed Runoff Coefficient (Cd)	0.8693	
Time of Concentration (min)	12.0	DMA A:
Clear Peak Flow Rate (cfs)	23.1663	$23.17 * (13/16 \text{ ac}) = 18.83 \text{ cfs}$
Burned Peak Flow Rate (cfs)	23.1663	
24-Hr Clear Runoff Volume (ac-ft)	3.8909	DMA B:
24-Hr Clear Runoff Volume (cu-ft)	169485.5006	$23.17 * (3/16 \text{ ac}) = 4.34 \text{ cfs}$



Peak Flow Hydrologic Analysis

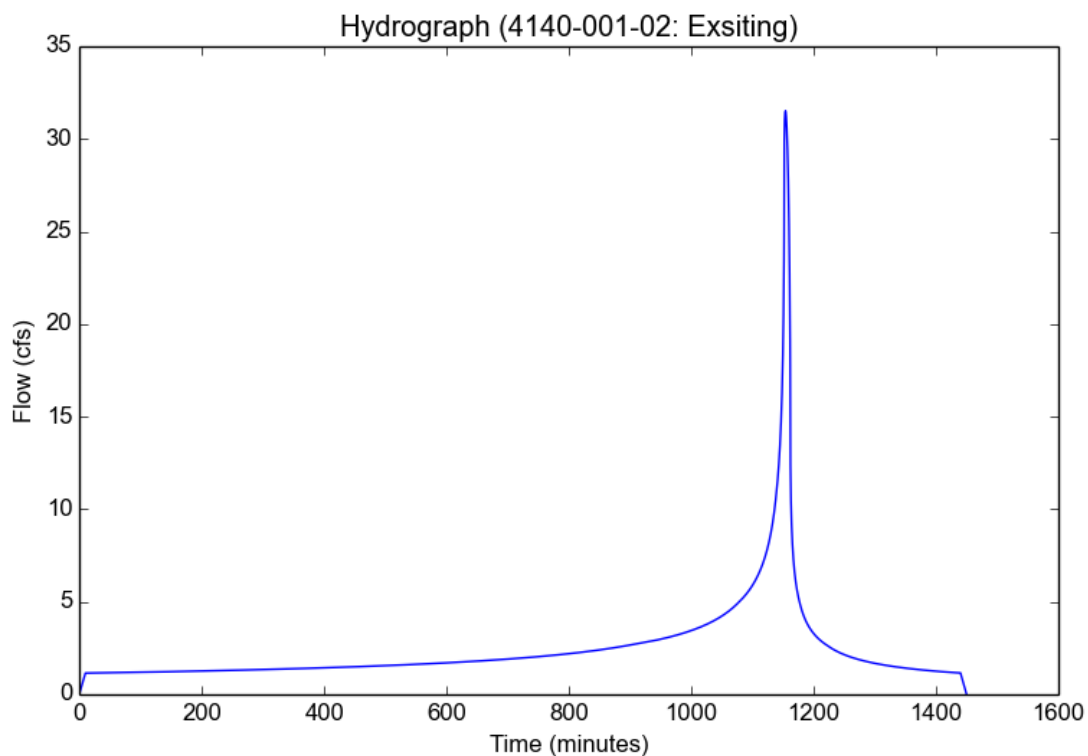
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Exsiting
Area (ac)	16.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.04
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.66
Soil Type	2
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1802	
Peak Intensity (in/hr)	2.2313	
Undeveloped Runoff Coefficient (Cu)	0.8497	
Developed Runoff Coefficient (Cd)	0.8829	
Time of Concentration (min)	10.0	
Clear Peak Flow Rate (cfs)	31.5205	DMA A: $31.52 * (13/16 \text{ ac}) = 25.61 \text{ cfs}$
Burned Peak Flow Rate (cfs)	31.5205	
24-Hr Clear Runoff Volume (ac-ft)	4.9133	DMA B: $31.52 * (3/16 \text{ ac}) = 5.91 \text{ cfs}$
24-Hr Clear Runoff Volume (cu-ft)	214021.26	



