**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
**Cove Rd & Padanaram Ave, New Bedford, MA**

# "Drainage Analysis"

Job location:

1500-1502 Cove Road, LLC
"Cove Surf & Turf"
1500-1502 Cove Rd & 1497-1503 Padanaram Ave
Assessors Map 17A, Lots 103, 102, & 101
New Bedford, MA

Prepared for Applicant/Owner

c/o Jesse J. Desouza
1500 Cove Road
New Bedford, Ma 02740

as of:

2/23/2024
Revised 8/12/24

prepared by:


**S & K Engineering, LLC**
**P.O. Box 1338**
**Westport, MA, 0279**

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
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## Exhibits

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
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## Summary:

The locus is comprised of three lots, consisting of an existing restaurant and two residential dwellings, on the Southwest corner of Cove Rd. and Padanaram Ave. Locus lot is situated in a Mixed-use Business/Residential neighborhood with a variety of different types of businesses occupying the area. Site is situated west of Clark's Cove and west of the Cove Road Dike. Locus lot is within a Special Flood Velocity Zone VE (EL16) per FEMA maps. The Business portion of the project consist primarily of structures, concrete, and pavement. The two additional lots, recently obtained, were typical residential cottage type houses with associated residential type yards and structures. The intent of the project is to renovate portions of the restaurant, by adding small additions to help the aesthetics with hopes to create a more attractive and comfortable customer experience. The proposed exterior look as well as the newly designed elevated deck allows the customers the option to enjoy the scenery of the cove while dining in the warmer months. In addition the southerly most residential dwelling w/ accessory buildings are to be razed and lot to be converted to a pervious parking area.

The deck and additions proposed are over an area of the lot that is currently used for a parking lot. This being situated on the corner with an acute angle type intersection created an awkward parking layout. The impervious parking area occupied by the new addition is to be removed and converted into a more attractive area with walkways and landscaped areas increasing the pervious lot coverage. The existing structures and dirt/gravel driveway situated on the southernmost lot are to be removed converting the lot into a permeable parking area. The proposed use, layout and concept was approved per a variance and special permit as designed and filed by others. Gutters are to be installed to capture runoff from the roof of the existing business and covered areas beneath the deck in its entirety. The downspouts are to be directed into rain barrels with smaller discharge pipes detaining the runoff and directing it to the pervious areas of the lot. The Rain barrels are to be equipped with valves allowing the option to control the outflow with the ability to store the water for onsite non potable uses.

This being a redevelopment type project with minimal options available, resulting from the coastal flood zone and lot configurations, a Low impact redevelopment approach was considered during the design process. The site is located on soils identified as Ur (see exhibit). Natural soils typically were removed or buried with fill type material. The unsurety of the soil along with an elevated water table potentially influenced by tidal action makes it unfeasible to introduce infiltration/detention area. The removal of portions of the pavement and buildings and introducing landscaped areas along with permeable grass parking area nets for no increase in total flow or volume into the municipal system. The low impact approach and use of rain barrels directed into the pervious areas of the lot resulted in a slight decrease in total flow from the site after modeled through the hydrology software.

The Pre-Development Water Shed was broken into Two Sub Areas (ESA1 & ESA2) based on the topography (see plan). The contributing watershed flow paths for both subareas begin at the southwesterly most corner of the lot, the high point. The analysis points at the end of

each flow path are at the existing concrete aprons at the edge of the right of ways. The flow then continues to flow over the apron and into Municipal storm drain system. The two subareas were then linked for a Total Flow into the municipal storm drain system, for comparison to that of Pre & Post-Development.

The intent of the Post development buildout was to consider redeveloping the upland area with a Low Impact Development (LID) approach to the maximum extent practical, implementing some Best Management Practices (BMP's). The two pre-development subareas were slightly altered because of the post development buildout. Portions of the existing parking lot were removed and converted to landscaping as well as a dwelling with associated sheds and driveway were removed. Proposed subarea (PSA1) parking area to be constructed with a reinforced grid/grass parking area simulating a vegetative strip (BMP). The intent of the grass area is to slow down the flow and allow for some overland treatment, prior to reaching the analysis point at the apron. In addition, The existing Bit. Asphalt parking lot in both subareas to be saw cut with curbing installed, allowing for smaller spaces to gain an additional 2'of landscaping/lawn (LID) along the perimeter of the spaces. The majority of the new deck is to be open slotted, and the existing roofs and proposed additions are to flow in to newly installed gutter system directed into associated rain barrels. Rain barrels to be built with a control valve to allow for non-potable reuse with the floe/overflow directed to the pervious portions of the property. Rain barrels with proper monitoring and use will detain the roof runoff and increase the natural recharge through the pervious portions during the warmer months.

The post development sub areas changed slightly due to the proposed development but were combined and analyzed as did in pre-development. The Post watershed areas were broken up with two Post Development sub-areas (PSA1 & PSA2); The total net flow volume and rate of the Proposed Sub-Areas were reduced prior to entering the municipal storm drain system (analysis point). (see the Hydrocad exhibit and summary Table).

The soils are designated as 602, Ur, Urban Land Soils, Hydrologic Soil Group not classified in the Soil Survey of Bristol County, Massachusetts, Southern Part prepared by the United States Soil Conservation Service (SCS) (see exhibit A). Therefore, "Assumed class D" for comparison. The soil not classified, is likely not suitable for an infiltration field based on findings. Refer to the Geotechnical engineering report, dated 3/31/2024 by CGE Engineering, Inc. which is on record with building permit and copies available upon request. (see test boring table sec 4.3, Pg 9 on plan). Assumed elev. 3.8+/- for water table with a silty gravelly sand type fill. In Addition, the lot area is congested within proximity to structures. Locus being within a designated velocity zone with limited area for compensatory storage, altering the topography does not seem feasible nor practical. Removing any Soil to construct ponds and/or fields to the suitable layers can get very intrusive to the site and abutting properties.

The Drainage Analysis was performed using the TR-20 methodology utilizing 2024 Hydrocad Stormwater software for the computation of curve numbers and time of concentrations. The data was input into software for the computation of Hydrographs. The

program was then used to model the overland flow, and routing of hydrographs. (see Exhibit)

In summary, the runoff was calculated utilizing the Hydrocad program, the storms overland flow resulted in a slight decrease in flow contributing to the municipal storm drain system for post redevelopment. Results are as shown in the Hydrograph Summary sheets in the exhibits. As shown on the Hydrographs, the total volume and rate are reduced for the 2-100 year storm events. The lot coverage was altered to decrease and minimize the impervious coverage, to accommodate the proposed build out and address the storm water concerns per DPI and the local stormwater policy, in a manner which is most feasible for this redevelopment project. This approach was achieved utilizing a Low Impact Development (LID) approach. Decreasing the impervious lot coverage (size and make) from that of existing site conditions and directing the roof runoff from the building, to rain barrels then discharging to permeable portions of the lot, per a city accepted practice, results in a theoretical reduction in impervious area of >40% from that of Pre-Development . Surface Run-off is currently discharging directly onto the abutting streets and is to remain the same for post construction. The business is to remain the same, the redevelopment is an aesthetic upgrade with an elevated deck to enhance the scenic view for the customers during the warmer months in hopes to attract more people to the area. Post development BMPs to the max. extent practical are parking lot/driveway sweeping, maintenance of the grass permeable parking area and perimeter landscaping areas, cleaning and maintaining rain barrels with outlet controls to store and reuse roof water where applicable during the warmer months. See Pre-Development and Post Development Tables and Sketches for the Breakdown of the areas.

**Tr-55 Curve Number and Time of Concentration Breakdown:**

Refer to Hydrocad Exhibit for a breakdown of each Subarea and associated Time of Concentrations.

**Summary of Peak Flows from Hydrocad Summary:**

| **Existing Pre-Development Peak Flows in CFS (Vol. CF)** | | | | |
|---|---|---|---|---|
| | **Storm Event** | | | |
| **Sub-Area** | 2 Year | 10 Year | 25 Year | 100 Year |
| ESA1 | 0.43 (1,241) | 0.75 (2,069) | 0.94 (2,592) | 1.25 (3,401) |
| ESA2 | 0.82 (2,557) | 1.31 (3,864) | 1.61 (4,675) | 2.08 (5,923) |
| Combined into Municipal Drain | **1.25 (3,797)** | **2.06 (5,933)** | **2.56 (7,268)** | **3.33 (9,324)** |
| **Post Development Peak Flows Runoff in CFS (Vol. CF)** | | | | |
| | **Storm Event** | | | |
| **Sub-Area** | 2 Year | 10 Year | 25 Year | 100 Year |
| PSA1 | 0.43 (1,248) | 0.75 (2,081) | 0.95 (2,607) | 1.26 (3,421) |
| PSA2 | 0.51 (1,460) | 0.88(2,500) | 1.11 (3,121) | 1.47(4,079) |
| Combined into Municipal Drain | **0.94 (2,764)** | **1.63 (4,581)** | **2.06 (5,728)** | **2.73 (7,500)** |

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
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## Stormwater Standards:

***Standard 1****: No new stormwater* conveyances discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

- All grading/textural changes to be directed and filtered overland as does currently.

**Standard 2**: Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates.

- The stormwater analysis was prepared for a 2, 10, 25 & 100 year Storm Event.
- There is a slight decrease in total runoff flow & volume for the subareas 2,10, 25 & 100 year Storm Events.
- Refer to Summary Sheet in the Hydrocad Exhibit for each storm event.

**Standard 3**: Recharge to groundwater, low impact development techniques, stormwater best management practices, and good operation and maintenance.

- A Roof Infiltration system, groundwater recharge, per Regulation is not practical however the reduction in pavement allows for some additional infiltration. +
- Roof leaders to be directed into rain barrels equipped with valves for reuse & control of flow into the permeable areas of the lot.

| Hydrologic Group Volume to Recharge (x Total Impervious Area) | |
|---|---|
| NRCS Hydrologic Group | Volume to Recharge x Total Impervious Area |
| A | 0.60 inches of runoff |
| B | 0.35 inches of runoff |
| **C** | **0.25 inches of runoff** |
| D | 0.10 inches of runoff |

Groundwater Recharge Requirement: Not applicable

Groundwater Recharge Provided: Not applicable

- All gutters, downspouts, barrels, and parking areas to be inspected and cleaned at minimum, twice a year (or as needed).

**Standard 4**: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).

No Increase in flow or change in use being proposed for the site as directed to the Analysis point(s). Grading is to predominately stay the same due to the site being located within a velocity zone, along the Clark's Cove coast which is subject to flooding and affected by Tidal action. Site has Limitations because of the minimal area to work with, surrounding properties and the

disturbed soils per mapping. Vertical separation to groundwater and raising grades to infiltrate or drain into storm drain system make it impractical to construct additional BMPs.

**Standard 5**: Same use, therefore, does not generate a higher potential pollutant load.

**Standard 6**: Stormwater discharge continues as does currently, directed to the same municipal drainage systems as the surrounding properties. Locus not within an Aquifer Zone I, II or Interim Wellhead Protection Area Mapping.

**Standard 7**: The project involves the redevelopment of an existing restaurant which has been functioning for many years. At minimum refer to the Stormwater Management Standards: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Also, Stormwater Analysis Proposed, as prepared to the maximum extent practicable.

- Impervious Area was reduced, smaller parking spaces as laid out by others, and Introduction of more vegetation around the peripheral of the parking. In addition additional downspouts are being proposed equipped with rain barrels allowing of some detainment, reuse and directed to permeable portions of the lot. The proposed is in attempt to satisfy the standard to the highest extent Practicable for the proposed project.

**Standard 8**: A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be implemented by the owner/contractor. Owner to designate a person in charge, if different, who will be responsible for the construction activities and implementing good housekeeping practices
However:

- Contractor to take care in creating the swales and/or any grading closest to the lot lines and to provide silt fencing, or erosion control blankets if needed to prevent silt or washout onto abutting properties. All proposed earthwork shall be contained onsite and graded in such that construction run-off does not infiltrate onto abutting land or roadways.
- The entrance shall be protected with construction type entrance, mats/pads, etc. to prevent any tracking of soil, water, or debris onto the roadway and onto the existing aprons
- Catch basins, as noted, to be equipped with filter bags during the grading and earth work Any sediment or washout collected in the basins or tracked onto the roadway or onto abutting properties to be swept clean daily, or as needed.
- All construction control devices to be checked weekly or immediately following any substantial storm event, cleaned, and replaced as needed.
- No refueling, dumping of construction water, storage of fuel/chemicals or construction debris to be allowed into/near any wetland protected area (if any) & onto abutting land.

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- Contractor to use Best Management Practices working onsite from start to finish. Construction to be in accordance with approved plan(s) on file and notify municipalities with any changes. Contractor responsible for all required permits, construction details and paperwork associated with the construction.
- All controlled devices to be maintained until final landscaping and driveway surfacing is complete. Final landscaping to be stabilized utilizing 4" compost type loam, blankets/hydroseeding and landscaped mulch beds.

**Standard 9**: Long -Term Operation and Maintenance (O&M) Plan shall be implemented to ensure that stormwater management systems function as designed.

- Property Owner to maintain using good housekeeping practices
- Roof leaders/gutters shall be inspected and cleaned twice a year at minimum or as needed
- Lawns, grassed swales, gardens, and other landscaped areas to be mowed, maintained, and regraded/reseeded as necessary. The use of fertilizers, herbicides, and pesticides to be applied or allowed per manufacturer and EPA.
- Paved portion of locus lot to be swept clean twice a year (once at minimum) or as needed.
- Embankments and swales shall be inspected for erosion at least once a year and regraded/reseeded as necessary.

**Standard 10**: No illicit discharges are proposed nor allowed into the municipal stormwater system.

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# Exhibit "A"

U.S.G. S. Topographic Quad Map

&

Aerial Photo 2021

# PORTION OF USGS MAP


USGS Topographic Maps
Property Tax Parcels


Data attribution
5/19/2023
80 ft
Camera: 482 ft
41.6

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
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# Exhibit "B"

## "Soil Descriptions"

by

Soil Survey of Bristol County, Massachusetts, Southern Part prepared by the United States Soil Conservation Service (SCS)

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Bristol County, Massachusetts, Southern Part


February 23, 2024

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Map Scale: 1:430 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bristol County, Massachusetts, Southern Part
Survey Area Data: Version 17, Sep 10, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 602 | Urban land | 0.9 | 100.0% |
| **Totals for Area of Interest** | | **0.9** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Bristol County, Massachusetts, Southern Part

## 602—Urban land

### Map Unit Setting

*National map unit symbol:* v5ry
*Frost-free period:* 120 to 200 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Urban land:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Urban Land

#### Setting

*Parent material:* Excavated and filled land

### Minor Components

#### Udorthents

*Percent of map unit:* 15 percent
*Hydric soil rating:* Unranked

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Gravelly Sand is to support the Structure on concrete piers, bearing on spread footings tied together by a grade beam. The spread footing and grade beam may bear directly on the very dense soil or as necessary on compacted ¾-inch crushed stone, just above the groundwater level, at approximately 5.0 ft below grade.

### 4.2 Frost Penetration Considerations

Although the *Massachusetts State Building Code* no longer specifies the foundation depth for frost protection, the longstanding standard minimum construction practice for exterior foundations of 4.0 feet below grade is recommended for footings and grade beams. Non-structural foundations constructed on shallow mat or pad foundations should be founded on at least 1-foot of compacted Structural Fill or crushed stone to minimize foundation movement from frost action.

### 4.3 Soil Layer Properties for Foundation Design

Based on visual observations, Standard Penetration Test blow counts, and soil classification, the angle of internal friction for granular soils, dry unit weight, have been estimated for each generalized stratum of the soil profile. These values, along with depth and uncorrected "*N-values*" are presented in the following table for each of the borings performed. GW represents the estimated depth to groundwater below grade at the time of the test borings. No groundwater monitoring wells were installed as part of this subsurface investigation.

**Test Borings (GW @ B-1, 7.0' El** 1.8**; B-2, 5.0' El 3.8)**

| Test Boring | Depth in Feet | Uncor-rected N-Values | Stratum | Consistency in Place | Angle of Internal Friction (degrees) | Dry Unit Weight (PCF) | Ultimate Bearing Capacity[1] (PSF) | Ultimate Skin Friction on Steel[2] | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Compression (PSF) | Tension (PSF) |
| B-1<br>B-2 | 1.0-3.0<br>1.0-3.0 | 5<br>5 | Fill: Silty Sand | Loose | 28 | 99 | 4k | 200 | 125 |
| B-1<br>B-2 | 3.0-5.0<br>3.0-6.5 | 3<br>1-1 | Fill: Silty Gravelly Sand<br>Fill: Silty Sand | Very Loose | 27 | 95 | 2k | 50 | 30 |
| B-1<br>B-2 | 5.0-17.0<br>7.0-17.0 | 22->50<br>52->50 | Silty Gravelly Sand & Rock Fragments | Very Dense | 40 | 130 | 48k | 2,000 | 1,500 |
| B-1<br>B-2 | 16.5<br>18.0 | Auger Refusal<br>Auger Refusal | Bedrock: Biotite Gneiss | Hard | 45 | 160 | >200k | -- | -- |

1. PSF - pounds per square foot. Does not include a Factor of Safety, a minimum Factor of Safety of 3 is recommended. Final foundation design must meet project specific performance criteria.

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
**Cove Rd & Padanaram Ave, New Bedford, MA**

# Exhibit "C"

## "Hydrograph Printout and Summary"

## By

## Hydrocad Software Solutions, LLC

## Rainfall Events Listing

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 2-yr | New Bedford - 1500 Cove Rd IDF 24-hr S1 | 2-yr | Default | 24.00 | 1 | 3.40 | |
| 2 | 10-yr | New Bedford - 1500 Cove Rd IDF 24-hr S1 | 10-yr | Default | 24.00 | 1 | 5.02 | |
| 3 | 25-yr | New Bedford - 1500 Cove Rd IDF 24-hr S1 | 25-yr | Default | 24.00 | 1 | 6.03 | |
| 4 | 100-yr | New Bedford - 1500 Cove Rd IDF 24-hr S1 | 100-yr | Default | 24.00 | 1 | 7.59 | |
| 5 | Custom | New Bedford - 1500 Cove Rd IDF 24-hr S1 | 2-yr | Default | 24.00 | 1 | 3.40 | |

## Summary for Subcatchment ESA1: EXIST. SUBAREA 1

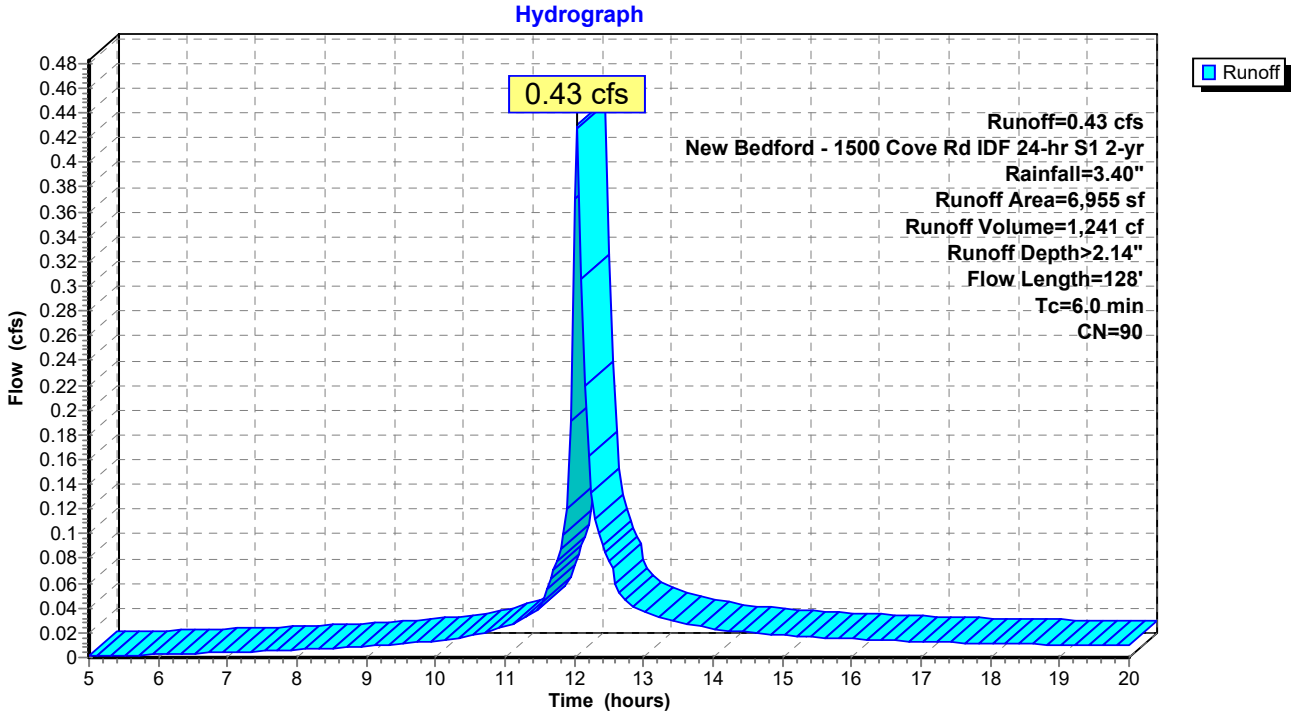
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,241 cf, Depth> 2.14"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 1,689 | 98 | Roofs, HSG D |
| 1,045 | 98 | Paved parking, HSG D |
| 447 | 96 | Gravel surface, HSG D |
| 3,774 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,955 | 90 | Weighted Average |
| 4,221 | | 60.69% Pervious Area |
| 2,734 | | 39.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 43 | 0.0230 | 1.27 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.8 | 40 | 0.0150 | 0.86 | | **Shallow Concentrated Flow, LAWN IN BACKYARD** Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 45 | 0.0400 | 3.22 | | **Shallow Concentrated Flow, ACCROSS DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.6 | 128 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA1: EXIST. SUBAREA 1



## Hydrograph for Subcatchment ESA1: EXIST. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.00 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.01 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.02 |
| 11.25 | 1.06 | 0.36 | 0.03 |
| 11.50 | 1.14 | 0.42 | 0.04 |
| 11.75 | 1.30 | 0.53 | 0.08 |
| 12.00 | 1.85 | 0.97 | **0.37** |
| 12.25 | 2.13 | 1.20 | **0.13** |
| 12.50 | 2.27 | 1.33 | 0.08 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.03 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.02 |
| 14.25 | 2.65 | 1.67 | 0.02 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.01 |
| 16.25 | 2.89 | 1.88 | 0.01 |
| 16.50 | 2.91 | 1.90 | 0.01 |
| 16.75 | 2.93 | 1.92 | 0.01 |
| 17.00 | 2.96 | 1.94 | 0.01 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment ESA2: EXIST. SUBAREA 2

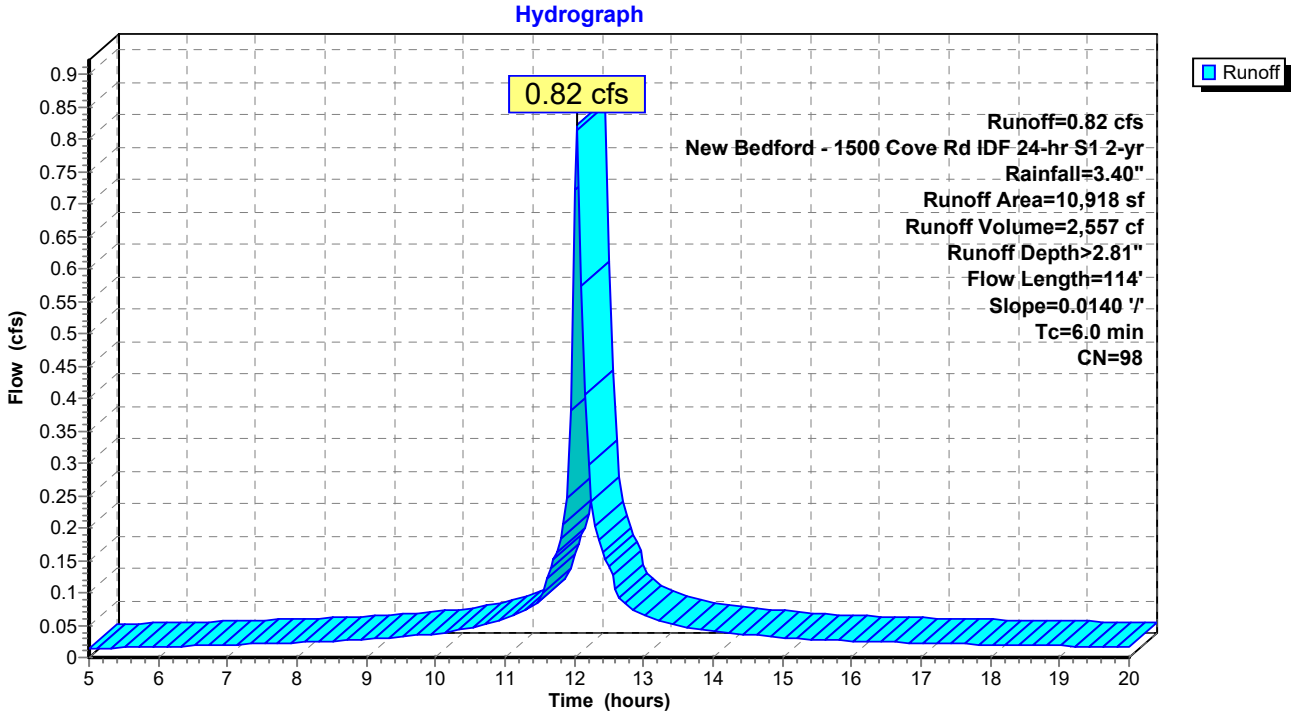
Runoff = 0.82 cfs @ 12.04 hrs, Volume= 2,557 cf, Depth> 2.81"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 2,072 | 98 | Roofs, HSG D |
| 8,682 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 164 | 84 | 50-75% Grass cover, Fair, HSG D |
| 10,918 | 98 | Weighted Average |
| 164 | | 1.50% Pervious Area |
| 10,754 | | 98.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.8 | 50 | 0.0140 | 1.07 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.4 | 64 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, WEST EDGE PRKING** Paved Kv= 20.3 fps |
| 1.2 | 114 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA2: EXIST. SUBAREA 2



## Hydrograph for Subcatchment ESA2: EXIST. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.14 | 0.01 |
| 5.25 | 0.31 | 0.15 | 0.01 |
| 5.50 | 0.33 | 0.17 | 0.02 |
| 5.75 | 0.34 | 0.18 | 0.02 |
| 6.00 | 0.36 | 0.20 | 0.02 |
| 6.25 | 0.38 | 0.21 | 0.02 |
| 6.50 | 0.40 | 0.23 | 0.02 |
| 6.75 | 0.42 | 0.25 | 0.02 |
| 7.00 | 0.45 | 0.27 | 0.02 |
| 7.25 | 0.47 | 0.29 | 0.02 |
| 7.50 | 0.49 | 0.31 | 0.02 |
| 7.75 | 0.51 | 0.33 | 0.02 |
| 8.00 | 0.54 | 0.35 | 0.02 |
| 8.25 | 0.57 | 0.38 | 0.02 |
| 8.50 | 0.59 | 0.40 | 0.03 |
| 8.75 | 0.62 | 0.43 | 0.03 |
| 9.00 | 0.65 | 0.46 | 0.03 |
| 9.25 | 0.68 | 0.49 | 0.03 |
| 9.50 | 0.72 | 0.52 | 0.03 |
| 9.75 | 0.75 | 0.55 | 0.03 |
| 10.00 | 0.79 | 0.59 | 0.04 |
| 10.25 | 0.83 | 0.63 | 0.04 |
| 10.50 | 0.88 | 0.67 | 0.05 |
| 10.75 | 0.93 | 0.72 | 0.05 |
| 11.00 | 0.99 | 0.78 | 0.06 |
| 11.25 | 1.06 | 0.85 | 0.07 |
| 11.50 | 1.14 | 0.93 | 0.09 |
| 11.75 | 1.30 | 1.09 | 0.16 |
| 12.00 | 1.85 | 1.63 | **0.72** |
| 12.25 | 2.13 | 1.90 | **0.24** |
| 12.50 | 2.27 | 2.05 | 0.14 |
| 12.75 | 2.36 | 2.13 | 0.08 |
| 13.00 | 2.42 | 2.19 | 0.07 |
| 13.25 | 2.48 | 2.25 | 0.06 |
| 13.50 | 2.53 | 2.30 | 0.05 |
| 13.75 | 2.58 | 2.35 | 0.04 |
| 14.00 | 2.62 | 2.39 | 0.04 |
| 14.25 | 2.65 | 2.42 | 0.04 |
| 14.50 | 2.69 | 2.46 | 0.04 |
| 14.75 | 2.72 | 2.49 | 0.03 |
| 15.00 | 2.75 | 2.52 | 0.03 |
| 15.25 | 2.78 | 2.55 | 0.03 |
| 15.50 | 2.81 | 2.58 | 0.03 |
| 15.75 | 2.84 | 2.61 | 0.03 |
| 16.00 | 2.86 | 2.63 | 0.03 |
| 16.25 | 2.89 | 2.66 | 0.02 |
| 16.50 | 2.91 | 2.68 | 0.02 |
| 16.75 | 2.93 | 2.70 | 0.02 |
| 17.00 | 2.96 | 2.72 | 0.02 |
| 17.25 | 2.98 | 2.75 | 0.02 |
| 17.50 | 3.00 | 2.77 | 0.02 |
| 17.75 | 3.02 | 2.79 | 0.02 |
| 18.00 | 3.04 | 2.81 | 0.02 |
| 18.25 | 3.06 | 2.82 | 0.02 |
| 18.50 | 3.08 | 2.84 | 0.02 |
| 18.75 | 3.09 | 2.86 | 0.02 |
| 19.00 | 3.11 | 2.88 | 0.02 |
| 19.25 | 3.13 | 2.90 | 0.02 |
| 19.50 | 3.14 | 2.91 | 0.02 |
| 19.75 | 3.16 | 2.93 | 0.02 |
| 20.00 | **3.18** | **2.95** | 0.02 |

## Summary for Subcatchment PSA1: PROP. SUBAREA 1

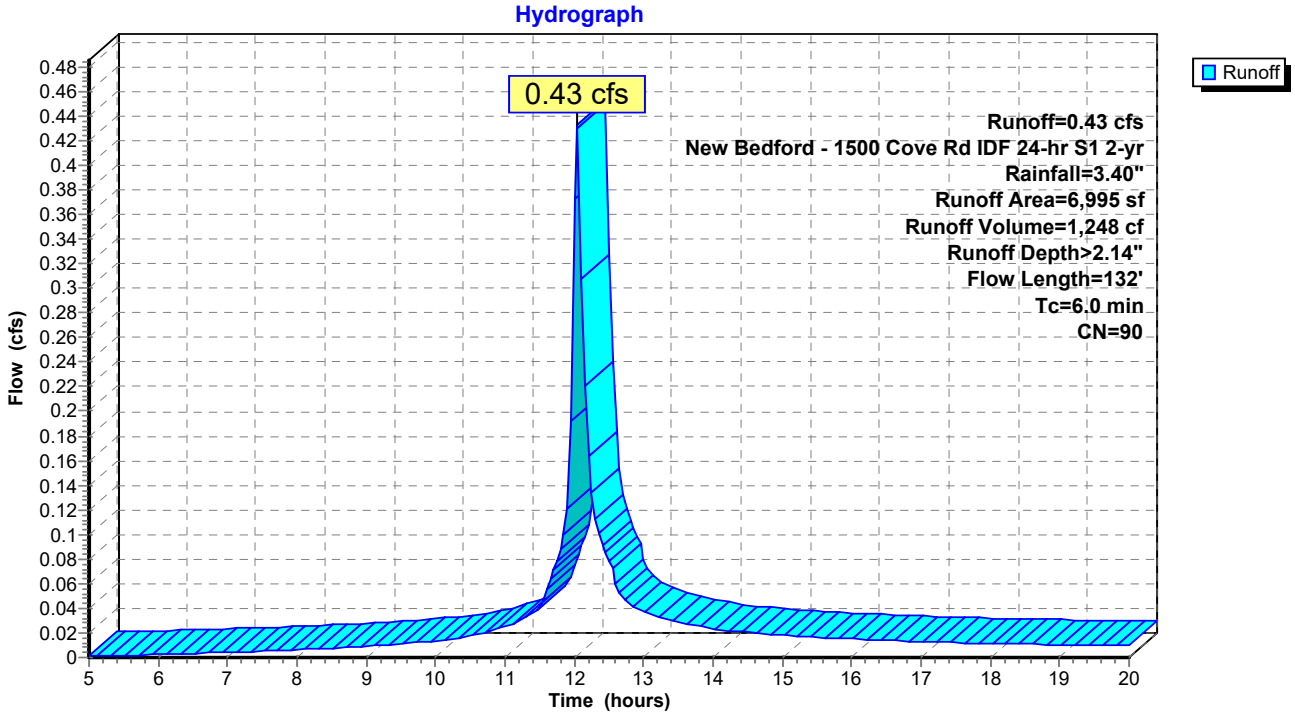
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,248 cf, Depth> 2.14"
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 944 | 98 | Roofs, HSG D |
| 1,094 | 98 | Paved parking, HSG D |
| 2,506 | 89 | <50% Grass cover, Poor, HSG D |
| 2,451 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,995 | 90 | Weighted Average |
| 4,957 | | 70.86% Pervious Area |
| 2,038 | | 29.14% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPE SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 0.2 | 45 | 0.0350 | 3.80 | | **Shallow Concentrated Flow, PAVED PARKING** Paved Kv= 20.3 fps |
| 0.7 | 84 | 0.0160 | 2.04 | | **Shallow Concentrated Flow, GRASS PARKIN/DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.5 | 132 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA1: PROP. SUBAREA 1



## Hydrograph for Subcatchment PSA1: PROP. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.00 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.01 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.02 |
| 11.25 | 1.06 | 0.36 | 0.03 |
| 11.50 | 1.14 | 0.42 | 0.04 |
| 11.75 | 1.30 | 0.53 | 0.08 |
| 12.00 | 1.85 | 0.97 | **0.37** |
| 12.25 | 2.13 | 1.20 | **0.13** |
| 12.50 | 2.27 | 1.33 | 0.08 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.03 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.02 |
| 14.25 | 2.65 | 1.67 | 0.02 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.02 |
| 16.25 | 2.89 | 1.88 | 0.01 |
| 16.50 | 2.91 | 1.90 | 0.01 |
| 16.75 | 2.93 | 1.92 | 0.01 |
| 17.00 | 2.96 | 1.94 | 0.01 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment PSA2: PROP. SUBAREA 2

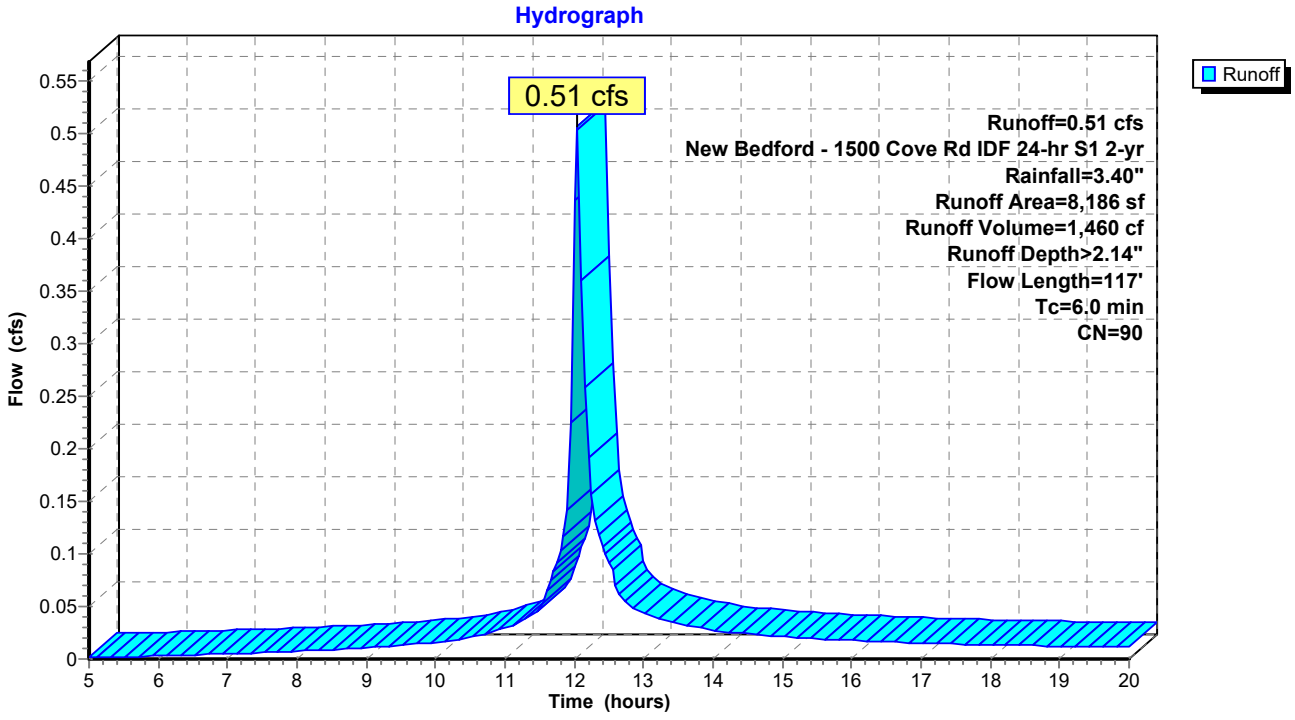
Runoff = 0.51 cfs @ 12.04 hrs, Volume= 1,460 cf, Depth> 2.14"
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 4,378 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 3,808 | 80 | >75% Grass cover, Good, HSG D |
| 8,186 | 90 | Weighted Average |
| 3,808 | | 46.52% Pervious Area |
| 4,378 | | 53.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPED SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 1.1 | 79 | 0.0140 | 1.17 | | **Sheet Flow, SE-COR PARKING LOT NORTHERLY** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.2 | 35 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, EDGE PRKING** Paved Kv= 20.3 fps |
| 1.9 | 117 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2: PROP. SUBAREA 2



## Hydrograph for Subcatchment PSA2: PROP. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.01 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.02 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.03 |
| 11.25 | 1.06 | 0.36 | 0.04 |
| 11.50 | 1.14 | 0.42 | 0.05 |
| 11.75 | 1.30 | 0.53 | 0.09 |
| 12.00 | 1.85 | 0.97 | **0.44** |
| 12.25 | 2.13 | 1.20 | **0.16** |
| 12.50 | 2.27 | 1.33 | 0.09 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.04 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.03 |
| 14.25 | 2.65 | 1.67 | 0.03 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.02 |
| 16.25 | 2.89 | 1.88 | 0.02 |
| 16.50 | 2.91 | 1.90 | 0.02 |
| 16.75 | 2.93 | 1.92 | 0.02 |
| 17.00 | 2.96 | 1.94 | 0.02 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

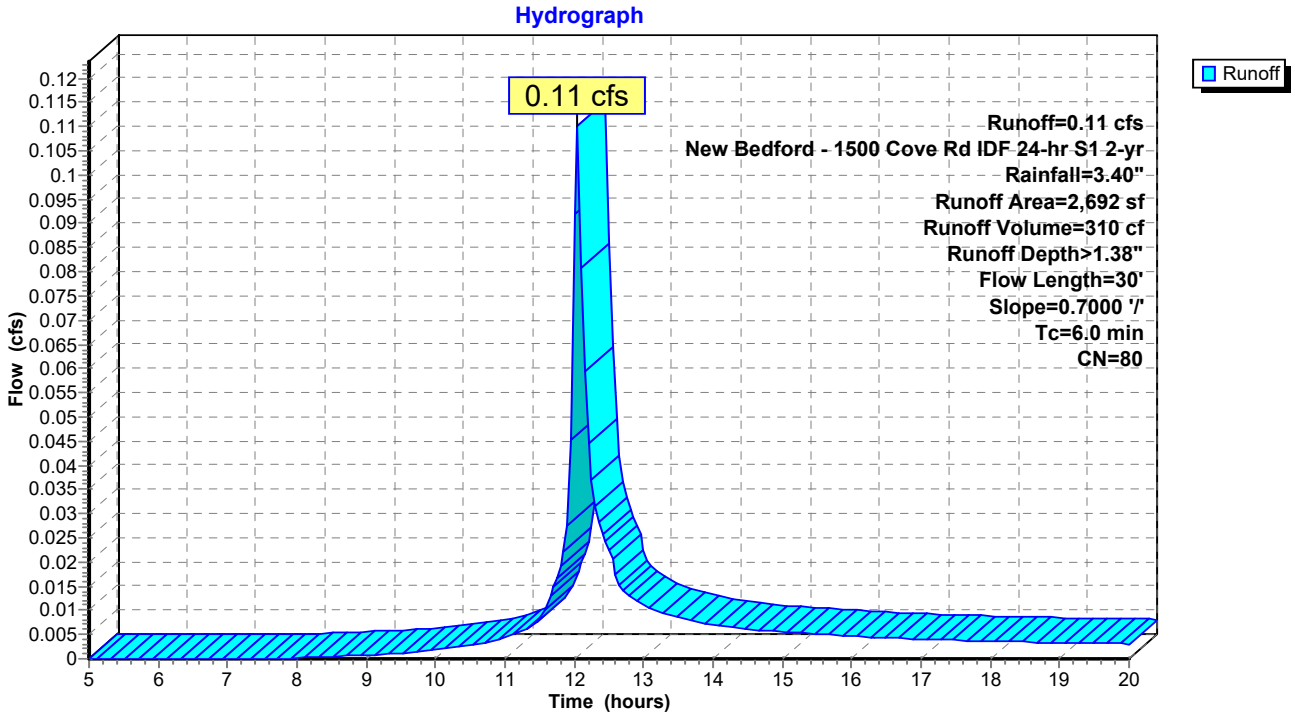
Runoff = 0.11 cfs @ 12.04 hrs, Volume= 310 cf, Depth> 1.38"
Routed to Pond RB : RAIN BARRELLS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 2,692 | 80 | >75% Grass cover, Good, HSG D |
| 2,692 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.1 | 30 | 0.7000 | 4.62 | | **Sheet Flow, ROOF** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.1 | 30 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2



## Hydrograph for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.00 | 0.00 |
| 5.50 | 0.33 | 0.00 | 0.00 |
| 5.75 | 0.34 | 0.00 | 0.00 |
| 6.00 | 0.36 | 0.00 | 0.00 |
| 6.25 | 0.38 | 0.00 | 0.00 |
| 6.50 | 0.40 | 0.00 | 0.00 |
| 6.75 | 0.42 | 0.00 | 0.00 |
| 7.00 | 0.45 | 0.00 | 0.00 |
| 7.25 | 0.47 | 0.00 | 0.00 |
| 7.50 | 0.49 | 0.00 | 0.00 |
| 7.75 | 0.51 | 0.00 | 0.00 |
| 8.00 | 0.54 | 0.00 | 0.00 |
| 8.25 | 0.57 | 0.00 | 0.00 |
| 8.50 | 0.59 | 0.00 | 0.00 |
| 8.75 | 0.62 | 0.01 | 0.00 |
| 9.00 | 0.65 | 0.01 | 0.00 |
| 9.25 | 0.68 | 0.01 | 0.00 |
| 9.50 | 0.72 | 0.02 | 0.00 |
| 9.75 | 0.75 | 0.02 | 0.00 |
| 10.00 | 0.79 | 0.03 | 0.00 |
| 10.25 | 0.83 | 0.04 | 0.00 |
| 10.50 | 0.88 | 0.05 | 0.00 |
| 10.75 | 0.93 | 0.06 | 0.00 |
| 11.00 | 0.99 | 0.08 | 0.00 |
| 11.25 | 1.06 | 0.10 | 0.01 |
| 11.50 | 1.14 | 0.13 | 0.01 |
| 11.75 | 1.30 | 0.20 | 0.02 |
| 12.00 | 1.85 | 0.47 | **0.09** |
| 12.25 | 2.13 | 0.64 | **0.04** |
| 12.50 | 2.27 | 0.74 | 0.02 |
| 12.75 | 2.36 | 0.79 | 0.01 |
| 13.00 | 2.42 | 0.84 | 0.01 |
| 13.25 | 2.48 | 0.88 | 0.01 |
| 13.50 | 2.53 | 0.91 | 0.01 |
| 13.75 | 2.58 | 0.94 | 0.01 |
| 14.00 | 2.62 | 0.97 | 0.01 |
| 14.25 | 2.65 | 1.00 | 0.01 |
| 14.50 | 2.69 | 1.02 | 0.01 |
| 14.75 | 2.72 | 1.05 | 0.01 |
| 15.00 | 2.75 | 1.07 | 0.01 |
| 15.25 | 2.78 | 1.09 | 0.01 |
| 15.50 | 2.81 | 1.11 | 0.01 |
| 15.75 | 2.84 | 1.13 | 0.00 |
| 16.00 | 2.86 | 1.15 | 0.00 |
| 16.25 | 2.89 | 1.17 | 0.00 |
| 16.50 | 2.91 | 1.18 | 0.00 |
| 16.75 | 2.93 | 1.20 | 0.00 |
| 17.00 | 2.96 | 1.22 | 0.00 |
| 17.25 | 2.98 | 1.23 | 0.00 |
| 17.50 | 3.00 | 1.25 | 0.00 |
| 17.75 | 3.02 | 1.26 | 0.00 |
| 18.00 | 3.04 | 1.28 | 0.00 |
| 18.25 | 3.06 | 1.29 | 0.00 |
| 18.50 | 3.08 | 1.31 | 0.00 |
| 18.75 | 3.09 | 1.32 | 0.00 |
| 19.00 | 3.11 | 1.33 | 0.00 |
| 19.25 | 3.13 | 1.35 | 0.00 |
| 19.50 | 3.14 | 1.36 | 0.00 |
| 19.75 | 3.16 | 1.37 | 0.00 |
| 20.00 | **3.18** | **1.38** | 0.00 |

## Summary for Pond RB: RAIN BARRELLS

Inflow Area = 2,692 sf, 0.00% Impervious, Inflow Depth > 1.38" for 2-yr event
Inflow = 0.11 cfs @ 12.04 hrs, Volume= 310 cf
Outflow = 0.10 cfs @ 12.04 hrs, Volume= 261 cf, Atten= 6%, Lag= 0.0 min
Primary = 0.00 cfs @ 11.50 hrs, Volume= 56 cf
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)
Secondary = 0.10 cfs @ 12.04 hrs, Volume= 205 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.59' @ 12.05 hrs Surf.Area= 17 sf Storage= 49 cf

Plug-Flow detention time= 76.4 min calculated for 261 cf (84% of inflow)
Center-of-Mass det. time= 25.4 min ( 836.5 - 811.2 )

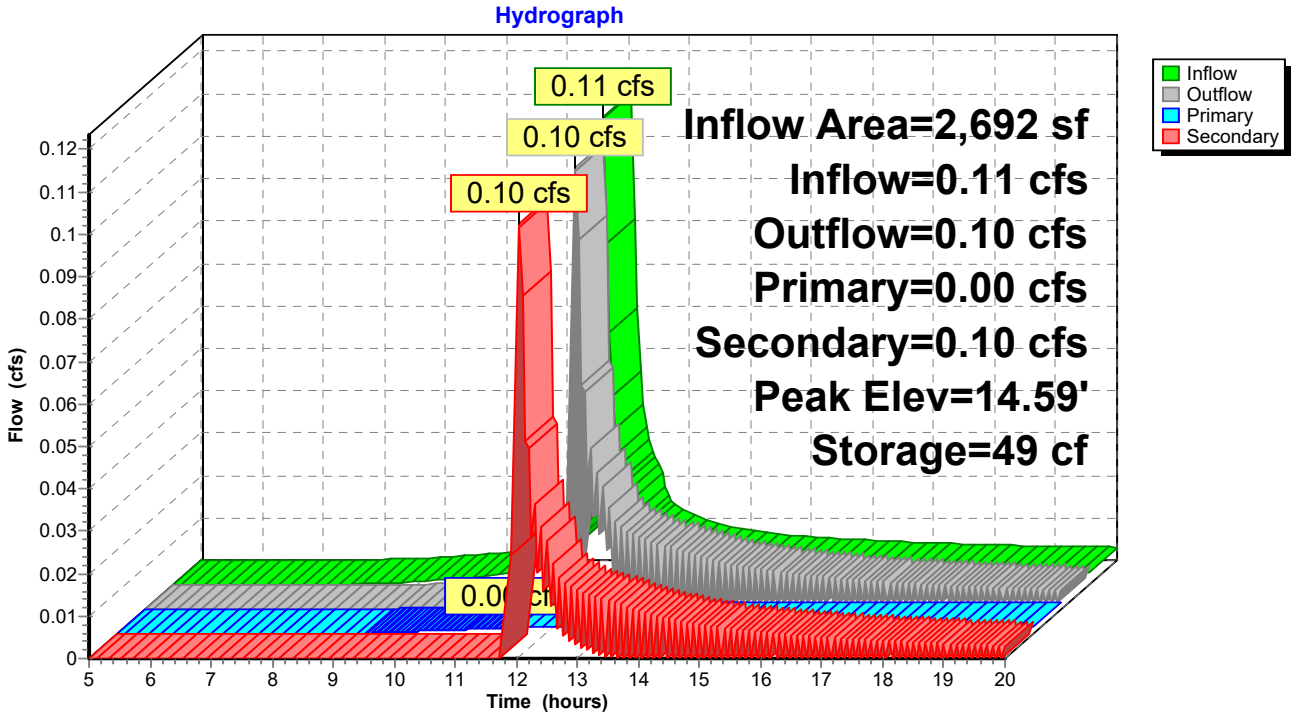
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 11.00' | 49 cf | **1.90'D x 2.90'H Vertical Cone/Cylinder** x 6 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 11.10' | **0.1" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Secondary | 14.50' | **3.0" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |

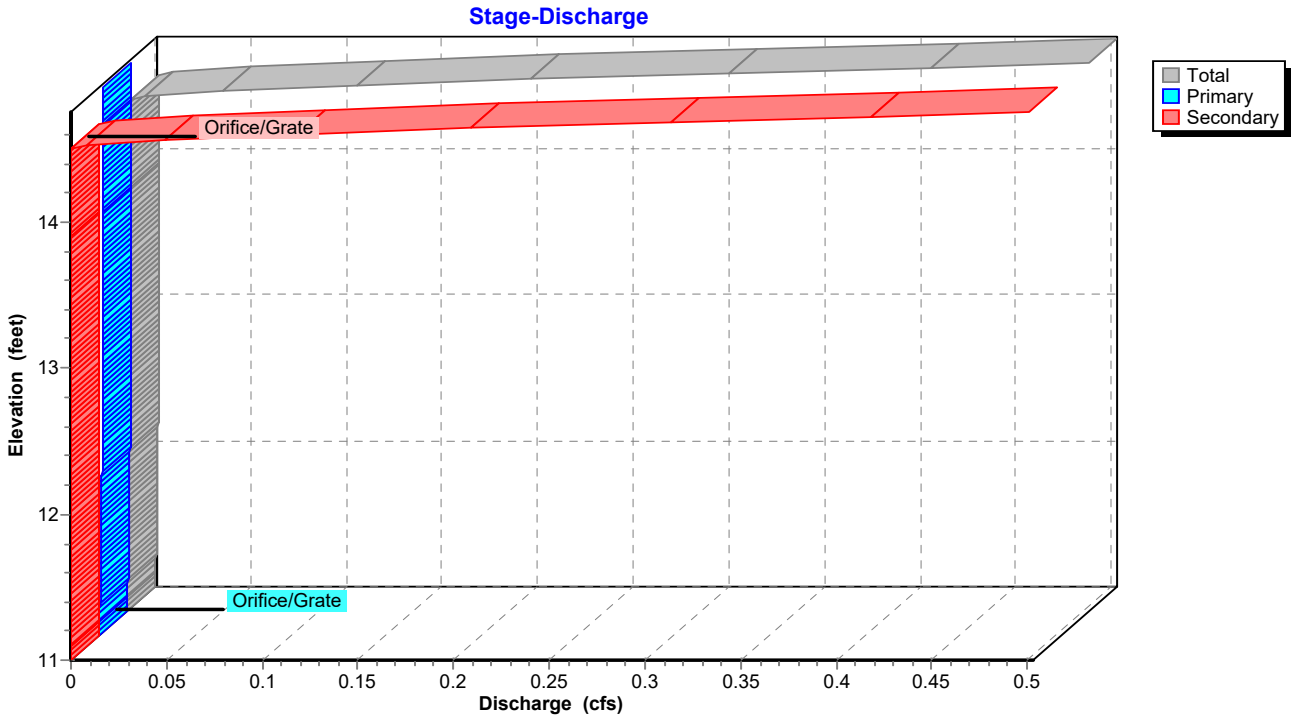
**Primary OutFlow** Max=0.00 cfs @ 11.50 hrs HW=12.15' TW=11.15' (TW follows 1.00' below HW)
↑—**1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 4.81 fps)

**Secondary OutFlow** Max=0.10 cfs @ 12.04 hrs HW=14.59' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.02 fps)

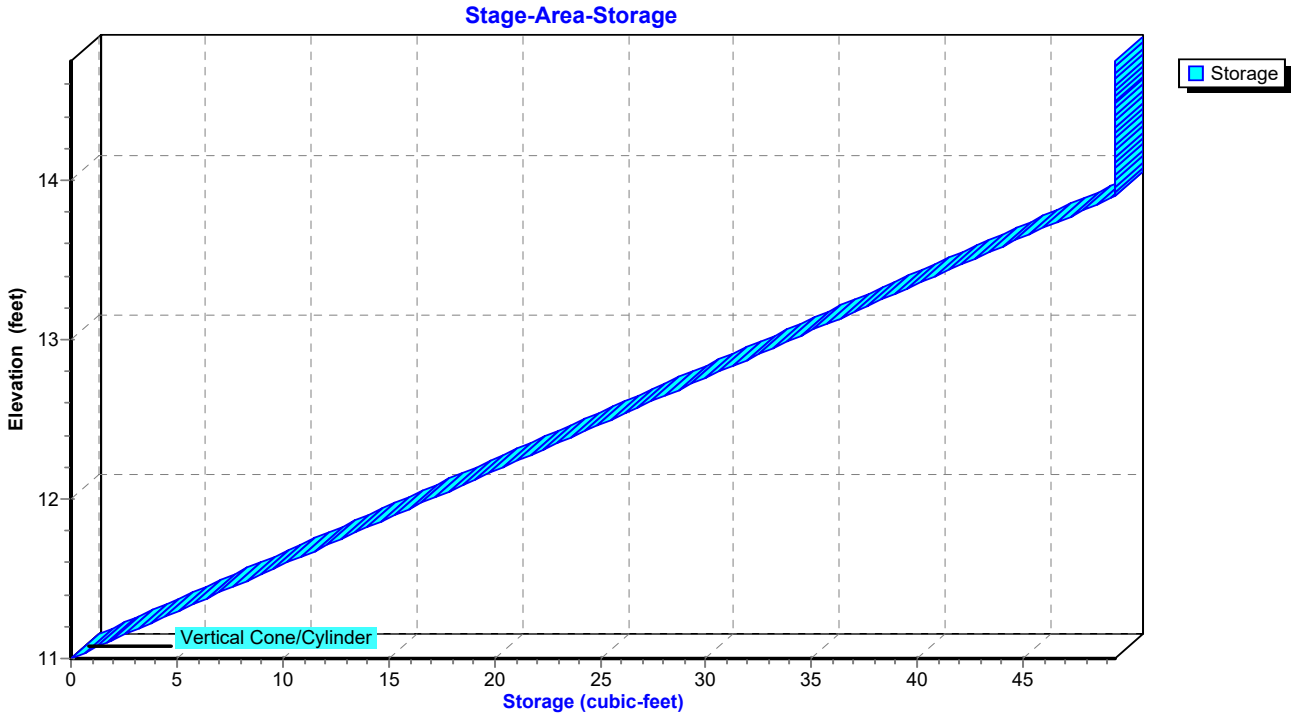
## Pond RB: RAIN BARRELLS




## Pond RB: RAIN BARRELLS



## Pond RB: RAIN BARRELLS



## Hydrograph for Pond RB: RAIN BARRELLS

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 5.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 1 | 11.03 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 2 | 11.10 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 3 | 11.17 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 5 | 11.28 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 7 | 11.43 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 12 | 11.68 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.01 | 20 | 12.15 | 0.00 | **0.00** | 0.00 |
| 12.00 | **0.09** | **49** | **14.59** | **0.10** | 0.00 | **0.10** |
| 12.50 | **0.02** | 49 | **14.54** | **0.03** | 0.00 | **0.03** |
| 13.00 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 13.50 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.01 |
| 14.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 14.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 15.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 16.00 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 16.50 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 17.00 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.00 |
| 17.50 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 18.00 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 18.50 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.00 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.50 | 0.00 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.00 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond RB: RAIN BARRELLS

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 11.00 | 0.00 | 0.00 | 0.00 |
| 11.05 | 0.00 | 0.00 | 0.00 |
| 11.10 | 0.00 | 0.00 | 0.00 |
| 11.15 | 0.00 | 0.00 | 0.00 |
| 11.20 | 0.00 | 0.00 | 0.00 |
| 11.25 | 0.00 | 0.00 | 0.00 |
| 11.30 | 0.00 | 0.00 | 0.00 |
| 11.35 | 0.00 | 0.00 | 0.00 |
| 11.40 | 0.00 | 0.00 | 0.00 |
| 11.45 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 |
| 11.55 | 0.00 | 0.00 | 0.00 |
| 11.60 | 0.00 | 0.00 | 0.00 |
| 11.65 | 0.00 | 0.00 | 0.00 |
| 11.70 | 0.00 | 0.00 | 0.00 |
| 11.75 | 0.00 | 0.00 | 0.00 |
| 11.80 | 0.00 | 0.00 | 0.00 |
| 11.85 | 0.00 | 0.00 | 0.00 |
| 11.90 | 0.00 | 0.00 | 0.00 |
| 11.95 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 |
| 12.05 | 0.00 | 0.00 | 0.00 |
| 12.10 | 0.00 | **0.00** | 0.00 |
| 12.15 | 0.00 | **0.00** | 0.00 |
| 12.20 | 0.00 | 0.00 | 0.00 |
| 12.25 | 0.00 | 0.00 | 0.00 |
| 12.30 | 0.00 | 0.00 | 0.00 |
| 12.35 | 0.00 | 0.00 | 0.00 |
| 12.40 | 0.00 | 0.00 | 0.00 |
| 12.45 | 0.00 | 0.00 | 0.00 |
| 12.50 | 0.00 | 0.00 | 0.00 |
| 12.55 | 0.00 | 0.00 | 0.00 |
| 12.60 | 0.00 | 0.00 | 0.00 |
| 12.65 | 0.00 | 0.00 | 0.00 |
| 12.70 | 0.00 | 0.00 | 0.00 |
| 12.75 | 0.00 | 0.00 | 0.00 |
| 12.80 | 0.00 | 0.00 | 0.00 |
| 12.85 | 0.00 | 0.00 | 0.00 |
| 12.90 | 0.00 | 0.00 | 0.00 |
| 12.95 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.00 | 0.00 | 0.00 |
| 13.05 | 0.00 | 0.00 | 0.00 |
| 13.10 | 0.00 | 0.00 | 0.00 |
| 13.15 | 0.00 | 0.00 | 0.00 |
| 13.20 | 0.00 | 0.00 | 0.00 |
| 13.25 | 0.00 | 0.00 | 0.00 |
| 13.30 | 0.00 | 0.00 | 0.00 |
| 13.35 | 0.00 | 0.00 | 0.00 |
| 13.40 | 0.00 | 0.00 | 0.00 |
| 13.45 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.00 | 0.00 | 0.00 |
| 13.55 | 0.00 | 0.00 | 0.00 |
| 13.60 | 0.00 | 0.00 | 0.00 |
| 13.65 | 0.00 | 0.00 | 0.00 |
| 13.70 | 0.00 | 0.00 | 0.00 |
| 13.75 | 0.00 | 0.00 | 0.00 |
| 13.80 | 0.00 | 0.00 | 0.00 |
| 13.85 | 0.00 | 0.00 | 0.00 |
| 13.90 | 0.00 | 0.00 | 0.00 |
| 13.95 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.00 | 0.00 | 0.00 |
| 14.05 | 0.00 | 0.00 | 0.00 |
| 14.10 | 0.00 | 0.00 | 0.00 |
| 14.15 | 0.00 | 0.00 | 0.00 |
| 14.20 | 0.00 | 0.00 | 0.00 |
| 14.25 | 0.00 | 0.00 | 0.00 |
| 14.30 | 0.00 | 0.00 | 0.00 |
| 14.35 | 0.00 | 0.00 | 0.00 |
| 14.40 | 0.00 | 0.00 | 0.00 |
| 14.45 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.00 | 0.00 | 0.00 |
| 14.55 | 0.03 | 0.00 | 0.03 |
| 14.60 | 0.12 | 0.00 | 0.12 |
| 14.65 | 0.24 | 0.00 | 0.24 |
| 14.70 | 0.39 | 0.00 | 0.38 |
| 14.75 | **0.50** | 0.00 | **0.50** |

## Stage-Area-Storage for Pond RB: RAIN BARRELLS

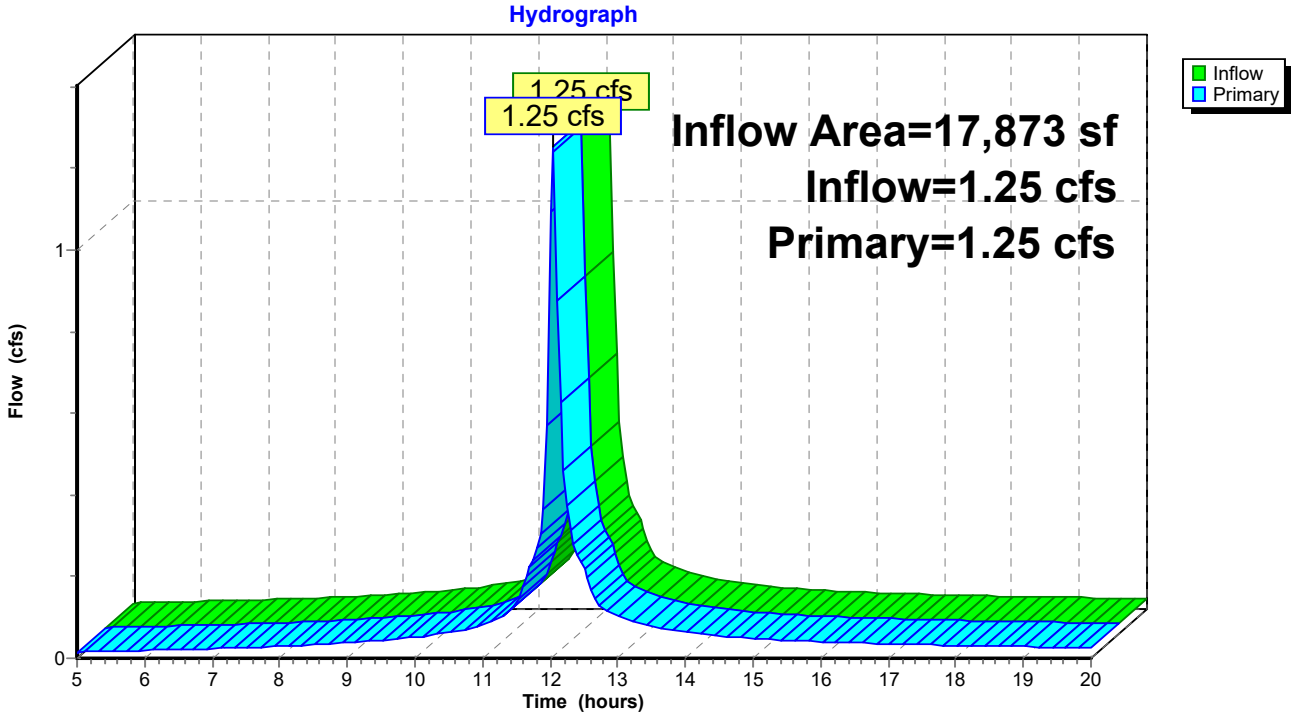
| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 11.00 | 0 |
| 11.05 | 1 |
| 11.10 | 2 |
| 11.15 | 3 |
| 11.20 | 3 |
| 11.25 | 4 |
| 11.30 | 5 |
| 11.35 | 6 |
| 11.40 | 7 |
| 11.45 | 8 |
| 11.50 | 9 |
| 11.55 | 9 |
| 11.60 | 10 |
| 11.65 | 11 |
| 11.70 | 12 |
| 11.75 | 13 |
| 11.80 | 14 |
| 11.85 | 14 |
| 11.90 | 15 |
| 11.95 | 16 |
| 12.00 | 17 |
| 12.05 | 18 |
| 12.10 | 19 |
| 12.15 | 20 |
| 12.20 | 20 |
| 12.25 | 21 |
| 12.30 | 22 |
| 12.35 | 23 |
| 12.40 | 24 |
| 12.45 | 25 |
| 12.50 | 26 |
| 12.55 | 26 |
| 12.60 | 27 |
| 12.65 | 28 |
| 12.70 | 29 |
| 12.75 | 30 |
| 12.80 | 31 |
| 12.85 | 31 |
| 12.90 | 32 |
| 12.95 | 33 |
| 13.00 | 34 |
| 13.05 | 35 |
| 13.10 | 36 |
| 13.15 | 37 |
| 13.20 | 37 |
| 13.25 | 38 |
| 13.30 | 39 |
| 13.35 | 40 |
| 13.40 | 41 |
| 13.45 | 42 |
| 13.50 | 43 |
| 13.55 | 43 |
| 13.60 | 44 |
| 13.65 | 45 |
| 13.70 | 46 |
| 13.75 | 47 |
| 13.80 | 48 |
| 13.85 | 48 |
| 13.90 | **49** |
| 13.95 | 49 |
| 14.00 | 49 |
| 14.05 | 49 |
| 14.10 | 49 |
| 14.15 | 49 |
| 14.20 | 49 |
| 14.25 | 49 |
| 14.30 | 49 |
| 14.35 | 49 |
| 14.40 | 49 |
| 14.45 | 49 |
| 14.50 | 49 |
| 14.55 | 49 |
| 14.60 | 49 |
| 14.65 | 49 |
| 14.70 | 49 |
| 14.75 | 49 |

## Summary for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 75.47% Impervious, Inflow Depth > 2.55" for 2-yr event
Inflow = 1.25 cfs @ 12.04 hrs, Volume= 3,797 cf
Primary = 1.25 cfs @ 12.04 hrs, Volume= 3,797 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link ESAT: EXIST. SUBAREA TOTAL OFFSITE



## Hydrograph for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

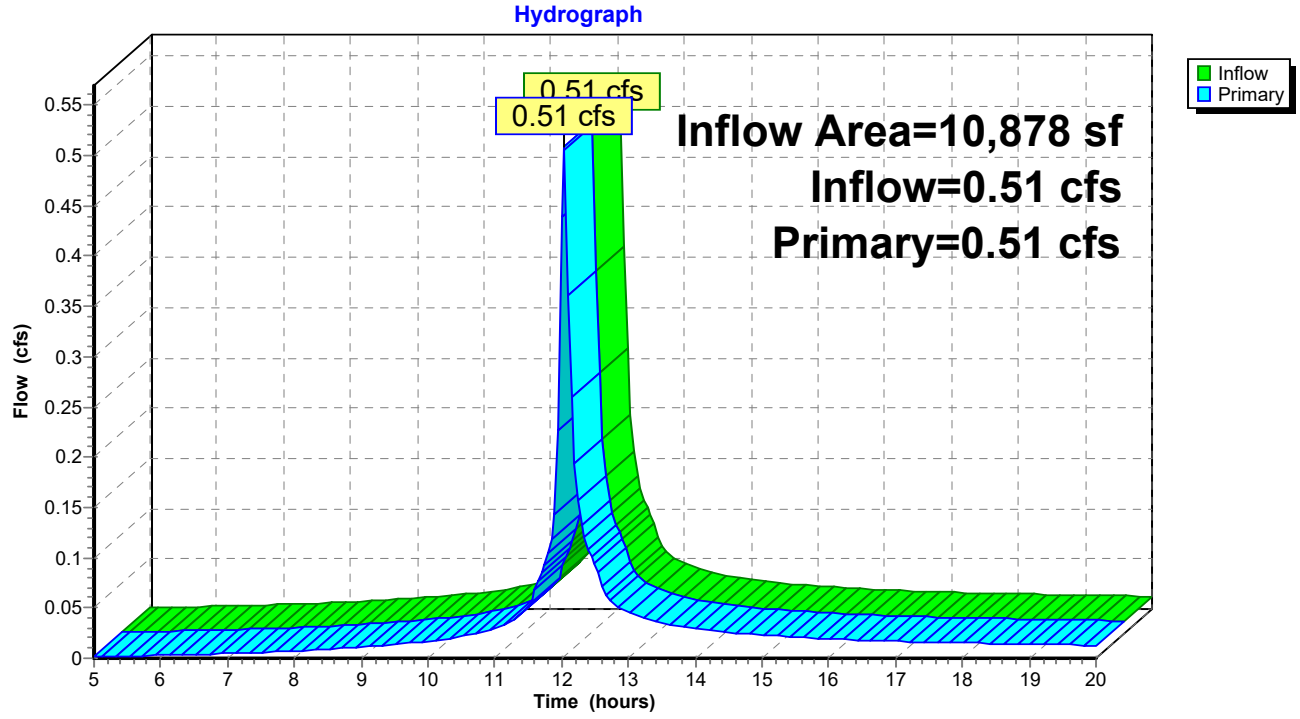
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.02 | **0.00** | 0.02 |
| 5.25 | 0.02 | 0.00 | 0.02 |
| 5.50 | 0.02 | 0.00 | 0.02 |
| 5.75 | 0.02 | 0.00 | 0.02 |
| 6.00 | 0.02 | 0.00 | 0.02 |
| 6.25 | 0.02 | 0.00 | 0.02 |
| 6.50 | 0.02 | 0.00 | 0.02 |
| 6.75 | 0.02 | 0.00 | 0.02 |
| 7.00 | 0.02 | 0.00 | 0.02 |
| 7.25 | 0.02 | 0.00 | 0.02 |
| 7.50 | 0.03 | 0.00 | 0.03 |
| 7.75 | 0.03 | 0.00 | 0.03 |
| 8.00 | 0.03 | 0.00 | 0.03 |
| 8.25 | 0.03 | 0.00 | 0.03 |
| 8.50 | 0.03 | 0.00 | 0.03 |
| 8.75 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.04 | 0.00 | 0.04 |
| 9.25 | 0.04 | 0.00 | 0.04 |
| 9.50 | 0.04 | 0.00 | 0.04 |
| 9.75 | 0.05 | 0.00 | 0.05 |
| 10.00 | 0.05 | 0.00 | 0.05 |
| 10.25 | 0.06 | 0.00 | 0.06 |
| 10.50 | 0.06 | 0.00 | 0.06 |
| 10.75 | 0.07 | 0.00 | 0.07 |
| 11.00 | 0.08 | 0.00 | 0.08 |
| 11.25 | 0.10 | 0.00 | 0.10 |
| 11.50 | 0.13 | 0.00 | 0.13 |
| 11.75 | 0.24 | 0.00 | 0.24 |
| 12.00 | **1.10** | 0.00 | **1.10** |
| 12.25 | **0.37** | 0.00 | **0.37** |
| 12.50 | 0.22 | 0.00 | 0.22 |
| 12.75 | 0.13 | 0.00 | 0.13 |
| 13.00 | 0.10 | 0.00 | 0.10 |
| 13.25 | 0.09 | 0.00 | 0.09 |
| 13.50 | 0.08 | 0.00 | 0.08 |
| 13.75 | 0.07 | 0.00 | 0.07 |
| 14.00 | 0.06 | 0.00 | 0.06 |
| 14.25 | 0.06 | 0.00 | 0.06 |
| 14.50 | 0.06 | 0.00 | 0.06 |
| 14.75 | 0.05 | 0.00 | 0.05 |
| 15.00 | 0.05 | 0.00 | 0.05 |
| 15.25 | 0.05 | 0.00 | 0.05 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.04 | 0.00 | 0.04 |
| 16.25 | 0.04 | 0.00 | 0.04 |
| 16.50 | 0.04 | 0.00 | 0.04 |
| 16.75 | 0.04 | 0.00 | 0.04 |
| 17.00 | 0.04 | 0.00 | 0.04 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.03 | 0.00 | 0.03 |
| 18.50 | 0.03 | 0.00 | 0.03 |
| 18.75 | 0.03 | 0.00 | 0.03 |
| 19.00 | 0.03 | 0.00 | 0.03 |
| 19.25 | 0.03 | 0.00 | 0.03 |
| 19.50 | 0.03 | 0.00 | 0.03 |
| 19.75 | 0.03 | 0.00 | 0.03 |
| 20.00 | 0.03 | 0.00 | 0.03 |

## Summary for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

Inflow Area = 10,878 sf, 40.25% Impervious, Inflow Depth > 1.67" for 2-yr event
Inflow = 0.51 cfs @ 12.04 hrs, Volume= 1,516 cf
Primary = 0.51 cfs @ 12.04 hrs, Volume= 1,516 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSA2(T): PROP SUB-AREA 2 (TOTAL)



## Hydrograph for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

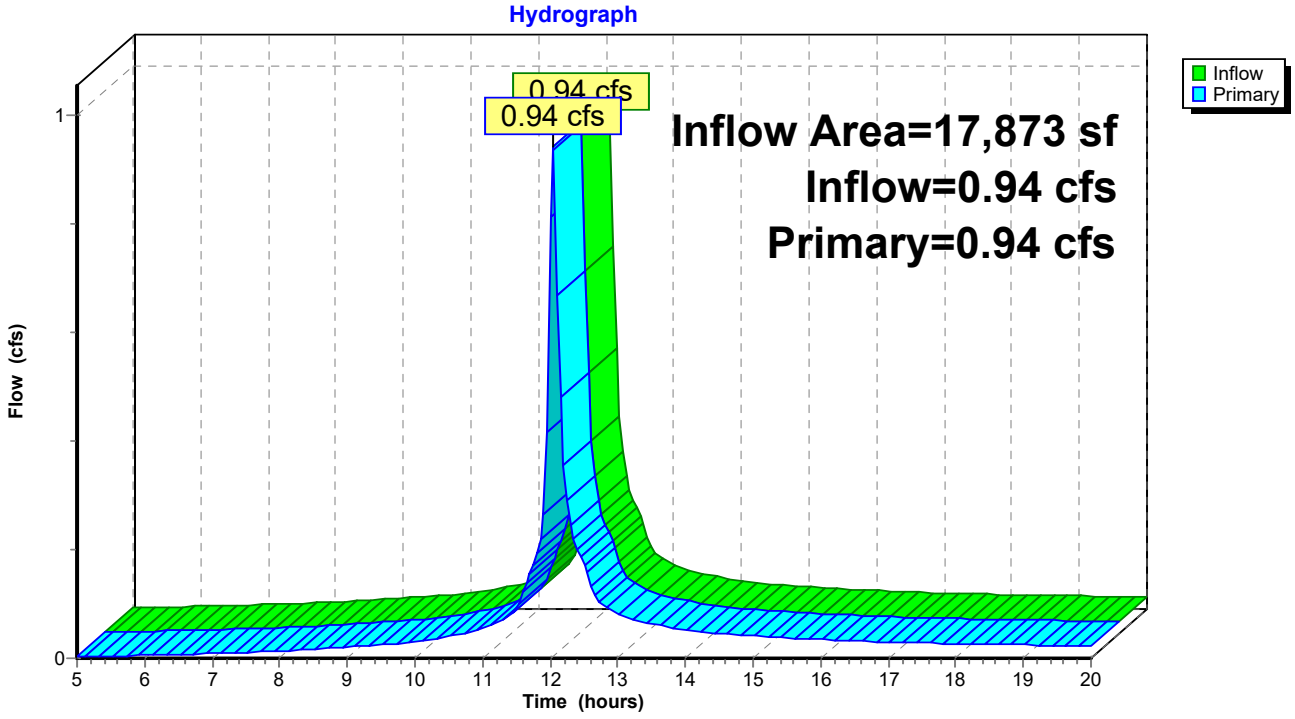
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.00 | **0.00** | 0.00 |
| 5.25 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 |
| 5.75 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 |
| 6.25 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 |
| 6.75 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 |
| 7.25 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.01 | 0.00 | 0.01 |
| 7.75 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.01 | 0.00 | 0.01 |
| 8.25 | 0.01 | 0.00 | 0.01 |
| 8.50 | 0.01 | 0.00 | 0.01 |
| 8.75 | 0.01 | 0.00 | 0.01 |
| 9.00 | 0.01 | 0.00 | 0.01 |
| 9.25 | 0.01 | 0.00 | 0.01 |
| 9.50 | 0.01 | 0.00 | 0.01 |
| 9.75 | 0.02 | 0.00 | 0.02 |
| 10.00 | 0.02 | 0.00 | 0.02 |
| 10.25 | 0.02 | 0.00 | 0.02 |
| 10.50 | 0.02 | 0.00 | 0.02 |
| 10.75 | 0.03 | 0.00 | 0.03 |
| 11.00 | 0.03 | 0.00 | 0.03 |
| 11.25 | 0.04 | 0.00 | 0.04 |
| 11.50 | 0.05 | 0.00 | 0.05 |
| 11.75 | 0.09 | 0.00 | 0.09 |
| 12.00 | **0.44** | 0.00 | **0.44** |
| 12.25 | **0.16** | 0.00 | **0.16** |
| 12.50 | 0.09 | 0.00 | 0.09 |
| 12.75 | 0.06 | 0.00 | 0.06 |
| 13.00 | 0.05 | 0.00 | 0.05 |
| 13.25 | 0.04 | 0.00 | 0.04 |
| 13.50 | 0.03 | 0.00 | 0.03 |
| 13.75 | 0.03 | 0.00 | 0.03 |
| 14.00 | 0.03 | 0.00 | 0.03 |
| 14.25 | 0.03 | 0.00 | 0.03 |
| 14.50 | 0.03 | 0.00 | 0.03 |
| 14.75 | 0.02 | 0.00 | 0.02 |
| 15.00 | 0.02 | 0.00 | 0.02 |
| 15.25 | 0.02 | 0.00 | 0.02 |
| 15.50 | 0.02 | 0.00 | 0.02 |
| 15.75 | 0.02 | 0.00 | 0.02 |
| 16.00 | 0.02 | 0.00 | 0.02 |
| 16.25 | 0.02 | 0.00 | 0.02 |
| 16.50 | 0.02 | 0.00 | 0.02 |
| 16.75 | 0.02 | 0.00 | 0.02 |
| 17.00 | 0.02 | 0.00 | 0.02 |
| 17.25 | 0.02 | 0.00 | 0.02 |
| 17.50 | 0.02 | 0.00 | 0.02 |
| 17.75 | 0.02 | 0.00 | 0.02 |
| 18.00 | 0.02 | 0.00 | 0.02 |
| 18.25 | 0.01 | 0.00 | 0.01 |
| 18.50 | 0.01 | 0.00 | 0.01 |
| 18.75 | 0.01 | 0.00 | 0.01 |
| 19.00 | 0.01 | 0.00 | 0.01 |
| 19.25 | 0.01 | 0.00 | 0.01 |
| 19.50 | 0.01 | 0.00 | 0.01 |
| 19.75 | 0.01 | 0.00 | 0.01 |
| 20.00 | 0.01 | 0.00 | 0.01 |

## Summary for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 35.90% Impervious, Inflow Depth > 1.86" for 2-yr event
Inflow = 0.94 cfs @ 12.04 hrs, Volume= 2,764 cf
Primary = 0.94 cfs @ 12.04 hrs, Volume= 2,764 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSAT: PROP. SUBAREA TOTAL OFFSITE



## Hydrograph for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.00 | **0.00** | 0.00 |
| 5.25 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 |
| 5.75 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.01 | 0.00 | 0.01 |
| 6.25 | 0.01 | 0.00 | 0.01 |
| 6.50 | 0.01 | 0.00 | 0.01 |
| 6.75 | 0.01 | 0.00 | 0.01 |
| 7.00 | 0.01 | 0.00 | 0.01 |
| 7.25 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.01 | 0.00 | 0.01 |
| 7.75 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.01 | 0.00 | 0.01 |
| 8.25 | 0.01 | 0.00 | 0.01 |
| 8.50 | 0.02 | 0.00 | 0.02 |
| 8.75 | 0.02 | 0.00 | 0.02 |
| 9.00 | 0.02 | 0.00 | 0.02 |
| 9.25 | 0.02 | 0.00 | 0.02 |
| 9.50 | 0.02 | 0.00 | 0.02 |
| 9.75 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.03 | 0.00 | 0.03 |
| 10.25 | 0.03 | 0.00 | 0.03 |
| 10.50 | 0.04 | 0.00 | 0.04 |
| 10.75 | 0.05 | 0.00 | 0.05 |
| 11.00 | 0.06 | 0.00 | 0.06 |
| 11.25 | 0.07 | 0.00 | 0.07 |
| 11.50 | 0.09 | 0.00 | 0.09 |
| 11.75 | 0.17 | 0.00 | 0.17 |
| 12.00 | **0.81** | 0.00 | **0.81** |
| 12.25 | **0.29** | 0.00 | **0.29** |
| 12.50 | 0.17 | 0.00 | 0.17 |
| 12.75 | 0.10 | 0.00 | 0.10 |
| 13.00 | 0.08 | 0.00 | 0.08 |
| 13.25 | 0.07 | 0.00 | 0.07 |
| 13.50 | 0.06 | 0.00 | 0.06 |
| 13.75 | 0.06 | 0.00 | 0.06 |
| 14.00 | 0.05 | 0.00 | 0.05 |
| 14.25 | 0.05 | 0.00 | 0.05 |
| 14.50 | 0.05 | 0.00 | 0.05 |
| 14.75 | 0.04 | 0.00 | 0.04 |
| 15.00 | 0.04 | 0.00 | 0.04 |
| 15.25 | 0.04 | 0.00 | 0.04 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.03 | 0.00 | 0.03 |
| 16.25 | 0.03 | 0.00 | 0.03 |
| 16.50 | 0.03 | 0.00 | 0.03 |
| 16.75 | 0.03 | 0.00 | 0.03 |
| 17.00 | 0.03 | 0.00 | 0.03 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.03 | 0.00 | 0.03 |
| 18.50 | 0.03 | 0.00 | 0.03 |
| 18.75 | 0.02 | 0.00 | 0.02 |
| 19.00 | 0.02 | 0.00 | 0.02 |
| 19.25 | 0.02 | 0.00 | 0.02 |
| 19.50 | 0.02 | 0.00 | 0.02 |
| 19.75 | 0.02 | 0.00 | 0.02 |
| 20.00 | 0.02 | 0.00 | 0.02 |

## Summary for Subcatchment ESA1: EXIST. SUBAREA 1

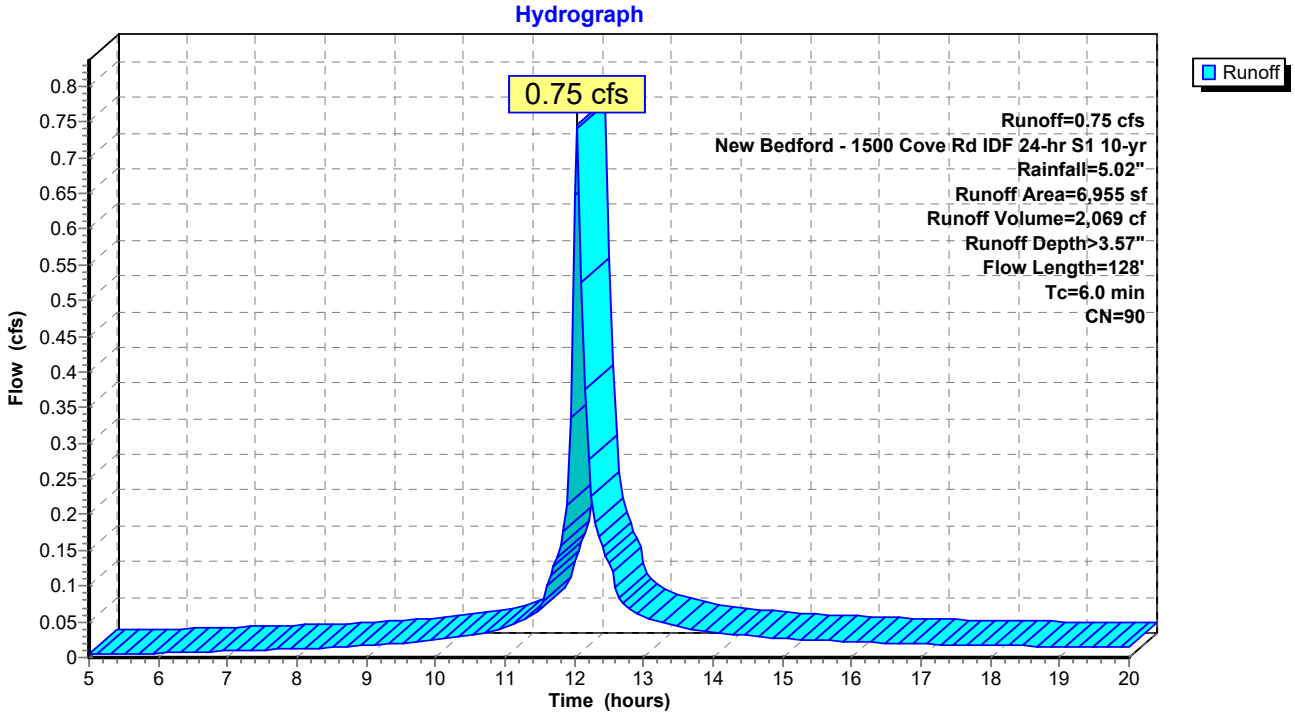
Runoff = 0.75 cfs @ 12.04 hrs, Volume= 2,069 cf, Depth> 3.57"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 10-yr Rainfall=5.02"

| Area (sf) | CN | Description |
|---|---|---|
| 1,689 | 98 | Roofs, HSG D |
| 1,045 | 98 | Paved parking, HSG D |
| 447 | 96 | Gravel surface, HSG D |
| 3,774 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,955 | 90 | Weighted Average |
| 4,221 | | 60.69% Pervious Area |
| 2,734 | | 39.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 43 | 0.0230 | 1.27 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.8 | 40 | 0.0150 | 0.86 | | **Shallow Concentrated Flow, LAWN IN BACKYARD** Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 45 | 0.0400 | 3.22 | | **Shallow Concentrated Flow, ACCROSS DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.6 | 128 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA1: EXIST. SUBAREA 1



## Hydrograph for Subcatchment ESA1: EXIST. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.40 | 0.03 | 0.00 |
| 5.25 | 0.43 | 0.03 | 0.00 |
| 5.50 | 0.45 | 0.04 | 0.01 |
| 5.75 | 0.48 | 0.05 | 0.01 |
| 6.00 | 0.51 | 0.06 | 0.01 |
| 6.25 | 0.53 | 0.07 | 0.01 |
| 6.50 | 0.56 | 0.08 | 0.01 |
| 6.75 | 0.59 | 0.09 | 0.01 |
| 7.00 | 0.62 | 0.11 | 0.01 |
| 7.25 | 0.65 | 0.12 | 0.01 |
| 7.50 | 0.69 | 0.14 | 0.01 |
| 7.75 | 0.72 | 0.15 | 0.01 |
| 8.00 | 0.75 | 0.17 | 0.01 |
| 8.25 | 0.79 | 0.19 | 0.01 |
| 8.50 | 0.83 | 0.21 | 0.01 |
| 8.75 | 0.87 | 0.24 | 0.02 |
| 9.00 | 0.91 | 0.26 | 0.02 |
| 9.25 | 0.96 | 0.29 | 0.02 |
| 9.50 | 1.00 | 0.32 | 0.02 |
| 9.75 | 1.06 | 0.36 | 0.02 |
| 10.00 | 1.11 | 0.39 | 0.02 |
| 10.25 | 1.17 | 0.44 | 0.03 |
| 10.50 | 1.24 | 0.48 | 0.03 |
| 10.75 | 1.31 | 0.54 | 0.04 |
| 11.00 | 1.40 | 0.60 | 0.04 |
| 11.25 | 1.50 | 0.68 | 0.05 |
| 11.50 | 1.63 | 0.79 | 0.07 |
| 11.75 | 1.88 | 0.99 | 0.14 |
| 12.00 | 2.75 | 1.75 | **0.65** |
| 12.25 | 3.18 | 2.15 | **0.23** |
| 12.50 | 3.42 | 2.37 | 0.13 |
| 12.75 | 3.54 | 2.49 | 0.07 |
| 13.00 | 3.64 | 2.58 | 0.06 |
| 13.25 | 3.72 | 2.66 | 0.05 |
| 13.50 | 3.79 | 2.72 | 0.04 |
| 13.75 | 3.86 | 2.79 | 0.04 |
| 14.00 | 3.92 | 2.84 | 0.04 |
| 14.25 | 3.97 | 2.89 | 0.03 |
| 14.50 | 4.02 | 2.94 | 0.03 |
| 14.75 | 4.07 | 2.98 | 0.03 |
| 15.00 | 4.11 | 3.03 | 0.03 |
| 15.25 | 4.16 | 3.07 | 0.03 |
| 15.50 | 4.20 | 3.10 | 0.02 |
| 15.75 | 4.23 | 3.14 | 0.02 |
| 16.00 | 4.27 | 3.18 | 0.02 |
| 16.25 | 4.30 | 3.21 | 0.02 |
| 16.50 | 4.34 | 3.24 | 0.02 |
| 16.75 | 4.37 | 3.27 | 0.02 |
| 17.00 | 4.40 | 3.30 | 0.02 |
| 17.25 | 4.43 | 3.33 | 0.02 |
| 17.50 | 4.46 | 3.36 | 0.02 |
| 17.75 | 4.49 | 3.38 | 0.02 |
| 18.00 | 4.52 | 3.41 | 0.02 |
| 18.25 | 4.54 | 3.44 | 0.02 |
| 18.50 | 4.57 | 3.46 | 0.02 |
| 18.75 | 4.59 | 3.49 | 0.02 |
| 19.00 | 4.62 | 3.51 | 0.02 |
| 19.25 | 4.64 | 3.53 | 0.01 |
| 19.50 | 4.67 | 3.55 | 0.01 |
| 19.75 | 4.69 | 3.58 | 0.01 |
| 20.00 | **4.71** | **3.60** | 0.01 |

## Summary for Subcatchment ESA2: EXIST. SUBAREA 2

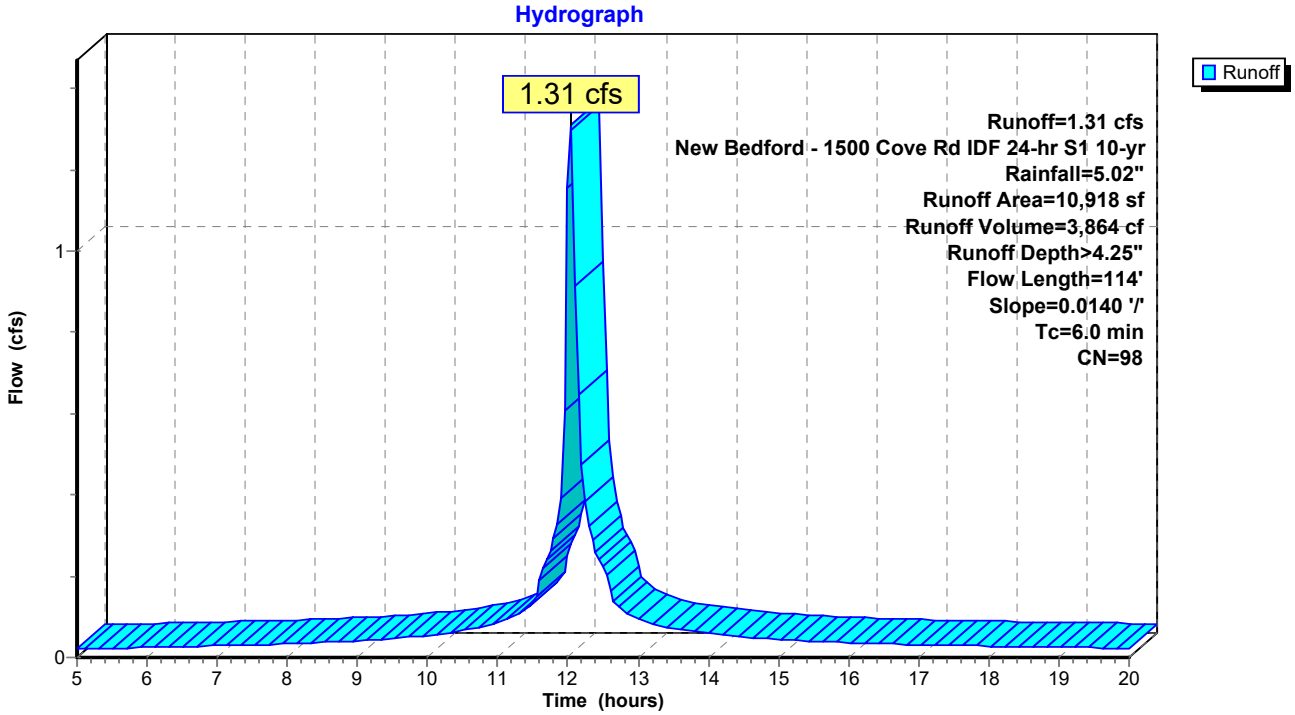
Runoff = 1.31 cfs @ 12.04 hrs, Volume= 3,864 cf, Depth> 4.25"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 10-yr Rainfall=5.02"

| Area (sf) | CN | Description |
|---|---|---|
| 2,072 | 98 | Roofs, HSG D |
| 8,682 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 164 | 84 | 50-75% Grass cover, Fair, HSG D |
| 10,918 | 98 | Weighted Average |
| 164 | | 1.50% Pervious Area |
| 10,754 | | 98.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.8 | 50 | 0.0140 | 1.07 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.4 | 64 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, WEST EDGE PRKING** Paved Kv= 20.3 fps |
| 1.2 | 114 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA2: EXIST. SUBAREA 2