Peak Flow Hydrologic Analysis

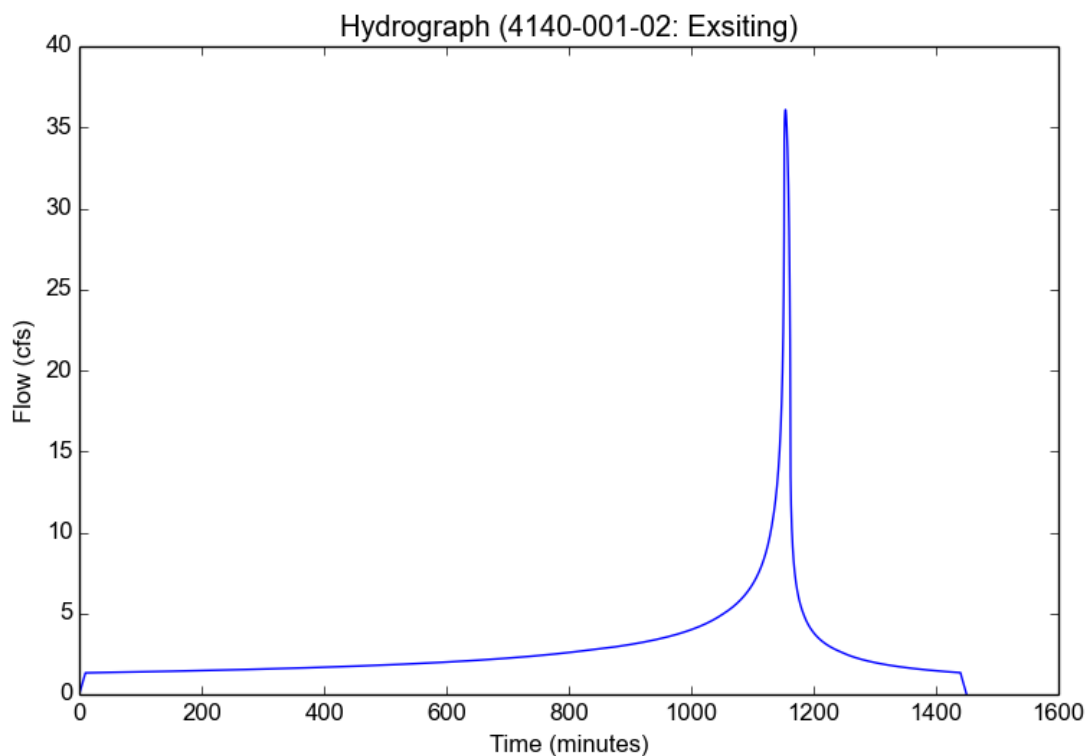
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Exsiting
Area (ac)	16.0
Flow Path Length (ft)	1200.0
Flow Path Slope (vft/hft)	0.04
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.66
Soil Type	2
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.9	
Peak Intensity (in/hr)	2.5414	
Undeveloped Runoff Coefficient (Cu)	0.8634	
Developed Runoff Coefficient (Cd)	0.8876	
Time of Concentration (min)	10.0	
Clear Peak Flow Rate (cfs)	36.0899	DMA A: $36.09 * (13/16 \text{ ac}) = 29.32 \text{ cfs}$
Burned Peak Flow Rate (cfs)	36.0899	
24-Hr Clear Runoff Volume (ac-ft)	5.7032	DMA B: $36.09 * (3/16 \text{ ac}) = 6.77 \text{ cfs}$
24-Hr Clear Runoff Volume (cu-ft)	248430.913	



Peak Flow Hydrologic Analysis

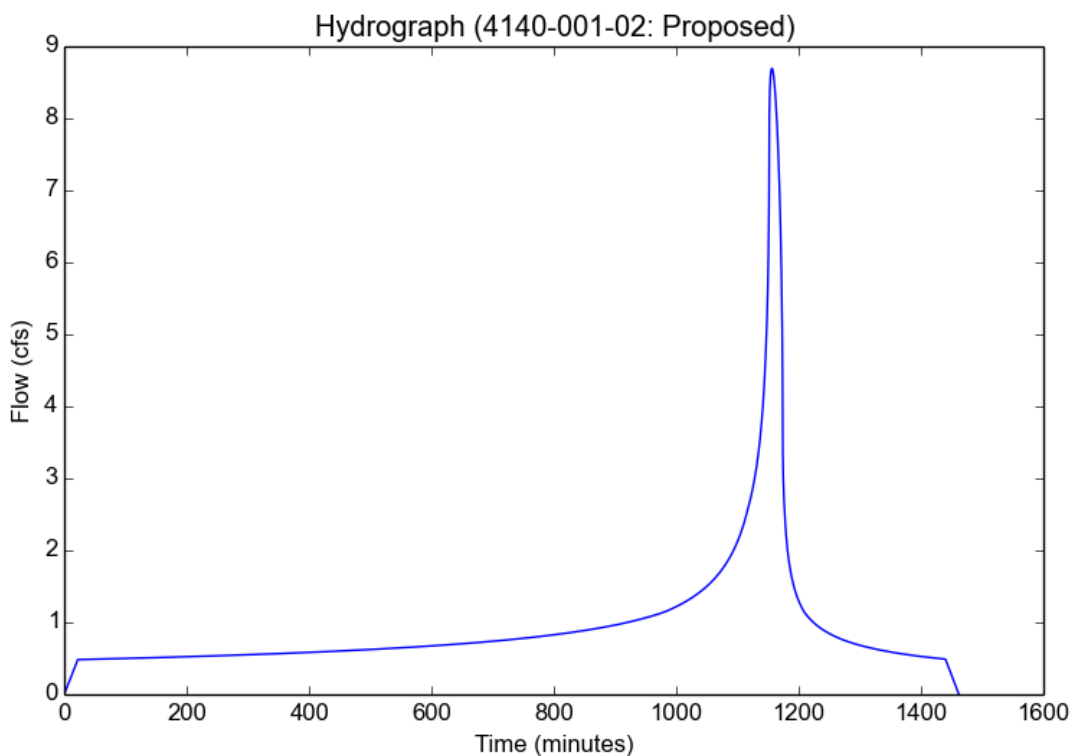
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	2-yr
Fire Factor	0
LID	False

Output Results

Modeled (2-yr) Rainfall Depth (in)	2.2833
Peak Intensity (in/hr)	0.679
Undeveloped Runoff Coefficient (Cu)	0.6378
Developed Runoff Coefficient (Cd)	0.8004
Time of Concentration (min)	22.0
Clear Peak Flow Rate (cfs)	8.6945
Burned Peak Flow Rate (cfs)	8.6945
24-Hr Clear Runoff Volume (ac-ft)	1.9143
24-Hr Clear Runoff Volume (cu-ft)	83385.6286



Peak Flow Hydrologic Analysis

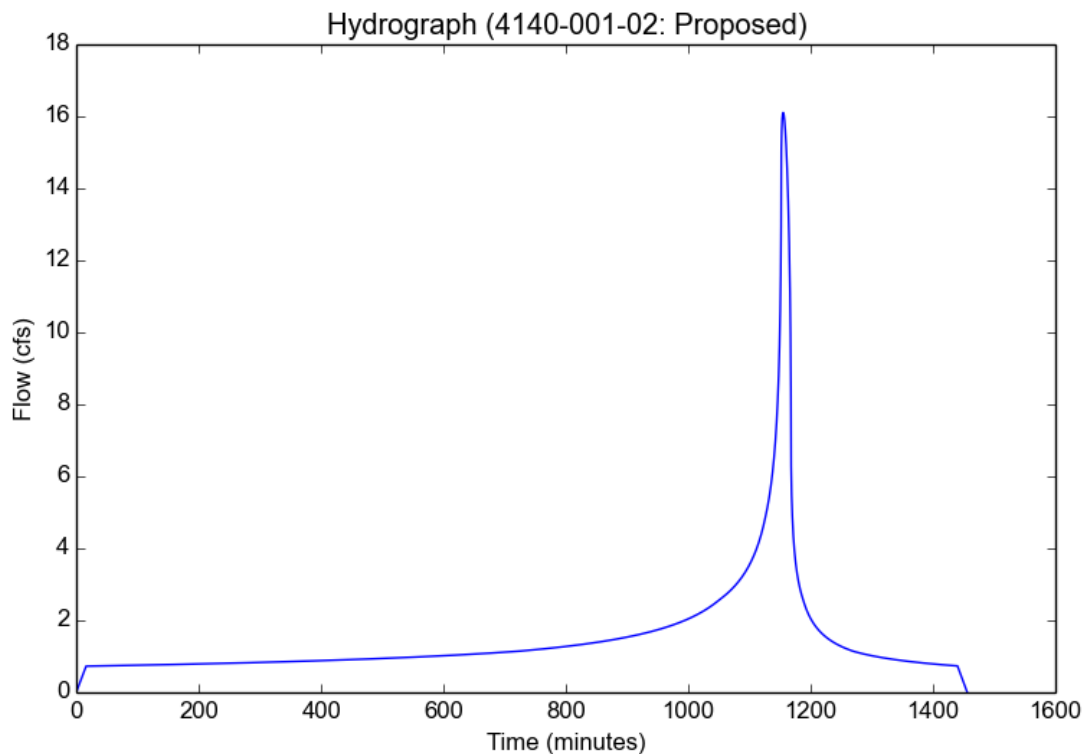
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	5-yr
Fire Factor	0
LID	False