## Hydrograph for Subcatchment ESA2: EXIST. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.40 | 0.23 | 0.02 |
| 5.25 | 0.43 | 0.25 | 0.02 |
| 5.50 | 0.45 | 0.28 | 0.02 |
| 5.75 | 0.48 | 0.30 | 0.02 |
| 6.00 | 0.51 | 0.32 | 0.02 |
| 6.25 | 0.53 | 0.35 | 0.03 |
| 6.50 | 0.56 | 0.38 | 0.03 |
| 6.75 | 0.59 | 0.40 | 0.03 |
| 7.00 | 0.62 | 0.43 | 0.03 |
| 7.25 | 0.65 | 0.46 | 0.03 |
| 7.50 | 0.69 | 0.49 | 0.03 |
| 7.75 | 0.72 | 0.52 | 0.03 |
| 8.00 | 0.75 | 0.56 | 0.03 |
| 8.25 | 0.79 | 0.59 | 0.04 |
| 8.50 | 0.83 | 0.63 | 0.04 |
| 8.75 | 0.87 | 0.67 | 0.04 |
| 9.00 | 0.91 | 0.71 | 0.04 |
| 9.25 | 0.96 | 0.75 | 0.04 |
| 9.50 | 1.00 | 0.80 | 0.05 |
| 9.75 | 1.06 | 0.84 | 0.05 |
| 10.00 | 1.11 | 0.90 | 0.05 |
| 10.25 | 1.17 | 0.96 | 0.06 |
| 10.50 | 1.24 | 1.02 | 0.07 |
| 10.75 | 1.31 | 1.09 | 0.07 |
| 11.00 | 1.40 | 1.18 | 0.09 |
| 11.25 | 1.50 | 1.28 | 0.10 |
| 11.50 | 1.63 | 1.41 | 0.13 |
| 11.75 | 1.88 | 1.66 | 0.26 |
| 12.00 | 2.75 | 2.52 | **1.15** |
| 12.25 | 3.18 | 2.95 | **0.38** |
| 12.50 | 3.42 | 3.18 | 0.22 |
| 12.75 | 3.54 | 3.31 | 0.12 |
| 13.00 | 3.64 | 3.40 | 0.10 |
| 13.25 | 3.72 | 3.49 | 0.08 |
| 13.50 | 3.79 | 3.56 | 0.07 |
| 13.75 | 3.86 | 3.62 | 0.06 |
| 14.00 | 3.92 | 3.68 | 0.06 |
| 14.25 | 3.97 | 3.74 | 0.05 |
| 14.50 | 4.02 | 3.79 | 0.05 |
| 14.75 | 4.07 | 3.83 | 0.05 |
| 15.00 | 4.11 | 3.88 | 0.04 |
| 15.25 | 4.16 | 3.92 | 0.04 |
| 15.50 | 4.20 | 3.96 | 0.04 |
| 15.75 | 4.23 | 4.00 | 0.04 |
| 16.00 | 4.27 | 4.03 | 0.04 |
| 16.25 | 4.30 | 4.07 | 0.03 |
| 16.50 | 4.34 | 4.10 | 0.03 |
| 16.75 | 4.37 | 4.13 | 0.03 |
| 17.00 | 4.40 | 4.16 | 0.03 |
| 17.25 | 4.43 | 4.19 | 0.03 |
| 17.50 | 4.46 | 4.22 | 0.03 |
| 17.75 | 4.49 | 4.25 | 0.03 |
| 18.00 | 4.52 | 4.28 | 0.03 |
| 18.25 | 4.54 | 4.31 | 0.03 |
| 18.50 | 4.57 | 4.33 | 0.03 |
| 18.75 | 4.59 | 4.36 | 0.03 |
| 19.00 | 4.62 | 4.38 | 0.02 |
| 19.25 | 4.64 | 4.41 | 0.02 |
| 19.50 | 4.67 | 4.43 | 0.02 |
| 19.75 | 4.69 | 4.45 | 0.02 |
| 20.00 | **4.71** | **4.47** | 0.02 |

## Summary for Subcatchment PSA1: PROP. SUBAREA 1

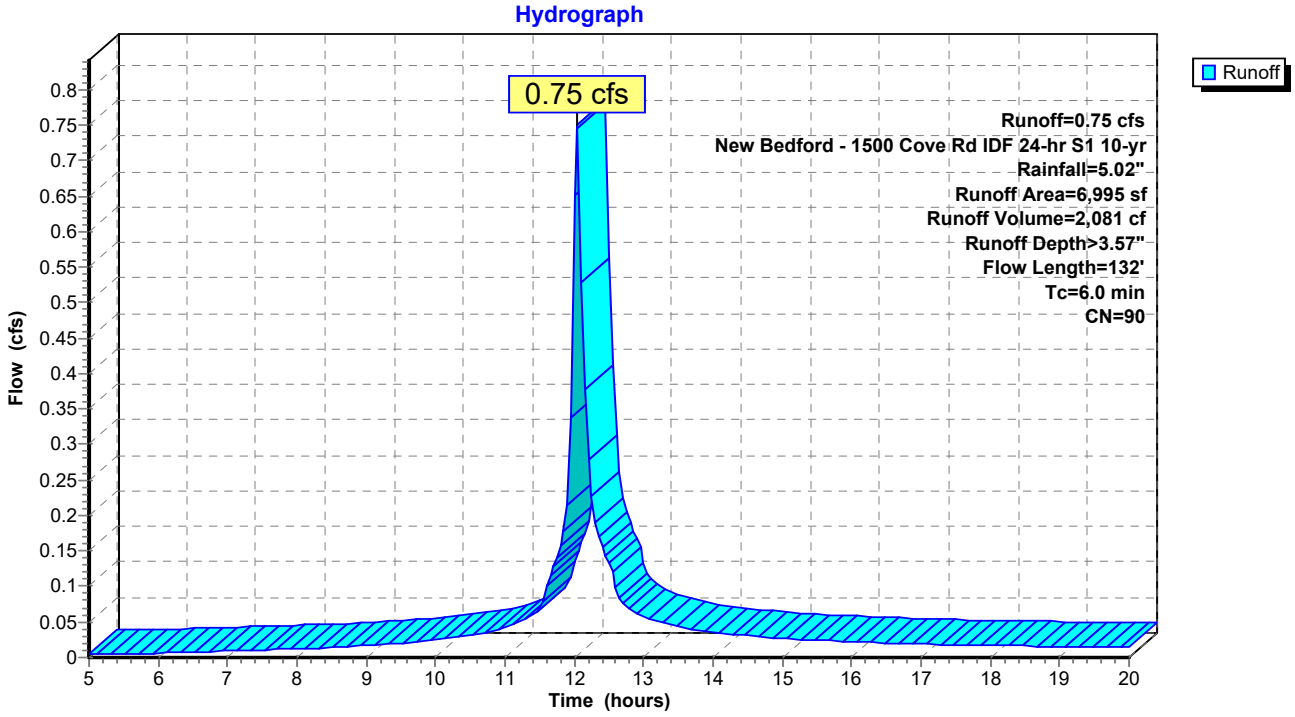
Runoff = 0.75 cfs @ 12.04 hrs, Volume= 2,081 cf, Depth> 3.57"
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 10-yr Rainfall=5.02"

| Area (sf) | CN | Description |
|---|---|---|
| 944 | 98 | Roofs, HSG D |
| 1,094 | 98 | Paved parking, HSG D |
| 2,506 | 89 | <50% Grass cover, Poor, HSG D |
| 2,451 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,995 | 90 | Weighted Average |
| 4,957 | | 70.86% Pervious Area |
| 2,038 | | 29.14% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPE SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 0.2 | 45 | 0.0350 | 3.80 | | **Shallow Concentrated Flow, PAVED PARKING** Paved Kv= 20.3 fps |
| 0.7 | 84 | 0.0160 | 2.04 | | **Shallow Concentrated Flow, GRASS PARKIN/DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.5 | 132 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA1: PROP. SUBAREA 1



## Hydrograph for Subcatchment PSA1: PROP. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.40 | 0.03 | 0.00 |
| 5.25 | 0.43 | 0.03 | 0.00 |
| 5.50 | 0.45 | 0.04 | 0.01 |
| 5.75 | 0.48 | 0.05 | 0.01 |
| 6.00 | 0.51 | 0.06 | 0.01 |
| 6.25 | 0.53 | 0.07 | 0.01 |
| 6.50 | 0.56 | 0.08 | 0.01 |
| 6.75 | 0.59 | 0.09 | 0.01 |
| 7.00 | 0.62 | 0.11 | 0.01 |
| 7.25 | 0.65 | 0.12 | 0.01 |
| 7.50 | 0.69 | 0.14 | 0.01 |
| 7.75 | 0.72 | 0.15 | 0.01 |
| 8.00 | 0.75 | 0.17 | 0.01 |
| 8.25 | 0.79 | 0.19 | 0.01 |
| 8.50 | 0.83 | 0.21 | 0.01 |
| 8.75 | 0.87 | 0.24 | 0.02 |
| 9.00 | 0.91 | 0.26 | 0.02 |
| 9.25 | 0.96 | 0.29 | 0.02 |
| 9.50 | 1.00 | 0.32 | 0.02 |
| 9.75 | 1.06 | 0.36 | 0.02 |
| 10.00 | 1.11 | 0.39 | 0.02 |
| 10.25 | 1.17 | 0.44 | 0.03 |
| 10.50 | 1.24 | 0.48 | 0.03 |
| 10.75 | 1.31 | 0.54 | 0.04 |
| 11.00 | 1.40 | 0.60 | 0.04 |
| 11.25 | 1.50 | 0.68 | 0.05 |
| 11.50 | 1.63 | 0.79 | 0.07 |
| 11.75 | 1.88 | 0.99 | 0.14 |
| 12.00 | 2.75 | 1.75 | **0.65** |
| 12.25 | 3.18 | 2.15 | **0.23** |
| 12.50 | 3.42 | 2.37 | 0.13 |
| 12.75 | 3.54 | 2.49 | 0.07 |
| 13.00 | 3.64 | 2.58 | 0.06 |
| 13.25 | 3.72 | 2.66 | 0.05 |
| 13.50 | 3.79 | 2.72 | 0.04 |
| 13.75 | 3.86 | 2.79 | 0.04 |
| 14.00 | 3.92 | 2.84 | 0.04 |
| 14.25 | 3.97 | 2.89 | 0.03 |
| 14.50 | 4.02 | 2.94 | 0.03 |
| 14.75 | 4.07 | 2.98 | 0.03 |
| 15.00 | 4.11 | 3.03 | 0.03 |
| 15.25 | 4.16 | 3.07 | 0.03 |
| 15.50 | 4.20 | 3.10 | 0.02 |
| 15.75 | 4.23 | 3.14 | 0.02 |
| 16.00 | 4.27 | 3.18 | 0.02 |
| 16.25 | 4.30 | 3.21 | 0.02 |
| 16.50 | 4.34 | 3.24 | 0.02 |
| 16.75 | 4.37 | 3.27 | 0.02 |
| 17.00 | 4.40 | 3.30 | 0.02 |
| 17.25 | 4.43 | 3.33 | 0.02 |
| 17.50 | 4.46 | 3.36 | 0.02 |
| 17.75 | 4.49 | 3.38 | 0.02 |
| 18.00 | 4.52 | 3.41 | 0.02 |
| 18.25 | 4.54 | 3.44 | 0.02 |
| 18.50 | 4.57 | 3.46 | 0.02 |
| 18.75 | 4.59 | 3.49 | 0.02 |
| 19.00 | 4.62 | 3.51 | 0.02 |
| 19.25 | 4.64 | 3.53 | 0.01 |
| 19.50 | 4.67 | 3.55 | 0.01 |
| 19.75 | 4.69 | 3.58 | 0.01 |
| 20.00 | **4.71** | **3.60** | 0.01 |

## Summary for Subcatchment PSA2: PROP. SUBAREA 2

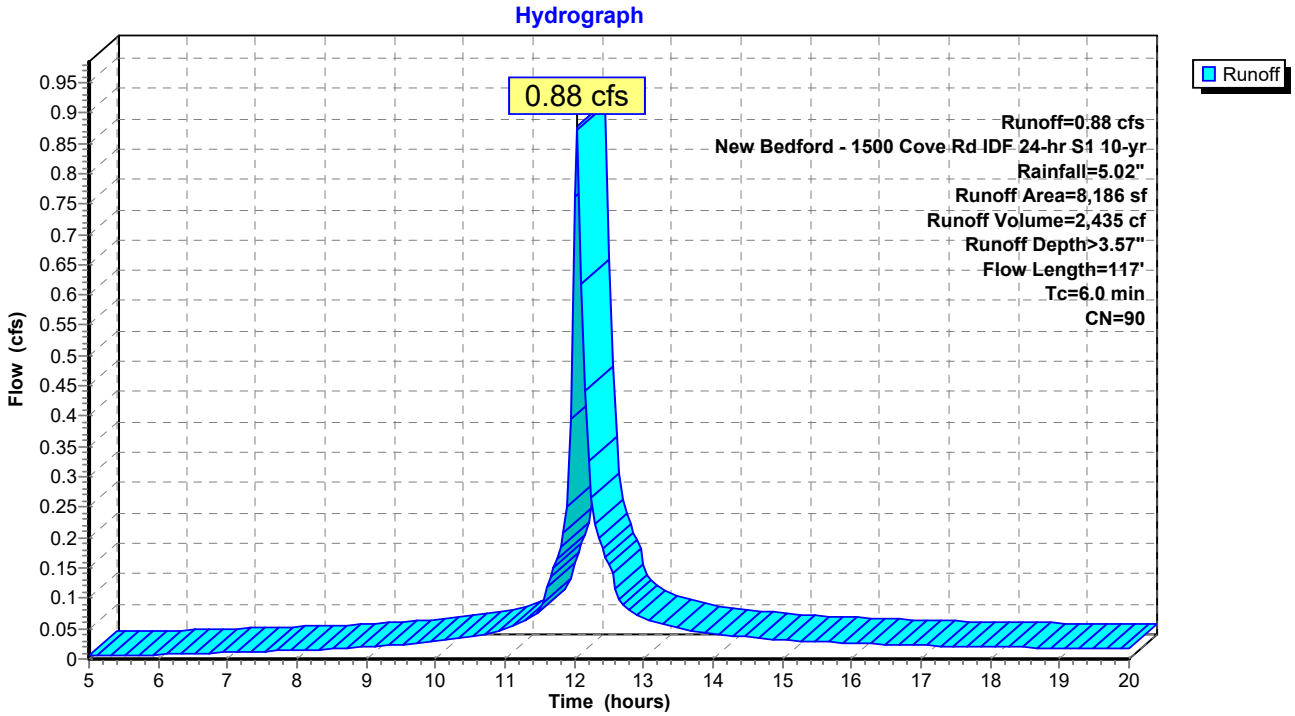
Runoff = 0.88 cfs @ 12.04 hrs, Volume= 2,435 cf, Depth> 3.57"
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 10-yr Rainfall=5.02"

| Area (sf) | CN | Description |
|---|---|---|
| 4,378 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 3,808 | 80 | >75% Grass cover, Good, HSG D |
| 8,186 | 90 | Weighted Average |
| 3,808 | | 46.52% Pervious Area |
| 4,378 | | 53.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPED SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 1.1 | 79 | 0.0140 | 1.17 | | **Sheet Flow, SE-COR PARKING LOT NORTHERLY** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.2 | 35 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, EDGE PRKING** Paved Kv= 20.3 fps |
| 1.9 | 117 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2: PROP. SUBAREA 2



## Hydrograph for Subcatchment PSA2: PROP. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.40 | 0.03 | 0.00 |
| 5.25 | 0.43 | 0.03 | 0.01 |
| 5.50 | 0.45 | 0.04 | 0.01 |
| 5.75 | 0.48 | 0.05 | 0.01 |
| 6.00 | 0.51 | 0.06 | 0.01 |
| 6.25 | 0.53 | 0.07 | 0.01 |
| 6.50 | 0.56 | 0.08 | 0.01 |
| 6.75 | 0.59 | 0.09 | 0.01 |
| 7.00 | 0.62 | 0.11 | 0.01 |
| 7.25 | 0.65 | 0.12 | 0.01 |
| 7.50 | 0.69 | 0.14 | 0.01 |
| 7.75 | 0.72 | 0.15 | 0.01 |
| 8.00 | 0.75 | 0.17 | 0.01 |
| 8.25 | 0.79 | 0.19 | 0.02 |
| 8.50 | 0.83 | 0.21 | 0.02 |
| 8.75 | 0.87 | 0.24 | 0.02 |
| 9.00 | 0.91 | 0.26 | 0.02 |
| 9.25 | 0.96 | 0.29 | 0.02 |
| 9.50 | 1.00 | 0.32 | 0.02 |
| 9.75 | 1.06 | 0.36 | 0.03 |
| 10.00 | 1.11 | 0.39 | 0.03 |
| 10.25 | 1.17 | 0.44 | 0.03 |
| 10.50 | 1.24 | 0.48 | 0.04 |
| 10.75 | 1.31 | 0.54 | 0.04 |
| 11.00 | 1.40 | 0.60 | 0.05 |
| 11.25 | 1.50 | 0.68 | 0.06 |
| 11.50 | 1.63 | 0.79 | 0.08 |
| 11.75 | 1.88 | 0.99 | 0.16 |
| 12.00 | 2.75 | 1.75 | **0.76** |
| 12.25 | 3.18 | 2.15 | **0.27** |
| 12.50 | 3.42 | 2.37 | 0.16 |
| 12.75 | 3.54 | 2.49 | 0.08 |
| 13.00 | 3.64 | 2.58 | 0.07 |
| 13.25 | 3.72 | 2.66 | 0.06 |
| 13.50 | 3.79 | 2.72 | 0.05 |
| 13.75 | 3.86 | 2.79 | 0.05 |
| 14.00 | 3.92 | 2.84 | 0.04 |
| 14.25 | 3.97 | 2.89 | 0.04 |
| 14.50 | 4.02 | 2.94 | 0.04 |
| 14.75 | 4.07 | 2.98 | 0.03 |
| 15.00 | 4.11 | 3.03 | 0.03 |
| 15.25 | 4.16 | 3.07 | 0.03 |
| 15.50 | 4.20 | 3.10 | 0.03 |
| 15.75 | 4.23 | 3.14 | 0.03 |
| 16.00 | 4.27 | 3.18 | 0.03 |
| 16.25 | 4.30 | 3.21 | 0.03 |
| 16.50 | 4.34 | 3.24 | 0.02 |
| 16.75 | 4.37 | 3.27 | 0.02 |
| 17.00 | 4.40 | 3.30 | 0.02 |
| 17.25 | 4.43 | 3.33 | 0.02 |
| 17.50 | 4.46 | 3.36 | 0.02 |
| 17.75 | 4.49 | 3.38 | 0.02 |
| 18.00 | 4.52 | 3.41 | 0.02 |
| 18.25 | 4.54 | 3.44 | 0.02 |
| 18.50 | 4.57 | 3.46 | 0.02 |
| 18.75 | 4.59 | 3.49 | 0.02 |
| 19.00 | 4.62 | 3.51 | 0.02 |
| 19.25 | 4.64 | 3.53 | 0.02 |
| 19.50 | 4.67 | 3.55 | 0.02 |
| 19.75 | 4.69 | 3.58 | 0.02 |
| 20.00 | **4.71** | **3.60** | 0.02 |

## Summary for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

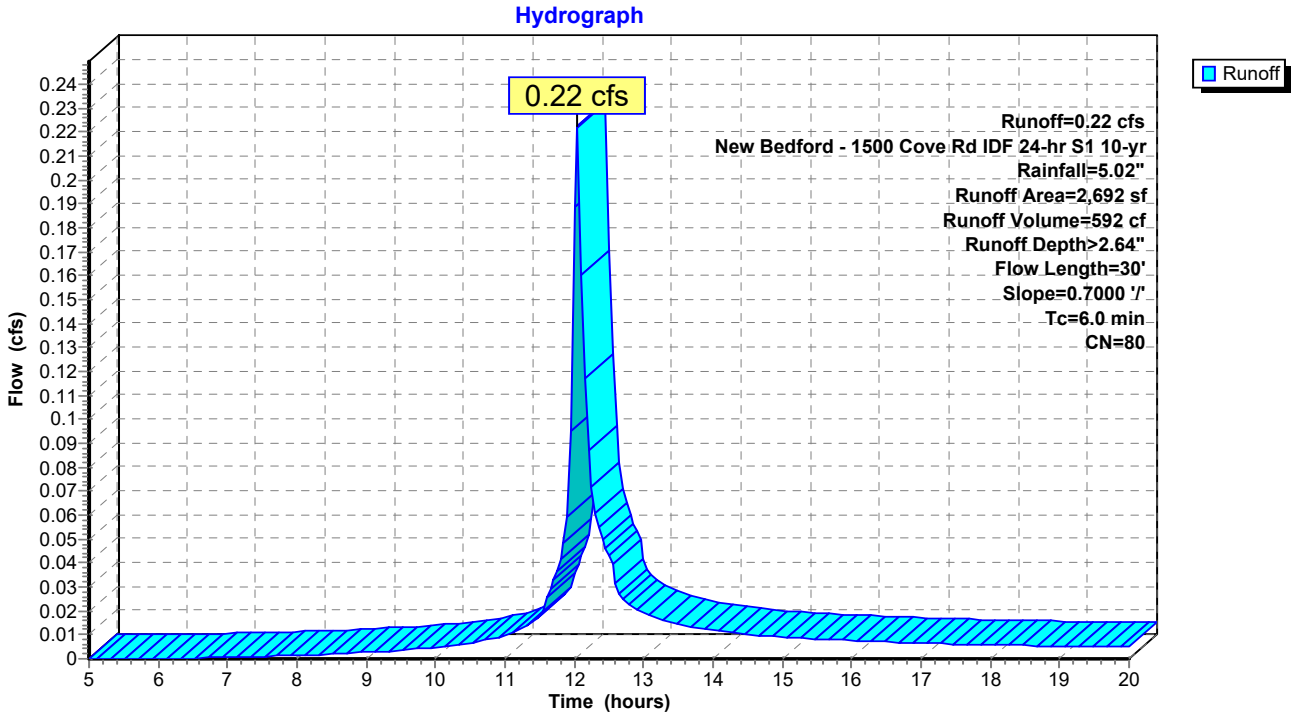
Runoff = 0.22 cfs @ 12.04 hrs, Volume= 592 cf, Depth> 2.64"
Routed to Pond RB : RAIN BARRELLS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 10-yr Rainfall=5.02"

| Area (sf) | CN | Description |
|---|---|---|
| 2,692 | 80 | >75% Grass cover, Good, HSG D |
| 2,692 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.1 | 30 | 0.7000 | 4.62 | | **Sheet Flow, ROOF** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.1 | 30 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2



## Hydrograph for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.40 | 0.00 | 0.00 |
| 5.25 | 0.43 | 0.00 | 0.00 |
| 5.50 | 0.45 | 0.00 | 0.00 |
| 5.75 | 0.48 | 0.00 | 0.00 |
| 6.00 | 0.51 | 0.00 | 0.00 |
| 6.25 | 0.53 | 0.00 | 0.00 |
| 6.50 | 0.56 | 0.00 | 0.00 |
| 6.75 | 0.59 | 0.00 | 0.00 |
| 7.00 | 0.62 | 0.01 | 0.00 |
| 7.25 | 0.65 | 0.01 | 0.00 |
| 7.50 | 0.69 | 0.01 | 0.00 |
| 7.75 | 0.72 | 0.02 | 0.00 |
| 8.00 | 0.75 | 0.02 | 0.00 |
| 8.25 | 0.79 | 0.03 | 0.00 |
| 8.50 | 0.83 | 0.04 | 0.00 |
| 8.75 | 0.87 | 0.05 | 0.00 |
| 9.00 | 0.91 | 0.06 | 0.00 |
| 9.25 | 0.96 | 0.07 | 0.00 |
| 9.50 | 1.00 | 0.08 | 0.00 |
| 9.75 | 1.06 | 0.10 | 0.00 |
| 10.00 | 1.11 | 0.12 | 0.00 |
| 10.25 | 1.17 | 0.14 | 0.01 |
| 10.50 | 1.24 | 0.17 | 0.01 |
| 10.75 | 1.31 | 0.20 | 0.01 |
| 11.00 | 1.40 | 0.24 | 0.01 |
| 11.25 | 1.50 | 0.29 | 0.01 |
| 11.50 | 1.63 | 0.35 | 0.02 |
| 11.75 | 1.88 | 0.49 | 0.04 |
| 12.00 | 2.75 | 1.06 | **0.19** |
| 12.25 | 3.18 | 1.39 | **0.07** |
| 12.50 | 3.42 | 1.57 | 0.04 |
| 12.75 | 3.54 | 1.67 | 0.02 |
| 13.00 | 3.64 | 1.75 | 0.02 |
| 13.25 | 3.72 | 1.81 | 0.02 |
| 13.50 | 3.79 | 1.87 | 0.01 |
| 13.75 | 3.86 | 1.93 | 0.01 |
| 14.00 | 3.92 | 1.97 | 0.01 |
| 14.25 | 3.97 | 2.02 | 0.01 |
| 14.50 | 4.02 | 2.06 | 0.01 |
| 14.75 | 4.07 | 2.10 | 0.01 |
| 15.00 | 4.11 | 2.14 | 0.01 |
| 15.25 | 4.16 | 2.17 | 0.01 |
| 15.50 | 4.20 | 2.20 | 0.01 |
| 15.75 | 4.23 | 2.24 | 0.01 |
| 16.00 | 4.27 | 2.27 | 0.01 |
| 16.25 | 4.30 | 2.30 | 0.01 |
| 16.50 | 4.34 | 2.32 | 0.01 |
| 16.75 | 4.37 | 2.35 | 0.01 |
| 17.00 | 4.40 | 2.38 | 0.01 |
| 17.25 | 4.43 | 2.40 | 0.01 |
| 17.50 | 4.46 | 2.43 | 0.01 |
| 17.75 | 4.49 | 2.45 | 0.01 |
| 18.00 | 4.52 | 2.47 | 0.01 |
| 18.25 | 4.54 | 2.50 | 0.01 |
| 18.50 | 4.57 | 2.52 | 0.01 |
| 18.75 | 4.59 | 2.54 | 0.01 |
| 19.00 | 4.62 | 2.56 | 0.01 |
| 19.25 | 4.64 | 2.58 | 0.01 |
| 19.50 | 4.67 | 2.60 | 0.01 |
| 19.75 | 4.69 | 2.62 | 0.00 |
| 20.00 | **4.71** | **2.64** | 0.00 |

## Summary for Pond RB: RAIN BARRELLS

Inflow Area = 2,692 sf, 0.00% Impervious, Inflow Depth > 2.64" for 10-yr event
Inflow = 0.22 cfs @ 12.04 hrs, Volume= 592 cf
Outflow = 0.22 cfs @ 12.04 hrs, Volume= 543 cf, Atten= 2%, Lag= 0.0 min
Primary = 0.00 cfs @ 10.20 hrs, Volume= 65 cf
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)
Secondary = 0.22 cfs @ 12.04 hrs, Volume= 478 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.64' @ 12.04 hrs Surf.Area= 17 sf Storage= 49 cf

Plug-Flow detention time= 46.5 min calculated for 541 cf (91% of inflow)
Center-of-Mass det. time= 16.9 min ( 807.3 - 790.4 )

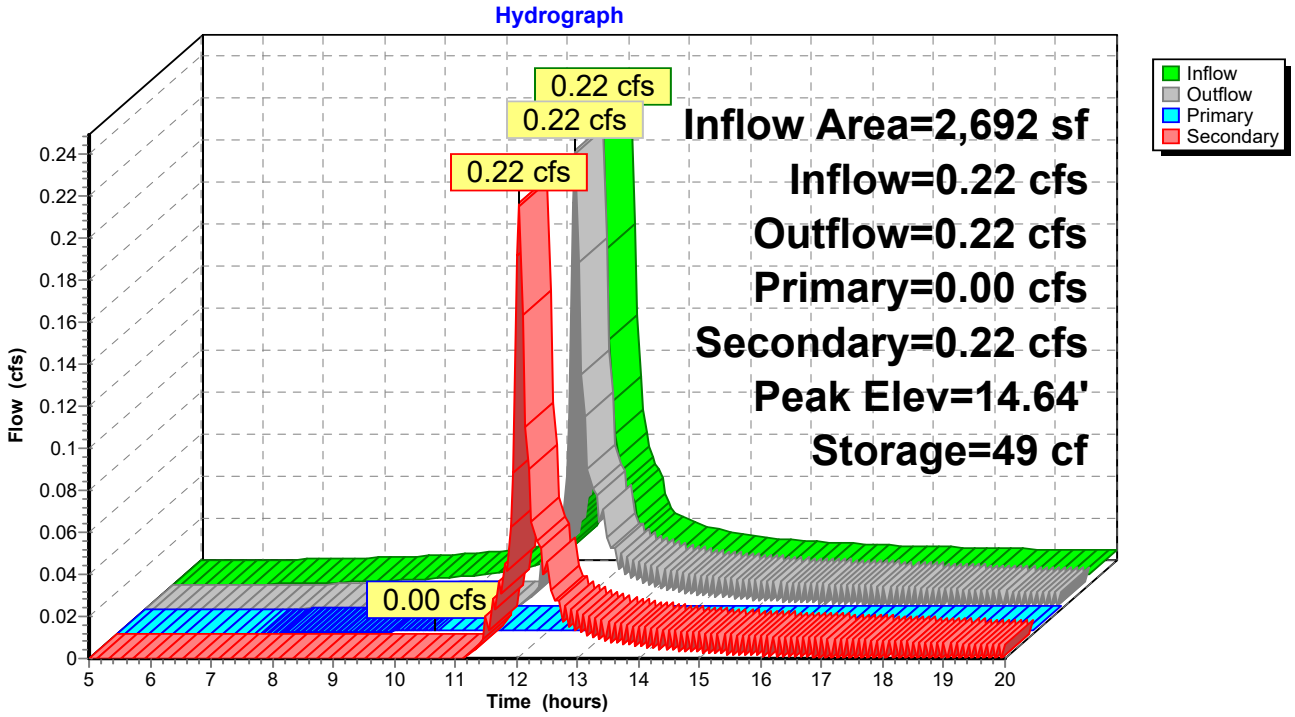
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 11.00' | 49 cf | **1.90'D x 2.90'H Vertical Cone/Cylinder** x 6 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 11.10' | **0.1" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Secondary | 14.50' | **3.0" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |

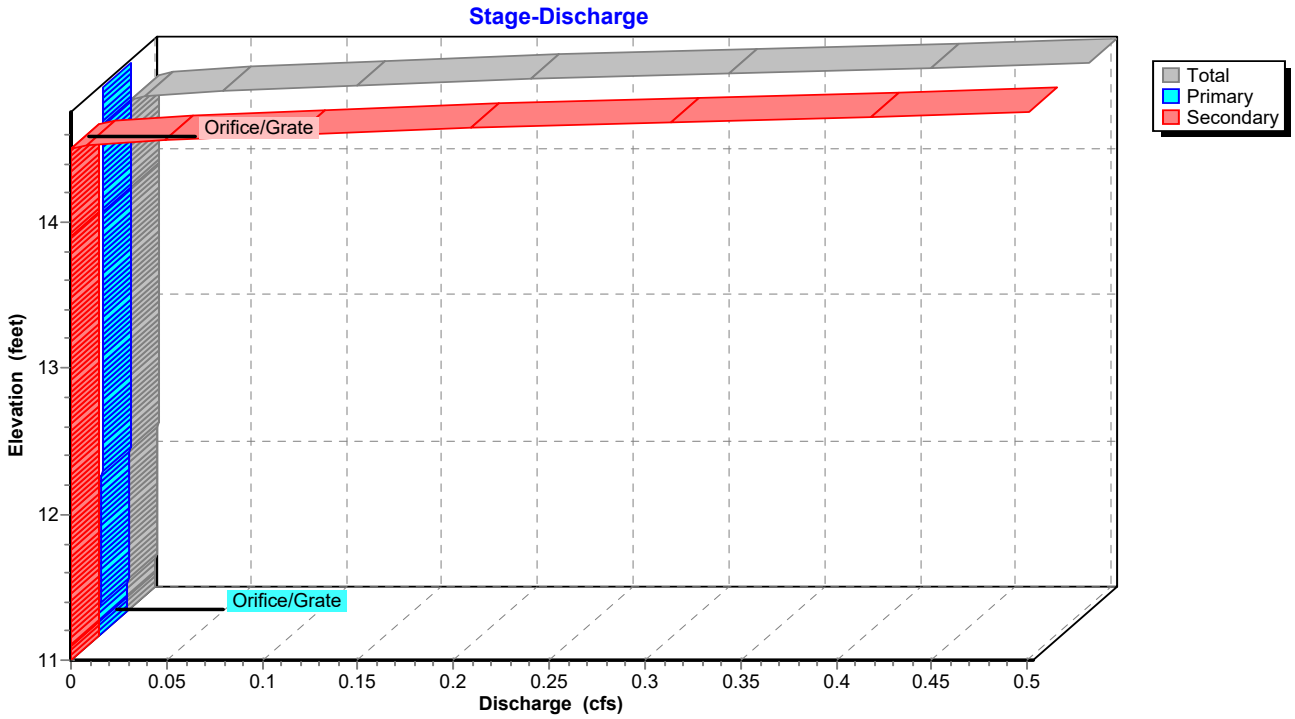
**Primary OutFlow** Max=0.00 cfs @ 10.20 hrs HW=12.16' TW=11.16' (TW follows 1.00' below HW)
↑—**1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 4.81 fps)

**Secondary OutFlow** Max=0.21 cfs @ 12.04 hrs HW=14.64' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.21 cfs @ 1.26 fps)

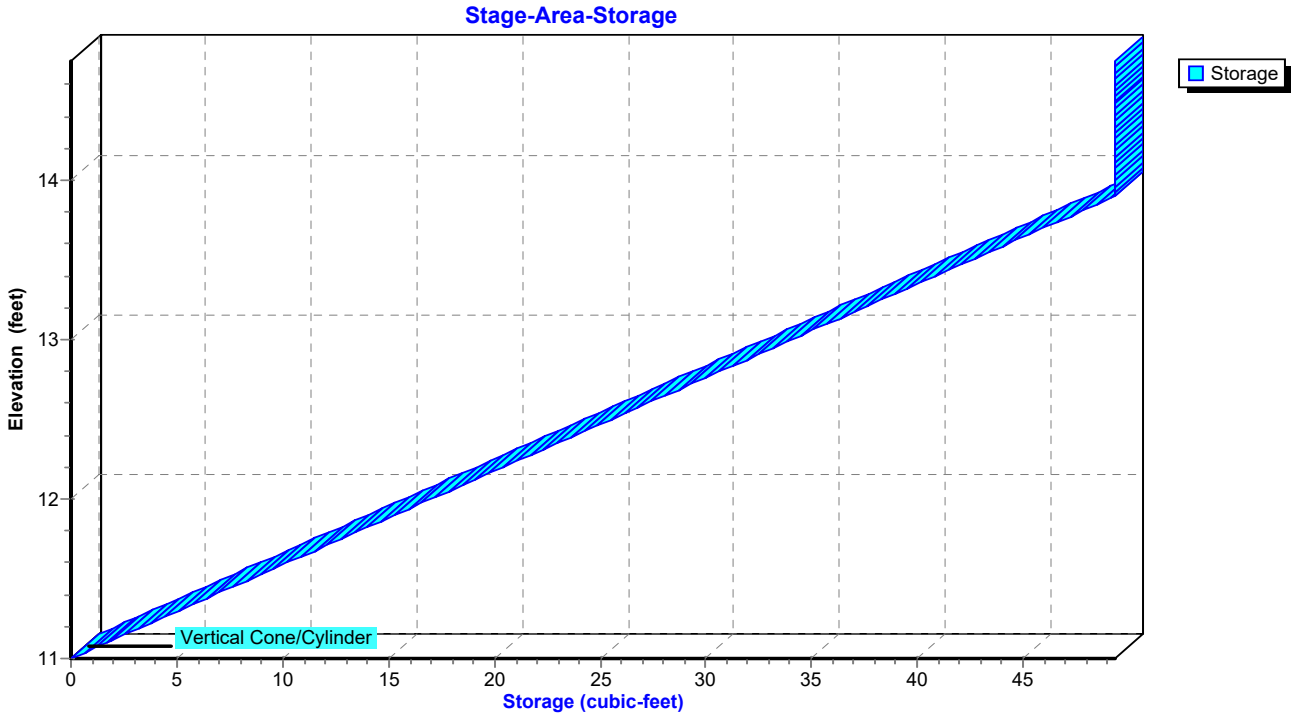
## Pond RB: RAIN BARRELLS




## Pond RB: RAIN BARRELLS



## Pond RB: RAIN BARRELLS



## Hydrograph for Pond RB: RAIN BARRELLS

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 5.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0 | 11.01 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 1 | 11.06 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 2 | 11.14 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 4 | 11.23 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 6 | 11.34 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 8 | 11.50 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 12 | 11.71 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 17 | 12.01 | 0.00 | **0.00** | 0.00 |
| 10.50 | 0.01 | 24 | 12.44 | 0.00 | **0.00** | 0.00 |
| 11.00 | 0.01 | **36** | 13.12 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.02 | **49** | 14.54 | 0.02 | 0.00 | 0.02 |
| 12.00 | **0.19** | 49 | **14.63** | **0.19** | 0.00 | **0.19** |
| 12.50 | **0.04** | 49 | **14.56** | **0.05** | 0.00 | **0.05** |
| 13.00 | 0.02 | 49 | 14.54 | 0.02 | 0.00 | 0.02 |
| 13.50 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 14.00 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 14.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 16.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 16.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 17.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 17.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 18.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 18.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 19.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 19.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 20.00 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |

## Stage-Discharge for Pond RB: RAIN BARRELLS

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 11.00 | 0.00 | 0.00 | 0.00 |
| 11.05 | 0.00 | 0.00 | 0.00 |
| 11.10 | 0.00 | 0.00 | 0.00 |
| 11.15 | 0.00 | 0.00 | 0.00 |
| 11.20 | 0.00 | 0.00 | 0.00 |
| 11.25 | 0.00 | 0.00 | 0.00 |
| 11.30 | 0.00 | 0.00 | 0.00 |
| 11.35 | 0.00 | 0.00 | 0.00 |
| 11.40 | 0.00 | 0.00 | 0.00 |
| 11.45 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 |
| 11.55 | 0.00 | 0.00 | 0.00 |
| 11.60 | 0.00 | 0.00 | 0.00 |
| 11.65 | 0.00 | 0.00 | 0.00 |
| 11.70 | 0.00 | 0.00 | 0.00 |
| 11.75 | 0.00 | 0.00 | 0.00 |
| 11.80 | 0.00 | 0.00 | 0.00 |
| 11.85 | 0.00 | 0.00 | 0.00 |
| 11.90 | 0.00 | 0.00 | 0.00 |
| 11.95 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 |
| 12.05 | 0.00 | 0.00 | 0.00 |
| 12.10 | 0.00 | **0.00** | 0.00 |
| 12.15 | 0.00 | **0.00** | 0.00 |
| 12.20 | 0.00 | 0.00 | 0.00 |
| 12.25 | 0.00 | 0.00 | 0.00 |
| 12.30 | 0.00 | 0.00 | 0.00 |
| 12.35 | 0.00 | 0.00 | 0.00 |
| 12.40 | 0.00 | 0.00 | 0.00 |
| 12.45 | 0.00 | 0.00 | 0.00 |
| 12.50 | 0.00 | 0.00 | 0.00 |
| 12.55 | 0.00 | 0.00 | 0.00 |
| 12.60 | 0.00 | 0.00 | 0.00 |
| 12.65 | 0.00 | 0.00 | 0.00 |
| 12.70 | 0.00 | 0.00 | 0.00 |
| 12.75 | 0.00 | 0.00 | 0.00 |
| 12.80 | 0.00 | 0.00 | 0.00 |
| 12.85 | 0.00 | 0.00 | 0.00 |
| 12.90 | 0.00 | 0.00 | 0.00 |
| 12.95 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.00 | 0.00 | 0.00 |
| 13.05 | 0.00 | 0.00 | 0.00 |
| 13.10 | 0.00 | 0.00 | 0.00 |
| 13.15 | 0.00 | 0.00 | 0.00 |
| 13.20 | 0.00 | 0.00 | 0.00 |
| 13.25 | 0.00 | 0.00 | 0.00 |
| 13.30 | 0.00 | 0.00 | 0.00 |
| 13.35 | 0.00 | 0.00 | 0.00 |
| 13.40 | 0.00 | 0.00 | 0.00 |
| 13.45 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.00 | 0.00 | 0.00 |
| 13.55 | 0.00 | 0.00 | 0.00 |
| 13.60 | 0.00 | 0.00 | 0.00 |
| 13.65 | 0.00 | 0.00 | 0.00 |
| 13.70 | 0.00 | 0.00 | 0.00 |
| 13.75 | 0.00 | 0.00 | 0.00 |
| 13.80 | 0.00 | 0.00 | 0.00 |
| 13.85 | 0.00 | 0.00 | 0.00 |
| 13.90 | 0.00 | 0.00 | 0.00 |
| 13.95 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.00 | 0.00 | 0.00 |
| 14.05 | 0.00 | 0.00 | 0.00 |
| 14.10 | 0.00 | 0.00 | 0.00 |
| 14.15 | 0.00 | 0.00 | 0.00 |
| 14.20 | 0.00 | 0.00 | 0.00 |
| 14.25 | 0.00 | 0.00 | 0.00 |
| 14.30 | 0.00 | 0.00 | 0.00 |
| 14.35 | 0.00 | 0.00 | 0.00 |
| 14.40 | 0.00 | 0.00 | 0.00 |
| 14.45 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.00 | 0.00 | 0.00 |
| 14.55 | 0.03 | 0.00 | 0.03 |
| 14.60 | 0.12 | 0.00 | 0.12 |
| 14.65 | 0.24 | 0.00 | 0.24 |
| 14.70 | 0.39 | 0.00 | 0.38 |
| 14.75 | **0.50** | 0.00 | **0.50** |

## Stage-Area-Storage for Pond RB: RAIN BARRELLS

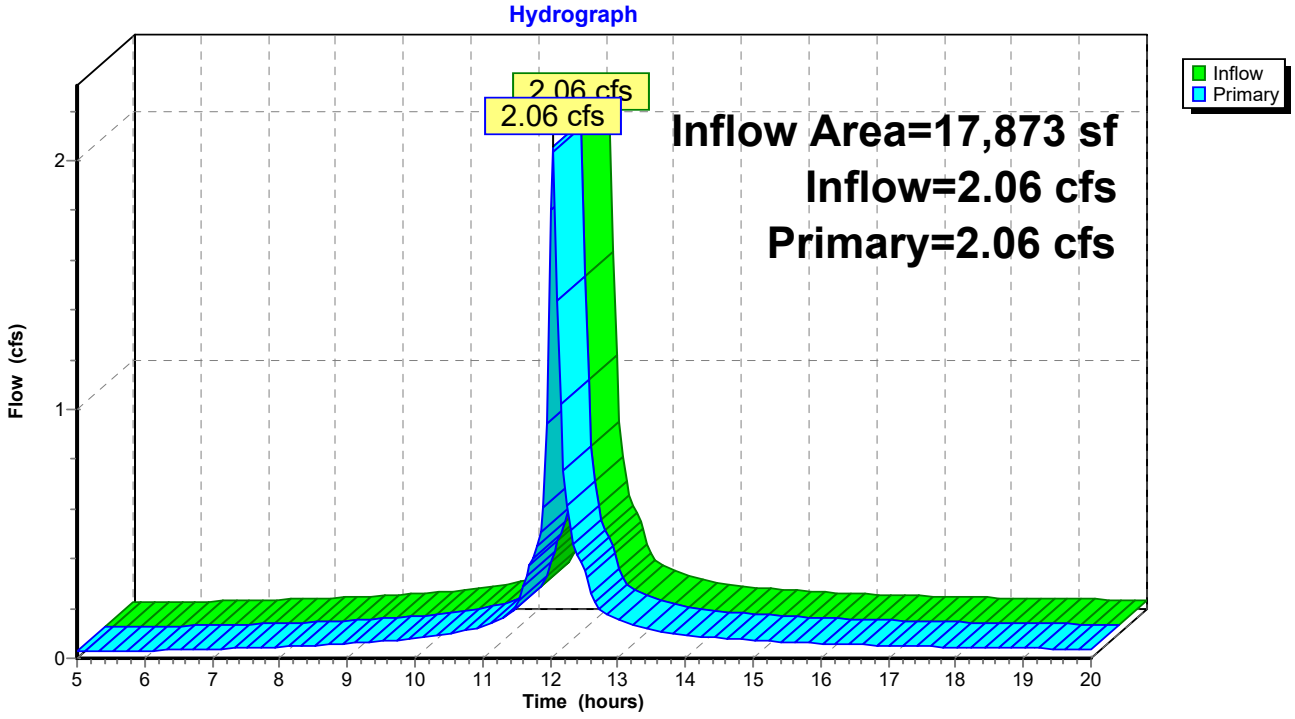
| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 11.00 | 0 |
| 11.05 | 1 |
| 11.10 | 2 |
| 11.15 | 3 |
| 11.20 | 3 |
| 11.25 | 4 |
| 11.30 | 5 |
| 11.35 | 6 |
| 11.40 | 7 |
| 11.45 | 8 |
| 11.50 | 9 |
| 11.55 | 9 |
| 11.60 | 10 |
| 11.65 | 11 |
| 11.70 | 12 |
| 11.75 | 13 |
| 11.80 | 14 |
| 11.85 | 14 |
| 11.90 | 15 |
| 11.95 | 16 |
| 12.00 | 17 |
| 12.05 | 18 |
| 12.10 | 19 |
| 12.15 | 20 |
| 12.20 | 20 |
| 12.25 | 21 |
| 12.30 | 22 |
| 12.35 | 23 |
| 12.40 | 24 |
| 12.45 | 25 |
| 12.50 | 26 |
| 12.55 | 26 |
| 12.60 | 27 |
| 12.65 | 28 |
| 12.70 | 29 |
| 12.75 | 30 |
| 12.80 | 31 |
| 12.85 | 31 |
| 12.90 | 32 |
| 12.95 | 33 |
| 13.00 | 34 |
| 13.05 | 35 |
| 13.10 | 36 |
| 13.15 | 37 |
| 13.20 | 37 |
| 13.25 | 38 |
| 13.30 | 39 |
| 13.35 | 40 |
| 13.40 | 41 |
| 13.45 | 42 |
| 13.50 | 43 |
| 13.55 | 43 |
| 13.60 | 44 |
| 13.65 | 45 |
| 13.70 | 46 |
| 13.75 | 47 |
| 13.80 | 48 |
| 13.85 | 48 |
| 13.90 | **49** |
| 13.95 | 49 |
| 14.00 | 49 |
| 14.05 | 49 |
| 14.10 | 49 |
| 14.15 | 49 |
| 14.20 | 49 |
| 14.25 | 49 |
| 14.30 | 49 |
| 14.35 | 49 |
| 14.40 | 49 |
| 14.45 | 49 |
| 14.50 | 49 |
| 14.55 | 49 |
| 14.60 | 49 |
| 14.65 | 49 |
| 14.70 | 49 |
| 14.75 | 49 |