Output Results

Modeled (5-yr) Rainfall Depth (in)	3.4456
Peak Intensity (in/hr)	1.19
Undeveloped Runoff Coefficient (Cu)	0.7575
Developed Runoff Coefficient (Cd)	0.8459
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	16.1053
Burned Peak Flow Rate (cfs)	16.1053
24-Hr Clear Runoff Volume (ac-ft)	2.9998
24-Hr Clear Runoff Volume (cu-ft)	130673.3691



Peak Flow Hydrologic Analysis

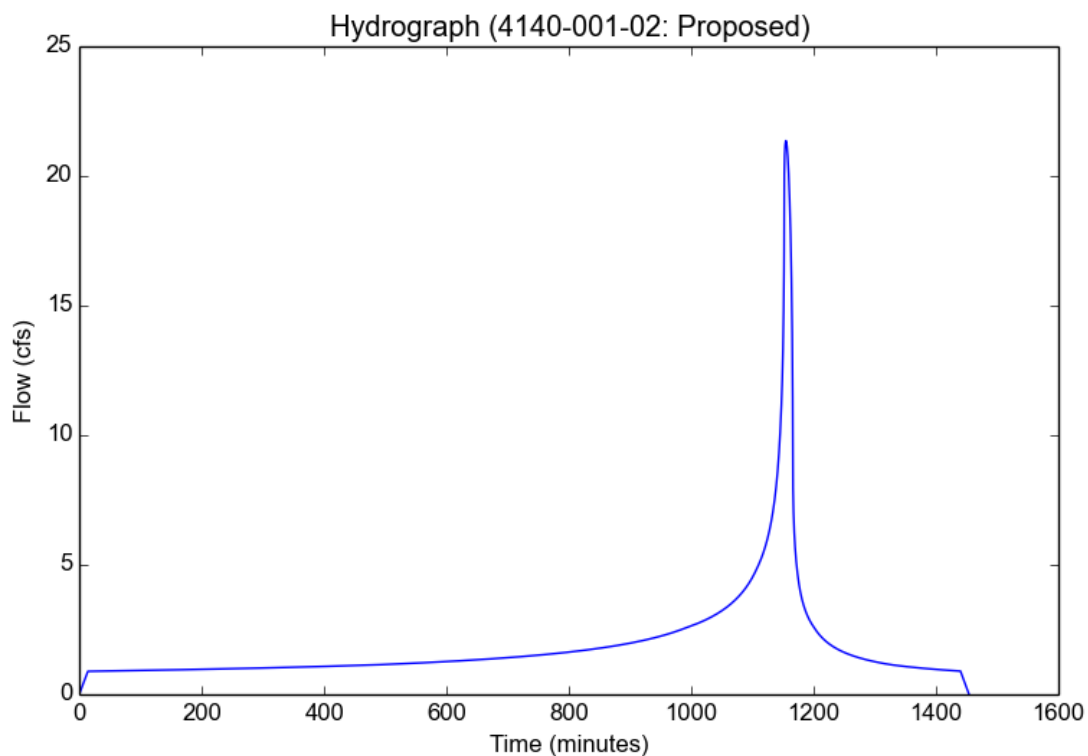
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	10-yr
Fire Factor	0
LID	False

Output Results

Modeled (10-yr) Rainfall Depth (in)	4.2126
Peak Intensity (in/hr)	1.5491
Undeveloped Runoff Coefficient (Cu)	0.7995
Developed Runoff Coefficient (Cd)	0.8618
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	21.3606
Burned Peak Flow Rate (cfs)	21.3606
24-Hr Clear Runoff Volume (ac-ft)	3.7585
24-Hr Clear Runoff Volume (cu-ft)	163718.6173