## Summary for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 75.47% Impervious, Inflow Depth > 3.98" for 10-yr event
Inflow = 2.06 cfs @ 12.04 hrs, Volume= 5,933 cf
Primary = 2.06 cfs @ 12.04 hrs, Volume= 5,933 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link ESAT: EXIST. SUBAREA TOTAL OFFSITE



## Hydrograph for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

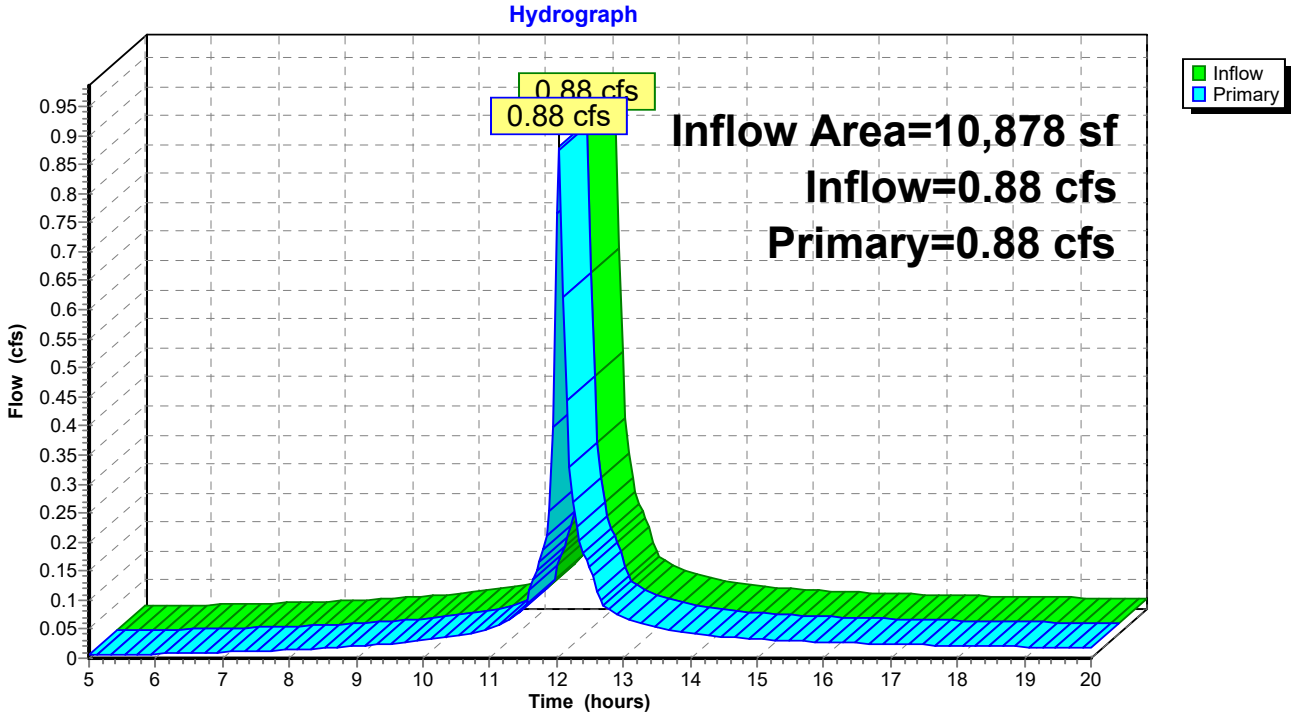
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.03 | **0.00** | 0.03 |
| 5.25 | 0.03 | 0.00 | 0.03 |
| 5.50 | 0.03 | 0.00 | 0.03 |
| 5.75 | 0.03 | 0.00 | 0.03 |
| 6.00 | 0.03 | 0.00 | 0.03 |
| 6.25 | 0.03 | 0.00 | 0.03 |
| 6.50 | 0.03 | 0.00 | 0.03 |
| 6.75 | 0.04 | 0.00 | 0.04 |
| 7.00 | 0.04 | 0.00 | 0.04 |
| 7.25 | 0.04 | 0.00 | 0.04 |
| 7.50 | 0.04 | 0.00 | 0.04 |
| 7.75 | 0.04 | 0.00 | 0.04 |
| 8.00 | 0.05 | 0.00 | 0.05 |
| 8.25 | 0.05 | 0.00 | 0.05 |
| 8.50 | 0.05 | 0.00 | 0.05 |
| 8.75 | 0.05 | 0.00 | 0.05 |
| 9.00 | 0.06 | 0.00 | 0.06 |
| 9.25 | 0.06 | 0.00 | 0.06 |
| 9.50 | 0.07 | 0.00 | 0.07 |
| 9.75 | 0.07 | 0.00 | 0.07 |
| 10.00 | 0.08 | 0.00 | 0.08 |
| 10.25 | 0.09 | 0.00 | 0.09 |
| 10.50 | 0.10 | 0.00 | 0.10 |
| 10.75 | 0.11 | 0.00 | 0.11 |
| 11.00 | 0.13 | 0.00 | 0.13 |
| 11.25 | 0.16 | 0.00 | 0.16 |
| 11.50 | 0.20 | 0.00 | 0.20 |
| 11.75 | 0.40 | 0.00 | 0.40 |
| 12.00 | **1.80** | 0.00 | **1.80** |
| 12.25 | **0.61** | 0.00 | **0.61** |
| 12.50 | 0.36 | 0.00 | 0.36 |
| 12.75 | 0.19 | 0.00 | 0.19 |
| 13.00 | 0.15 | 0.00 | 0.15 |
| 13.25 | 0.13 | 0.00 | 0.13 |
| 13.50 | 0.12 | 0.00 | 0.12 |
| 13.75 | 0.10 | 0.00 | 0.10 |
| 14.00 | 0.09 | 0.00 | 0.09 |
| 14.25 | 0.09 | 0.00 | 0.09 |
| 14.50 | 0.08 | 0.00 | 0.08 |
| 14.75 | 0.08 | 0.00 | 0.08 |
| 15.00 | 0.07 | 0.00 | 0.07 |
| 15.25 | 0.07 | 0.00 | 0.07 |
| 15.50 | 0.06 | 0.00 | 0.06 |
| 15.75 | 0.06 | 0.00 | 0.06 |
| 16.00 | 0.06 | 0.00 | 0.06 |
| 16.25 | 0.06 | 0.00 | 0.06 |
| 16.50 | 0.05 | 0.00 | 0.05 |
| 16.75 | 0.05 | 0.00 | 0.05 |
| 17.00 | 0.05 | 0.00 | 0.05 |
| 17.25 | 0.05 | 0.00 | 0.05 |
| 17.50 | 0.05 | 0.00 | 0.05 |
| 17.75 | 0.05 | 0.00 | 0.05 |
| 18.00 | 0.04 | 0.00 | 0.04 |
| 18.25 | 0.04 | 0.00 | 0.04 |
| 18.50 | 0.04 | 0.00 | 0.04 |
| 18.75 | 0.04 | 0.00 | 0.04 |
| 19.00 | 0.04 | 0.00 | 0.04 |
| 19.25 | 0.04 | 0.00 | 0.04 |
| 19.50 | 0.04 | 0.00 | 0.04 |
| 19.75 | 0.04 | 0.00 | 0.04 |
| 20.00 | 0.04 | 0.00 | 0.04 |

## Summary for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

Inflow Area = 10,878 sf, 40.25% Impervious, Inflow Depth > 2.76" for 10-yr event
Inflow = 0.88 cfs @ 12.04 hrs, Volume= 2,500 cf
Primary = 0.88 cfs @ 12.04 hrs, Volume= 2,500 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSA2(T): PROP SUB-AREA 2 (TOTAL)



## Hydrograph for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

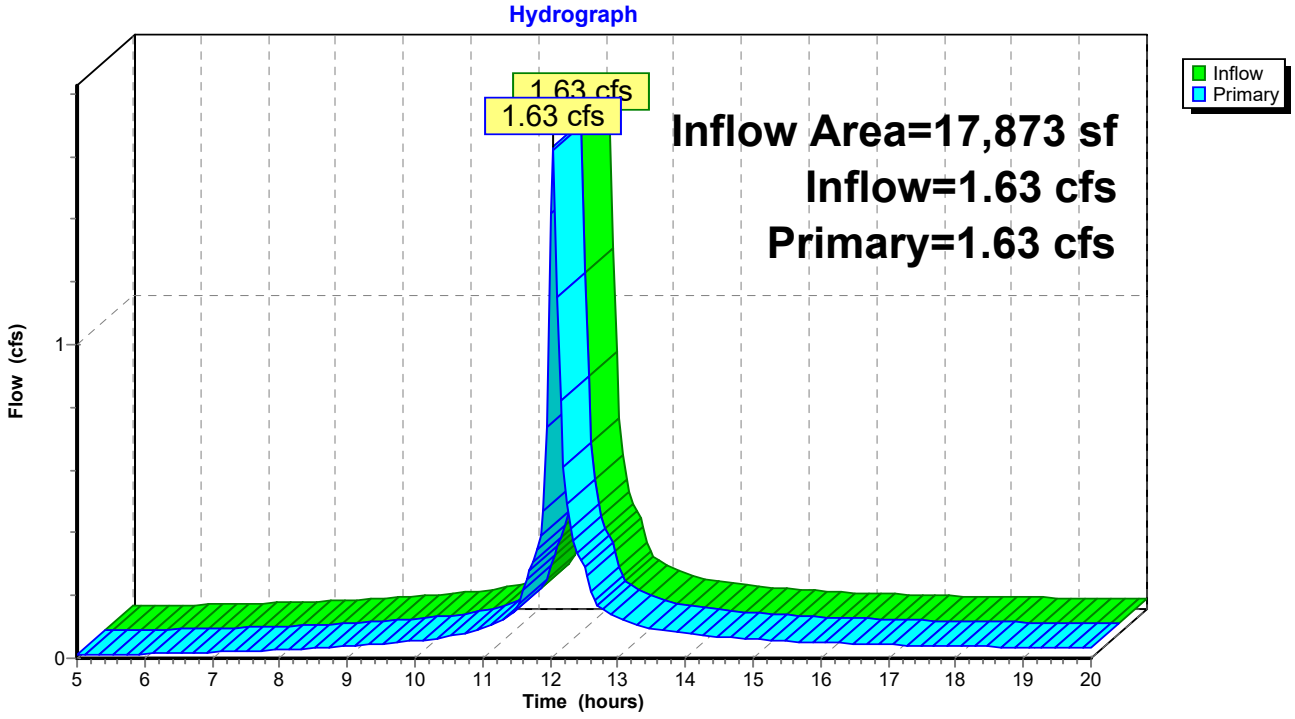
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.00 | **0.00** | 0.00 |
| 5.25 | 0.01 | 0.00 | 0.01 |
| 5.50 | 0.01 | 0.00 | 0.01 |
| 5.75 | 0.01 | 0.00 | 0.01 |
| 6.00 | 0.01 | 0.00 | 0.01 |
| 6.25 | 0.01 | 0.00 | 0.01 |
| 6.50 | 0.01 | 0.00 | 0.01 |
| 6.75 | 0.01 | 0.00 | 0.01 |
| 7.00 | 0.01 | 0.00 | 0.01 |
| 7.25 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.01 | 0.00 | 0.01 |
| 7.75 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.01 | 0.00 | 0.01 |
| 8.25 | 0.02 | 0.00 | 0.02 |
| 8.50 | 0.02 | 0.00 | 0.02 |
| 8.75 | 0.02 | 0.00 | 0.02 |
| 9.00 | 0.02 | 0.00 | 0.02 |
| 9.25 | 0.02 | 0.00 | 0.02 |
| 9.50 | 0.02 | 0.00 | 0.02 |
| 9.75 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.03 | 0.00 | 0.03 |
| 10.25 | 0.03 | 0.00 | 0.03 |
| 10.50 | 0.04 | 0.00 | 0.04 |
| 10.75 | 0.04 | 0.00 | 0.04 |
| 11.00 | 0.05 | 0.00 | 0.05 |
| 11.25 | 0.06 | 0.00 | 0.06 |
| 11.50 | 0.08 | 0.00 | 0.08 |
| 11.75 | 0.17 | 0.00 | 0.17 |
| 12.00 | **0.76** | 0.00 | **0.76** |
| 12.25 | **0.27** | 0.00 | **0.27** |
| 12.50 | 0.16 | 0.00 | 0.16 |
| 12.75 | 0.09 | 0.00 | 0.09 |
| 13.00 | 0.07 | 0.00 | 0.07 |
| 13.25 | 0.06 | 0.00 | 0.06 |
| 13.50 | 0.05 | 0.00 | 0.05 |
| 13.75 | 0.05 | 0.00 | 0.05 |
| 14.00 | 0.04 | 0.00 | 0.04 |
| 14.25 | 0.04 | 0.00 | 0.04 |
| 14.50 | 0.04 | 0.00 | 0.04 |
| 14.75 | 0.04 | 0.00 | 0.04 |
| 15.00 | 0.03 | 0.00 | 0.03 |
| 15.25 | 0.03 | 0.00 | 0.03 |
| 15.50 | 0.03 | 0.00 | 0.03 |
| 15.75 | 0.03 | 0.00 | 0.03 |
| 16.00 | 0.03 | 0.00 | 0.03 |
| 16.25 | 0.03 | 0.00 | 0.03 |
| 16.50 | 0.03 | 0.00 | 0.03 |
| 16.75 | 0.02 | 0.00 | 0.02 |
| 17.00 | 0.02 | 0.00 | 0.02 |
| 17.25 | 0.02 | 0.00 | 0.02 |
| 17.50 | 0.02 | 0.00 | 0.02 |
| 17.75 | 0.02 | 0.00 | 0.02 |
| 18.00 | 0.02 | 0.00 | 0.02 |
| 18.25 | 0.02 | 0.00 | 0.02 |
| 18.50 | 0.02 | 0.00 | 0.02 |
| 18.75 | 0.02 | 0.00 | 0.02 |
| 19.00 | 0.02 | 0.00 | 0.02 |
| 19.25 | 0.02 | 0.00 | 0.02 |
| 19.50 | 0.02 | 0.00 | 0.02 |
| 19.75 | 0.02 | 0.00 | 0.02 |
| 20.00 | 0.02 | 0.00 | 0.02 |

## Summary for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 35.90% Impervious, Inflow Depth > 3.08" for 10-yr event
Inflow = 1.63 cfs @ 12.04 hrs, Volume= 4,581 cf
Primary = 1.63 cfs @ 12.04 hrs, Volume= 4,581 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSAT: PROP. SUBAREA TOTAL OFFSITE



## Hydrograph for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.01 | **0.00** | 0.01 |
| 5.25 | 0.01 | 0.00 | 0.01 |
| 5.50 | 0.01 | 0.00 | 0.01 |
| 5.75 | 0.01 | 0.00 | 0.01 |
| 6.00 | 0.01 | 0.00 | 0.01 |
| 6.25 | 0.01 | 0.00 | 0.01 |
| 6.50 | 0.02 | 0.00 | 0.02 |
| 6.75 | 0.02 | 0.00 | 0.02 |
| 7.00 | 0.02 | 0.00 | 0.02 |
| 7.25 | 0.02 | 0.00 | 0.02 |
| 7.50 | 0.02 | 0.00 | 0.02 |
| 7.75 | 0.02 | 0.00 | 0.02 |
| 8.00 | 0.03 | 0.00 | 0.03 |
| 8.25 | 0.03 | 0.00 | 0.03 |
| 8.50 | 0.03 | 0.00 | 0.03 |
| 8.75 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.04 | 0.00 | 0.04 |
| 9.25 | 0.04 | 0.00 | 0.04 |
| 9.50 | 0.05 | 0.00 | 0.05 |
| 9.75 | 0.05 | 0.00 | 0.05 |
| 10.00 | 0.06 | 0.00 | 0.06 |
| 10.25 | 0.06 | 0.00 | 0.06 |
| 10.50 | 0.07 | 0.00 | 0.07 |
| 10.75 | 0.08 | 0.00 | 0.08 |
| 11.00 | 0.09 | 0.00 | 0.09 |
| 11.25 | 0.12 | 0.00 | 0.12 |
| 11.50 | 0.15 | 0.00 | 0.15 |
| 11.75 | 0.31 | 0.00 | 0.31 |
| 12.00 | **1.42** | 0.00 | **1.42** |
| 12.25 | **0.49** | 0.00 | **0.49** |
| 12.50 | 0.29 | 0.00 | 0.29 |
| 12.75 | 0.16 | 0.00 | 0.16 |
| 13.00 | 0.13 | 0.00 | 0.13 |
| 13.25 | 0.11 | 0.00 | 0.11 |
| 13.50 | 0.10 | 0.00 | 0.10 |
| 13.75 | 0.09 | 0.00 | 0.09 |
| 14.00 | 0.08 | 0.00 | 0.08 |
| 14.25 | 0.07 | 0.00 | 0.07 |
| 14.50 | 0.07 | 0.00 | 0.07 |
| 14.75 | 0.06 | 0.00 | 0.06 |
| 15.00 | 0.06 | 0.00 | 0.06 |
| 15.25 | 0.06 | 0.00 | 0.06 |
| 15.50 | 0.05 | 0.00 | 0.05 |
| 15.75 | 0.05 | 0.00 | 0.05 |
| 16.00 | 0.05 | 0.00 | 0.05 |
| 16.25 | 0.05 | 0.00 | 0.05 |
| 16.50 | 0.05 | 0.00 | 0.05 |
| 16.75 | 0.04 | 0.00 | 0.04 |
| 17.00 | 0.04 | 0.00 | 0.04 |
| 17.25 | 0.04 | 0.00 | 0.04 |
| 17.50 | 0.04 | 0.00 | 0.04 |
| 17.75 | 0.04 | 0.00 | 0.04 |
| 18.00 | 0.04 | 0.00 | 0.04 |
| 18.25 | 0.04 | 0.00 | 0.04 |
| 18.50 | 0.04 | 0.00 | 0.04 |
| 18.75 | 0.04 | 0.00 | 0.04 |
| 19.00 | 0.03 | 0.00 | 0.03 |
| 19.25 | 0.03 | 0.00 | 0.03 |
| 19.50 | 0.03 | 0.00 | 0.03 |
| 19.75 | 0.03 | 0.00 | 0.03 |
| 20.00 | 0.03 | 0.00 | 0.03 |

## Summary for Subcatchment ESA1: EXIST. SUBAREA 1

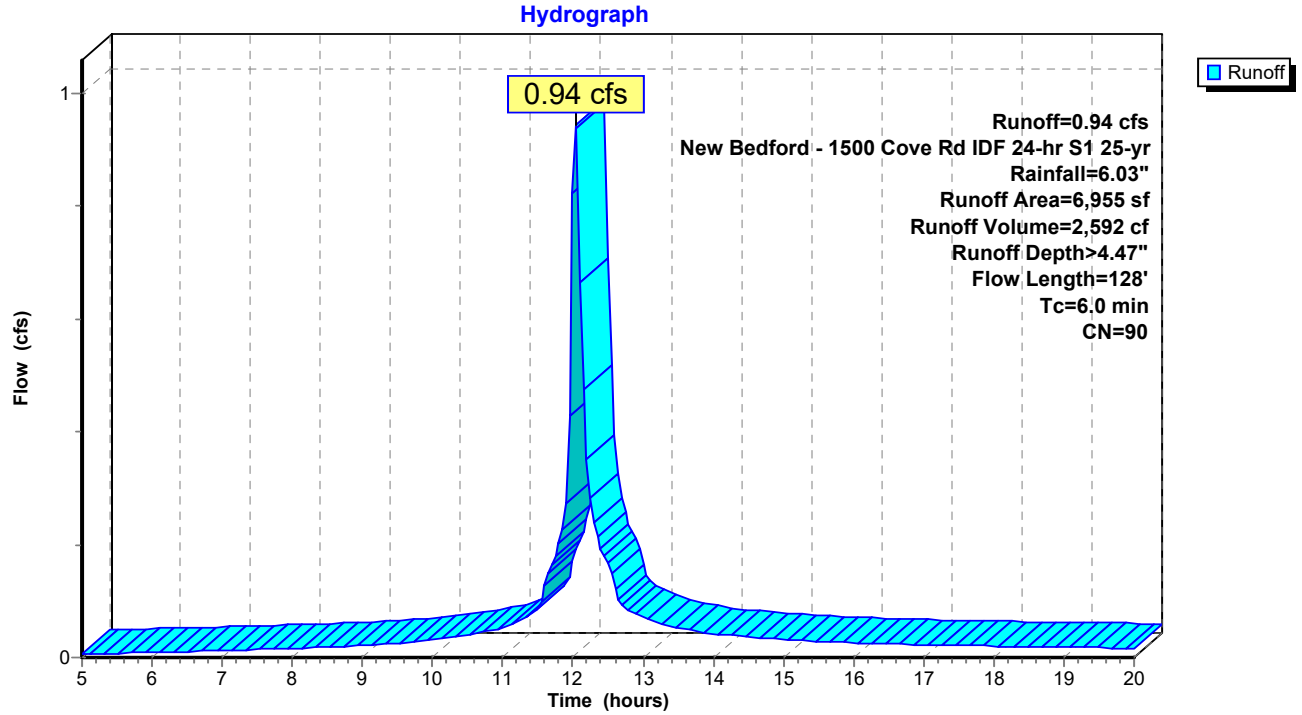
Runoff = 0.94 cfs @ 12.04 hrs, Volume= 2,592 cf, Depth> 4.47"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 25-yr Rainfall=6.03"

| Area (sf) | CN | Description |
|---|---|---|
| 1,689 | 98 | Roofs, HSG D |
| 1,045 | 98 | Paved parking, HSG D |
| 447 | 96 | Gravel surface, HSG D |
| 3,774 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,955 | 90 | Weighted Average |
| 4,221 | | 60.69% Pervious Area |
| 2,734 | | 39.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 43 | 0.0230 | 1.27 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.8 | 40 | 0.0150 | 0.86 | | **Shallow Concentrated Flow, LAWN IN BACKYARD** Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 45 | 0.0400 | 3.22 | | **Shallow Concentrated Flow, ACCROSS DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.6 | 128 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA1: EXIST. SUBAREA 1



## Hydrograph for Subcatchment ESA1: EXIST. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.47 | 0.05 | 0.01 |
| 5.25 | 0.50 | 0.06 | 0.01 |
| 5.50 | 0.53 | 0.07 | 0.01 |
| 5.75 | 0.56 | 0.08 | 0.01 |
| 6.00 | 0.60 | 0.09 | 0.01 |
| 6.25 | 0.63 | 0.11 | 0.01 |
| 6.50 | 0.66 | 0.12 | 0.01 |
| 6.75 | 0.70 | 0.14 | 0.01 |
| 7.00 | 0.73 | 0.16 | 0.01 |
| 7.25 | 0.77 | 0.18 | 0.01 |
| 7.50 | 0.81 | 0.20 | 0.01 |
| 7.75 | 0.85 | 0.23 | 0.02 |
| 8.00 | 0.89 | 0.25 | 0.02 |
| 8.25 | 0.93 | 0.28 | 0.02 |
| 8.50 | 0.98 | 0.31 | 0.02 |
| 8.75 | 1.03 | 0.34 | 0.02 |
| 9.00 | 1.08 | 0.37 | 0.02 |
| 9.25 | 1.13 | 0.41 | 0.02 |
| 9.50 | 1.19 | 0.45 | 0.03 |
| 9.75 | 1.25 | 0.49 | 0.03 |
| 10.00 | 1.31 | 0.54 | 0.03 |
| 10.25 | 1.38 | 0.59 | 0.04 |
| 10.50 | 1.46 | 0.65 | 0.04 |
| 10.75 | 1.55 | 0.72 | 0.05 |
| 11.00 | 1.65 | 0.81 | 0.05 |
| 11.25 | 1.78 | 0.91 | 0.07 |
| 11.50 | 1.93 | 1.04 | 0.09 |
| 11.75 | 2.24 | 1.30 | 0.18 |
| 12.00 | 3.31 | 2.27 | **0.82** |
| 12.25 | 3.84 | 2.77 | **0.28** |
| 12.50 | 4.13 | 3.04 | 0.17 |
| 12.75 | 4.28 | 3.18 | 0.09 |
| 13.00 | 4.39 | 3.29 | 0.07 |
| 13.25 | 4.49 | 3.39 | 0.06 |
| 13.50 | 4.58 | 3.47 | 0.05 |
| 13.75 | 4.66 | 3.55 | 0.05 |
| 14.00 | 4.73 | 3.61 | 0.04 |
| 14.25 | 4.79 | 3.68 | 0.04 |
| 14.50 | 4.85 | 3.73 | 0.04 |
| 14.75 | 4.91 | 3.79 | 0.03 |
| 15.00 | 4.96 | 3.84 | 0.03 |
| 15.25 | 5.01 | 3.89 | 0.03 |
| 15.50 | 5.06 | 3.93 | 0.03 |
| 15.75 | 5.10 | 3.97 | 0.03 |
| 16.00 | 5.14 | 4.02 | 0.03 |
| 16.25 | 5.19 | 4.06 | 0.03 |
| 16.50 | 5.23 | 4.09 | 0.02 |
| 16.75 | 5.26 | 4.13 | 0.02 |
| 17.00 | 5.30 | 4.17 | 0.02 |
| 17.25 | 5.34 | 4.20 | 0.02 |
| 17.50 | 5.37 | 4.23 | 0.02 |
| 17.75 | 5.40 | 4.27 | 0.02 |
| 18.00 | 5.44 | 4.30 | 0.02 |
| 18.25 | 5.47 | 4.33 | 0.02 |
| 18.50 | 5.50 | 4.36 | 0.02 |
| 18.75 | 5.53 | 4.39 | 0.02 |
| 19.00 | 5.56 | 4.42 | 0.02 |
| 19.25 | 5.59 | 4.44 | 0.02 |
| 19.50 | 5.61 | 4.47 | 0.02 |
| 19.75 | 5.64 | 4.50 | 0.02 |
| 20.00 | **5.67** | **4.52** | 0.02 |

## Summary for Subcatchment ESA2: EXIST. SUBAREA 2

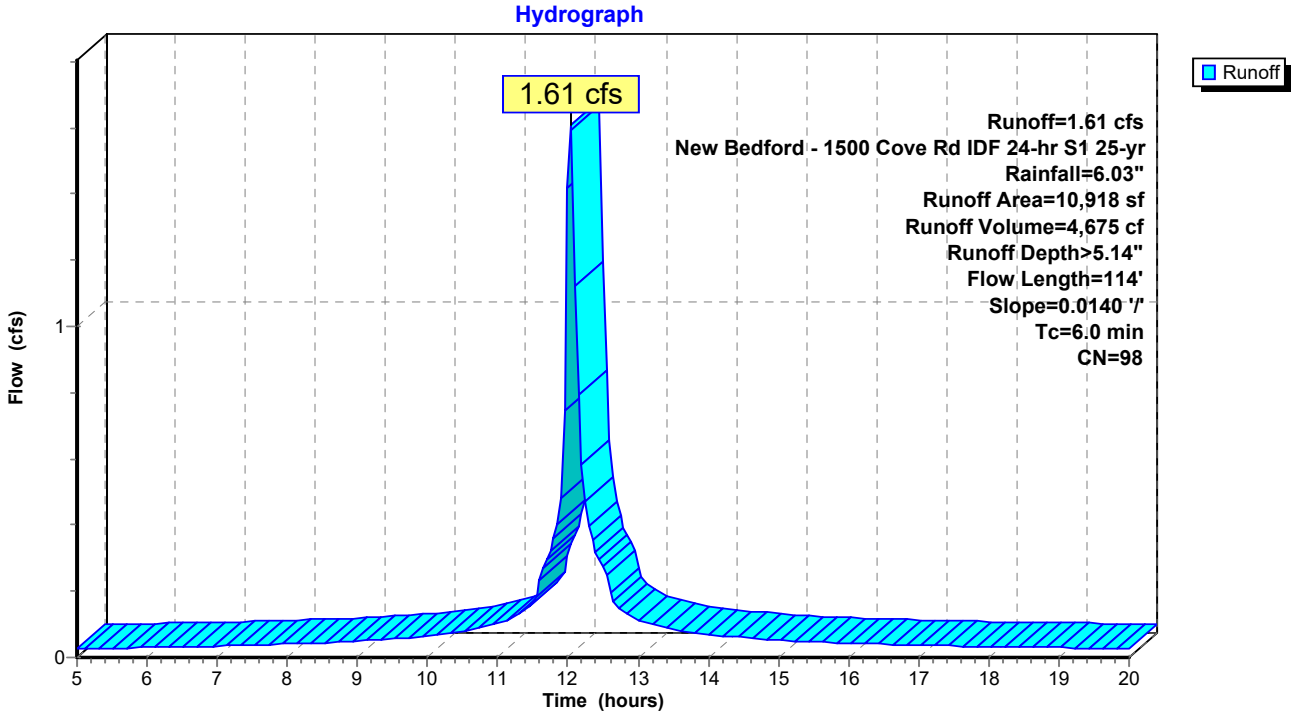
Runoff = 1.61 cfs @ 12.04 hrs, Volume= 4,675 cf, Depth> 5.14"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 25-yr Rainfall=6.03"

| Area (sf) | CN | Description |
|---|---|---|
| 2,072 | 98 | Roofs, HSG D |
| 8,682 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 164 | 84 | 50-75% Grass cover, Fair, HSG D |
| 10,918 | 98 | Weighted Average |
| 164 | | 1.50% Pervious Area |
| 10,754 | | 98.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.8 | 50 | 0.0140 | 1.07 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.4 | 64 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, WEST EDGE PRKING** Paved Kv= 20.3 fps |
| 1.2 | 114 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA2: EXIST. SUBAREA 2



## Hydrograph for Subcatchment ESA2: EXIST. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.47 | 0.30 | 0.03 |
| 5.25 | 0.50 | 0.32 | 0.03 |
| 5.50 | 0.53 | 0.35 | 0.03 |
| 5.75 | 0.56 | 0.38 | 0.03 |
| 6.00 | 0.60 | 0.41 | 0.03 |
| 6.25 | 0.63 | 0.44 | 0.03 |
| 6.50 | 0.66 | 0.47 | 0.03 |
| 6.75 | 0.70 | 0.50 | 0.03 |
| 7.00 | 0.73 | 0.53 | 0.03 |
| 7.25 | 0.77 | 0.57 | 0.04 |
| 7.50 | 0.81 | 0.61 | 0.04 |
| 7.75 | 0.85 | 0.64 | 0.04 |
| 8.00 | 0.89 | 0.68 | 0.04 |
| 8.25 | 0.93 | 0.73 | 0.04 |
| 8.50 | 0.98 | 0.77 | 0.04 |
| 8.75 | 1.03 | 0.82 | 0.05 |
| 9.00 | 1.08 | 0.86 | 0.05 |
| 9.25 | 1.13 | 0.92 | 0.05 |
| 9.50 | 1.19 | 0.97 | 0.06 |
| 9.75 | 1.25 | 1.03 | 0.06 |
| 10.00 | 1.31 | 1.10 | 0.07 |
| 10.25 | 1.38 | 1.17 | 0.07 |
| 10.50 | 1.46 | 1.24 | 0.08 |
| 10.75 | 1.55 | 1.33 | 0.09 |
| 11.00 | 1.65 | 1.43 | 0.10 |
| 11.25 | 1.78 | 1.55 | 0.12 |
| 11.50 | 1.93 | 1.71 | 0.16 |
| 11.75 | 2.24 | 2.02 | 0.32 |
| 12.00 | 3.31 | 3.07 | **1.42** |
| 12.25 | 3.84 | 3.61 | **0.47** |
| 12.50 | 4.13 | 3.90 | 0.27 |
| 12.75 | 4.28 | 4.04 | 0.14 |
| 13.00 | 4.39 | 4.16 | 0.12 |
| 13.25 | 4.49 | 4.26 | 0.10 |
| 13.50 | 4.58 | 4.34 | 0.09 |
| 13.75 | 4.66 | 4.42 | 0.08 |
| 14.00 | 4.73 | 4.49 | 0.07 |
| 14.25 | 4.79 | 4.56 | 0.06 |
| 14.50 | 4.85 | 4.62 | 0.06 |
| 14.75 | 4.91 | 4.67 | 0.06 |
| 15.00 | 4.96 | 4.72 | 0.05 |
| 15.25 | 5.01 | 4.77 | 0.05 |
| 15.50 | 5.06 | 4.82 | 0.05 |
| 15.75 | 5.10 | 4.86 | 0.05 |
| 16.00 | 5.14 | 4.91 | 0.04 |
| 16.25 | 5.19 | 4.95 | 0.04 |
| 16.50 | 5.23 | 4.99 | 0.04 |
| 16.75 | 5.26 | 5.03 | 0.04 |
| 17.00 | 5.30 | 5.06 | 0.04 |
| 17.25 | 5.34 | 5.10 | 0.04 |
| 17.50 | 5.37 | 5.13 | 0.03 |
| 17.75 | 5.40 | 5.17 | 0.03 |
| 18.00 | 5.44 | 5.20 | 0.03 |
| 18.25 | 5.47 | 5.23 | 0.03 |
| 18.50 | 5.50 | 5.26 | 0.03 |
| 18.75 | 5.53 | 5.29 | 0.03 |
| 19.00 | 5.56 | 5.32 | 0.03 |
| 19.25 | 5.59 | 5.35 | 0.03 |
| 19.50 | 5.61 | 5.38 | 0.03 |
| 19.75 | 5.64 | 5.40 | 0.03 |
| 20.00 | **5.67** | **5.43** | 0.03 |

## Summary for Subcatchment PSA1: PROP. SUBAREA 1

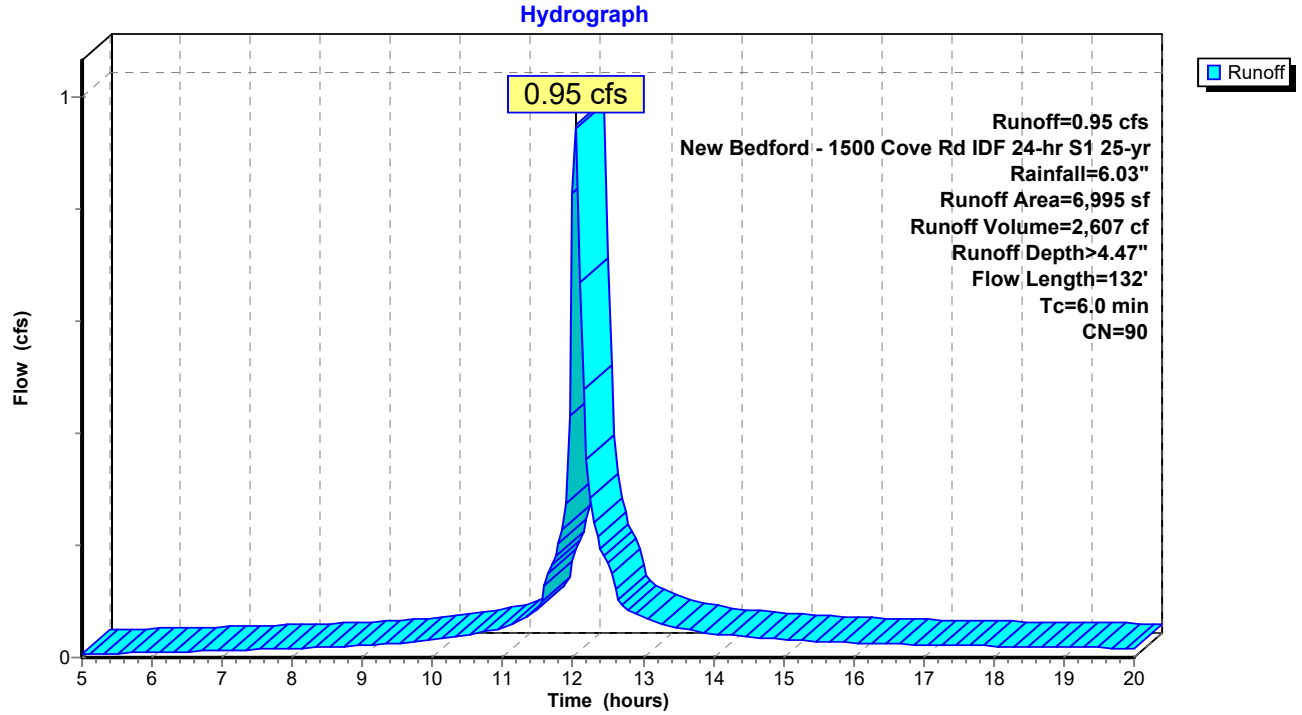
Runoff = 0.95 cfs @ 12.04 hrs, Volume= 2,607 cf, Depth> 4.47"
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 25-yr Rainfall=6.03"

| Area (sf) | CN | Description |
|---|---|---|
| 944 | 98 | Roofs, HSG D |
| 1,094 | 98 | Paved parking, HSG D |
| 2,506 | 89 | <50% Grass cover, Poor, HSG D |
| 2,451 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,995 | 90 | Weighted Average |
| 4,957 | | 70.86% Pervious Area |
| 2,038 | | 29.14% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPE SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 0.2 | 45 | 0.0350 | 3.80 | | **Shallow Concentrated Flow, PAVED PARKING** Paved Kv= 20.3 fps |
| 0.7 | 84 | 0.0160 | 2.04 | | **Shallow Concentrated Flow, GRASS PARKIN/DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.5 | 132 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA1: PROP. SUBAREA 1



## Hydrograph for Subcatchment PSA1: PROP. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.47 | 0.05 | 0.01 |
| 5.25 | 0.50 | 0.06 | 0.01 |
| 5.50 | 0.53 | 0.07 | 0.01 |
| 5.75 | 0.56 | 0.08 | 0.01 |
| 6.00 | 0.60 | 0.09 | 0.01 |
| 6.25 | 0.63 | 0.11 | 0.01 |
| 6.50 | 0.66 | 0.12 | 0.01 |
| 6.75 | 0.70 | 0.14 | 0.01 |
| 7.00 | 0.73 | 0.16 | 0.01 |
| 7.25 | 0.77 | 0.18 | 0.01 |
| 7.50 | 0.81 | 0.20 | 0.01 |
| 7.75 | 0.85 | 0.23 | 0.02 |
| 8.00 | 0.89 | 0.25 | 0.02 |
| 8.25 | 0.93 | 0.28 | 0.02 |
| 8.50 | 0.98 | 0.31 | 0.02 |
| 8.75 | 1.03 | 0.34 | 0.02 |
| 9.00 | 1.08 | 0.37 | 0.02 |
| 9.25 | 1.13 | 0.41 | 0.02 |
| 9.50 | 1.19 | 0.45 | 0.03 |
| 9.75 | 1.25 | 0.49 | 0.03 |
| 10.00 | 1.31 | 0.54 | 0.03 |
| 10.25 | 1.38 | 0.59 | 0.04 |
| 10.50 | 1.46 | 0.65 | 0.04 |
| 10.75 | 1.55 | 0.72 | 0.05 |
| 11.00 | 1.65 | 0.81 | 0.05 |
| 11.25 | 1.78 | 0.91 | 0.07 |
| 11.50 | 1.93 | 1.04 | 0.09 |
| 11.75 | 2.24 | 1.30 | 0.18 |
| 12.00 | 3.31 | 2.27 | **0.83** |
| 12.25 | 3.84 | 2.77 | **0.29** |
| 12.50 | 4.13 | 3.04 | 0.17 |
| 12.75 | 4.28 | 3.18 | 0.09 |
| 13.00 | 4.39 | 3.29 | 0.07 |
| 13.25 | 4.49 | 3.39 | 0.06 |
| 13.50 | 4.58 | 3.47 | 0.05 |
| 13.75 | 4.66 | 3.55 | 0.05 |
| 14.00 | 4.73 | 3.61 | 0.04 |
| 14.25 | 4.79 | 3.68 | 0.04 |
| 14.50 | 4.85 | 3.73 | 0.04 |
| 14.75 | 4.91 | 3.79 | 0.03 |
| 15.00 | 4.96 | 3.84 | 0.03 |
| 15.25 | 5.01 | 3.89 | 0.03 |
| 15.50 | 5.06 | 3.93 | 0.03 |
| 15.75 | 5.10 | 3.97 | 0.03 |
| 16.00 | 5.14 | 4.02 | 0.03 |
| 16.25 | 5.19 | 4.06 | 0.03 |
| 16.50 | 5.23 | 4.09 | 0.02 |
| 16.75 | 5.26 | 4.13 | 0.02 |
| 17.00 | 5.30 | 4.17 | 0.02 |
| 17.25 | 5.34 | 4.20 | 0.02 |
| 17.50 | 5.37 | 4.23 | 0.02 |
| 17.75 | 5.40 | 4.27 | 0.02 |
| 18.00 | 5.44 | 4.30 | 0.02 |
| 18.25 | 5.47 | 4.33 | 0.02 |
| 18.50 | 5.50 | 4.36 | 0.02 |
| 18.75 | 5.53 | 4.39 | 0.02 |
| 19.00 | 5.56 | 4.42 | 0.02 |
| 19.25 | 5.59 | 4.44 | 0.02 |
| 19.50 | 5.61 | 4.47 | 0.02 |
| 19.75 | 5.64 | 4.50 | 0.02 |
| 20.00 | **5.67** | **4.52** | 0.02 |

## Summary for Subcatchment PSA2: PROP. SUBAREA 2

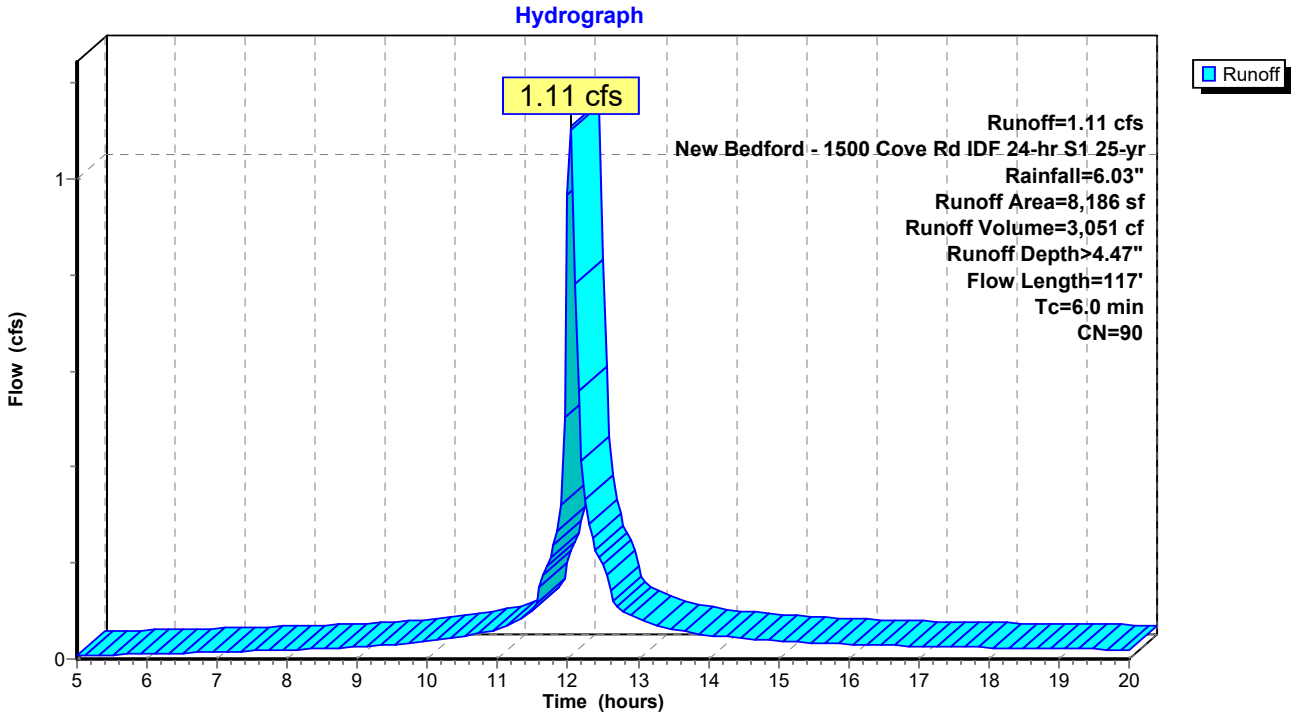
Runoff = 1.11 cfs @ 12.04 hrs, Volume= 3,051 cf, Depth> 4.47"
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 25-yr Rainfall=6.03"

| Area (sf) | CN | Description |
|---|---|---|
| 4,378 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 3,808 | 80 | >75% Grass cover, Good, HSG D |
| 8,186 | 90 | Weighted Average |
| 3,808 | | 46.52% Pervious Area |
| 4,378 | | 53.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPED SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 1.1 | 79 | 0.0140 | 1.17 | | **Sheet Flow, SE-COR PARKING LOT NORTHERLY** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.2 | 35 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, EDGE PRKING** Paved Kv= 20.3 fps |
| 1.9 | 117 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2: PROP. SUBAREA 2



## Hydrograph for Subcatchment PSA2: PROP. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.47 | 0.05 | 0.01 |
| 5.25 | 0.50 | 0.06 | 0.01 |
| 5.50 | 0.53 | 0.07 | 0.01 |
| 5.75 | 0.56 | 0.08 | 0.01 |
| 6.00 | 0.60 | 0.09 | 0.01 |
| 6.25 | 0.63 | 0.11 | 0.01 |
| 6.50 | 0.66 | 0.12 | 0.01 |
| 6.75 | 0.70 | 0.14 | 0.01 |
| 7.00 | 0.73 | 0.16 | 0.01 |
| 7.25 | 0.77 | 0.18 | 0.02 |
| 7.50 | 0.81 | 0.20 | 0.02 |
| 7.75 | 0.85 | 0.23 | 0.02 |
| 8.00 | 0.89 | 0.25 | 0.02 |
| 8.25 | 0.93 | 0.28 | 0.02 |
| 8.50 | 0.98 | 0.31 | 0.02 |
| 8.75 | 1.03 | 0.34 | 0.02 |
| 9.00 | 1.08 | 0.37 | 0.03 |
| 9.25 | 1.13 | 0.41 | 0.03 |
| 9.50 | 1.19 | 0.45 | 0.03 |
| 9.75 | 1.25 | 0.49 | 0.03 |
| 10.00 | 1.31 | 0.54 | 0.04 |
| 10.25 | 1.38 | 0.59 | 0.04 |
| 10.50 | 1.46 | 0.65 | 0.05 |
| 10.75 | 1.55 | 0.72 | 0.05 |
| 11.00 | 1.65 | 0.81 | 0.06 |
| 11.25 | 1.78 | 0.91 | 0.08 |
| 11.50 | 1.93 | 1.04 | 0.10 |
| 11.75 | 2.24 | 1.30 | 0.21 |
| 12.00 | 3.31 | 2.27 | **0.97** |
| 12.25 | 3.84 | 2.77 | **0.33** |
| 12.50 | 4.13 | 3.04 | 0.20 |
| 12.75 | 4.28 | 3.18 | 0.10 |
| 13.00 | 4.39 | 3.29 | 0.08 |
| 13.25 | 4.49 | 3.39 | 0.07 |
| 13.50 | 4.58 | 3.47 | 0.06 |
| 13.75 | 4.66 | 3.55 | 0.06 |
| 14.00 | 4.73 | 3.61 | 0.05 |
| 14.25 | 4.79 | 3.68 | 0.05 |
| 14.50 | 4.85 | 3.73 | 0.04 |
| 14.75 | 4.91 | 3.79 | 0.04 |
| 15.00 | 4.96 | 3.84 | 0.04 |
| 15.25 | 5.01 | 3.89 | 0.04 |
| 15.50 | 5.06 | 3.93 | 0.03 |
| 15.75 | 5.10 | 3.97 | 0.03 |
| 16.00 | 5.14 | 4.02 | 0.03 |
| 16.25 | 5.19 | 4.06 | 0.03 |
| 16.50 | 5.23 | 4.09 | 0.03 |
| 16.75 | 5.26 | 4.13 | 0.03 |
| 17.00 | 5.30 | 4.17 | 0.03 |
| 17.25 | 5.34 | 4.20 | 0.03 |
| 17.50 | 5.37 | 4.23 | 0.03 |
| 17.75 | 5.40 | 4.27 | 0.02 |
| 18.00 | 5.44 | 4.30 | 0.02 |
| 18.25 | 5.47 | 4.33 | 0.02 |
| 18.50 | 5.50 | 4.36 | 0.02 |
| 18.75 | 5.53 | 4.39 | 0.02 |
| 19.00 | 5.56 | 4.42 | 0.02 |
| 19.25 | 5.59 | 4.44 | 0.02 |
| 19.50 | 5.61 | 4.47 | 0.02 |
| 19.75 | 5.64 | 4.50 | 0.02 |
| 20.00 | **5.67** | **4.52** | 0.02 |

## Summary for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

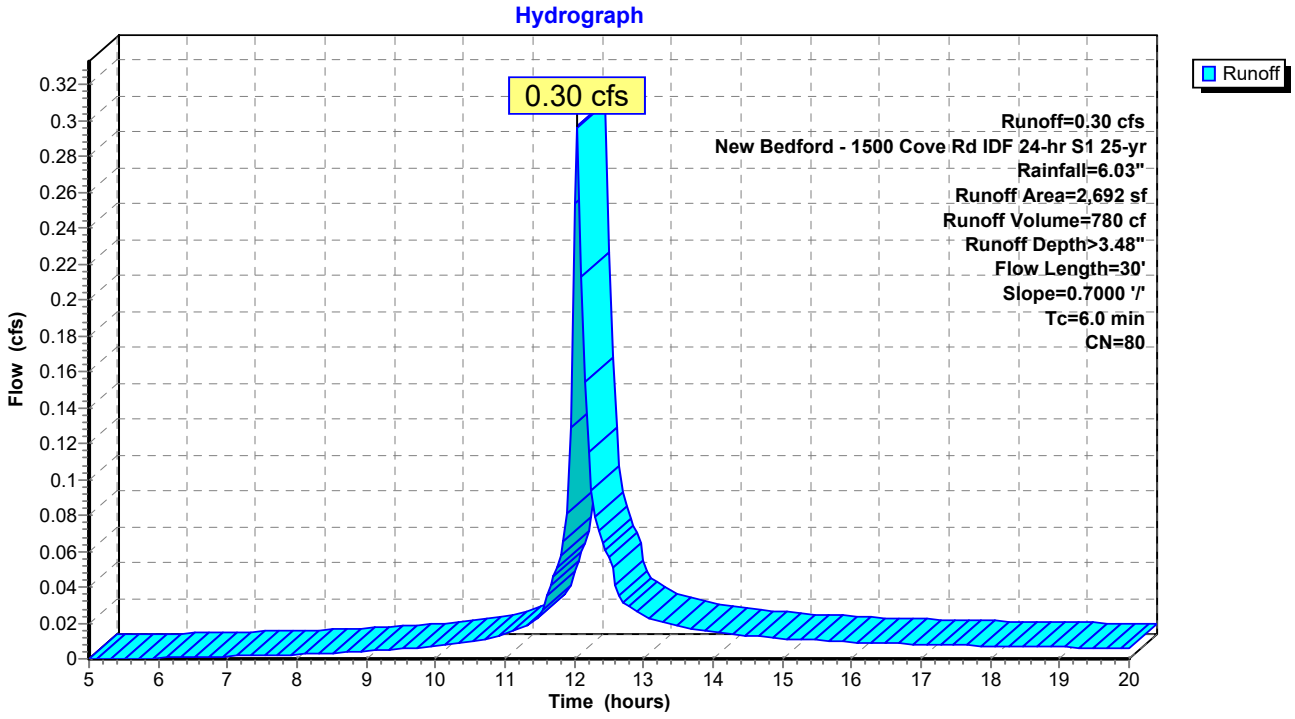
Runoff = 0.30 cfs @ 12.04 hrs, Volume= 780 cf, Depth> 3.48"
Routed to Pond RB : RAIN BARRELLS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 25-yr Rainfall=6.03"

| Area (sf) | CN | Description |
|---|---|---|
| 2,692 | 80 | >75% Grass cover, Good, HSG D |
| 2,692 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.1 | 30 | 0.7000 | 4.62 | | **Sheet Flow, ROOF** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.1 | 30 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2



## Hydrograph for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.47 | 0.00 | 0.00 |
| 5.25 | 0.50 | 0.00 | 0.00 |
| 5.50 | 0.53 | 0.00 | 0.00 |
| 5.75 | 0.56 | 0.00 | 0.00 |
| 6.00 | 0.60 | 0.00 | 0.00 |
| 6.25 | 0.63 | 0.01 | 0.00 |
| 6.50 | 0.66 | 0.01 | 0.00 |
| 6.75 | 0.70 | 0.01 | 0.00 |
| 7.00 | 0.73 | 0.02 | 0.00 |
| 7.25 | 0.77 | 0.03 | 0.00 |
| 7.50 | 0.81 | 0.03 | 0.00 |
| 7.75 | 0.85 | 0.04 | 0.00 |
| 8.00 | 0.89 | 0.05 | 0.00 |
| 8.25 | 0.93 | 0.06 | 0.00 |
| 8.50 | 0.98 | 0.08 | 0.00 |
| 8.75 | 1.03 | 0.09 | 0.00 |
| 9.00 | 1.08 | 0.11 | 0.00 |
| 9.25 | 1.13 | 0.13 | 0.00 |
| 9.50 | 1.19 | 0.15 | 0.01 |
| 9.75 | 1.25 | 0.17 | 0.01 |
| 10.00 | 1.31 | 0.20 | 0.01 |
| 10.25 | 1.38 | 0.23 | 0.01 |
| 10.50 | 1.46 | 0.27 | 0.01 |
| 10.75 | 1.55 | 0.31 | 0.01 |
| 11.00 | 1.65 | 0.36 | 0.01 |
| 11.25 | 1.78 | 0.43 | 0.02 |
| 11.50 | 1.93 | 0.52 | 0.02 |
| 11.75 | 2.24 | 0.72 | 0.05 |
| 12.00 | 3.31 | 1.48 | **0.25** |
| 12.25 | 3.84 | 1.91 | **0.09** |
| 12.50 | 4.13 | 2.15 | 0.06 |
| 12.75 | 4.28 | 2.27 | 0.03 |
| 13.00 | 4.39 | 2.37 | 0.02 |
| 13.25 | 4.49 | 2.46 | 0.02 |
| 13.50 | 4.58 | 2.53 | 0.02 |
| 13.75 | 4.66 | 2.60 | 0.02 |
| 14.00 | 4.73 | 2.66 | 0.01 |
| 14.25 | 4.79 | 2.71 | 0.01 |
| 14.50 | 4.85 | 2.76 | 0.01 |
| 14.75 | 4.91 | 2.81 | 0.01 |
| 15.00 | 4.96 | 2.86 | 0.01 |
| 15.25 | 5.01 | 2.90 | 0.01 |
| 15.50 | 5.06 | 2.94 | 0.01 |
| 15.75 | 5.10 | 2.98 | 0.01 |
| 16.00 | 5.14 | 3.02 | 0.01 |
| 16.25 | 5.19 | 3.06 | 0.01 |
| 16.50 | 5.23 | 3.09 | 0.01 |
| 16.75 | 5.26 | 3.12 | 0.01 |
| 17.00 | 5.30 | 3.16 | 0.01 |
| 17.25 | 5.34 | 3.19 | 0.01 |
| 17.50 | 5.37 | 3.22 | 0.01 |
| 17.75 | 5.40 | 3.25 | 0.01 |
| 18.00 | 5.44 | 3.28 | 0.01 |
| 18.25 | 5.47 | 3.30 | 0.01 |
| 18.50 | 5.50 | 3.33 | 0.01 |
| 18.75 | 5.53 | 3.36 | 0.01 |
| 19.00 | 5.56 | 3.38 | 0.01 |
| 19.25 | 5.59 | 3.41 | 0.01 |
| 19.50 | 5.61 | 3.43 | 0.01 |
| 19.75 | 5.64 | 3.46 | 0.01 |
| 20.00 | **5.67** | **3.48** | 0.01 |

## Summary for Pond RB: RAIN BARRELLS

Inflow Area = 2,692 sf, 0.00% Impervious, Inflow Depth > 3.48" for 25-yr event
Inflow = 0.30 cfs @ 12.04 hrs, Volume= 780 cf
Outflow = 0.29 cfs @ 12.04 hrs, Volume= 731 cf, Atten= 1%, Lag= 0.0 min
Primary = 0.00 cfs @ 9.35 hrs, Volume= 70 cf
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)
Secondary = 0.29 cfs @ 12.04 hrs, Volume= 661 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.67' @ 12.04 hrs Surf.Area= 17 sf Storage= 49 cf

Plug-Flow detention time= 38.7 min calculated for 731 cf (94% of inflow)
Center-of-Mass det. time= 15.1 min ( 797.2 - 782.1 )

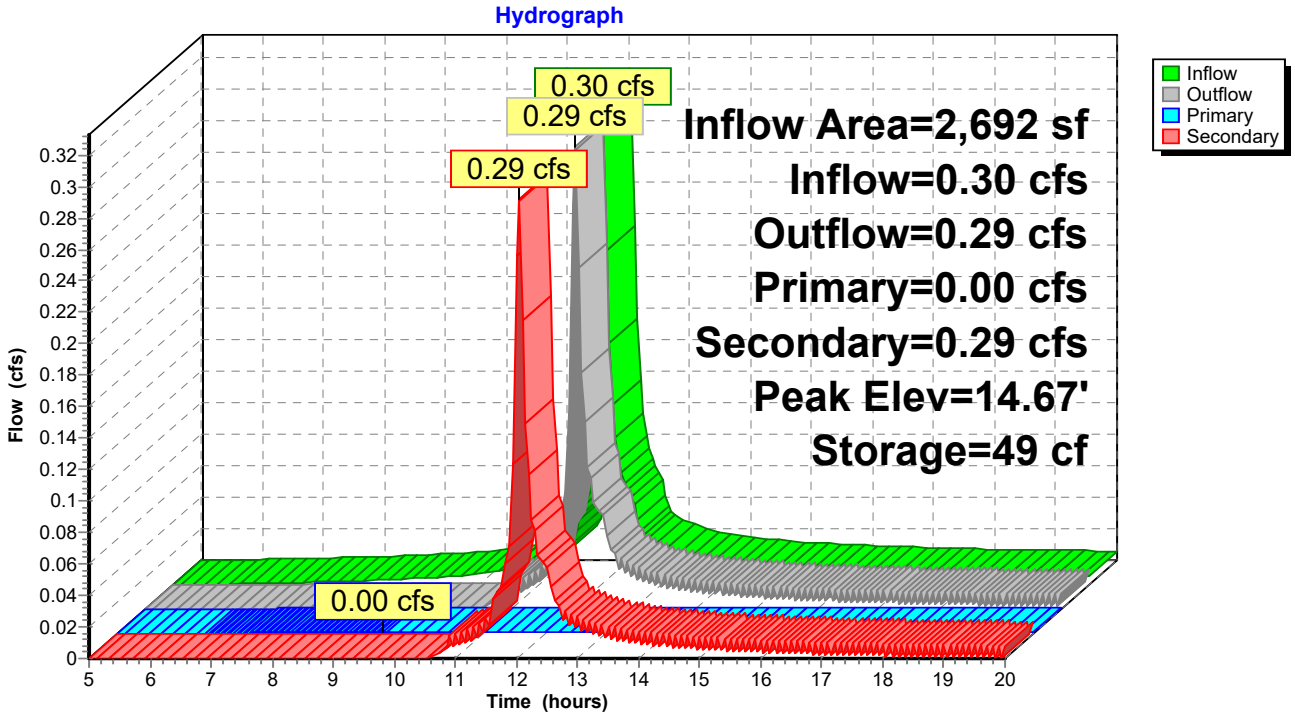
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 11.00' | 49 cf | **1.90'D x 2.90'H Vertical Cone/Cylinder** x 6 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 11.10' | **0.1" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Secondary | 14.50' | **3.0" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |

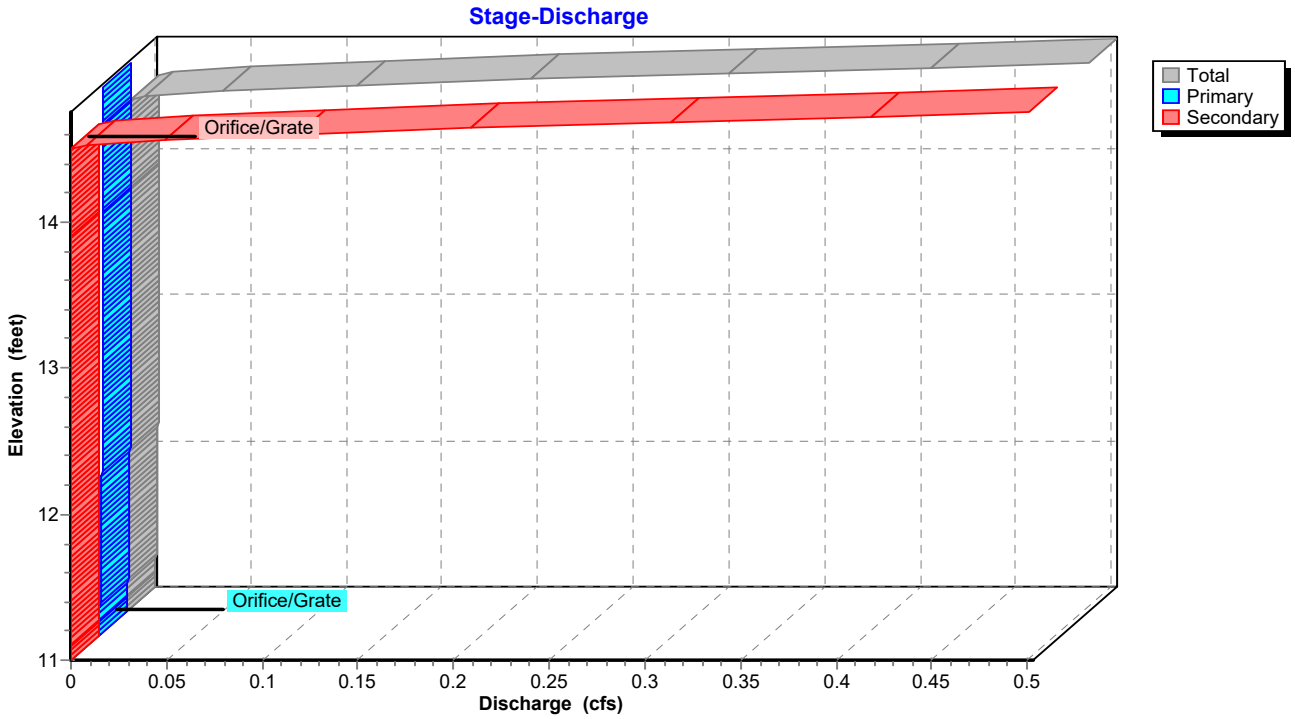
**Primary OutFlow** Max=0.00 cfs @ 9.35 hrs HW=12.13' TW=11.13' (TW follows 1.00' below HW)
↑—**1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 4.81 fps)

**Secondary OutFlow** Max=0.28 cfs @ 12.04 hrs HW=14.66' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 1.38 fps)

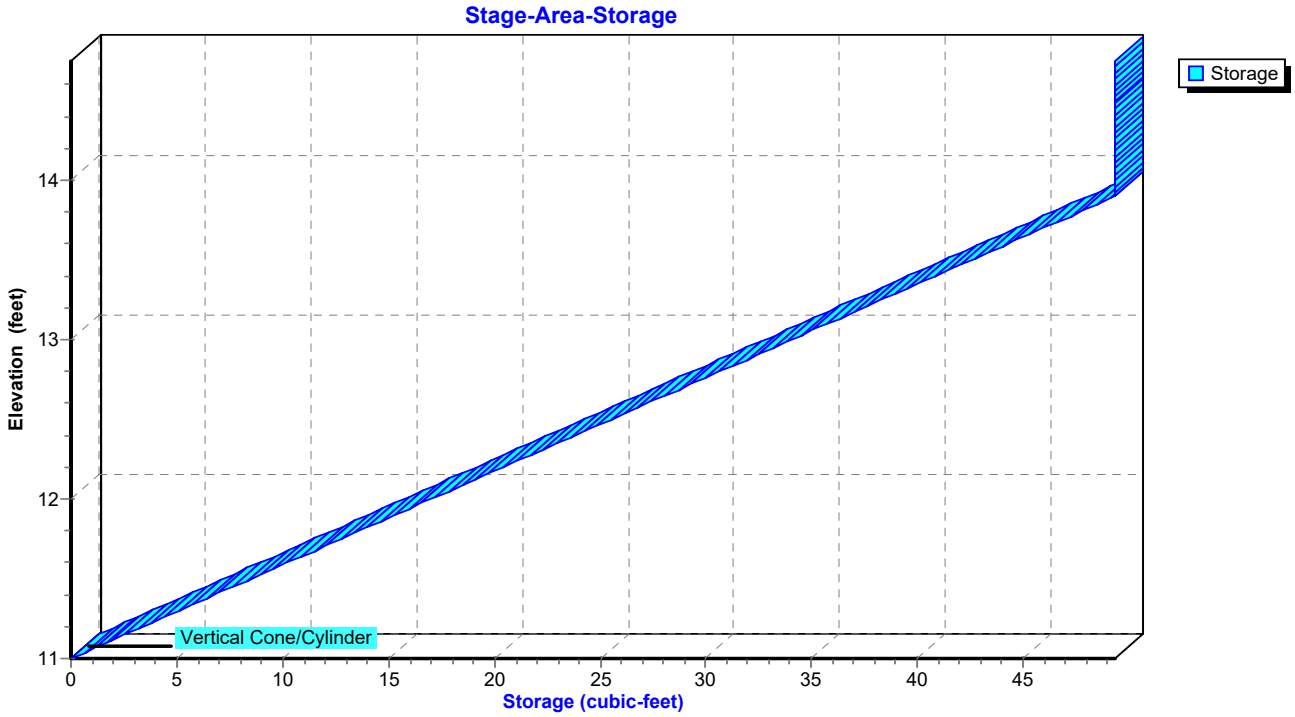
## Pond RB: RAIN BARRELLS




## Pond RB: RAIN BARRELLS



## Pond RB: RAIN BARRELLS



## Hydrograph for Pond RB: RAIN BARRELLS

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 5.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 1 | 11.04 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 2 | 11.11 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 3 | 11.20 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 5 | 11.31 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 8 | 11.46 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 11 | 11.65 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 15 | 11.91 | 0.00 | **0.00** | 0.00 |
| 9.50 | 0.01 | 21 | 12.25 | 0.00 | **0.00** | 0.00 |
| 10.00 | 0.01 | 29 | 12.73 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.01 | **41** | 13.41 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.01 | **49** | 14.53 | 0.02 | 0.00 | 0.02 |
| 11.50 | 0.02 | 49 | 14.54 | 0.03 | 0.00 | 0.03 |
| 12.00 | **0.25** | 49 | **14.65** | **0.26** | 0.00 | **0.26** |
| 12.50 | **0.06** | 49 | **14.57** | **0.06** | 0.00 | **0.06** |
| 13.00 | 0.02 | 49 | 14.54 | 0.03 | 0.00 | 0.03 |
| 13.50 | 0.02 | 49 | 14.54 | 0.02 | 0.00 | 0.02 |
| 14.00 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 14.50 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 15.00 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.01 |
| 15.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 16.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 16.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 17.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 17.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 18.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 18.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 19.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 19.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 20.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |

## Stage-Discharge for Pond RB: RAIN BARRELLS

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 11.00 | 0.00 | 0.00 | 0.00 |
| 11.05 | 0.00 | 0.00 | 0.00 |
| 11.10 | 0.00 | 0.00 | 0.00 |
| 11.15 | 0.00 | 0.00 | 0.00 |
| 11.20 | 0.00 | 0.00 | 0.00 |
| 11.25 | 0.00 | 0.00 | 0.00 |
| 11.30 | 0.00 | 0.00 | 0.00 |
| 11.35 | 0.00 | 0.00 | 0.00 |
| 11.40 | 0.00 | 0.00 | 0.00 |
| 11.45 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 |
| 11.55 | 0.00 | 0.00 | 0.00 |
| 11.60 | 0.00 | 0.00 | 0.00 |
| 11.65 | 0.00 | 0.00 | 0.00 |
| 11.70 | 0.00 | 0.00 | 0.00 |
| 11.75 | 0.00 | 0.00 | 0.00 |
| 11.80 | 0.00 | 0.00 | 0.00 |
| 11.85 | 0.00 | 0.00 | 0.00 |
| 11.90 | 0.00 | 0.00 | 0.00 |
| 11.95 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 |
| 12.05 | 0.00 | 0.00 | 0.00 |
| 12.10 | 0.00 | **0.00** | 0.00 |
| 12.15 | 0.00 | **0.00** | 0.00 |
| 12.20 | 0.00 | 0.00 | 0.00 |
| 12.25 | 0.00 | 0.00 | 0.00 |
| 12.30 | 0.00 | 0.00 | 0.00 |
| 12.35 | 0.00 | 0.00 | 0.00 |
| 12.40 | 0.00 | 0.00 | 0.00 |
| 12.45 | 0.00 | 0.00 | 0.00 |
| 12.50 | 0.00 | 0.00 | 0.00 |
| 12.55 | 0.00 | 0.00 | 0.00 |
| 12.60 | 0.00 | 0.00 | 0.00 |
| 12.65 | 0.00 | 0.00 | 0.00 |
| 12.70 | 0.00 | 0.00 | 0.00 |
| 12.75 | 0.00 | 0.00 | 0.00 |
| 12.80 | 0.00 | 0.00 | 0.00 |
| 12.85 | 0.00 | 0.00 | 0.00 |
| 12.90 | 0.00 | 0.00 | 0.00 |
| 12.95 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.00 | 0.00 | 0.00 |
| 13.05 | 0.00 | 0.00 | 0.00 |
| 13.10 | 0.00 | 0.00 | 0.00 |
| 13.15 | 0.00 | 0.00 | 0.00 |
| 13.20 | 0.00 | 0.00 | 0.00 |
| 13.25 | 0.00 | 0.00 | 0.00 |
| 13.30 | 0.00 | 0.00 | 0.00 |
| 13.35 | 0.00 | 0.00 | 0.00 |
| 13.40 | 0.00 | 0.00 | 0.00 |
| 13.45 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.00 | 0.00 | 0.00 |
| 13.55 | 0.00 | 0.00 | 0.00 |
| 13.60 | 0.00 | 0.00 | 0.00 |
| 13.65 | 0.00 | 0.00 | 0.00 |
| 13.70 | 0.00 | 0.00 | 0.00 |
| 13.75 | 0.00 | 0.00 | 0.00 |
| 13.80 | 0.00 | 0.00 | 0.00 |
| 13.85 | 0.00 | 0.00 | 0.00 |
| 13.90 | 0.00 | 0.00 | 0.00 |
| 13.95 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.00 | 0.00 | 0.00 |
| 14.05 | 0.00 | 0.00 | 0.00 |
| 14.10 | 0.00 | 0.00 | 0.00 |
| 14.15 | 0.00 | 0.00 | 0.00 |
| 14.20 | 0.00 | 0.00 | 0.00 |
| 14.25 | 0.00 | 0.00 | 0.00 |
| 14.30 | 0.00 | 0.00 | 0.00 |
| 14.35 | 0.00 | 0.00 | 0.00 |
| 14.40 | 0.00 | 0.00 | 0.00 |
| 14.45 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.00 | 0.00 | 0.00 |
| 14.55 | 0.03 | 0.00 | 0.03 |
| 14.60 | 0.12 | 0.00 | 0.12 |
| 14.65 | 0.24 | 0.00 | 0.24 |
| 14.70 | 0.39 | 0.00 | 0.38 |
| 14.75 | **0.50** | 0.00 | **0.50** |

## Stage-Area-Storage for Pond RB: RAIN BARRELLS

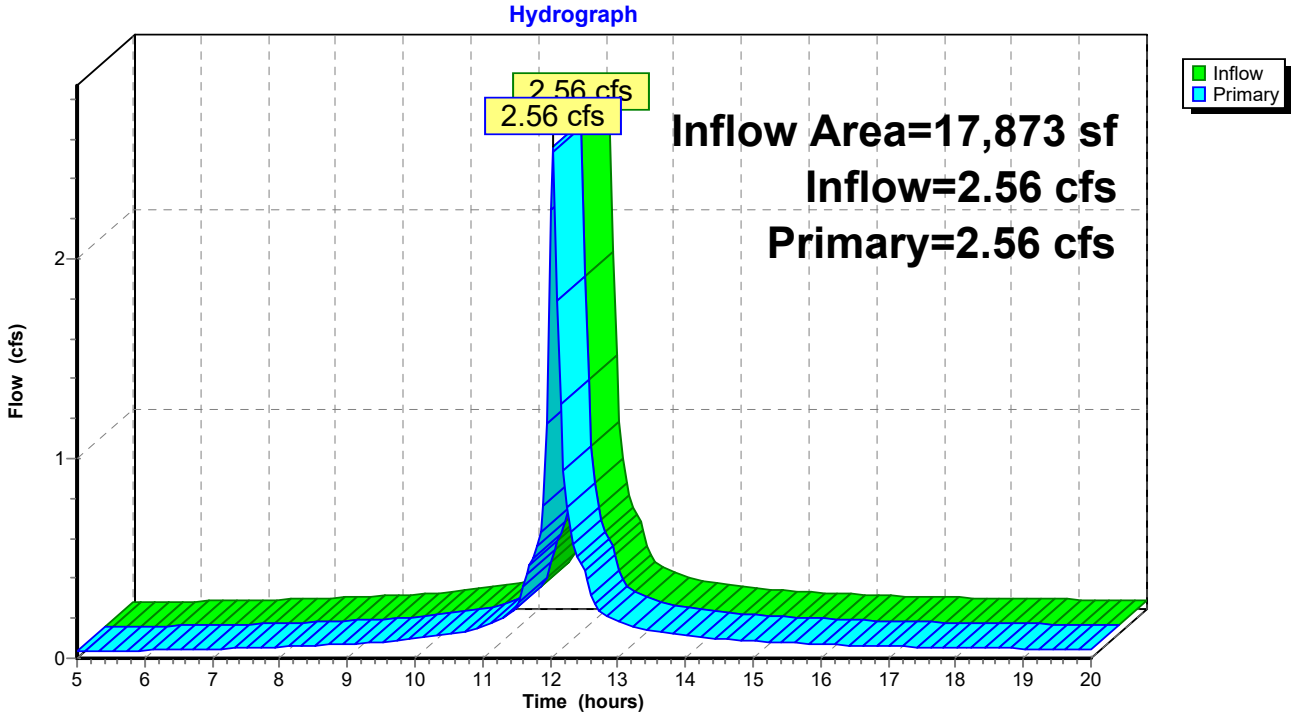
| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 11.00 | 0 |
| 11.05 | 1 |
| 11.10 | 2 |
| 11.15 | 3 |
| 11.20 | 3 |
| 11.25 | 4 |
| 11.30 | 5 |
| 11.35 | 6 |
| 11.40 | 7 |
| 11.45 | 8 |
| 11.50 | 9 |
| 11.55 | 9 |
| 11.60 | 10 |
| 11.65 | 11 |
| 11.70 | 12 |
| 11.75 | 13 |
| 11.80 | 14 |
| 11.85 | 14 |
| 11.90 | 15 |
| 11.95 | 16 |
| 12.00 | 17 |
| 12.05 | 18 |
| 12.10 | 19 |
| 12.15 | 20 |
| 12.20 | 20 |
| 12.25 | 21 |
| 12.30 | 22 |
| 12.35 | 23 |
| 12.40 | 24 |
| 12.45 | 25 |
| 12.50 | 26 |
| 12.55 | 26 |
| 12.60 | 27 |
| 12.65 | 28 |
| 12.70 | 29 |
| 12.75 | 30 |
| 12.80 | 31 |
| 12.85 | 31 |
| 12.90 | 32 |
| 12.95 | 33 |
| 13.00 | 34 |
| 13.05 | 35 |
| 13.10 | 36 |
| 13.15 | 37 |
| 13.20 | 37 |
| 13.25 | 38 |
| 13.30 | 39 |
| 13.35 | 40 |
| 13.40 | 41 |
| 13.45 | 42 |
| 13.50 | 43 |
| 13.55 | 43 |
| 13.60 | 44 |
| 13.65 | 45 |
| 13.70 | 46 |
| 13.75 | 47 |
| 13.80 | 48 |
| 13.85 | 48 |
| 13.90 | **49** |
| 13.95 | 49 |
| 14.00 | 49 |
| 14.05 | 49 |
| 14.10 | 49 |
| 14.15 | 49 |
| 14.20 | 49 |
| 14.25 | 49 |
| 14.30 | 49 |
| 14.35 | 49 |
| 14.40 | 49 |
| 14.45 | 49 |
| 14.50 | 49 |
| 14.55 | 49 |
| 14.60 | 49 |
| 14.65 | 49 |
| 14.70 | 49 |
| 14.75 | 49 |

## Summary for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 75.47% Impervious, Inflow Depth > 4.88" for 25-yr event
Inflow = 2.56 cfs @ 12.04 hrs, Volume= 7,268 cf
Primary = 2.56 cfs @ 12.04 hrs, Volume= 7,268 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link ESAT: EXIST. SUBAREA TOTAL OFFSITE



## Hydrograph for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

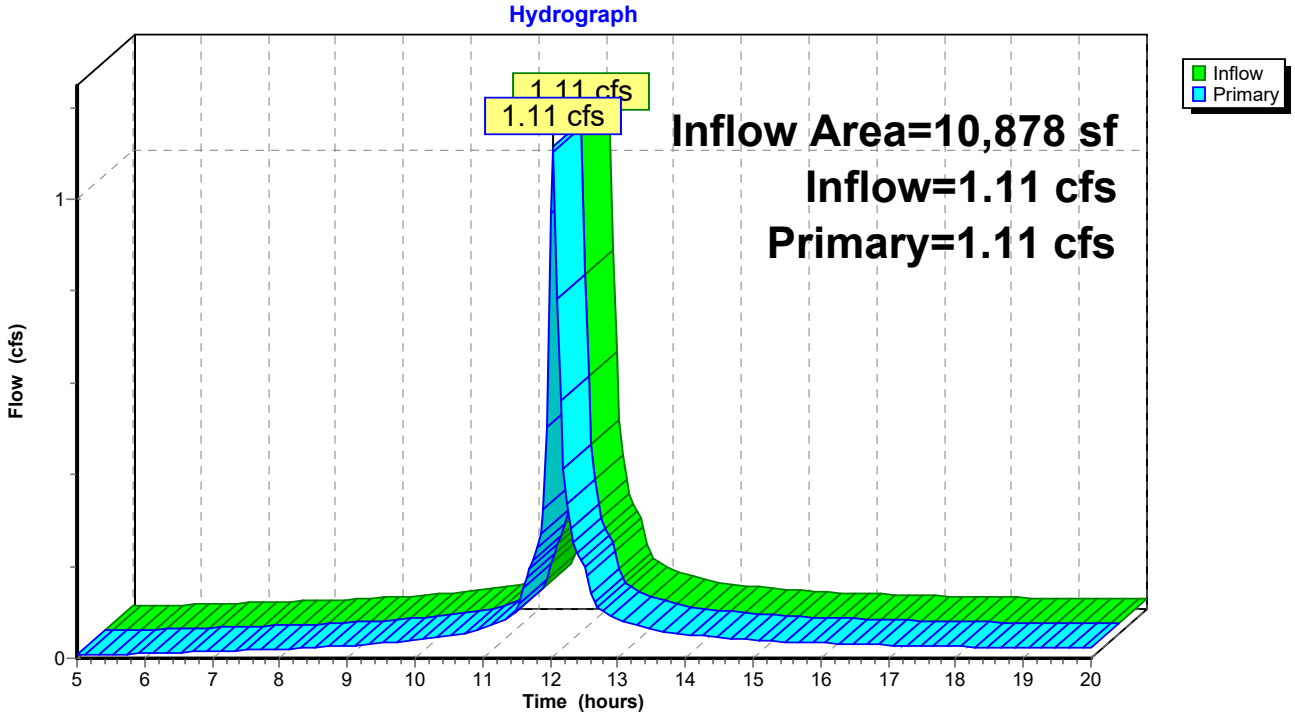
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.03 | **0.00** | 0.03 |
| 5.25 | 0.03 | 0.00 | 0.03 |
| 5.50 | 0.04 | 0.00 | 0.04 |
| 5.75 | 0.04 | 0.00 | 0.04 |
| 6.00 | 0.04 | 0.00 | 0.04 |
| 6.25 | 0.04 | 0.00 | 0.04 |
| 6.50 | 0.04 | 0.00 | 0.04 |
| 6.75 | 0.04 | 0.00 | 0.04 |
| 7.00 | 0.05 | 0.00 | 0.05 |
| 7.25 | 0.05 | 0.00 | 0.05 |
| 7.50 | 0.05 | 0.00 | 0.05 |
| 7.75 | 0.05 | 0.00 | 0.05 |
| 8.00 | 0.06 | 0.00 | 0.06 |
| 8.25 | 0.06 | 0.00 | 0.06 |
| 8.50 | 0.06 | 0.00 | 0.06 |
| 8.75 | 0.07 | 0.00 | 0.07 |
| 9.00 | 0.07 | 0.00 | 0.07 |
| 9.25 | 0.08 | 0.00 | 0.08 |
| 9.50 | 0.08 | 0.00 | 0.08 |
| 9.75 | 0.09 | 0.00 | 0.09 |
| 10.00 | 0.10 | 0.00 | 0.10 |
| 10.25 | 0.11 | 0.00 | 0.11 |
| 10.50 | 0.12 | 0.00 | 0.12 |
| 10.75 | 0.14 | 0.00 | 0.14 |
| 11.00 | 0.16 | 0.00 | 0.16 |
| 11.25 | 0.19 | 0.00 | 0.19 |
| 11.50 | 0.25 | 0.00 | 0.25 |
| 11.75 | 0.50 | 0.00 | 0.50 |
| 12.00 | **2.24** | 0.00 | **2.24** |
| 12.25 | **0.76** | 0.00 | **0.76** |
| 12.50 | 0.44 | 0.00 | 0.44 |
| 12.75 | 0.23 | 0.00 | 0.23 |
| 13.00 | 0.19 | 0.00 | 0.19 |
| 13.25 | 0.16 | 0.00 | 0.16 |
| 13.50 | 0.14 | 0.00 | 0.14 |
| 13.75 | 0.12 | 0.00 | 0.12 |
| 14.00 | 0.11 | 0.00 | 0.11 |
| 14.25 | 0.10 | 0.00 | 0.10 |
| 14.50 | 0.10 | 0.00 | 0.10 |
| 14.75 | 0.09 | 0.00 | 0.09 |
| 15.00 | 0.08 | 0.00 | 0.08 |
| 15.25 | 0.08 | 0.00 | 0.08 |
| 15.50 | 0.08 | 0.00 | 0.08 |
| 15.75 | 0.07 | 0.00 | 0.07 |
| 16.00 | 0.07 | 0.00 | 0.07 |
| 16.25 | 0.07 | 0.00 | 0.07 |
| 16.50 | 0.06 | 0.00 | 0.06 |
| 16.75 | 0.06 | 0.00 | 0.06 |
| 17.00 | 0.06 | 0.00 | 0.06 |
| 17.25 | 0.06 | 0.00 | 0.06 |
| 17.50 | 0.06 | 0.00 | 0.06 |
| 17.75 | 0.05 | 0.00 | 0.05 |
| 18.00 | 0.05 | 0.00 | 0.05 |
| 18.25 | 0.05 | 0.00 | 0.05 |
| 18.50 | 0.05 | 0.00 | 0.05 |
| 18.75 | 0.05 | 0.00 | 0.05 |
| 19.00 | 0.05 | 0.00 | 0.05 |
| 19.25 | 0.05 | 0.00 | 0.05 |
| 19.50 | 0.05 | 0.00 | 0.05 |
| 19.75 | 0.04 | 0.00 | 0.04 |
| 20.00 | 0.04 | 0.00 | 0.04 |

## Summary for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

Inflow Area = 10,878 sf, 40.25% Impervious, Inflow Depth > 3.44" for 25-yr event
Inflow = 1.11 cfs @ 12.04 hrs, Volume= 3,121 cf
Primary = 1.11 cfs @ 12.04 hrs, Volume= 3,121 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSA2(T): PROP SUB-AREA 2 (TOTAL)



## Hydrograph for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

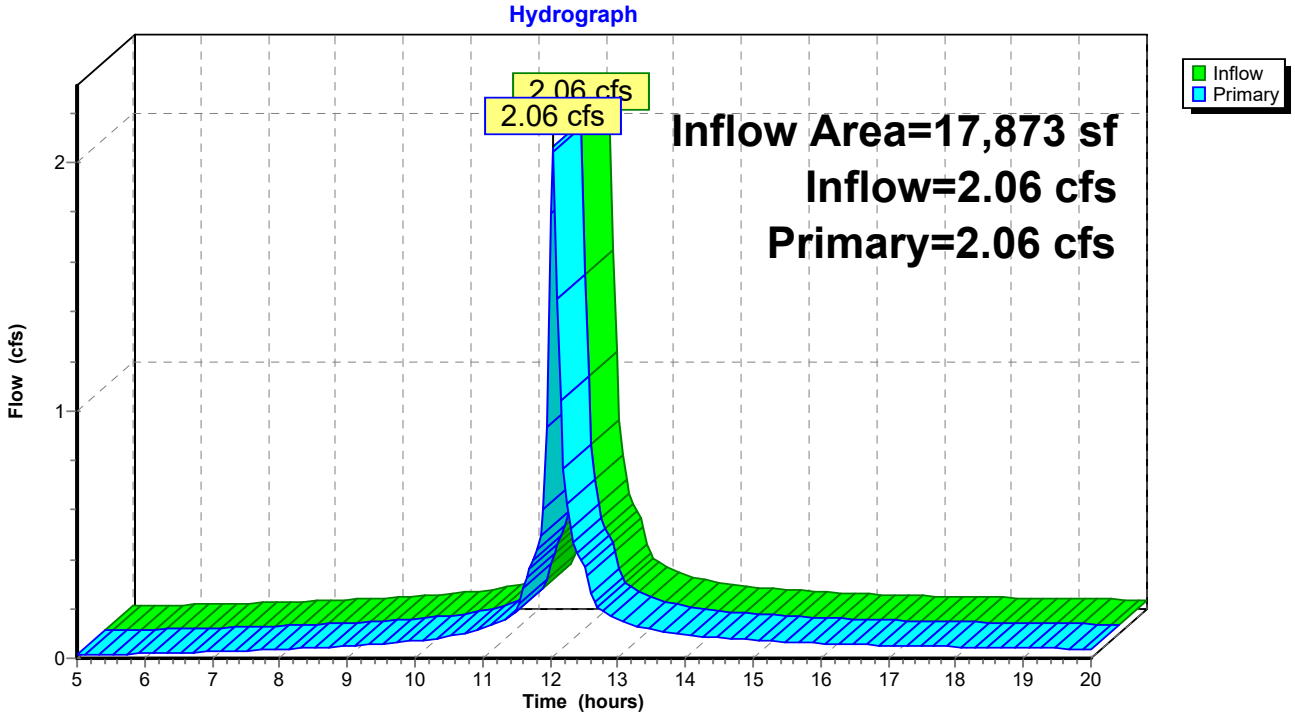
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.01 | **0.00** | 0.01 |
| 5.25 | 0.01 | 0.00 | 0.01 |
| 5.50 | 0.01 | 0.00 | 0.01 |
| 5.75 | 0.01 | 0.00 | 0.01 |
| 6.00 | 0.01 | 0.00 | 0.01 |
| 6.25 | 0.01 | 0.00 | 0.01 |
| 6.50 | 0.01 | 0.00 | 0.01 |
| 6.75 | 0.01 | 0.00 | 0.01 |
| 7.00 | 0.01 | 0.00 | 0.01 |
| 7.25 | 0.02 | 0.00 | 0.02 |
| 7.50 | 0.02 | 0.00 | 0.02 |
| 7.75 | 0.02 | 0.00 | 0.02 |
| 8.00 | 0.02 | 0.00 | 0.02 |
| 8.25 | 0.02 | 0.00 | 0.02 |
| 8.50 | 0.02 | 0.00 | 0.02 |
| 8.75 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.03 | 0.00 | 0.03 |
| 9.25 | 0.03 | 0.00 | 0.03 |
| 9.50 | 0.03 | 0.00 | 0.03 |
| 9.75 | 0.04 | 0.00 | 0.04 |
| 10.00 | 0.04 | 0.00 | 0.04 |
| 10.25 | 0.04 | 0.00 | 0.04 |
| 10.50 | 0.05 | 0.00 | 0.05 |
| 10.75 | 0.06 | 0.00 | 0.06 |
| 11.00 | 0.07 | 0.00 | 0.07 |
| 11.25 | 0.08 | 0.00 | 0.08 |
| 11.50 | 0.10 | 0.00 | 0.10 |
| 11.75 | 0.21 | 0.00 | 0.21 |
| 12.00 | **0.97** | 0.00 | **0.97** |
| 12.25 | **0.34** | 0.00 | **0.34** |
| 12.50 | 0.20 | 0.00 | 0.20 |
| 12.75 | 0.10 | 0.00 | 0.10 |
| 13.00 | 0.08 | 0.00 | 0.08 |
| 13.25 | 0.07 | 0.00 | 0.07 |
| 13.50 | 0.06 | 0.00 | 0.06 |
| 13.75 | 0.06 | 0.00 | 0.06 |
| 14.00 | 0.05 | 0.00 | 0.05 |
| 14.25 | 0.05 | 0.00 | 0.05 |
| 14.50 | 0.04 | 0.00 | 0.04 |
| 14.75 | 0.04 | 0.00 | 0.04 |
| 15.00 | 0.04 | 0.00 | 0.04 |
| 15.25 | 0.04 | 0.00 | 0.04 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.03 | 0.00 | 0.03 |
| 16.00 | 0.03 | 0.00 | 0.03 |
| 16.25 | 0.03 | 0.00 | 0.03 |
| 16.50 | 0.03 | 0.00 | 0.03 |
| 16.75 | 0.03 | 0.00 | 0.03 |
| 17.00 | 0.03 | 0.00 | 0.03 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.02 | 0.00 | 0.02 |
| 18.50 | 0.02 | 0.00 | 0.02 |
| 18.75 | 0.02 | 0.00 | 0.02 |
| 19.00 | 0.02 | 0.00 | 0.02 |
| 19.25 | 0.02 | 0.00 | 0.02 |
| 19.50 | 0.02 | 0.00 | 0.02 |
| 19.75 | 0.02 | 0.00 | 0.02 |
| 20.00 | 0.02 | 0.00 | 0.02 |

## Summary for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 35.90% Impervious, Inflow Depth > 3.85" for 25-yr event
Inflow = 2.06 cfs @ 12.04 hrs, Volume= 5,728 cf
Primary = 2.06 cfs @ 12.04 hrs, Volume= 5,728 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSAT: PROP. SUBAREA TOTAL OFFSITE