Peak Flow Hydrologic Analysis

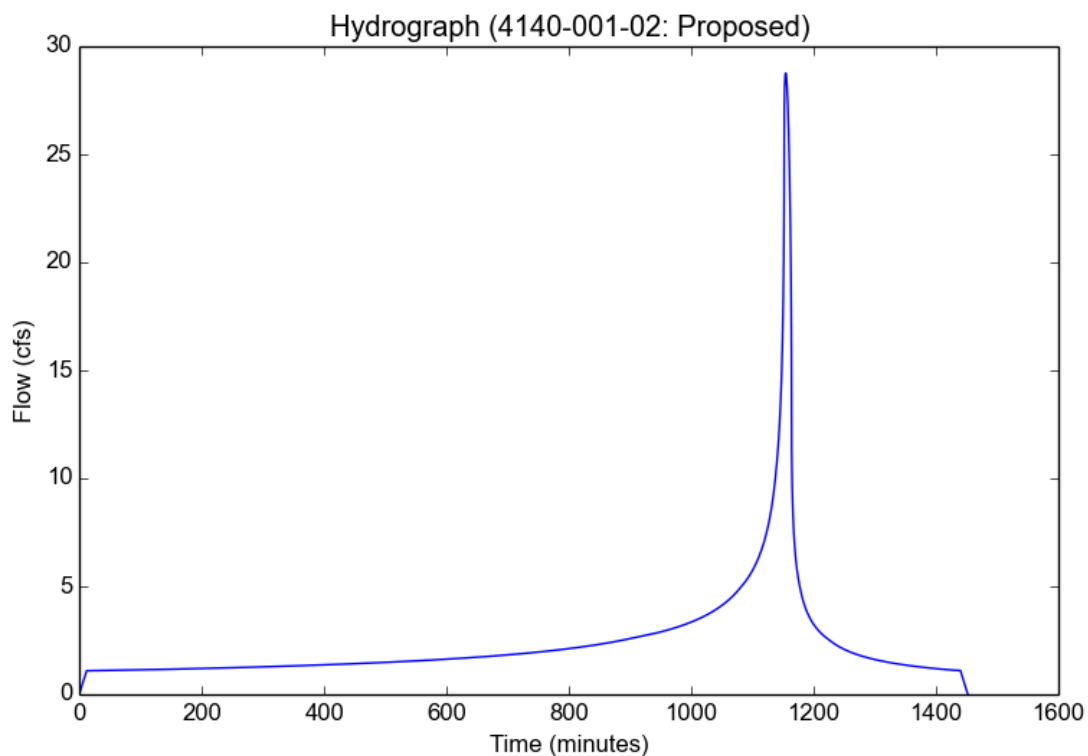
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.1802
Peak Intensity (in/hr)	2.0481
Undeveloped Runoff Coefficient (Cu)	0.8416
Developed Runoff Coefficient (Cd)	0.8778
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	28.7651
Burned Peak Flow Rate (cfs)	28.7651
24-Hr Clear Runoff Volume (ac-ft)	4.7657
24-Hr Clear Runoff Volume (cu-ft)	207594.8081



Peak Flow Hydrologic Analysis

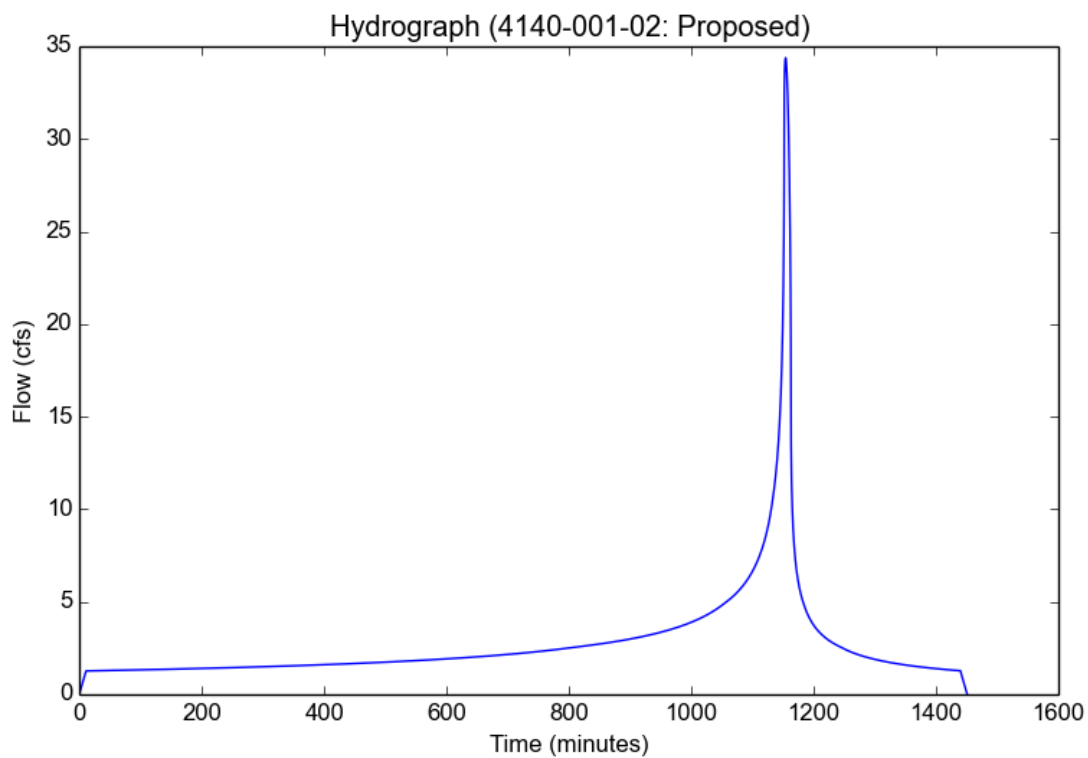
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Version: HydroCalc 1.0.2