## Hydrograph for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.01 | **0.00** | 0.01 |
| 5.25 | 0.01 | 0.00 | 0.01 |
| 5.50 | 0.02 | 0.00 | 0.02 |
| 5.75 | 0.02 | 0.00 | 0.02 |
| 6.00 | 0.02 | 0.00 | 0.02 |
| 6.25 | 0.02 | 0.00 | 0.02 |
| 6.50 | 0.02 | 0.00 | 0.02 |
| 6.75 | 0.02 | 0.00 | 0.02 |
| 7.00 | 0.03 | 0.00 | 0.03 |
| 7.25 | 0.03 | 0.00 | 0.03 |
| 7.50 | 0.03 | 0.00 | 0.03 |
| 7.75 | 0.03 | 0.00 | 0.03 |
| 8.00 | 0.04 | 0.00 | 0.04 |
| 8.25 | 0.04 | 0.00 | 0.04 |
| 8.50 | 0.04 | 0.00 | 0.04 |
| 8.75 | 0.05 | 0.00 | 0.05 |
| 9.00 | 0.05 | 0.00 | 0.05 |
| 9.25 | 0.05 | 0.00 | 0.05 |
| 9.50 | 0.06 | 0.00 | 0.06 |
| 9.75 | 0.06 | 0.00 | 0.06 |
| 10.00 | 0.07 | 0.00 | 0.07 |
| 10.25 | 0.08 | 0.00 | 0.08 |
| 10.50 | 0.09 | 0.00 | 0.09 |
| 10.75 | 0.10 | 0.00 | 0.10 |
| 11.00 | 0.12 | 0.00 | 0.12 |
| 11.25 | 0.15 | 0.00 | 0.15 |
| 11.50 | 0.19 | 0.00 | 0.19 |
| 11.75 | 0.39 | 0.00 | 0.39 |
| 12.00 | **1.80** | 0.00 | **1.80** |
| 12.25 | **0.62** | 0.00 | **0.62** |
| 12.50 | 0.36 | 0.00 | 0.36 |
| 12.75 | 0.19 | 0.00 | 0.19 |
| 13.00 | 0.15 | 0.00 | 0.15 |
| 13.25 | 0.13 | 0.00 | 0.13 |
| 13.50 | 0.12 | 0.00 | 0.12 |
| 13.75 | 0.10 | 0.00 | 0.10 |
| 14.00 | 0.10 | 0.00 | 0.10 |
| 14.25 | 0.09 | 0.00 | 0.09 |
| 14.50 | 0.08 | 0.00 | 0.08 |
| 14.75 | 0.08 | 0.00 | 0.08 |
| 15.00 | 0.07 | 0.00 | 0.07 |
| 15.25 | 0.07 | 0.00 | 0.07 |
| 15.50 | 0.07 | 0.00 | 0.07 |
| 15.75 | 0.06 | 0.00 | 0.06 |
| 16.00 | 0.06 | 0.00 | 0.06 |
| 16.25 | 0.06 | 0.00 | 0.06 |
| 16.50 | 0.06 | 0.00 | 0.06 |
| 16.75 | 0.05 | 0.00 | 0.05 |
| 17.00 | 0.05 | 0.00 | 0.05 |
| 17.25 | 0.05 | 0.00 | 0.05 |
| 17.50 | 0.05 | 0.00 | 0.05 |
| 17.75 | 0.05 | 0.00 | 0.05 |
| 18.00 | 0.05 | 0.00 | 0.05 |
| 18.25 | 0.04 | 0.00 | 0.04 |
| 18.50 | 0.04 | 0.00 | 0.04 |
| 18.75 | 0.04 | 0.00 | 0.04 |
| 19.00 | 0.04 | 0.00 | 0.04 |
| 19.25 | 0.04 | 0.00 | 0.04 |
| 19.50 | 0.04 | 0.00 | 0.04 |
| 19.75 | 0.04 | 0.00 | 0.04 |
| 20.00 | 0.04 | 0.00 | 0.04 |

## Summary for Subcatchment ESA1: EXIST. SUBAREA 1

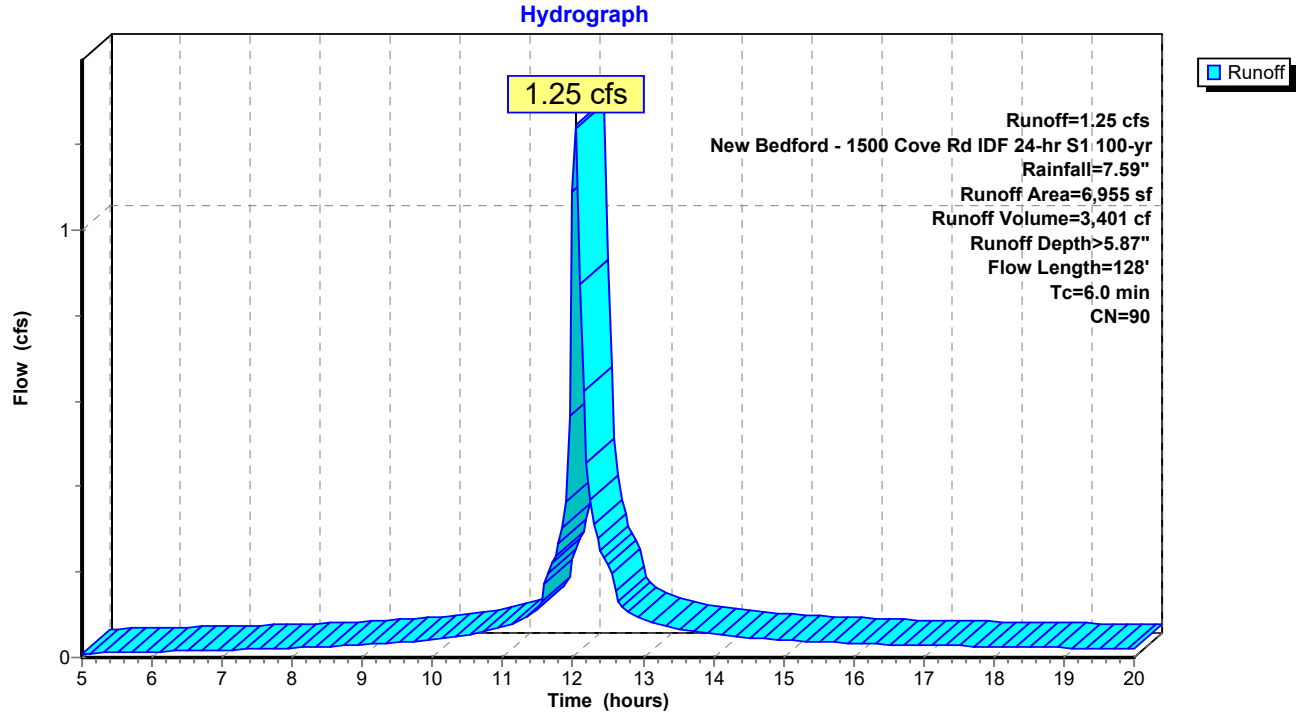
Runoff = 1.25 cfs @ 12.04 hrs, Volume= 3,401 cf, Depth> 5.87"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 100-yr Rainfall=7.59"

| Area (sf) | CN | Description |
|---|---|---|
| 1,689 | 98 | Roofs, HSG D |
| 1,045 | 98 | Paved parking, HSG D |
| 447 | 96 | Gravel surface, HSG D |
| 3,774 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,955 | 90 | Weighted Average |
| 4,221 | | 60.69% Pervious Area |
| 2,734 | | 39.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 43 | 0.0230 | 1.27 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.8 | 40 | 0.0150 | 0.86 | | **Shallow Concentrated Flow, LAWN IN BACKYARD** Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 45 | 0.0400 | 3.22 | | **Shallow Concentrated Flow, ACCROSS DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.6 | 128 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA1: EXIST. SUBAREA 1



## Hydrograph for Subcatchment ESA1: EXIST. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.59 | 0.09 | 0.01 |
| 5.25 | 0.62 | 0.11 | 0.01 |
| 5.50 | 0.66 | 0.12 | 0.01 |
| 5.75 | 0.70 | 0.14 | 0.01 |
| 6.00 | 0.74 | 0.16 | 0.01 |
| 6.25 | 0.78 | 0.19 | 0.01 |
| 6.50 | 0.82 | 0.21 | 0.02 |
| 6.75 | 0.86 | 0.23 | 0.02 |
| 7.00 | 0.91 | 0.26 | 0.02 |
| 7.25 | 0.95 | 0.29 | 0.02 |
| 7.50 | 1.00 | 0.32 | 0.02 |
| 7.75 | 1.05 | 0.35 | 0.02 |
| 8.00 | 1.10 | 0.39 | 0.02 |
| 8.25 | 1.16 | 0.43 | 0.02 |
| 8.50 | 1.21 | 0.47 | 0.03 |
| 8.75 | 1.27 | 0.51 | 0.03 |
| 9.00 | 1.33 | 0.56 | 0.03 |
| 9.25 | 1.40 | 0.61 | 0.03 |
| 9.50 | 1.47 | 0.66 | 0.04 |
| 9.75 | 1.55 | 0.72 | 0.04 |
| 10.00 | 1.63 | 0.79 | 0.04 |
| 10.25 | 1.72 | 0.86 | 0.05 |
| 10.50 | 1.82 | 0.94 | 0.05 |
| 10.75 | 1.93 | 1.03 | 0.06 |
| 11.00 | 2.06 | 1.14 | 0.07 |
| 11.25 | 2.21 | 1.28 | 0.09 |
| 11.50 | 2.40 | 1.45 | 0.12 |
| 11.75 | 2.81 | 1.81 | 0.24 |
| 12.00 | 4.17 | 3.08 | **1.09** |
| 12.25 | 4.85 | 3.74 | **0.37** |
| 12.50 | 5.22 | 4.09 | 0.22 |
| 12.75 | 5.41 | 4.27 | 0.11 |
| 13.00 | 5.56 | 4.41 | 0.09 |
| 13.25 | 5.68 | 4.53 | 0.08 |
| 13.50 | 5.79 | 4.64 | 0.07 |
| 13.75 | 5.88 | 4.73 | 0.06 |
| 14.00 | 5.97 | 4.82 | 0.05 |
| 14.25 | 6.05 | 4.90 | 0.05 |
| 14.50 | 6.13 | 4.97 | 0.05 |
| 14.75 | 6.20 | 5.04 | 0.04 |
| 15.00 | 6.26 | 5.10 | 0.04 |
| 15.25 | 6.32 | 5.16 | 0.04 |
| 15.50 | 6.38 | 5.22 | 0.04 |
| 15.75 | 6.44 | 5.27 | 0.03 |
| 16.00 | 6.49 | 5.33 | 0.03 |
| 16.25 | 6.54 | 5.38 | 0.03 |
| 16.50 | 6.59 | 5.42 | 0.03 |
| 16.75 | 6.64 | 5.47 | 0.03 |
| 17.00 | 6.69 | 5.52 | 0.03 |
| 17.25 | 6.73 | 5.56 | 0.03 |
| 17.50 | 6.77 | 5.60 | 0.03 |
| 17.75 | 6.81 | 5.64 | 0.03 |
| 18.00 | 6.85 | 5.68 | 0.03 |
| 18.25 | 6.89 | 5.72 | 0.02 |
| 18.50 | 6.93 | 5.76 | 0.02 |
| 18.75 | 6.97 | 5.79 | 0.02 |
| 19.00 | 7.00 | 5.83 | 0.02 |
| 19.25 | 7.04 | 5.86 | 0.02 |
| 19.50 | 7.07 | 5.90 | 0.02 |
| 19.75 | 7.11 | 5.93 | 0.02 |
| 20.00 | **7.14** | **5.96** | 0.02 |

## Summary for Subcatchment ESA2: EXIST. SUBAREA 2

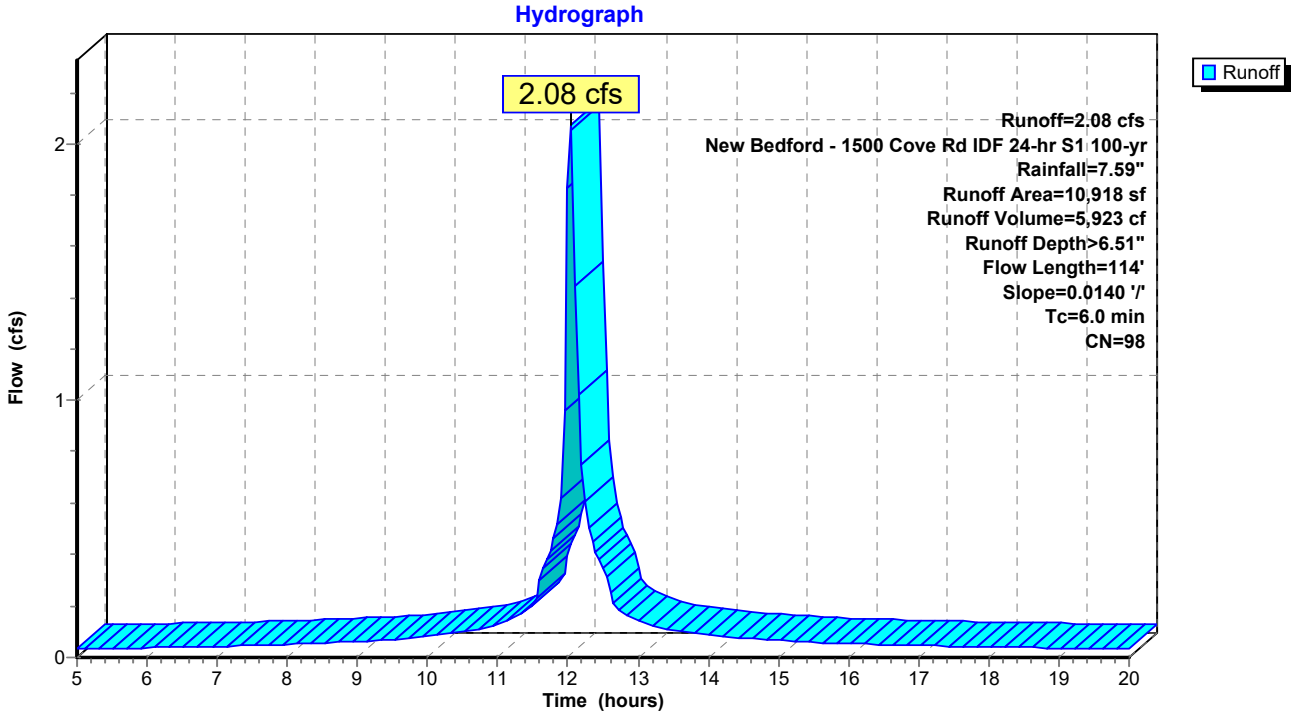
Runoff = 2.08 cfs @ 12.04 hrs, Volume= 5,923 cf, Depth> 6.51"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 100-yr Rainfall=7.59"

| Area (sf) | CN | Description |
|---|---|---|
| 2,072 | 98 | Roofs, HSG D |
| 8,682 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 164 | 84 | 50-75% Grass cover, Fair, HSG D |
| 10,918 | 98 | Weighted Average |
| 164 | | 1.50% Pervious Area |
| 10,754 | | 98.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.8 | 50 | 0.0140 | 1.07 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.4 | 64 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, WEST EDGE PRKING** Paved Kv= 20.3 fps |
| 1.2 | 114 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA2: EXIST. SUBAREA 2



## Hydrograph for Subcatchment ESA2: EXIST. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.59 | 0.40 | 0.03 |
| 5.25 | 0.62 | 0.43 | 0.03 |
| 5.50 | 0.66 | 0.47 | 0.04 |
| 5.75 | 0.70 | 0.50 | 0.04 |
| 6.00 | 0.74 | 0.54 | 0.04 |
| 6.25 | 0.78 | 0.58 | 0.04 |
| 6.50 | 0.82 | 0.62 | 0.04 |
| 6.75 | 0.86 | 0.66 | 0.04 |
| 7.00 | 0.91 | 0.70 | 0.04 |
| 7.25 | 0.95 | 0.75 | 0.05 |
| 7.50 | 1.00 | 0.79 | 0.05 |
| 7.75 | 1.05 | 0.84 | 0.05 |
| 8.00 | 1.10 | 0.89 | 0.05 |
| 8.25 | 1.16 | 0.94 | 0.05 |
| 8.50 | 1.21 | 1.00 | 0.06 |
| 8.75 | 1.27 | 1.06 | 0.06 |
| 9.00 | 1.33 | 1.12 | 0.06 |
| 9.25 | 1.40 | 1.18 | 0.07 |
| 9.50 | 1.47 | 1.25 | 0.07 |
| 9.75 | 1.55 | 1.33 | 0.08 |
| 10.00 | 1.63 | 1.41 | 0.08 |
| 10.25 | 1.72 | 1.50 | 0.09 |
| 10.50 | 1.82 | 1.59 | 0.10 |
| 10.75 | 1.93 | 1.70 | 0.11 |
| 11.00 | 2.06 | 1.83 | 0.13 |
| 11.25 | 2.21 | 1.98 | 0.16 |
| 11.50 | 2.40 | 2.18 | 0.20 |
| 11.75 | 2.81 | 2.57 | 0.41 |
| 12.00 | 4.17 | 3.94 | **1.83** |
| 12.25 | 4.85 | 4.62 | **0.61** |
| 12.50 | 5.22 | 4.99 | 0.35 |
| 12.75 | 5.41 | 5.17 | 0.18 |
| 13.00 | 5.56 | 5.32 | 0.14 |
| 13.25 | 5.68 | 5.44 | 0.12 |
| 13.50 | 5.79 | 5.55 | 0.11 |
| 13.75 | 5.88 | 5.65 | 0.10 |
| 14.00 | 5.97 | 5.73 | 0.09 |
| 14.25 | 6.05 | 5.81 | 0.08 |
| 14.50 | 6.13 | 5.89 | 0.07 |
| 14.75 | 6.20 | 5.96 | 0.07 |
| 15.00 | 6.26 | 6.02 | 0.07 |
| 15.25 | 6.32 | 6.09 | 0.06 |
| 15.50 | 6.38 | 6.15 | 0.06 |
| 15.75 | 6.44 | 6.20 | 0.06 |
| 16.00 | 6.49 | 6.25 | 0.05 |
| 16.25 | 6.54 | 6.31 | 0.05 |
| 16.50 | 6.59 | 6.35 | 0.05 |
| 16.75 | 6.64 | 6.40 | 0.05 |
| 17.00 | 6.69 | 6.45 | 0.05 |
| 17.25 | 6.73 | 6.49 | 0.04 |
| 17.50 | 6.77 | 6.53 | 0.04 |
| 17.75 | 6.81 | 6.58 | 0.04 |
| 18.00 | 6.85 | 6.62 | 0.04 |
| 18.25 | 6.89 | 6.65 | 0.04 |
| 18.50 | 6.93 | 6.69 | 0.04 |
| 18.75 | 6.97 | 6.73 | 0.04 |
| 19.00 | 7.00 | 6.77 | 0.04 |
| 19.25 | 7.04 | 6.80 | 0.04 |
| 19.50 | 7.07 | 6.83 | 0.03 |
| 19.75 | 7.11 | 6.87 | 0.03 |
| 20.00 | **7.14** | **6.90** | 0.03 |

## Summary for Subcatchment PSA1: PROP. SUBAREA 1

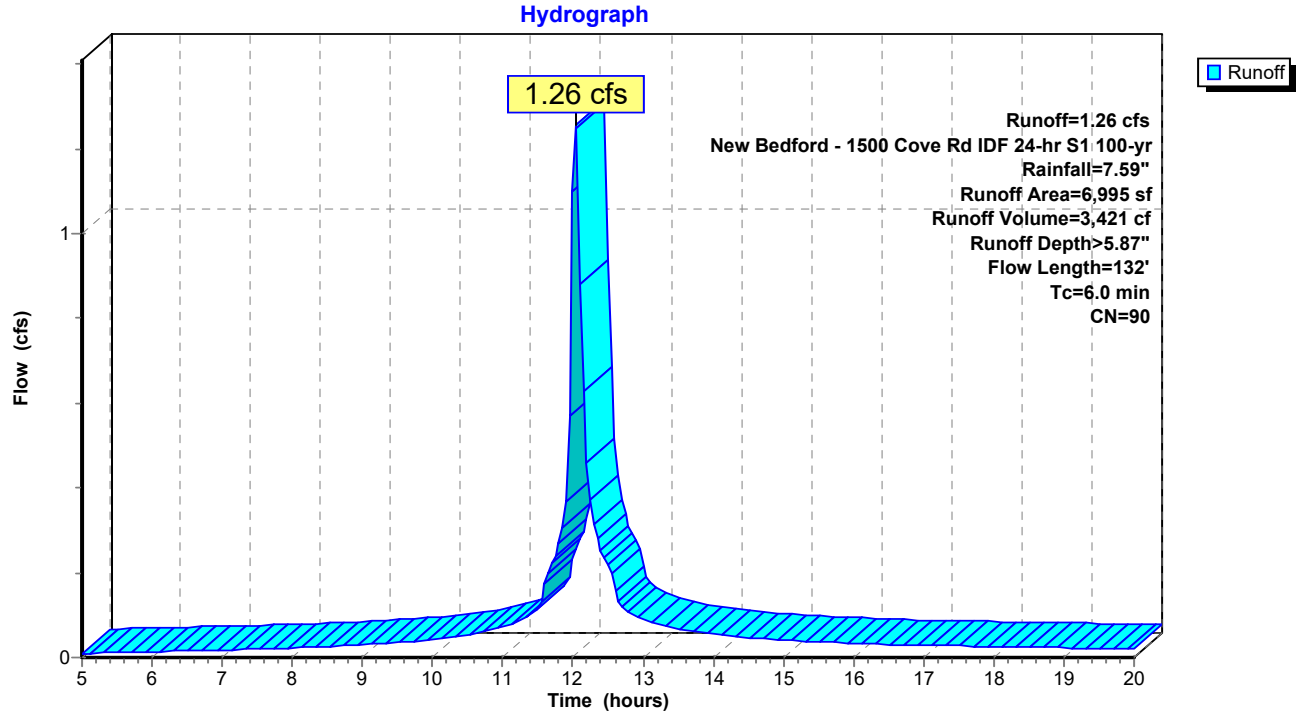
Runoff = 1.26 cfs @ 12.04 hrs, Volume= 3,421 cf, Depth> 5.87"
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 100-yr Rainfall=7.59"

| Area (sf) | CN | Description |
|---|---|---|
| 944 | 98 | Roofs, HSG D |
| 1,094 | 98 | Paved parking, HSG D |
| 2,506 | 89 | <50% Grass cover, Poor, HSG D |
| 2,451 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,995 | 90 | Weighted Average |
| 4,957 | | 70.86% Pervious Area |
| 2,038 | | 29.14% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPE SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 0.2 | 45 | 0.0350 | 3.80 | | **Shallow Concentrated Flow, PAVED PARKING** Paved Kv= 20.3 fps |
| 0.7 | 84 | 0.0160 | 2.04 | | **Shallow Concentrated Flow, GRASS PARKIN/DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.5 | 132 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA1: PROP. SUBAREA 1



## Hydrograph for Subcatchment PSA1: PROP. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.59 | 0.09 | 0.01 |
| 5.25 | 0.62 | 0.11 | 0.01 |
| 5.50 | 0.66 | 0.12 | 0.01 |
| 5.75 | 0.70 | 0.14 | 0.01 |
| 6.00 | 0.74 | 0.16 | 0.01 |
| 6.25 | 0.78 | 0.19 | 0.01 |
| 6.50 | 0.82 | 0.21 | 0.02 |
| 6.75 | 0.86 | 0.23 | 0.02 |
| 7.00 | 0.91 | 0.26 | 0.02 |
| 7.25 | 0.95 | 0.29 | 0.02 |
| 7.50 | 1.00 | 0.32 | 0.02 |
| 7.75 | 1.05 | 0.35 | 0.02 |
| 8.00 | 1.10 | 0.39 | 0.02 |
| 8.25 | 1.16 | 0.43 | 0.02 |
| 8.50 | 1.21 | 0.47 | 0.03 |
| 8.75 | 1.27 | 0.51 | 0.03 |
| 9.00 | 1.33 | 0.56 | 0.03 |
| 9.25 | 1.40 | 0.61 | 0.03 |
| 9.50 | 1.47 | 0.66 | 0.04 |
| 9.75 | 1.55 | 0.72 | 0.04 |
| 10.00 | 1.63 | 0.79 | 0.04 |
| 10.25 | 1.72 | 0.86 | 0.05 |
| 10.50 | 1.82 | 0.94 | 0.05 |
| 10.75 | 1.93 | 1.03 | 0.06 |
| 11.00 | 2.06 | 1.14 | 0.07 |
| 11.25 | 2.21 | 1.28 | 0.09 |
| 11.50 | 2.40 | 1.45 | 0.12 |
| 11.75 | 2.81 | 1.81 | 0.24 |
| 12.00 | 4.17 | 3.08 | **1.10** |
| 12.25 | 4.85 | 3.74 | **0.37** |
| 12.50 | 5.22 | 4.09 | 0.22 |
| 12.75 | 5.41 | 4.27 | 0.11 |
| 13.00 | 5.56 | 4.41 | 0.09 |
| 13.25 | 5.68 | 4.53 | 0.08 |
| 13.50 | 5.79 | 4.64 | 0.07 |
| 13.75 | 5.88 | 4.73 | 0.06 |
| 14.00 | 5.97 | 4.82 | 0.05 |
| 14.25 | 6.05 | 4.90 | 0.05 |
| 14.50 | 6.13 | 4.97 | 0.05 |
| 14.75 | 6.20 | 5.04 | 0.04 |
| 15.00 | 6.26 | 5.10 | 0.04 |
| 15.25 | 6.32 | 5.16 | 0.04 |
| 15.50 | 6.38 | 5.22 | 0.04 |
| 15.75 | 6.44 | 5.27 | 0.04 |
| 16.00 | 6.49 | 5.33 | 0.03 |
| 16.25 | 6.54 | 5.38 | 0.03 |
| 16.50 | 6.59 | 5.42 | 0.03 |
| 16.75 | 6.64 | 5.47 | 0.03 |
| 17.00 | 6.69 | 5.52 | 0.03 |
| 17.25 | 6.73 | 5.56 | 0.03 |
| 17.50 | 6.77 | 5.60 | 0.03 |
| 17.75 | 6.81 | 5.64 | 0.03 |
| 18.00 | 6.85 | 5.68 | 0.03 |
| 18.25 | 6.89 | 5.72 | 0.02 |
| 18.50 | 6.93 | 5.76 | 0.02 |
| 18.75 | 6.97 | 5.79 | 0.02 |
| 19.00 | 7.00 | 5.83 | 0.02 |
| 19.25 | 7.04 | 5.86 | 0.02 |
| 19.50 | 7.07 | 5.90 | 0.02 |
| 19.75 | 7.11 | 5.93 | 0.02 |
| 20.00 | **7.14** | **5.96** | 0.02 |

## Summary for Subcatchment PSA2: PROP. SUBAREA 2

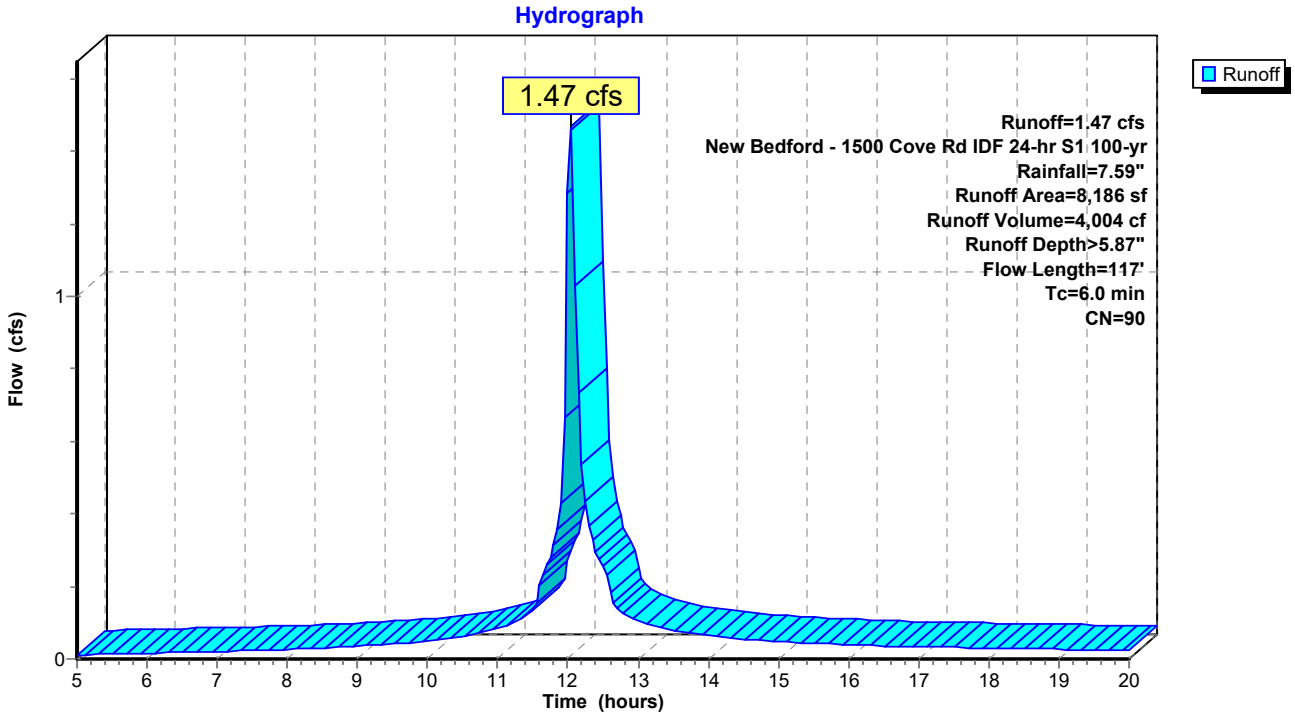
Runoff = 1.47 cfs @ 12.04 hrs, Volume= 4,004 cf, Depth> 5.87"
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 100-yr Rainfall=7.59"

| Area (sf) | CN | Description |
|---|---|---|
| 4,378 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 3,808 | 80 | >75% Grass cover, Good, HSG D |
| 8,186 | 90 | Weighted Average |
| 3,808 | | 46.52% Pervious Area |
| 4,378 | | 53.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPED SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 1.1 | 79 | 0.0140 | 1.17 | | **Sheet Flow, SE-COR PARKING LOT NORTHERLY** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.2 | 35 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, EDGE PRKING** Paved Kv= 20.3 fps |
| 1.9 | 117 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2: PROP. SUBAREA 2



## Hydrograph for Subcatchment PSA2: PROP. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.59 | 0.09 | 0.01 |
| 5.25 | 0.62 | 0.11 | 0.01 |
| 5.50 | 0.66 | 0.12 | 0.01 |
| 5.75 | 0.70 | 0.14 | 0.01 |
| 6.00 | 0.74 | 0.16 | 0.02 |
| 6.25 | 0.78 | 0.19 | 0.02 |
| 6.50 | 0.82 | 0.21 | 0.02 |
| 6.75 | 0.86 | 0.23 | 0.02 |
| 7.00 | 0.91 | 0.26 | 0.02 |
| 7.25 | 0.95 | 0.29 | 0.02 |
| 7.50 | 1.00 | 0.32 | 0.02 |
| 7.75 | 1.05 | 0.35 | 0.03 |
| 8.00 | 1.10 | 0.39 | 0.03 |
| 8.25 | 1.16 | 0.43 | 0.03 |
| 8.50 | 1.21 | 0.47 | 0.03 |
| 8.75 | 1.27 | 0.51 | 0.03 |
| 9.00 | 1.33 | 0.56 | 0.04 |
| 9.25 | 1.40 | 0.61 | 0.04 |
| 9.50 | 1.47 | 0.66 | 0.04 |
| 9.75 | 1.55 | 0.72 | 0.05 |
| 10.00 | 1.63 | 0.79 | 0.05 |
| 10.25 | 1.72 | 0.86 | 0.06 |
| 10.50 | 1.82 | 0.94 | 0.06 |
| 10.75 | 1.93 | 1.03 | 0.07 |
| 11.00 | 2.06 | 1.14 | 0.08 |
| 11.25 | 2.21 | 1.28 | 0.10 |
| 11.50 | 2.40 | 1.45 | 0.14 |
| 11.75 | 2.81 | 1.81 | 0.28 |
| 12.00 | 4.17 | 3.08 | **1.28** |
| 12.25 | 4.85 | 3.74 | **0.44** |
| 12.50 | 5.22 | 4.09 | 0.25 |
| 12.75 | 5.41 | 4.27 | 0.13 |
| 13.00 | 5.56 | 4.41 | 0.11 |
| 13.25 | 5.68 | 4.53 | 0.09 |
| 13.50 | 5.79 | 4.64 | 0.08 |
| 13.75 | 5.88 | 4.73 | 0.07 |
| 14.00 | 5.97 | 4.82 | 0.06 |
| 14.25 | 6.05 | 4.90 | 0.06 |
| 14.50 | 6.13 | 4.97 | 0.05 |
| 14.75 | 6.20 | 5.04 | 0.05 |
| 15.00 | 6.26 | 5.10 | 0.05 |
| 15.25 | 6.32 | 5.16 | 0.05 |
| 15.50 | 6.38 | 5.22 | 0.04 |
| 15.75 | 6.44 | 5.27 | 0.04 |
| 16.00 | 6.49 | 5.33 | 0.04 |
| 16.25 | 6.54 | 5.38 | 0.04 |
| 16.50 | 6.59 | 5.42 | 0.04 |
| 16.75 | 6.64 | 5.47 | 0.03 |
| 17.00 | 6.69 | 5.52 | 0.03 |
| 17.25 | 6.73 | 5.56 | 0.03 |
| 17.50 | 6.77 | 5.60 | 0.03 |
| 17.75 | 6.81 | 5.64 | 0.03 |
| 18.00 | 6.85 | 5.68 | 0.03 |
| 18.25 | 6.89 | 5.72 | 0.03 |
| 18.50 | 6.93 | 5.76 | 0.03 |
| 18.75 | 6.97 | 5.79 | 0.03 |
| 19.00 | 7.00 | 5.83 | 0.03 |
| 19.25 | 7.04 | 5.86 | 0.03 |
| 19.50 | 7.07 | 5.90 | 0.03 |
| 19.75 | 7.11 | 5.93 | 0.02 |
| 20.00 | **7.14** | **5.96** | 0.02 |

## Summary for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

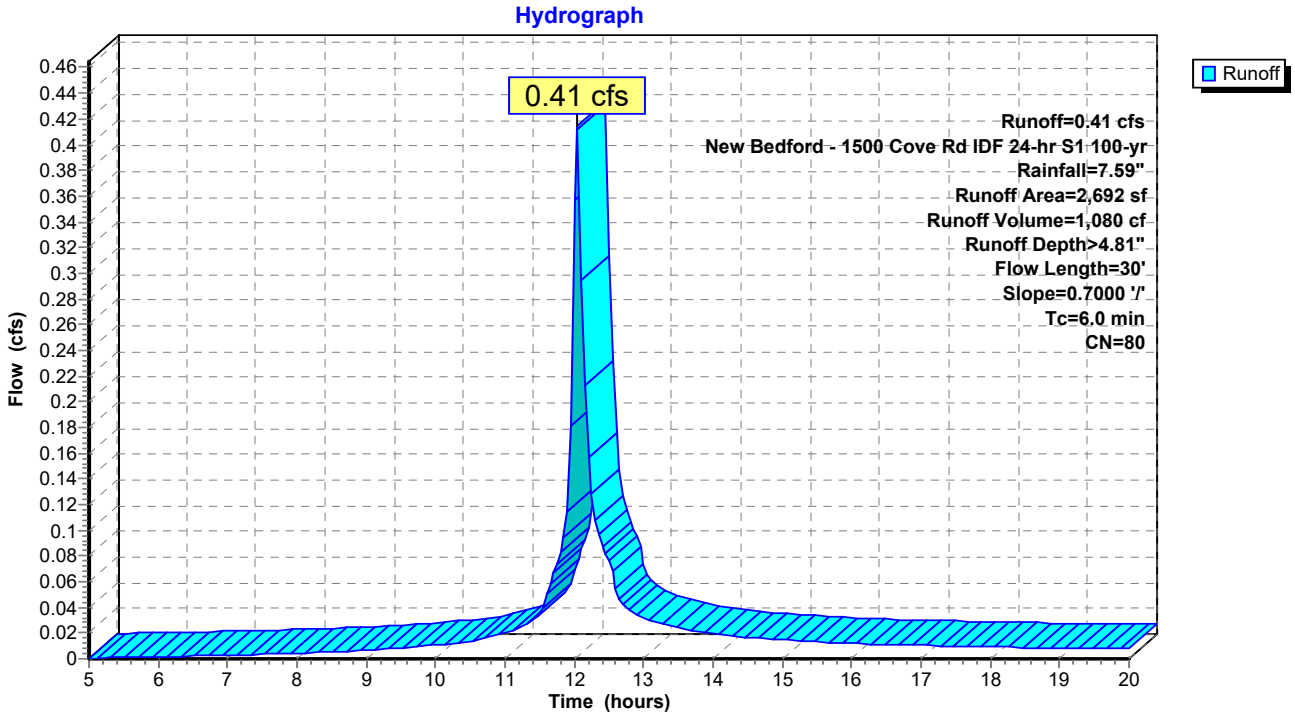
Runoff = 0.41 cfs @ 12.04 hrs, Volume= 1,080 cf, Depth> 4.81"
Routed to Pond RB : RAIN BARRELLS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 100-yr Rainfall=7.59"

| Area (sf) | CN | Description |
|---|---|---|
| 2,692 | 80 | >75% Grass cover, Good, HSG D |
| 2,692 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.1 | 30 | 0.7000 | 4.62 | | **Sheet Flow, ROOF** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.1 | 30 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2



## Hydrograph for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.59 | 0.00 | 0.00 |
| 5.25 | 0.62 | 0.01 | 0.00 |
| 5.50 | 0.66 | 0.01 | 0.00 |
| 5.75 | 0.70 | 0.01 | 0.00 |
| 6.00 | 0.74 | 0.02 | 0.00 |
| 6.25 | 0.78 | 0.03 | 0.00 |
| 6.50 | 0.82 | 0.04 | 0.00 |
| 6.75 | 0.86 | 0.05 | 0.00 |
| 7.00 | 0.91 | 0.06 | 0.00 |
| 7.25 | 0.95 | 0.07 | 0.00 |
| 7.50 | 1.00 | 0.08 | 0.00 |
| 7.75 | 1.05 | 0.10 | 0.00 |
| 8.00 | 1.10 | 0.12 | 0.00 |
| 8.25 | 1.16 | 0.14 | 0.00 |
| 8.50 | 1.21 | 0.16 | 0.01 |
| 8.75 | 1.27 | 0.18 | 0.01 |
| 9.00 | 1.33 | 0.21 | 0.01 |
| 9.25 | 1.40 | 0.24 | 0.01 |
| 9.50 | 1.47 | 0.27 | 0.01 |
| 9.75 | 1.55 | 0.31 | 0.01 |
| 10.00 | 1.63 | 0.35 | 0.01 |
| 10.25 | 1.72 | 0.40 | 0.01 |
| 10.50 | 1.82 | 0.45 | 0.01 |
| 10.75 | 1.93 | 0.52 | 0.02 |
| 11.00 | 2.06 | 0.60 | 0.02 |
| 11.25 | 2.21 | 0.69 | 0.02 |
| 11.50 | 2.40 | 0.82 | 0.03 |
| 11.75 | 2.81 | 1.11 | 0.07 |
| 12.00 | 4.17 | 2.18 | **0.36** |
| 12.25 | 4.85 | 2.77 | **0.13** |
| 12.50 | 5.22 | 3.09 | 0.08 |
| 12.75 | 5.41 | 3.25 | 0.04 |
| 13.00 | 5.56 | 3.38 | 0.03 |
| 13.25 | 5.68 | 3.49 | 0.03 |
| 13.50 | 5.79 | 3.59 | 0.02 |
| 13.75 | 5.88 | 3.68 | 0.02 |
| 14.00 | 5.97 | 3.76 | 0.02 |
| 14.25 | 6.05 | 3.83 | 0.02 |
| 14.50 | 6.13 | 3.90 | 0.02 |
| 14.75 | 6.20 | 3.96 | 0.02 |
| 15.00 | 6.26 | 4.02 | 0.01 |
| 15.25 | 6.32 | 4.08 | 0.01 |
| 15.50 | 6.38 | 4.13 | 0.01 |
| 15.75 | 6.44 | 4.18 | 0.01 |
| 16.00 | 6.49 | 4.23 | 0.01 |
| 16.25 | 6.54 | 4.28 | 0.01 |
| 16.50 | 6.59 | 4.32 | 0.01 |
| 16.75 | 6.64 | 4.36 | 0.01 |
| 17.00 | 6.69 | 4.41 | 0.01 |
| 17.25 | 6.73 | 4.45 | 0.01 |
| 17.50 | 6.77 | 4.49 | 0.01 |
| 17.75 | 6.81 | 4.52 | 0.01 |
| 18.00 | 6.85 | 4.56 | 0.01 |
| 18.25 | 6.89 | 4.60 | 0.01 |
| 18.50 | 6.93 | 4.63 | 0.01 |
| 18.75 | 6.97 | 4.67 | 0.01 |
| 19.00 | 7.00 | 4.70 | 0.01 |
| 19.25 | 7.04 | 4.73 | 0.01 |
| 19.50 | 7.07 | 4.76 | 0.01 |
| 19.75 | 7.11 | 4.79 | 0.01 |
| 20.00 | **7.14** | **4.82** | 0.01 |

## Summary for Pond RB: RAIN BARRELLS

Inflow Area = 2,692 sf, 0.00% Impervious, Inflow Depth > 4.81" for 100-yr event
Inflow = 0.41 cfs @ 12.04 hrs, Volume= 1,080 cf
Outflow = 0.42 cfs @ 12.04 hrs, Volume= 1,030 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 8.25 hrs, Volume= 76 cf
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)
Secondary = 0.42 cfs @ 12.04 hrs, Volume= 955 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.71' @ 12.04 hrs Surf.Area= 17 sf Storage= 49 cf

Plug-Flow detention time= 31.2 min calculated for 1,030 cf (95% of inflow)
Center-of-Mass det. time= 13.1 min ( 785.7 - 772.6 )

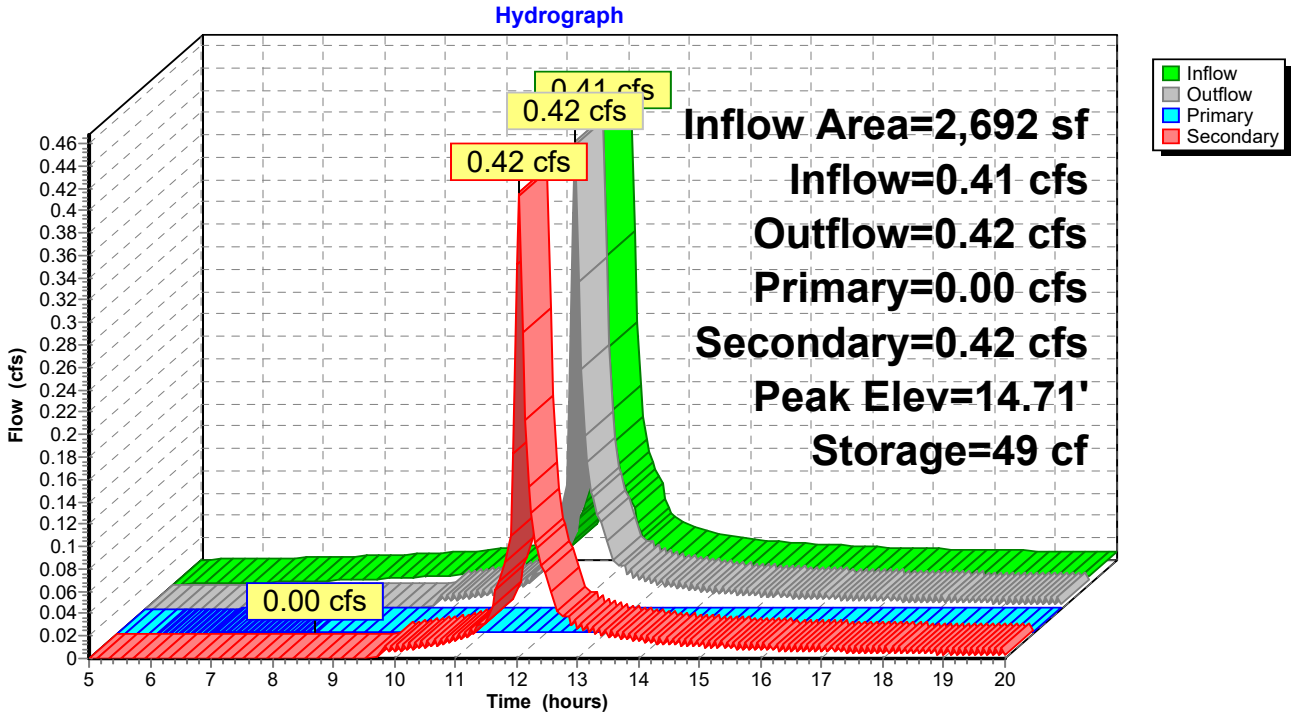
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 11.00' | 49 cf | **1.90'D x 2.90'H Vertical Cone/Cylinder** x 6 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 11.10' | **0.1" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Secondary | 14.50' | **3.0" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |

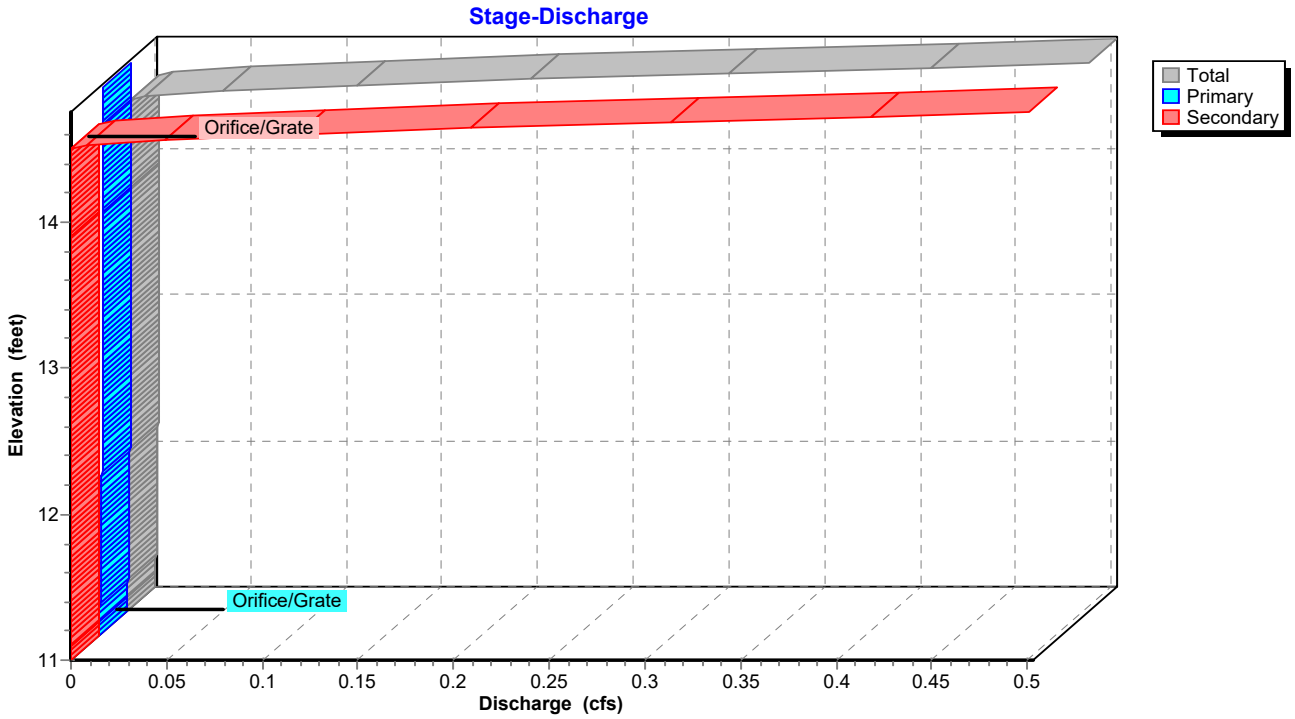
**Primary OutFlow** Max=0.00 cfs @ 8.25 hrs HW=12.16' TW=11.16' (TW follows 1.00' below HW)
↑└**1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 4.81 fps)

**Secondary OutFlow** Max=0.40 cfs @ 12.04 hrs HW=14.71' (Free Discharge)
↑└**2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 1.55 fps)

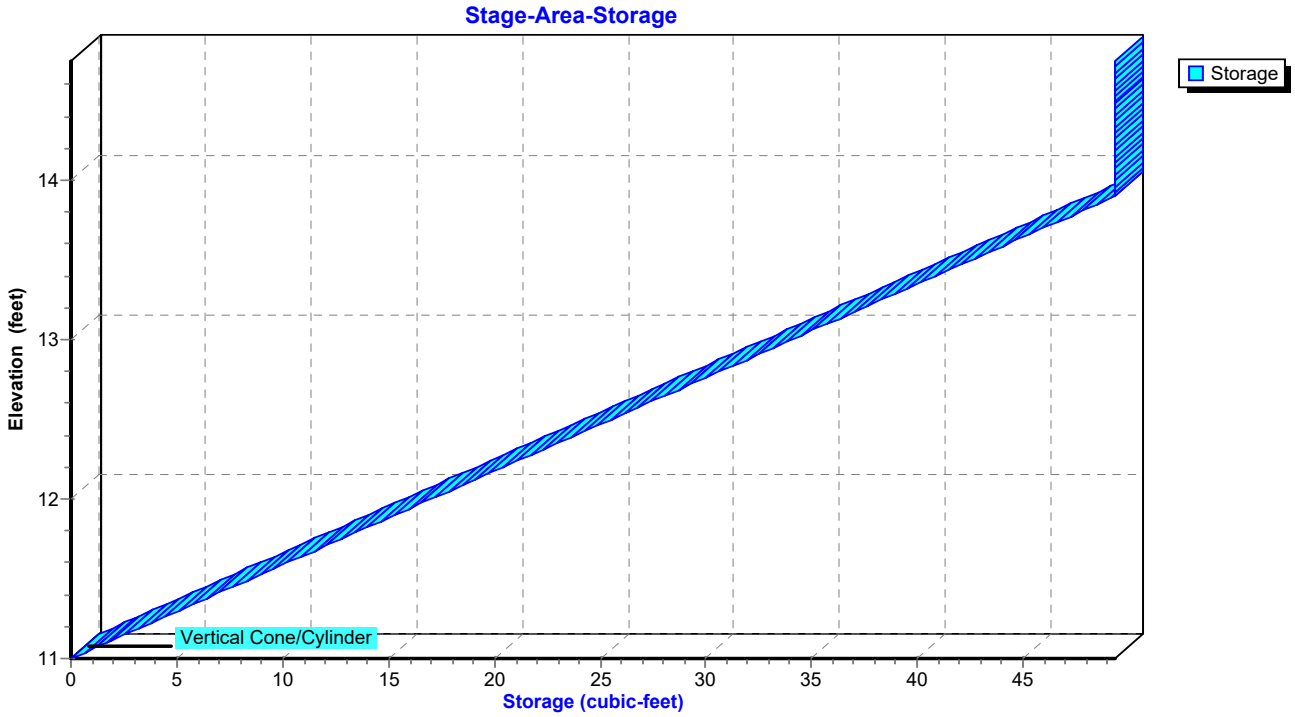
## Pond RB: RAIN BARRELLS




## Pond RB: RAIN BARRELLS



## Pond RB: RAIN BARRELLS



## Hydrograph for Pond RB: RAIN BARRELLS

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 5.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 1 | 11.08 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 3 | 11.19 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 5 | 11.32 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 8 | 11.49 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 12 | 11.71 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 17 | 11.99 | 0.00 | **0.00** | 0.00 |
| 8.50 | 0.01 | 23 | 12.35 | 0.00 | **0.00** | 0.00 |
| 9.00 | 0.01 | 31 | 12.82 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.01 | **42** | 13.46 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.01 | **49** | 14.52 | 0.01 | 0.00 | 0.01 |
| 10.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 11.00 | 0.02 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 11.50 | 0.03 | 49 | 14.54 | 0.03 | 0.00 | 0.03 |
| 12.00 | **0.36** | 49 | **14.69** | **0.35** | 0.00 | **0.35** |
| 12.50 | **0.08** | 49 | **14.57** | **0.07** | 0.00 | **0.07** |
| 13.00 | 0.03 | 49 | 14.54 | 0.03 | 0.00 | 0.03 |
| 13.50 | 0.02 | 49 | 14.54 | 0.02 | 0.00 | 0.02 |
| 14.00 | 0.02 | 49 | 14.53 | 0.02 | 0.00 | 0.01 |
| 14.50 | 0.02 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 16.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 16.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 17.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 17.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 18.00 | 0.01 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 18.50 | 0.01 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.00 | 0.01 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.50 | 0.01 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.01 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond RB: RAIN BARRELLS

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 11.00 | 0.00 | 0.00 | 0.00 |
| 11.05 | 0.00 | 0.00 | 0.00 |
| 11.10 | 0.00 | 0.00 | 0.00 |
| 11.15 | 0.00 | 0.00 | 0.00 |
| 11.20 | 0.00 | 0.00 | 0.00 |
| 11.25 | 0.00 | 0.00 | 0.00 |
| 11.30 | 0.00 | 0.00 | 0.00 |
| 11.35 | 0.00 | 0.00 | 0.00 |
| 11.40 | 0.00 | 0.00 | 0.00 |
| 11.45 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 |
| 11.55 | 0.00 | 0.00 | 0.00 |
| 11.60 | 0.00 | 0.00 | 0.00 |
| 11.65 | 0.00 | 0.00 | 0.00 |
| 11.70 | 0.00 | 0.00 | 0.00 |
| 11.75 | 0.00 | 0.00 | 0.00 |
| 11.80 | 0.00 | 0.00 | 0.00 |
| 11.85 | 0.00 | 0.00 | 0.00 |
| 11.90 | 0.00 | 0.00 | 0.00 |
| 11.95 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 |
| 12.05 | 0.00 | 0.00 | 0.00 |
| 12.10 | 0.00 | **0.00** | 0.00 |
| 12.15 | 0.00 | **0.00** | 0.00 |
| 12.20 | 0.00 | 0.00 | 0.00 |
| 12.25 | 0.00 | 0.00 | 0.00 |
| 12.30 | 0.00 | 0.00 | 0.00 |
| 12.35 | 0.00 | 0.00 | 0.00 |
| 12.40 | 0.00 | 0.00 | 0.00 |
| 12.45 | 0.00 | 0.00 | 0.00 |
| 12.50 | 0.00 | 0.00 | 0.00 |
| 12.55 | 0.00 | 0.00 | 0.00 |
| 12.60 | 0.00 | 0.00 | 0.00 |
| 12.65 | 0.00 | 0.00 | 0.00 |
| 12.70 | 0.00 | 0.00 | 0.00 |
| 12.75 | 0.00 | 0.00 | 0.00 |
| 12.80 | 0.00 | 0.00 | 0.00 |
| 12.85 | 0.00 | 0.00 | 0.00 |
| 12.90 | 0.00 | 0.00 | 0.00 |
| 12.95 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.00 | 0.00 | 0.00 |
| 13.05 | 0.00 | 0.00 | 0.00 |
| 13.10 | 0.00 | 0.00 | 0.00 |
| 13.15 | 0.00 | 0.00 | 0.00 |
| 13.20 | 0.00 | 0.00 | 0.00 |
| 13.25 | 0.00 | 0.00 | 0.00 |
| 13.30 | 0.00 | 0.00 | 0.00 |
| 13.35 | 0.00 | 0.00 | 0.00 |
| 13.40 | 0.00 | 0.00 | 0.00 |
| 13.45 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.00 | 0.00 | 0.00 |
| 13.55 | 0.00 | 0.00 | 0.00 |
| 13.60 | 0.00 | 0.00 | 0.00 |
| 13.65 | 0.00 | 0.00 | 0.00 |
| 13.70 | 0.00 | 0.00 | 0.00 |
| 13.75 | 0.00 | 0.00 | 0.00 |
| 13.80 | 0.00 | 0.00 | 0.00 |
| 13.85 | 0.00 | 0.00 | 0.00 |
| 13.90 | 0.00 | 0.00 | 0.00 |
| 13.95 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.00 | 0.00 | 0.00 |
| 14.05 | 0.00 | 0.00 | 0.00 |
| 14.10 | 0.00 | 0.00 | 0.00 |
| 14.15 | 0.00 | 0.00 | 0.00 |
| 14.20 | 0.00 | 0.00 | 0.00 |
| 14.25 | 0.00 | 0.00 | 0.00 |
| 14.30 | 0.00 | 0.00 | 0.00 |
| 14.35 | 0.00 | 0.00 | 0.00 |
| 14.40 | 0.00 | 0.00 | 0.00 |
| 14.45 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.00 | 0.00 | 0.00 |
| 14.55 | 0.03 | 0.00 | 0.03 |
| 14.60 | 0.12 | 0.00 | 0.12 |
| 14.65 | 0.24 | 0.00 | 0.24 |
| 14.70 | 0.39 | 0.00 | 0.38 |
| 14.75 | **0.50** | 0.00 | **0.50** |

## Stage-Area-Storage for Pond RB: RAIN BARRELLS

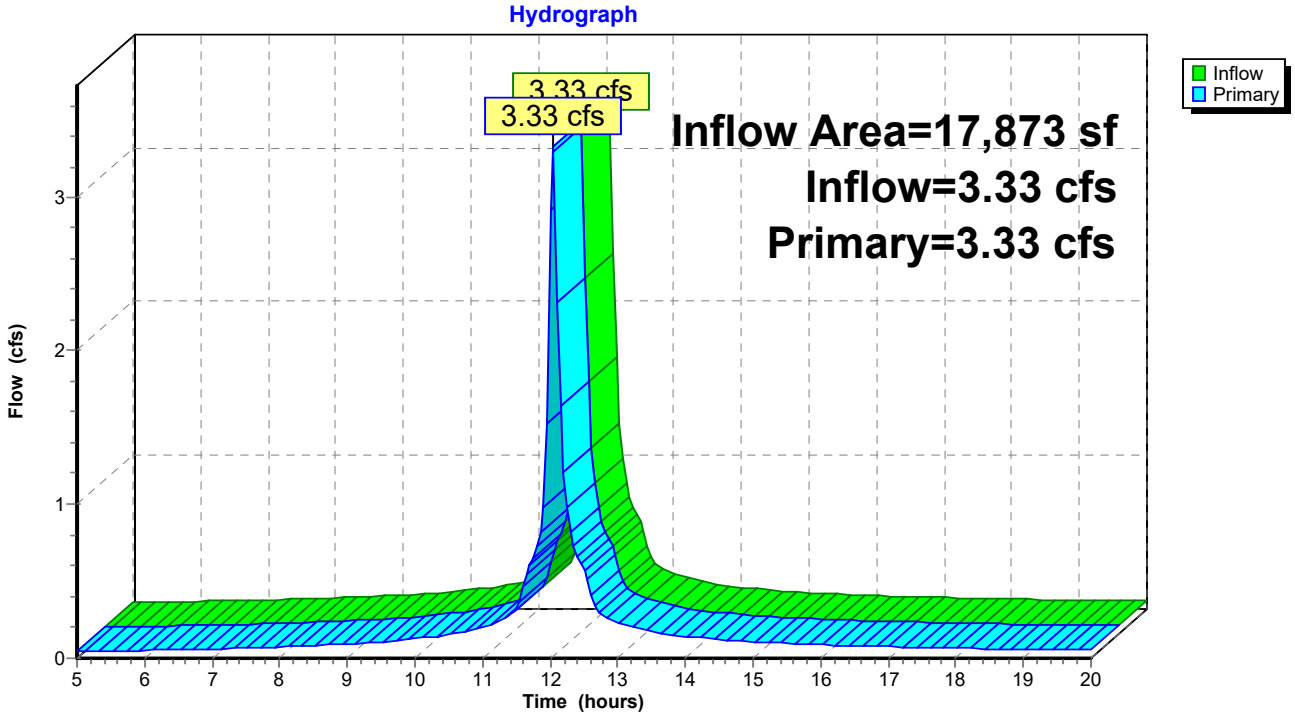
| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 11.00 | 0 |
| 11.05 | 1 |
| 11.10 | 2 |
| 11.15 | 3 |
| 11.20 | 3 |
| 11.25 | 4 |
| 11.30 | 5 |
| 11.35 | 6 |
| 11.40 | 7 |
| 11.45 | 8 |
| 11.50 | 9 |
| 11.55 | 9 |
| 11.60 | 10 |
| 11.65 | 11 |
| 11.70 | 12 |
| 11.75 | 13 |
| 11.80 | 14 |
| 11.85 | 14 |
| 11.90 | 15 |
| 11.95 | 16 |
| 12.00 | 17 |
| 12.05 | 18 |
| 12.10 | 19 |
| 12.15 | 20 |
| 12.20 | 20 |
| 12.25 | 21 |
| 12.30 | 22 |
| 12.35 | 23 |
| 12.40 | 24 |
| 12.45 | 25 |
| 12.50 | 26 |
| 12.55 | 26 |
| 12.60 | 27 |
| 12.65 | 28 |
| 12.70 | 29 |
| 12.75 | 30 |
| 12.80 | 31 |
| 12.85 | 31 |
| 12.90 | 32 |
| 12.95 | 33 |
| 13.00 | 34 |
| 13.05 | 35 |
| 13.10 | 36 |
| 13.15 | 37 |
| 13.20 | 37 |
| 13.25 | 38 |
| 13.30 | 39 |
| 13.35 | 40 |
| 13.40 | 41 |
| 13.45 | 42 |
| 13.50 | 43 |
| 13.55 | 43 |
| 13.60 | 44 |
| 13.65 | 45 |
| 13.70 | 46 |
| 13.75 | 47 |
| 13.80 | 48 |
| 13.85 | 48 |
| 13.90 | **49** |
| 13.95 | 49 |
| 14.00 | 49 |
| 14.05 | 49 |
| 14.10 | 49 |
| 14.15 | 49 |
| 14.20 | 49 |
| 14.25 | 49 |
| 14.30 | 49 |
| 14.35 | 49 |
| 14.40 | 49 |
| 14.45 | 49 |
| 14.50 | 49 |
| 14.55 | 49 |
| 14.60 | 49 |
| 14.65 | 49 |
| 14.70 | 49 |
| 14.75 | 49 |

## Summary for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 75.47% Impervious, Inflow Depth > 6.26" for 100-yr event
Inflow = 3.33 cfs @ 12.04 hrs, Volume= 9,324 cf
Primary = 3.33 cfs @ 12.04 hrs, Volume= 9,324 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link ESAT: EXIST. SUBAREA TOTAL OFFSITE



## Hydrograph for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

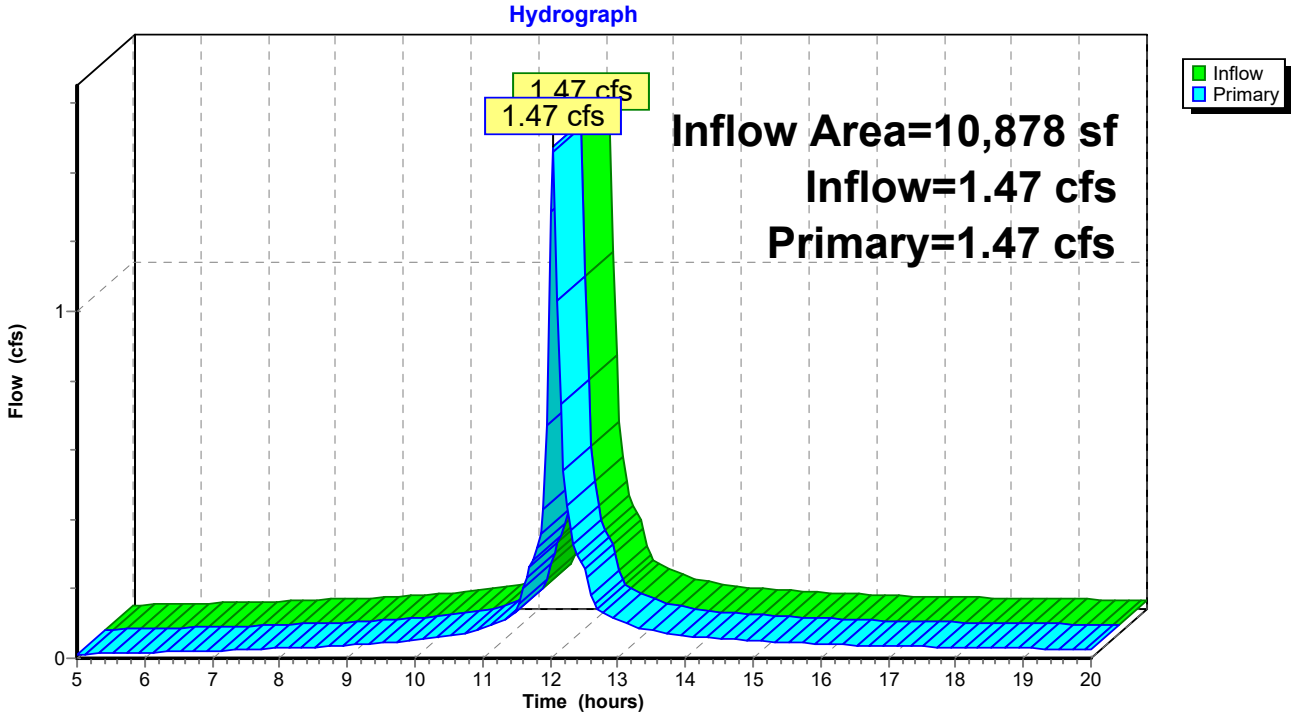
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.04 | **0.00** | 0.04 |
| 5.25 | 0.04 | 0.00 | 0.04 |
| 5.50 | 0.05 | 0.00 | 0.05 |
| 5.75 | 0.05 | 0.00 | 0.05 |
| 6.00 | 0.05 | 0.00 | 0.05 |
| 6.25 | 0.05 | 0.00 | 0.05 |
| 6.50 | 0.06 | 0.00 | 0.06 |
| 6.75 | 0.06 | 0.00 | 0.06 |
| 7.00 | 0.06 | 0.00 | 0.06 |
| 7.25 | 0.06 | 0.00 | 0.06 |
| 7.50 | 0.07 | 0.00 | 0.07 |
| 7.75 | 0.07 | 0.00 | 0.07 |
| 8.00 | 0.07 | 0.00 | 0.07 |
| 8.25 | 0.08 | 0.00 | 0.08 |
| 8.50 | 0.08 | 0.00 | 0.08 |
| 8.75 | 0.09 | 0.00 | 0.09 |
| 9.00 | 0.09 | 0.00 | 0.09 |
| 9.25 | 0.10 | 0.00 | 0.10 |
| 9.50 | 0.11 | 0.00 | 0.11 |
| 9.75 | 0.11 | 0.00 | 0.11 |
| 10.00 | 0.13 | 0.00 | 0.13 |
| 10.25 | 0.14 | 0.00 | 0.14 |
| 10.50 | 0.15 | 0.00 | 0.15 |
| 10.75 | 0.17 | 0.00 | 0.17 |
| 11.00 | 0.20 | 0.00 | 0.20 |
| 11.25 | 0.24 | 0.00 | 0.24 |
| 11.50 | 0.32 | 0.00 | 0.32 |
| 11.75 | 0.65 | 0.00 | 0.65 |
| 12.00 | **2.92** | 0.00 | **2.92** |
| 12.25 | **0.98** | 0.00 | **0.98** |
| 12.50 | 0.57 | 0.00 | 0.57 |
| 12.75 | 0.29 | 0.00 | 0.29 |
| 13.00 | 0.23 | 0.00 | 0.23 |
| 13.25 | 0.20 | 0.00 | 0.20 |
| 13.50 | 0.17 | 0.00 | 0.17 |
| 13.75 | 0.16 | 0.00 | 0.16 |
| 14.00 | 0.14 | 0.00 | 0.14 |
| 14.25 | 0.13 | 0.00 | 0.13 |
| 14.50 | 0.12 | 0.00 | 0.12 |
| 14.75 | 0.11 | 0.00 | 0.11 |
| 15.00 | 0.11 | 0.00 | 0.11 |
| 15.25 | 0.10 | 0.00 | 0.10 |
| 15.50 | 0.10 | 0.00 | 0.10 |
| 15.75 | 0.09 | 0.00 | 0.09 |
| 16.00 | 0.09 | 0.00 | 0.09 |
| 16.25 | 0.08 | 0.00 | 0.08 |
| 16.50 | 0.08 | 0.00 | 0.08 |
| 16.75 | 0.08 | 0.00 | 0.08 |
| 17.00 | 0.07 | 0.00 | 0.07 |
| 17.25 | 0.07 | 0.00 | 0.07 |
| 17.50 | 0.07 | 0.00 | 0.07 |
| 17.75 | 0.07 | 0.00 | 0.07 |
| 18.00 | 0.07 | 0.00 | 0.07 |
| 18.25 | 0.06 | 0.00 | 0.06 |
| 18.50 | 0.06 | 0.00 | 0.06 |
| 18.75 | 0.06 | 0.00 | 0.06 |
| 19.00 | 0.06 | 0.00 | 0.06 |
| 19.25 | 0.06 | 0.00 | 0.06 |
| 19.50 | 0.06 | 0.00 | 0.06 |
| 19.75 | 0.05 | 0.00 | 0.05 |
| 20.00 | 0.05 | 0.00 | 0.05 |

## Summary for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

Inflow Area = 10,878 sf, 40.25% Impervious, Inflow Depth > 4.50" for 100-yr event
Inflow = 1.47 cfs @ 12.04 hrs, Volume= 4,079 cf
Primary = 1.47 cfs @ 12.04 hrs, Volume= 4,079 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSA2(T): PROP SUB-AREA 2 (TOTAL)



## Hydrograph for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

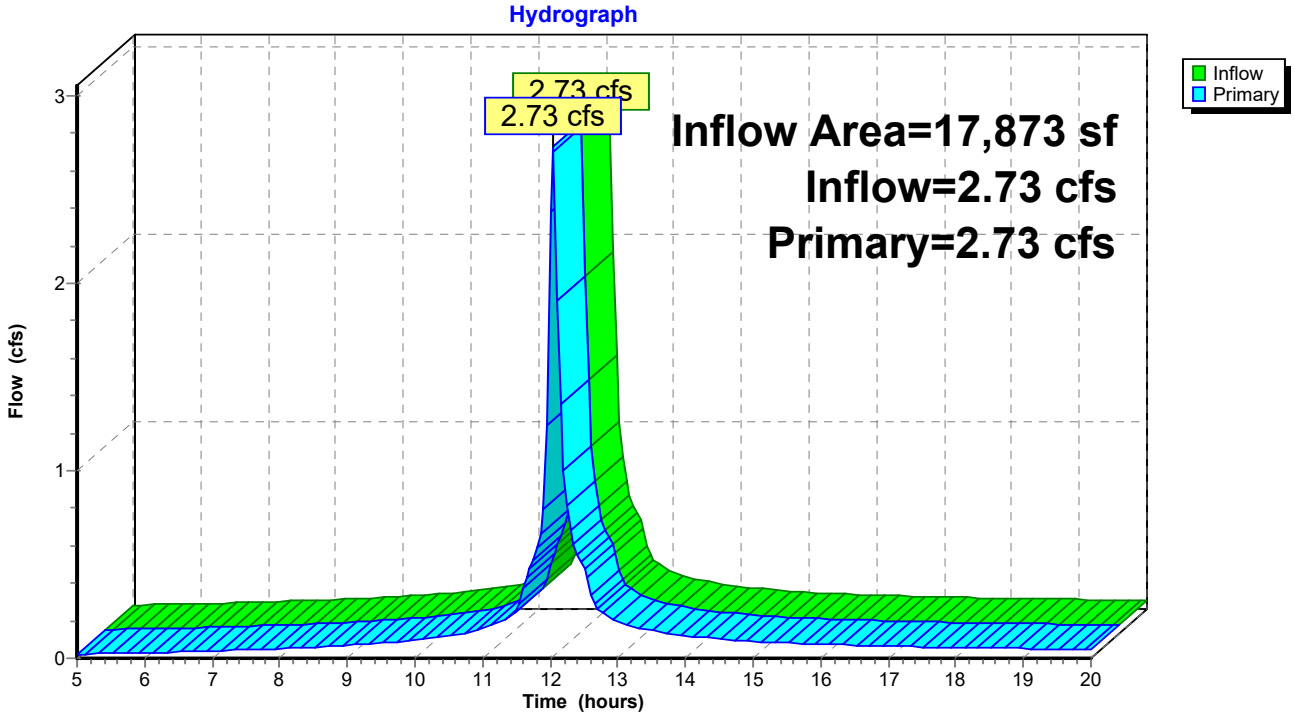
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.01 | **0.00** | 0.01 |
| 5.25 | 0.01 | 0.00 | 0.01 |
| 5.50 | 0.01 | 0.00 | 0.01 |
| 5.75 | 0.01 | 0.00 | 0.01 |
| 6.00 | 0.02 | 0.00 | 0.02 |
| 6.25 | 0.02 | 0.00 | 0.02 |
| 6.50 | 0.02 | 0.00 | 0.02 |
| 6.75 | 0.02 | 0.00 | 0.02 |
| 7.00 | 0.02 | 0.00 | 0.02 |
| 7.25 | 0.02 | 0.00 | 0.02 |
| 7.50 | 0.02 | 0.00 | 0.02 |
| 7.75 | 0.03 | 0.00 | 0.03 |
| 8.00 | 0.03 | 0.00 | 0.03 |
| 8.25 | 0.03 | 0.00 | 0.03 |
| 8.50 | 0.03 | 0.00 | 0.03 |
| 8.75 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.04 | 0.00 | 0.04 |
| 9.25 | 0.04 | 0.00 | 0.04 |
| 9.50 | 0.04 | 0.00 | 0.04 |
| 9.75 | 0.05 | 0.00 | 0.05 |
| 10.00 | 0.05 | 0.00 | 0.05 |
| 10.25 | 0.06 | 0.00 | 0.06 |
| 10.50 | 0.06 | 0.00 | 0.06 |
| 10.75 | 0.07 | 0.00 | 0.07 |
| 11.00 | 0.09 | 0.00 | 0.09 |
| 11.25 | 0.10 | 0.00 | 0.10 |
| 11.50 | 0.14 | 0.00 | 0.14 |
| 11.75 | 0.28 | 0.00 | 0.28 |
| 12.00 | **1.29** | 0.00 | **1.29** |
| 12.25 | **0.44** | 0.00 | **0.44** |
| 12.50 | 0.26 | 0.00 | 0.26 |
| 12.75 | 0.13 | 0.00 | 0.13 |
| 13.00 | 0.11 | 0.00 | 0.11 |
| 13.25 | 0.09 | 0.00 | 0.09 |
| 13.50 | 0.08 | 0.00 | 0.08 |
| 13.75 | 0.07 | 0.00 | 0.07 |
| 14.00 | 0.07 | 0.00 | 0.07 |
| 14.25 | 0.06 | 0.00 | 0.06 |
| 14.50 | 0.06 | 0.00 | 0.06 |
| 14.75 | 0.05 | 0.00 | 0.05 |
| 15.00 | 0.05 | 0.00 | 0.05 |
| 15.25 | 0.05 | 0.00 | 0.05 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.04 | 0.00 | 0.04 |
| 16.25 | 0.04 | 0.00 | 0.04 |
| 16.50 | 0.04 | 0.00 | 0.04 |
| 16.75 | 0.04 | 0.00 | 0.04 |
| 17.00 | 0.04 | 0.00 | 0.04 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.03 | 0.00 | 0.03 |
| 18.50 | 0.03 | 0.00 | 0.03 |
| 18.75 | 0.03 | 0.00 | 0.03 |
| 19.00 | 0.03 | 0.00 | 0.03 |
| 19.25 | 0.03 | 0.00 | 0.03 |
| 19.50 | 0.03 | 0.00 | 0.03 |
| 19.75 | 0.03 | 0.00 | 0.03 |
| 20.00 | 0.03 | 0.00 | 0.03 |

## Summary for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 35.90% Impervious, Inflow Depth > 5.04" for 100-yr event
Inflow = 2.73 cfs @ 12.04 hrs, Volume= 7,500 cf
Primary = 2.73 cfs @ 12.04 hrs, Volume= 7,500 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSAT: PROP. SUBAREA TOTAL OFFSITE



## Hydrograph for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.02 | **0.00** | 0.02 |
| 5.25 | 0.02 | 0.00 | 0.02 |
| 5.50 | 0.03 | 0.00 | 0.03 |
| 5.75 | 0.03 | 0.00 | 0.03 |
| 6.00 | 0.03 | 0.00 | 0.03 |
| 6.25 | 0.03 | 0.00 | 0.03 |
| 6.50 | 0.03 | 0.00 | 0.03 |
| 6.75 | 0.04 | 0.00 | 0.04 |
| 7.00 | 0.04 | 0.00 | 0.04 |
| 7.25 | 0.04 | 0.00 | 0.04 |
| 7.50 | 0.04 | 0.00 | 0.04 |
| 7.75 | 0.05 | 0.00 | 0.05 |
| 8.00 | 0.05 | 0.00 | 0.05 |
| 8.25 | 0.05 | 0.00 | 0.05 |
| 8.50 | 0.06 | 0.00 | 0.06 |
| 8.75 | 0.06 | 0.00 | 0.06 |
| 9.00 | 0.07 | 0.00 | 0.07 |
| 9.25 | 0.07 | 0.00 | 0.07 |
| 9.50 | 0.08 | 0.00 | 0.08 |
| 9.75 | 0.09 | 0.00 | 0.09 |
| 10.00 | 0.09 | 0.00 | 0.09 |
| 10.25 | 0.10 | 0.00 | 0.10 |
| 10.50 | 0.12 | 0.00 | 0.12 |
| 10.75 | 0.13 | 0.00 | 0.13 |
| 11.00 | 0.16 | 0.00 | 0.16 |
| 11.25 | 0.19 | 0.00 | 0.19 |
| 11.50 | 0.25 | 0.00 | 0.25 |
| 11.75 | 0.52 | 0.00 | 0.52 |
| 12.00 | **2.38** | 0.00 | **2.38** |
| 12.25 | **0.81** | 0.00 | **0.81** |
| 12.50 | 0.47 | 0.00 | 0.47 |
| 12.75 | 0.25 | 0.00 | 0.25 |
| 13.00 | 0.20 | 0.00 | 0.20 |
| 13.25 | 0.17 | 0.00 | 0.17 |
| 13.50 | 0.15 | 0.00 | 0.15 |
| 13.75 | 0.13 | 0.00 | 0.13 |
| 14.00 | 0.12 | 0.00 | 0.12 |
| 14.25 | 0.11 | 0.00 | 0.11 |
| 14.50 | 0.10 | 0.00 | 0.10 |
| 14.75 | 0.10 | 0.00 | 0.10 |
| 15.00 | 0.09 | 0.00 | 0.09 |
| 15.25 | 0.09 | 0.00 | 0.09 |
| 15.50 | 0.08 | 0.00 | 0.08 |
| 15.75 | 0.08 | 0.00 | 0.08 |
| 16.00 | 0.07 | 0.00 | 0.07 |
| 16.25 | 0.07 | 0.00 | 0.07 |
| 16.50 | 0.07 | 0.00 | 0.07 |
| 16.75 | 0.07 | 0.00 | 0.07 |
| 17.00 | 0.06 | 0.00 | 0.06 |
| 17.25 | 0.06 | 0.00 | 0.06 |
| 17.50 | 0.06 | 0.00 | 0.06 |
| 17.75 | 0.06 | 0.00 | 0.06 |
| 18.00 | 0.06 | 0.00 | 0.06 |
| 18.25 | 0.06 | 0.00 | 0.06 |
| 18.50 | 0.05 | 0.00 | 0.05 |
| 18.75 | 0.05 | 0.00 | 0.05 |
| 19.00 | 0.05 | 0.00 | 0.05 |
| 19.25 | 0.05 | 0.00 | 0.05 |
| 19.50 | 0.05 | 0.00 | 0.05 |
| 19.75 | 0.05 | 0.00 | 0.05 |
| 20.00 | 0.05 | 0.00 | 0.05 |

## Summary for Subcatchment ESA1: EXIST. SUBAREA 1

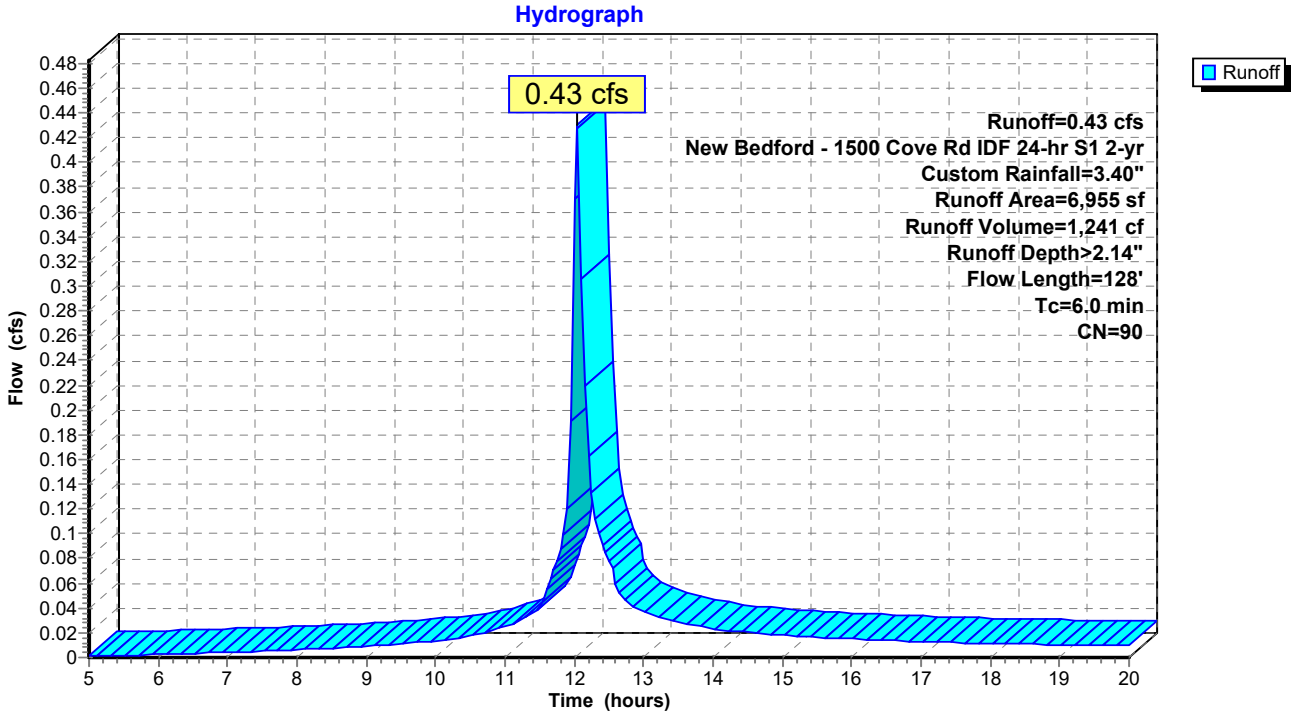
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,241 cf, Depth> 2.14"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Custom Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 1,689 | 98 | Roofs, HSG D |
| 1,045 | 98 | Paved parking, HSG D |
| 447 | 96 | Gravel surface, HSG D |
| 3,774 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,955 | 90 | Weighted Average |
| 4,221 | | 60.69% Pervious Area |
| 2,734 | | 39.31% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 43 | 0.0230 | 1.27 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.8 | 40 | 0.0150 | 0.86 | | **Shallow Concentrated Flow, LAWN IN BACKYARD** Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 45 | 0.0400 | 3.22 | | **Shallow Concentrated Flow, ACCROSS DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.6 | 128 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA1: EXIST. SUBAREA 1



## Hydrograph for Subcatchment ESA1: EXIST. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.00 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.01 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.02 |
| 11.25 | 1.06 | 0.36 | 0.03 |
| 11.50 | 1.14 | 0.42 | 0.04 |
| 11.75 | 1.30 | 0.53 | 0.08 |
| 12.00 | 1.85 | 0.97 | **0.37** |
| 12.25 | 2.13 | 1.20 | **0.13** |
| 12.50 | 2.27 | 1.33 | 0.08 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.03 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.02 |
| 14.25 | 2.65 | 1.67 | 0.02 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.01 |
| 16.25 | 2.89 | 1.88 | 0.01 |
| 16.50 | 2.91 | 1.90 | 0.01 |
| 16.75 | 2.93 | 1.92 | 0.01 |
| 17.00 | 2.96 | 1.94 | 0.01 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment ESA2: EXIST. SUBAREA 2

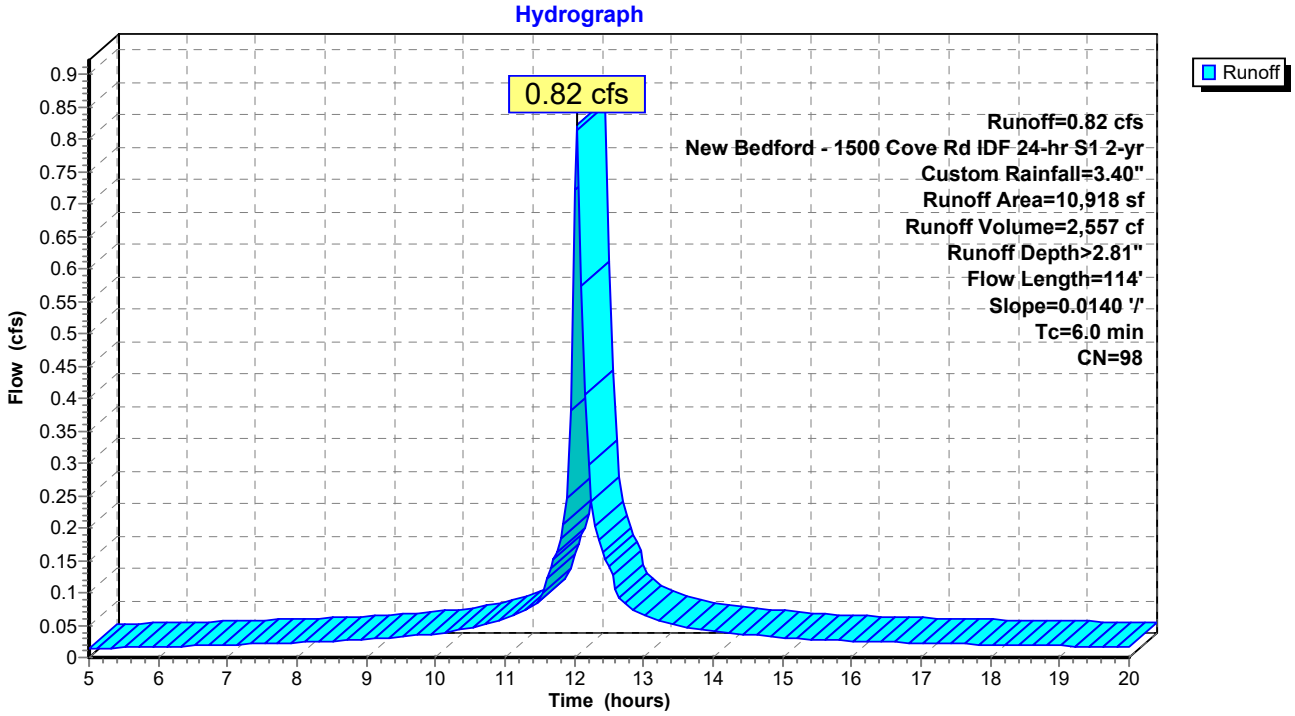
Runoff = 0.82 cfs @ 12.04 hrs, Volume= 2,557 cf, Depth> 2.81"
Routed to Link ESAT : EXIST. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Custom Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 2,072 | 98 | Roofs, HSG D |
| 8,682 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 164 | 84 | 50-75% Grass cover, Fair, HSG D |
| 10,918 | 98 | Weighted Average |
| 164 | | 1.50% Pervious Area |
| 10,754 | | 98.50% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.8 | 50 | 0.0140 | 1.07 | | **Sheet Flow, SE-COR PARKING LOT** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.4 | 64 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, WEST EDGE PRKING** Paved Kv= 20.3 fps |
| 1.2 | 114 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment ESA2: EXIST. SUBAREA 2



## Hydrograph for Subcatchment ESA2: EXIST. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.14 | 0.01 |
| 5.25 | 0.31 | 0.15 | 0.01 |
| 5.50 | 0.33 | 0.17 | 0.02 |
| 5.75 | 0.34 | 0.18 | 0.02 |
| 6.00 | 0.36 | 0.20 | 0.02 |
| 6.25 | 0.38 | 0.21 | 0.02 |
| 6.50 | 0.40 | 0.23 | 0.02 |
| 6.75 | 0.42 | 0.25 | 0.02 |
| 7.00 | 0.45 | 0.27 | 0.02 |
| 7.25 | 0.47 | 0.29 | 0.02 |
| 7.50 | 0.49 | 0.31 | 0.02 |
| 7.75 | 0.51 | 0.33 | 0.02 |
| 8.00 | 0.54 | 0.35 | 0.02 |
| 8.25 | 0.57 | 0.38 | 0.02 |
| 8.50 | 0.59 | 0.40 | 0.03 |
| 8.75 | 0.62 | 0.43 | 0.03 |
| 9.00 | 0.65 | 0.46 | 0.03 |
| 9.25 | 0.68 | 0.49 | 0.03 |
| 9.50 | 0.72 | 0.52 | 0.03 |
| 9.75 | 0.75 | 0.55 | 0.03 |
| 10.00 | 0.79 | 0.59 | 0.04 |
| 10.25 | 0.83 | 0.63 | 0.04 |
| 10.50 | 0.88 | 0.67 | 0.05 |
| 10.75 | 0.93 | 0.72 | 0.05 |
| 11.00 | 0.99 | 0.78 | 0.06 |
| 11.25 | 1.06 | 0.85 | 0.07 |
| 11.50 | 1.14 | 0.93 | 0.09 |
| 11.75 | 1.30 | 1.09 | 0.16 |
| 12.00 | 1.85 | 1.63 | **0.72** |
| 12.25 | 2.13 | 1.90 | **0.24** |
| 12.50 | 2.27 | 2.05 | 0.14 |
| 12.75 | 2.36 | 2.13 | 0.08 |
| 13.00 | 2.42 | 2.19 | 0.07 |
| 13.25 | 2.48 | 2.25 | 0.06 |
| 13.50 | 2.53 | 2.30 | 0.05 |
| 13.75 | 2.58 | 2.35 | 0.04 |
| 14.00 | 2.62 | 2.39 | 0.04 |
| 14.25 | 2.65 | 2.42 | 0.04 |
| 14.50 | 2.69 | 2.46 | 0.04 |
| 14.75 | 2.72 | 2.49 | 0.03 |
| 15.00 | 2.75 | 2.52 | 0.03 |
| 15.25 | 2.78 | 2.55 | 0.03 |
| 15.50 | 2.81 | 2.58 | 0.03 |
| 15.75 | 2.84 | 2.61 | 0.03 |
| 16.00 | 2.86 | 2.63 | 0.03 |
| 16.25 | 2.89 | 2.66 | 0.02 |
| 16.50 | 2.91 | 2.68 | 0.02 |
| 16.75 | 2.93 | 2.70 | 0.02 |
| 17.00 | 2.96 | 2.72 | 0.02 |
| 17.25 | 2.98 | 2.75 | 0.02 |
| 17.50 | 3.00 | 2.77 | 0.02 |
| 17.75 | 3.02 | 2.79 | 0.02 |
| 18.00 | 3.04 | 2.81 | 0.02 |
| 18.25 | 3.06 | 2.82 | 0.02 |
| 18.50 | 3.08 | 2.84 | 0.02 |
| 18.75 | 3.09 | 2.86 | 0.02 |
| 19.00 | 3.11 | 2.88 | 0.02 |
| 19.25 | 3.13 | 2.90 | 0.02 |
| 19.50 | 3.14 | 2.91 | 0.02 |
| 19.75 | 3.16 | 2.93 | 0.02 |
| 20.00 | **3.18** | **2.95** | 0.02 |

## Summary for Subcatchment PSA1: PROP. SUBAREA 1

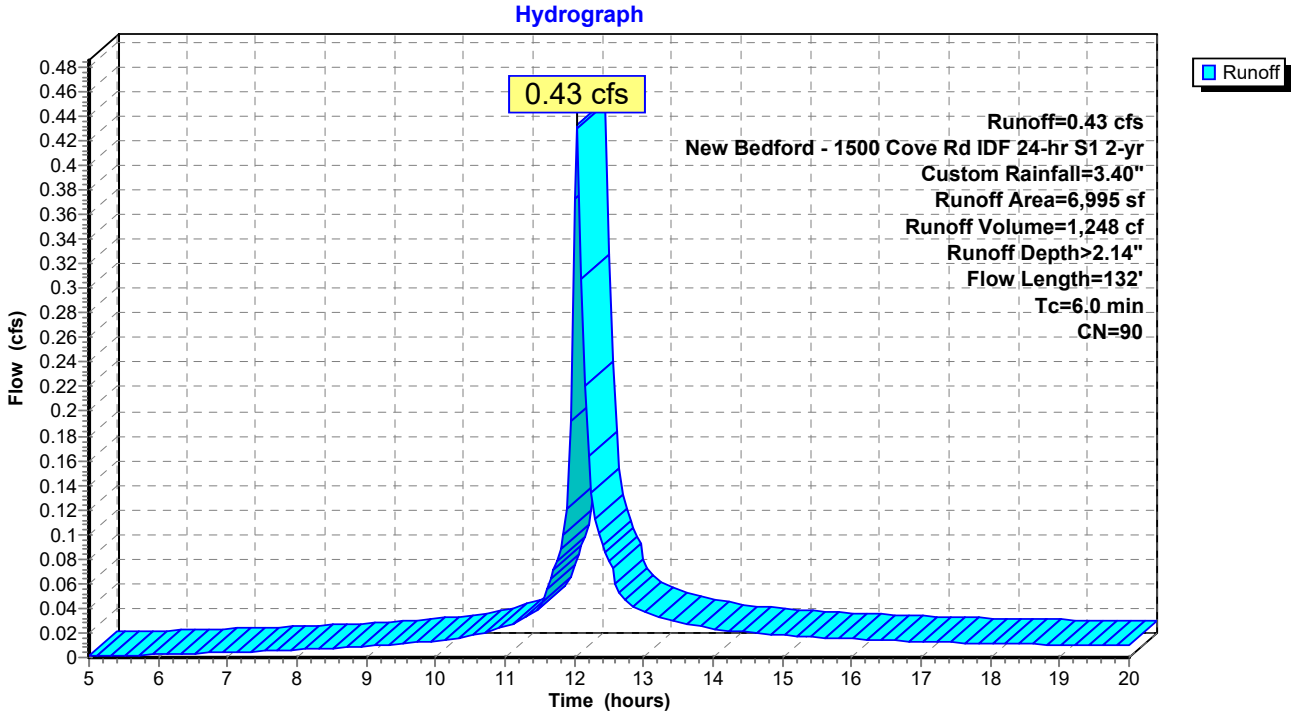
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,248 cf, Depth> 2.14"
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Custom Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 944 | 98 | Roofs, HSG D |
| 1,094 | 98 | Paved parking, HSG D |
| 2,506 | 89 | <50% Grass cover, Poor, HSG D |
| 2,451 | 84 | 50-75% Grass cover, Fair, HSG D |
| 6,995 | 90 | Weighted Average |
| 4,957 | | 70.86% Pervious Area |
| 2,038 | | 29.14% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPE SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 0.2 | 45 | 0.0350 | 3.80 | | **Shallow Concentrated Flow, PAVED PARKING** Paved Kv= 20.3 fps |
| 0.7 | 84 | 0.0160 | 2.04 | | **Shallow Concentrated Flow, GRASS PARKIN/DRIVEWAY** Unpaved Kv= 16.1 fps |
| 1.5 | 132 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA1: PROP. SUBAREA 1