Input Parameters

Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	5.9
Peak Intensity (in/hr)	2.4301
Undeveloped Runoff Coefficient (Cu)	0.8585
Developed Runoff Coefficient (Cd)	0.8842
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	34.3792
Burned Peak Flow Rate (cfs)	34.3792
24-Hr Clear Runoff Volume (ac-ft)	5.5479
24-Hr Clear Runoff Volume (cu-ft)	241666.9628



APPENDIX C

WATER QUALITY CALCULATIONS

Peak Flow Hydrologic Analysis

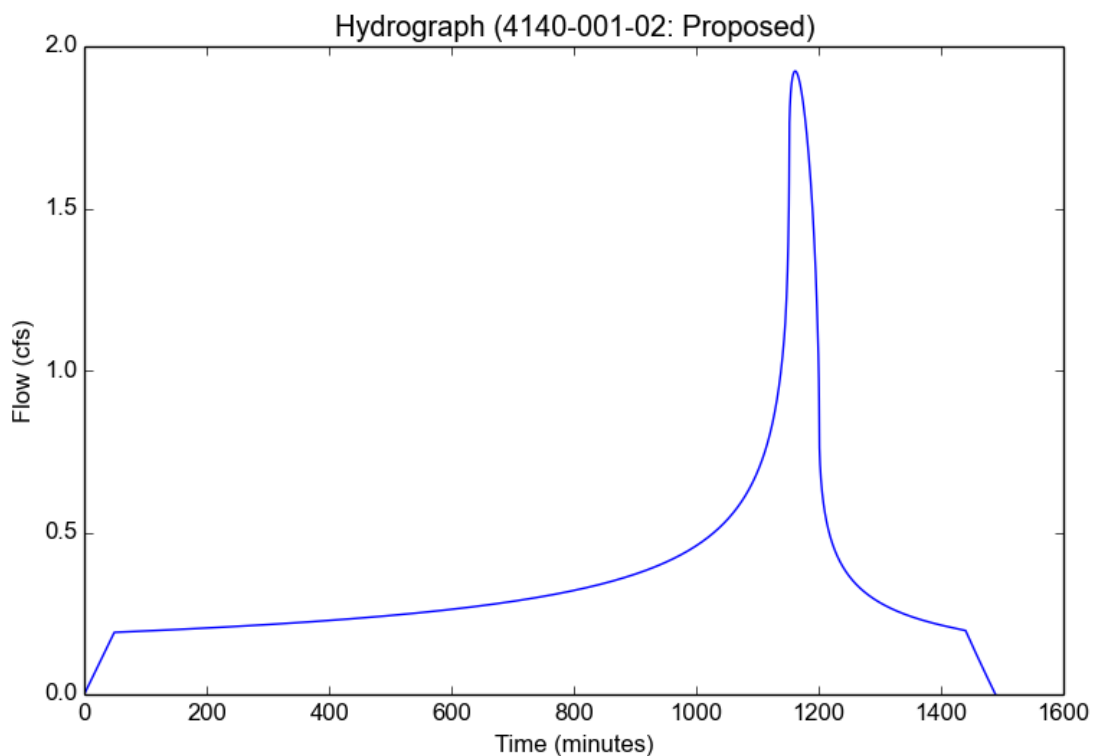
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Version: HydroCalc 1.0.2

Input Parameters

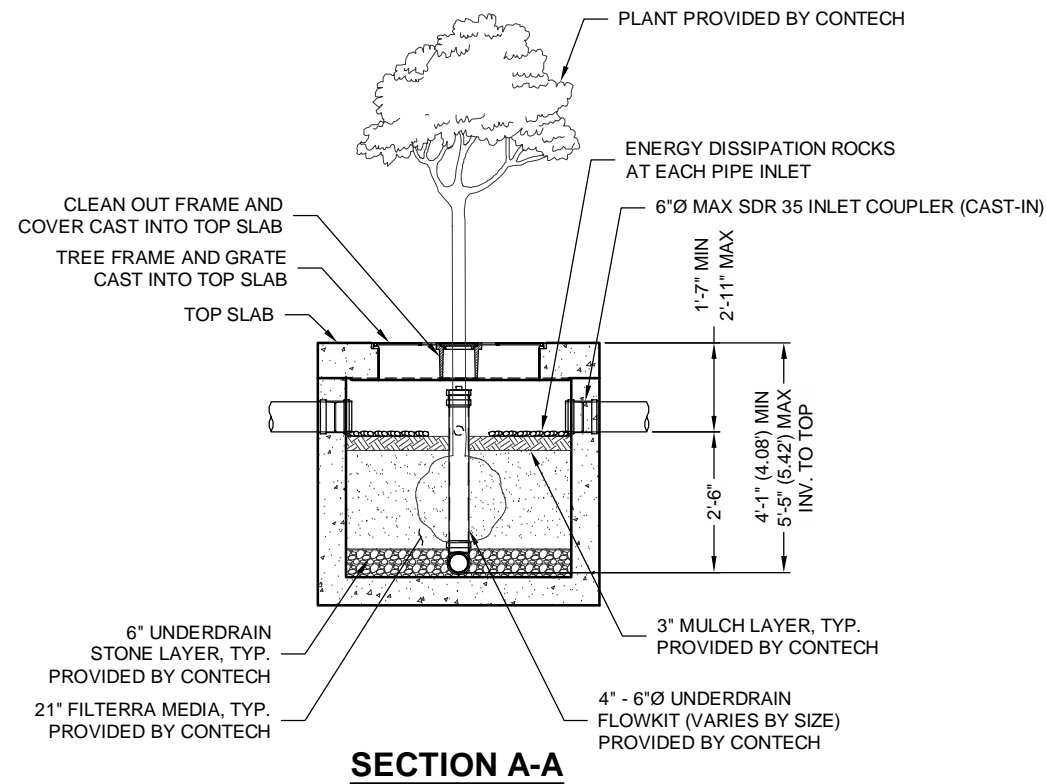
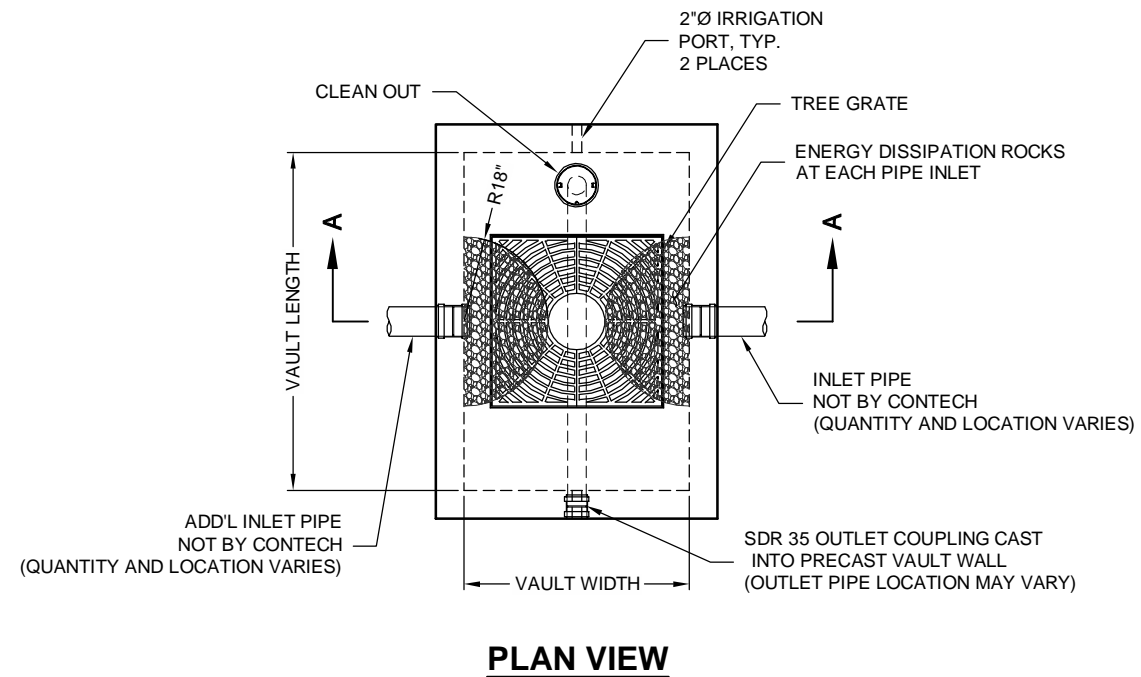
Project Name	4140-001-02
Subarea ID	Proposed
Area (ac)	16.0
Flow Path Length (ft)	1220.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	0.9
Percent Impervious	0.62
Soil Type	2
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.9
Peak Intensity (in/hr)	0.1837
Undeveloped Runoff Coefficient (Cu)	0.2541
Developed Runoff Coefficient (Cd)	0.6546
Time of Concentration (min)	49.0
Clear Peak Flow Rate (cfs)	1.9237
Burned Peak Flow Rate (cfs)	1.9237
24-Hr Clear Runoff Volume (ac-ft)	0.7174
24-Hr Clear Runoff Volume (cu-ft)	31248.2689



I:\STORMWATER\COM\OPS\54 FILTERRA40 STANDARD DRAWINGS\FT-P - FILTERRA OFFLINE - PIPE LAYOUT DETAILS\DWG\FT-P - FILTERRA OFFLINE - PIPE CONFIG DTL.DWG 9/8/2022 10:41 AM



FT-P STANDARD OFFLINE CONFIGURATION						
DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (L x W)	OUTLET PIPE	TREE GRATE QTY & SIZE	MIN NO. OF INLET PIPES
FT0404-P	ALL	4 x 4	4 x 4	4" SDR 35	(1) 3' x 3'	1
FT0604-P	ALL	6 x 4	6 x 4	4" SDR 35	(1) 3' x 3'	1
FT0606-P	ALL	6 x 6	6 x 6	4" SDR 35	(1) 3' x 3'	1
FT078045-P	DE, MD, NJ, PA, VA, WV ONLY	7.83 x 4.5	7.83 x 4.5	4" SDR 35	(1) 3' x 3'	1
FT0804-P	N/A DE, MD, NJ, PA, VA, WV	8 x 4	8 x 4	4" SDR 35	(1) 3' x 3'	1
FT0806-P	ALL	8 x 6	8 x 6	4" SDR 35	(1) 4' x 4'	1
FT1006-P	ALL	10 x 6	10 x 6	6" SDR 35	(1) 4' x 4'	2
FT1206-P	ALL	12 x 6	12 x 6	6" SDR 35	(2) 4' x 4'	2
FT1307-P	ALL	13 x 7	13 x 7	6" SDR 35	(2) 4' x 4'	2
FT1408-P	CALL CONTECH	14 x 8	14 x 8	6" SDR 35	(2) 4' x 4'	3
FT1509-P	CALL CONTECH	15 x 9	15 x 9	6" SDR 35	(2) 4' x 4'	3
FT1608-P	CALL CONTECH	16 x 8	16 x 8	6" SDR 35	(2) 4' x 4'	3
FT1808-P	CALL CONTECH	18 x 8	18 x 8	6" SDR 35	(2) 4' x 4'	3
FT2008-P	CALL CONTECH	20 x 8	20 x 8	6" SDR 35	(3) 4' x 4'	4
FT2208-P	CALL CONTECH	22 x 8	22 x 8	6" SDR 35	(3) 4' x 4'	4

N/A = NOT AVAILABLE

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION.



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 8,271,274; 6,989,325; 7,825,486; 7,425,861; 7,833,412. RELATED FOREIGN PATENTS.



www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA OFFLINE - PIPE (FT-P)
CONFIGURATION DETAIL

APPENDIX D

FEMA MAP

National Flood Hazard Layer FIRMMette



118°7'8"W 34°2'40"N



Legend

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

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | 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 <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | 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 |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| 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 **4/11/2023 at 12:45 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.