## Hydrograph for Subcatchment PSA1: PROP. SUBAREA 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.00 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.01 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.02 |
| 11.25 | 1.06 | 0.36 | 0.03 |
| 11.50 | 1.14 | 0.42 | 0.04 |
| 11.75 | 1.30 | 0.53 | 0.08 |
| 12.00 | 1.85 | 0.97 | **0.37** |
| 12.25 | 2.13 | 1.20 | **0.13** |
| 12.50 | 2.27 | 1.33 | 0.08 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.03 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.02 |
| 14.25 | 2.65 | 1.67 | 0.02 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.02 |
| 16.25 | 2.89 | 1.88 | 0.01 |
| 16.50 | 2.91 | 1.90 | 0.01 |
| 16.75 | 2.93 | 1.92 | 0.01 |
| 17.00 | 2.96 | 1.94 | 0.01 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment PSA2: PROP. SUBAREA 2

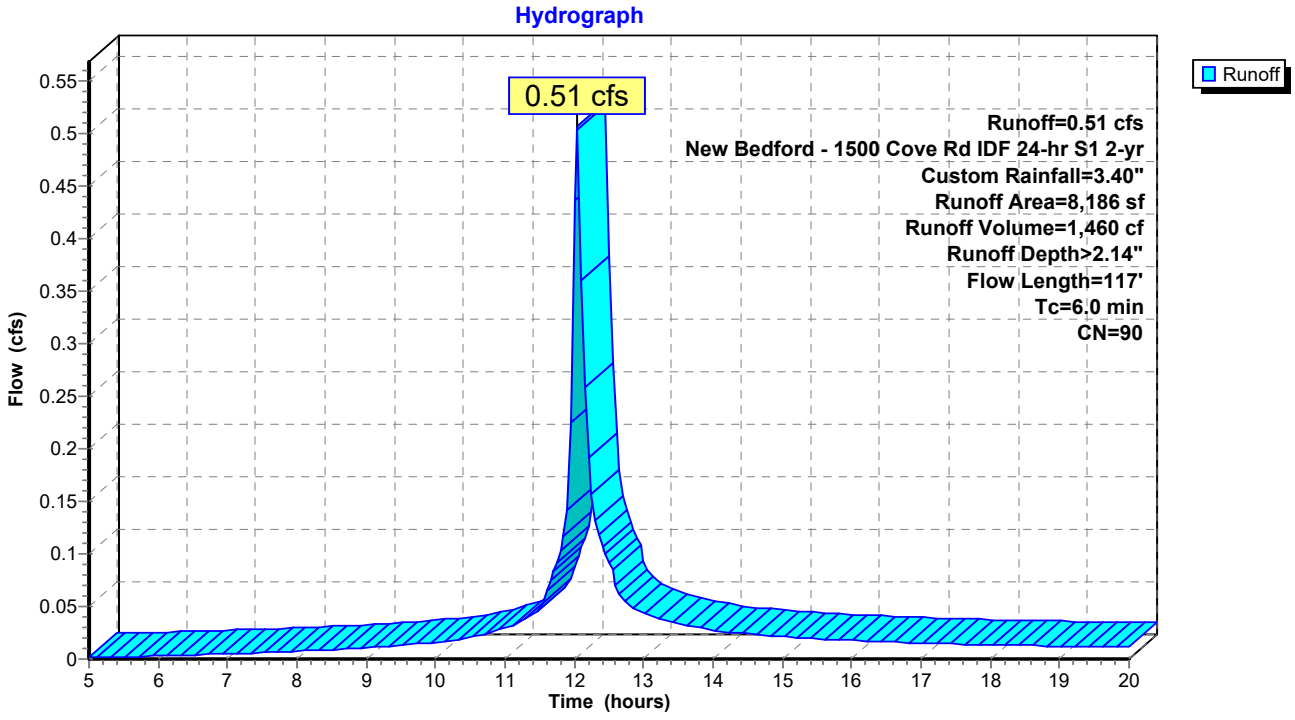
Runoff = 0.51 cfs @ 12.04 hrs, Volume= 1,460 cf, Depth> 2.14"
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Custom Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 4,378 | 98 | Paved parking, HSG D |
| 0 | 96 | Gravel surface, HSG D |
| 3,808 | 80 | >75% Grass cover, Good, HSG D |
| 8,186 | 90 | Weighted Average |
| 3,808 | | 46.52% Pervious Area |
| 4,378 | | 53.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.6 | 3 | 0.0200 | 0.09 | | **Sheet Flow, LANDSCAPED SHOULDER** Grass: Short n= 0.150 P2= 3.40" |
| 1.1 | 79 | 0.0140 | 1.17 | | **Sheet Flow, SE-COR PARKING LOT NORTHERLY** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.2 | 35 | 0.0140 | 2.40 | | **Shallow Concentrated Flow, EDGE PRKING** Paved Kv= 20.3 fps |
| 1.9 | 117 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2: PROP. SUBAREA 2



## Hydrograph for Subcatchment PSA2: PROP. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.01 | 0.00 |
| 5.50 | 0.33 | 0.01 | 0.00 |
| 5.75 | 0.34 | 0.01 | 0.00 |
| 6.00 | 0.36 | 0.02 | 0.00 |
| 6.25 | 0.38 | 0.02 | 0.00 |
| 6.50 | 0.40 | 0.03 | 0.00 |
| 6.75 | 0.42 | 0.03 | 0.00 |
| 7.00 | 0.45 | 0.04 | 0.00 |
| 7.25 | 0.47 | 0.04 | 0.01 |
| 7.50 | 0.49 | 0.05 | 0.01 |
| 7.75 | 0.51 | 0.06 | 0.01 |
| 8.00 | 0.54 | 0.07 | 0.01 |
| 8.25 | 0.57 | 0.08 | 0.01 |
| 8.50 | 0.59 | 0.09 | 0.01 |
| 8.75 | 0.62 | 0.11 | 0.01 |
| 9.00 | 0.65 | 0.12 | 0.01 |
| 9.25 | 0.68 | 0.13 | 0.01 |
| 9.50 | 0.72 | 0.15 | 0.01 |
| 9.75 | 0.75 | 0.17 | 0.01 |
| 10.00 | 0.79 | 0.19 | 0.02 |
| 10.25 | 0.83 | 0.22 | 0.02 |
| 10.50 | 0.88 | 0.24 | 0.02 |
| 10.75 | 0.93 | 0.27 | 0.02 |
| 11.00 | 0.99 | 0.31 | 0.03 |
| 11.25 | 1.06 | 0.36 | 0.04 |
| 11.50 | 1.14 | 0.42 | 0.05 |
| 11.75 | 1.30 | 0.53 | 0.09 |
| 12.00 | 1.85 | 0.97 | **0.44** |
| 12.25 | 2.13 | 1.20 | **0.16** |
| 12.50 | 2.27 | 1.33 | 0.09 |
| 12.75 | 2.36 | 1.40 | 0.05 |
| 13.00 | 2.42 | 1.46 | 0.04 |
| 13.25 | 2.48 | 1.51 | 0.04 |
| 13.50 | 2.53 | 1.56 | 0.03 |
| 13.75 | 2.58 | 1.60 | 0.03 |
| 14.00 | 2.62 | 1.64 | 0.03 |
| 14.25 | 2.65 | 1.67 | 0.03 |
| 14.50 | 2.69 | 1.70 | 0.02 |
| 14.75 | 2.72 | 1.73 | 0.02 |
| 15.00 | 2.75 | 1.76 | 0.02 |
| 15.25 | 2.78 | 1.79 | 0.02 |
| 15.50 | 2.81 | 1.81 | 0.02 |
| 15.75 | 2.84 | 1.84 | 0.02 |
| 16.00 | 2.86 | 1.86 | 0.02 |
| 16.25 | 2.89 | 1.88 | 0.02 |
| 16.50 | 2.91 | 1.90 | 0.02 |
| 16.75 | 2.93 | 1.92 | 0.02 |
| 17.00 | 2.96 | 1.94 | 0.02 |
| 17.25 | 2.98 | 1.96 | 0.01 |
| 17.50 | 3.00 | 1.98 | 0.01 |
| 17.75 | 3.02 | 2.00 | 0.01 |
| 18.00 | 3.04 | 2.02 | 0.01 |
| 18.25 | 3.06 | 2.04 | 0.01 |
| 18.50 | 3.08 | 2.05 | 0.01 |
| 18.75 | 3.09 | 2.07 | 0.01 |
| 19.00 | 3.11 | 2.09 | 0.01 |
| 19.25 | 3.13 | 2.10 | 0.01 |
| 19.50 | 3.14 | 2.12 | 0.01 |
| 19.75 | 3.16 | 2.13 | 0.01 |
| 20.00 | **3.18** | **2.15** | 0.01 |

## Summary for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

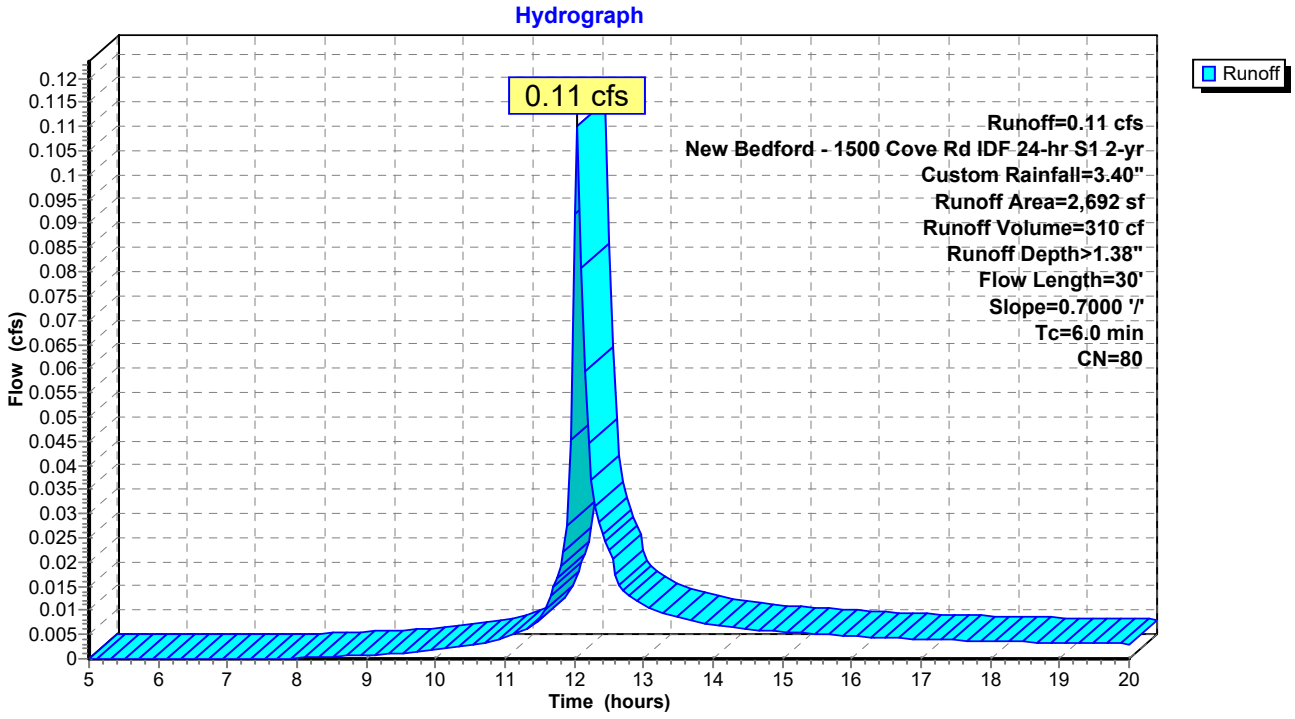
Runoff = 0.11 cfs @ 12.04 hrs, Volume= 310 cf, Depth> 1.38"
Routed to Pond RB : RAIN BARRELLS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
New Bedford - 1500 Cove Rd IDF 24-hr S1 2-yr Custom Rainfall=3.40"

| Area (sf) | CN | Description |
|---|---|---|
| 2,692 | 80 | >75% Grass cover, Good, HSG D |
| 2,692 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.1 | 30 | 0.7000 | 4.62 | | **Sheet Flow, ROOF** Smooth surfaces n= 0.011 P2= 3.40" |
| 0.1 | 30 | Total, Increased to minimum Tc = 6.0 min | | | |

## Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2



## Hydrograph for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 5.00 | 0.29 | 0.00 | 0.00 |
| 5.25 | 0.31 | 0.00 | 0.00 |
| 5.50 | 0.33 | 0.00 | 0.00 |
| 5.75 | 0.34 | 0.00 | 0.00 |
| 6.00 | 0.36 | 0.00 | 0.00 |
| 6.25 | 0.38 | 0.00 | 0.00 |
| 6.50 | 0.40 | 0.00 | 0.00 |
| 6.75 | 0.42 | 0.00 | 0.00 |
| 7.00 | 0.45 | 0.00 | 0.00 |
| 7.25 | 0.47 | 0.00 | 0.00 |
| 7.50 | 0.49 | 0.00 | 0.00 |
| 7.75 | 0.51 | 0.00 | 0.00 |
| 8.00 | 0.54 | 0.00 | 0.00 |
| 8.25 | 0.57 | 0.00 | 0.00 |
| 8.50 | 0.59 | 0.00 | 0.00 |
| 8.75 | 0.62 | 0.01 | 0.00 |
| 9.00 | 0.65 | 0.01 | 0.00 |
| 9.25 | 0.68 | 0.01 | 0.00 |
| 9.50 | 0.72 | 0.02 | 0.00 |
| 9.75 | 0.75 | 0.02 | 0.00 |
| 10.00 | 0.79 | 0.03 | 0.00 |
| 10.25 | 0.83 | 0.04 | 0.00 |
| 10.50 | 0.88 | 0.05 | 0.00 |
| 10.75 | 0.93 | 0.06 | 0.00 |
| 11.00 | 0.99 | 0.08 | 0.00 |
| 11.25 | 1.06 | 0.10 | 0.01 |
| 11.50 | 1.14 | 0.13 | 0.01 |
| 11.75 | 1.30 | 0.20 | 0.02 |
| 12.00 | 1.85 | 0.47 | **0.09** |
| 12.25 | 2.13 | 0.64 | **0.04** |
| 12.50 | 2.27 | 0.74 | 0.02 |
| 12.75 | 2.36 | 0.79 | 0.01 |
| 13.00 | 2.42 | 0.84 | 0.01 |
| 13.25 | 2.48 | 0.88 | 0.01 |
| 13.50 | 2.53 | 0.91 | 0.01 |
| 13.75 | 2.58 | 0.94 | 0.01 |
| 14.00 | 2.62 | 0.97 | 0.01 |
| 14.25 | 2.65 | 1.00 | 0.01 |
| 14.50 | 2.69 | 1.02 | 0.01 |
| 14.75 | 2.72 | 1.05 | 0.01 |
| 15.00 | 2.75 | 1.07 | 0.01 |
| 15.25 | 2.78 | 1.09 | 0.01 |
| 15.50 | 2.81 | 1.11 | 0.01 |
| 15.75 | 2.84 | 1.13 | 0.00 |
| 16.00 | 2.86 | 1.15 | 0.00 |
| 16.25 | 2.89 | 1.17 | 0.00 |
| 16.50 | 2.91 | 1.18 | 0.00 |
| 16.75 | 2.93 | 1.20 | 0.00 |
| 17.00 | 2.96 | 1.22 | 0.00 |
| 17.25 | 2.98 | 1.23 | 0.00 |
| 17.50 | 3.00 | 1.25 | 0.00 |
| 17.75 | 3.02 | 1.26 | 0.00 |
| 18.00 | 3.04 | 1.28 | 0.00 |
| 18.25 | 3.06 | 1.29 | 0.00 |
| 18.50 | 3.08 | 1.31 | 0.00 |
| 18.75 | 3.09 | 1.32 | 0.00 |
| 19.00 | 3.11 | 1.33 | 0.00 |
| 19.25 | 3.13 | 1.35 | 0.00 |
| 19.50 | 3.14 | 1.36 | 0.00 |
| 19.75 | 3.16 | 1.37 | 0.00 |
| 20.00 | **3.18** | **1.38** | 0.00 |

## Summary for Pond RB: RAIN BARRELLS

Inflow Area = 2,692 sf, 0.00% Impervious, Inflow Depth > 1.38" for Custom event
Inflow = 0.11 cfs @ 12.04 hrs, Volume= 310 cf
Outflow = 0.10 cfs @ 12.04 hrs, Volume= 261 cf, Atten= 6%, Lag= 0.0 min
Primary = 0.00 cfs @ 11.50 hrs, Volume= 56 cf
Routed to Link PSA2(T) : PROP SUB-AREA 2 (TOTAL)
Secondary = 0.10 cfs @ 12.04 hrs, Volume= 205 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.59' @ 12.05 hrs Surf.Area= 17 sf Storage= 49 cf

Plug-Flow detention time= 76.4 min calculated for 261 cf (84% of inflow)
Center-of-Mass det. time= 25.4 min ( 836.5 - 811.2 )

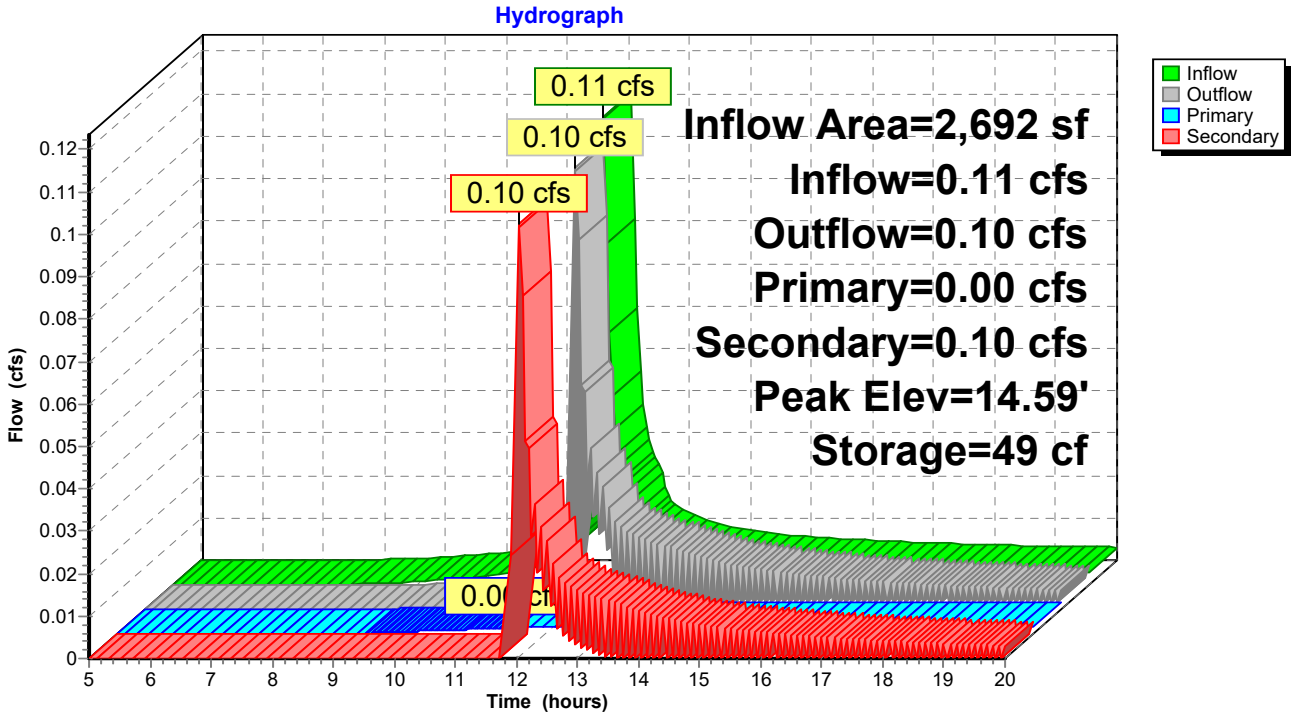
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 11.00' | 49 cf | **1.90'D x 2.90'H Vertical Cone/Cylinder** x 6 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 11.10' | **0.1" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Secondary | 14.50' | **3.0" Vert. Orifice/Grate X 6.00** C= 0.600<br>Limited to weir flow at low heads |

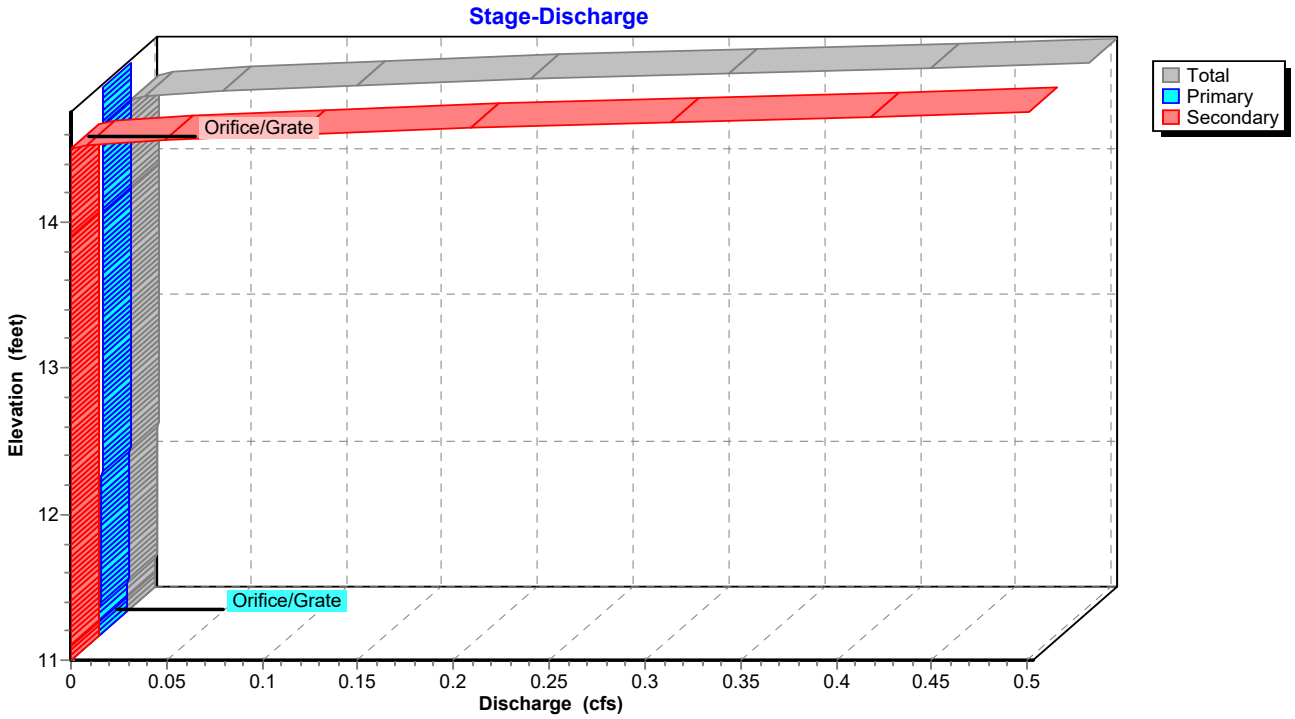
**Primary OutFlow** Max=0.00 cfs @ 11.50 hrs HW=12.15' TW=11.15' (TW follows 1.00' below HW)
↑—**1=Orifice/Grate** (Orifice Controls 0.00 cfs @ 4.81 fps)

**Secondary OutFlow** Max=0.10 cfs @ 12.04 hrs HW=14.59' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.02 fps)

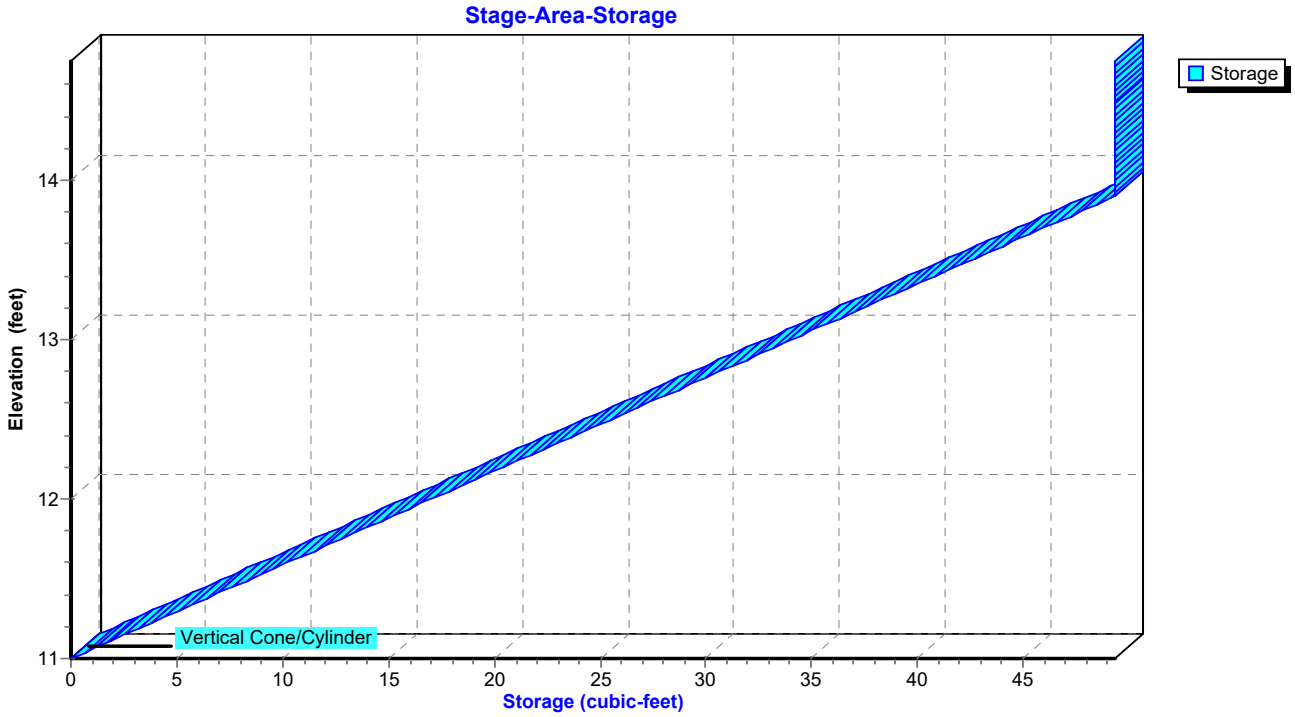
## Pond RB: RAIN BARRELLS




## Pond RB: RAIN BARRELLS



## Pond RB: RAIN BARRELLS



## Hydrograph for Pond RB: RAIN BARRELLS

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|---|---|
| 5.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 7.50 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0 | 11.00 | 0.00 | 0.00 | 0.00 |
| 8.50 | 0.00 | 1 | 11.03 | 0.00 | 0.00 | 0.00 |
| 9.00 | 0.00 | 2 | 11.10 | 0.00 | 0.00 | 0.00 |
| 9.50 | 0.00 | 3 | 11.17 | 0.00 | 0.00 | 0.00 |
| 10.00 | 0.00 | 5 | 11.28 | 0.00 | 0.00 | 0.00 |
| 10.50 | 0.00 | 7 | 11.43 | 0.00 | 0.00 | 0.00 |
| 11.00 | 0.00 | 12 | 11.68 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.01 | 20 | 12.15 | 0.00 | **0.00** | 0.00 |
| 12.00 | **0.09** | **49** | **14.59** | **0.10** | 0.00 | **0.10** |
| 12.50 | **0.02** | 49 | **14.54** | **0.03** | 0.00 | **0.03** |
| 13.00 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.02 |
| 13.50 | 0.01 | 49 | 14.53 | 0.02 | 0.00 | 0.01 |
| 14.00 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 14.50 | 0.01 | 49 | 14.53 | 0.01 | 0.00 | 0.01 |
| 15.00 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 15.50 | 0.01 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 16.00 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 16.50 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.01 |
| 17.00 | 0.00 | 49 | 14.52 | 0.01 | 0.00 | 0.00 |
| 17.50 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 18.00 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 18.50 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.00 | 0.00 | 49 | 14.51 | 0.01 | 0.00 | 0.00 |
| 19.50 | 0.00 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.00 | 49 | 14.51 | 0.00 | 0.00 | 0.00 |

## Stage-Discharge for Pond RB: RAIN BARRELLS

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 11.00 | 0.00 | 0.00 | 0.00 |
| 11.05 | 0.00 | 0.00 | 0.00 |
| 11.10 | 0.00 | 0.00 | 0.00 |
| 11.15 | 0.00 | 0.00 | 0.00 |
| 11.20 | 0.00 | 0.00 | 0.00 |
| 11.25 | 0.00 | 0.00 | 0.00 |
| 11.30 | 0.00 | 0.00 | 0.00 |
| 11.35 | 0.00 | 0.00 | 0.00 |
| 11.40 | 0.00 | 0.00 | 0.00 |
| 11.45 | 0.00 | 0.00 | 0.00 |
| 11.50 | 0.00 | 0.00 | 0.00 |
| 11.55 | 0.00 | 0.00 | 0.00 |
| 11.60 | 0.00 | 0.00 | 0.00 |
| 11.65 | 0.00 | 0.00 | 0.00 |
| 11.70 | 0.00 | 0.00 | 0.00 |
| 11.75 | 0.00 | 0.00 | 0.00 |
| 11.80 | 0.00 | 0.00 | 0.00 |
| 11.85 | 0.00 | 0.00 | 0.00 |
| 11.90 | 0.00 | 0.00 | 0.00 |
| 11.95 | 0.00 | 0.00 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 |
| 12.05 | 0.00 | 0.00 | 0.00 |
| 12.10 | 0.00 | **0.00** | 0.00 |
| 12.15 | 0.00 | **0.00** | 0.00 |
| 12.20 | 0.00 | 0.00 | 0.00 |
| 12.25 | 0.00 | 0.00 | 0.00 |
| 12.30 | 0.00 | 0.00 | 0.00 |
| 12.35 | 0.00 | 0.00 | 0.00 |
| 12.40 | 0.00 | 0.00 | 0.00 |
| 12.45 | 0.00 | 0.00 | 0.00 |
| 12.50 | 0.00 | 0.00 | 0.00 |
| 12.55 | 0.00 | 0.00 | 0.00 |
| 12.60 | 0.00 | 0.00 | 0.00 |
| 12.65 | 0.00 | 0.00 | 0.00 |
| 12.70 | 0.00 | 0.00 | 0.00 |
| 12.75 | 0.00 | 0.00 | 0.00 |
| 12.80 | 0.00 | 0.00 | 0.00 |
| 12.85 | 0.00 | 0.00 | 0.00 |
| 12.90 | 0.00 | 0.00 | 0.00 |
| 12.95 | 0.00 | 0.00 | 0.00 |
| 13.00 | 0.00 | 0.00 | 0.00 |
| 13.05 | 0.00 | 0.00 | 0.00 |
| 13.10 | 0.00 | 0.00 | 0.00 |
| 13.15 | 0.00 | 0.00 | 0.00 |
| 13.20 | 0.00 | 0.00 | 0.00 |
| 13.25 | 0.00 | 0.00 | 0.00 |
| 13.30 | 0.00 | 0.00 | 0.00 |
| 13.35 | 0.00 | 0.00 | 0.00 |
| 13.40 | 0.00 | 0.00 | 0.00 |
| 13.45 | 0.00 | 0.00 | 0.00 |
| 13.50 | 0.00 | 0.00 | 0.00 |
| 13.55 | 0.00 | 0.00 | 0.00 |
| 13.60 | 0.00 | 0.00 | 0.00 |
| 13.65 | 0.00 | 0.00 | 0.00 |
| 13.70 | 0.00 | 0.00 | 0.00 |
| 13.75 | 0.00 | 0.00 | 0.00 |
| 13.80 | 0.00 | 0.00 | 0.00 |
| 13.85 | 0.00 | 0.00 | 0.00 |
| 13.90 | 0.00 | 0.00 | 0.00 |
| 13.95 | 0.00 | 0.00 | 0.00 |
| 14.00 | 0.00 | 0.00 | 0.00 |
| 14.05 | 0.00 | 0.00 | 0.00 |
| 14.10 | 0.00 | 0.00 | 0.00 |
| 14.15 | 0.00 | 0.00 | 0.00 |
| 14.20 | 0.00 | 0.00 | 0.00 |
| 14.25 | 0.00 | 0.00 | 0.00 |
| 14.30 | 0.00 | 0.00 | 0.00 |
| 14.35 | 0.00 | 0.00 | 0.00 |
| 14.40 | 0.00 | 0.00 | 0.00 |
| 14.45 | 0.00 | 0.00 | 0.00 |
| 14.50 | 0.00 | 0.00 | 0.00 |
| 14.55 | 0.03 | 0.00 | 0.03 |
| 14.60 | 0.12 | 0.00 | 0.12 |
| 14.65 | 0.24 | 0.00 | 0.24 |
| 14.70 | 0.39 | 0.00 | 0.38 |
| 14.75 | **0.50** | 0.00 | **0.50** |

## Stage-Area-Storage for Pond RB: RAIN BARRELLS

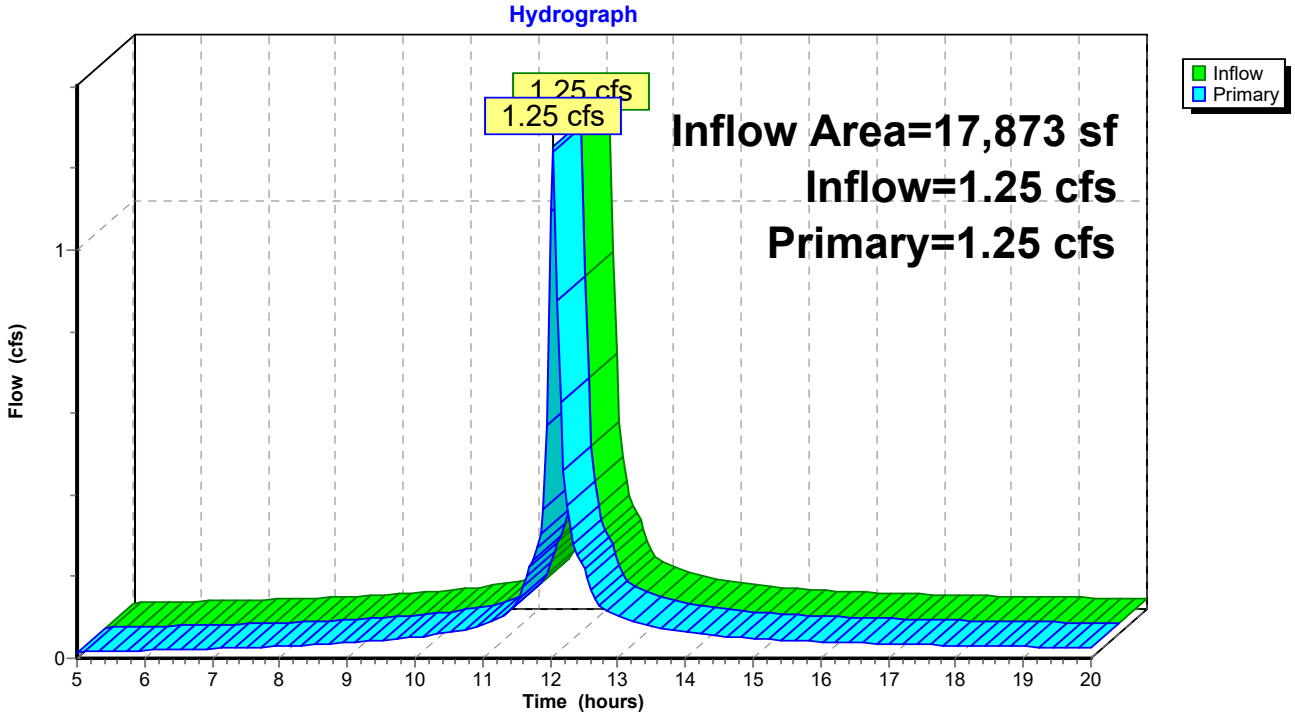
| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 11.00 | 0 |
| 11.05 | 1 |
| 11.10 | 2 |
| 11.15 | 3 |
| 11.20 | 3 |
| 11.25 | 4 |
| 11.30 | 5 |
| 11.35 | 6 |
| 11.40 | 7 |
| 11.45 | 8 |
| 11.50 | 9 |
| 11.55 | 9 |
| 11.60 | 10 |
| 11.65 | 11 |
| 11.70 | 12 |
| 11.75 | 13 |
| 11.80 | 14 |
| 11.85 | 14 |
| 11.90 | 15 |
| 11.95 | 16 |
| 12.00 | 17 |
| 12.05 | 18 |
| 12.10 | 19 |
| 12.15 | 20 |
| 12.20 | 20 |
| 12.25 | 21 |
| 12.30 | 22 |
| 12.35 | 23 |
| 12.40 | 24 |
| 12.45 | 25 |
| 12.50 | 26 |
| 12.55 | 26 |
| 12.60 | 27 |
| 12.65 | 28 |
| 12.70 | 29 |
| 12.75 | 30 |
| 12.80 | 31 |
| 12.85 | 31 |
| 12.90 | 32 |
| 12.95 | 33 |
| 13.00 | 34 |
| 13.05 | 35 |
| 13.10 | 36 |
| 13.15 | 37 |
| 13.20 | 37 |
| 13.25 | 38 |
| 13.30 | 39 |
| 13.35 | 40 |
| 13.40 | 41 |
| 13.45 | 42 |
| 13.50 | 43 |
| 13.55 | 43 |
| 13.60 | 44 |
| 13.65 | 45 |
| 13.70 | 46 |
| 13.75 | 47 |
| 13.80 | 48 |
| 13.85 | 48 |
| 13.90 | **49** |
| 13.95 | 49 |
| 14.00 | 49 |
| 14.05 | 49 |
| 14.10 | 49 |
| 14.15 | 49 |
| 14.20 | 49 |
| 14.25 | 49 |
| 14.30 | 49 |
| 14.35 | 49 |
| 14.40 | 49 |
| 14.45 | 49 |
| 14.50 | 49 |
| 14.55 | 49 |
| 14.60 | 49 |
| 14.65 | 49 |
| 14.70 | 49 |
| 14.75 | 49 |

## Summary for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 75.47% Impervious, Inflow Depth > 2.55" for Custom event
Inflow = 1.25 cfs @ 12.04 hrs, Volume= 3,797 cf
Primary = 1.25 cfs @ 12.04 hrs, Volume= 3,797 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link ESAT: EXIST. SUBAREA TOTAL OFFSITE



## Hydrograph for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

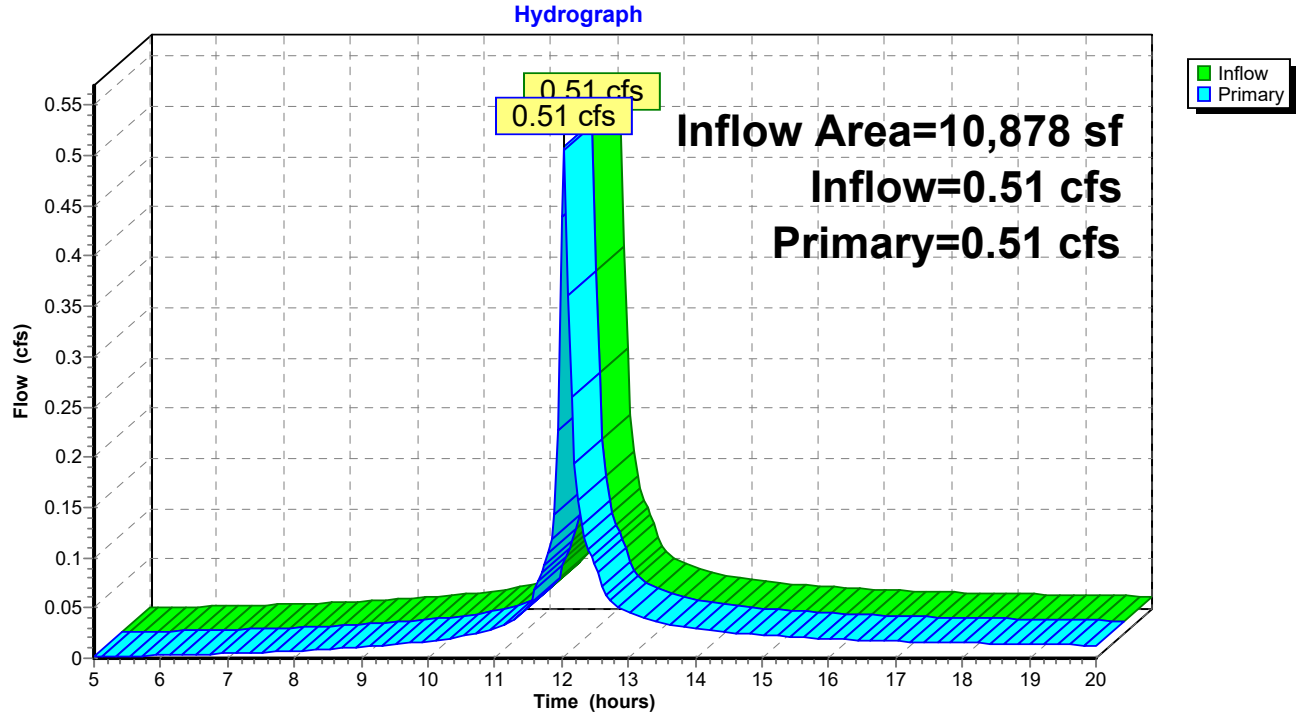
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.02 | **0.00** | 0.02 |
| 5.25 | 0.02 | 0.00 | 0.02 |
| 5.50 | 0.02 | 0.00 | 0.02 |
| 5.75 | 0.02 | 0.00 | 0.02 |
| 6.00 | 0.02 | 0.00 | 0.02 |
| 6.25 | 0.02 | 0.00 | 0.02 |
| 6.50 | 0.02 | 0.00 | 0.02 |
| 6.75 | 0.02 | 0.00 | 0.02 |
| 7.00 | 0.02 | 0.00 | 0.02 |
| 7.25 | 0.02 | 0.00 | 0.02 |
| 7.50 | 0.03 | 0.00 | 0.03 |
| 7.75 | 0.03 | 0.00 | 0.03 |
| 8.00 | 0.03 | 0.00 | 0.03 |
| 8.25 | 0.03 | 0.00 | 0.03 |
| 8.50 | 0.03 | 0.00 | 0.03 |
| 8.75 | 0.03 | 0.00 | 0.03 |
| 9.00 | 0.04 | 0.00 | 0.04 |
| 9.25 | 0.04 | 0.00 | 0.04 |
| 9.50 | 0.04 | 0.00 | 0.04 |
| 9.75 | 0.05 | 0.00 | 0.05 |
| 10.00 | 0.05 | 0.00 | 0.05 |
| 10.25 | 0.06 | 0.00 | 0.06 |
| 10.50 | 0.06 | 0.00 | 0.06 |
| 10.75 | 0.07 | 0.00 | 0.07 |
| 11.00 | 0.08 | 0.00 | 0.08 |
| 11.25 | 0.10 | 0.00 | 0.10 |
| 11.50 | 0.13 | 0.00 | 0.13 |
| 11.75 | 0.24 | 0.00 | 0.24 |
| 12.00 | **1.10** | 0.00 | **1.10** |
| 12.25 | **0.37** | 0.00 | **0.37** |
| 12.50 | 0.22 | 0.00 | 0.22 |
| 12.75 | 0.13 | 0.00 | 0.13 |
| 13.00 | 0.10 | 0.00 | 0.10 |
| 13.25 | 0.09 | 0.00 | 0.09 |
| 13.50 | 0.08 | 0.00 | 0.08 |
| 13.75 | 0.07 | 0.00 | 0.07 |
| 14.00 | 0.06 | 0.00 | 0.06 |
| 14.25 | 0.06 | 0.00 | 0.06 |
| 14.50 | 0.06 | 0.00 | 0.06 |
| 14.75 | 0.05 | 0.00 | 0.05 |
| 15.00 | 0.05 | 0.00 | 0.05 |
| 15.25 | 0.05 | 0.00 | 0.05 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.04 | 0.00 | 0.04 |
| 16.25 | 0.04 | 0.00 | 0.04 |
| 16.50 | 0.04 | 0.00 | 0.04 |
| 16.75 | 0.04 | 0.00 | 0.04 |
| 17.00 | 0.04 | 0.00 | 0.04 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.03 | 0.00 | 0.03 |
| 18.50 | 0.03 | 0.00 | 0.03 |
| 18.75 | 0.03 | 0.00 | 0.03 |
| 19.00 | 0.03 | 0.00 | 0.03 |
| 19.25 | 0.03 | 0.00 | 0.03 |
| 19.50 | 0.03 | 0.00 | 0.03 |
| 19.75 | 0.03 | 0.00 | 0.03 |
| 20.00 | 0.03 | 0.00 | 0.03 |

## Summary for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

Inflow Area = 10,878 sf, 40.25% Impervious, Inflow Depth > 1.67" for Custom event
Inflow = 0.51 cfs @ 12.04 hrs, Volume= 1,516 cf
Primary = 0.51 cfs @ 12.04 hrs, Volume= 1,516 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PSAT : PROP. SUBAREA TOTAL OFFSITE

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSA2(T): PROP SUB-AREA 2 (TOTAL)



## Hydrograph for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

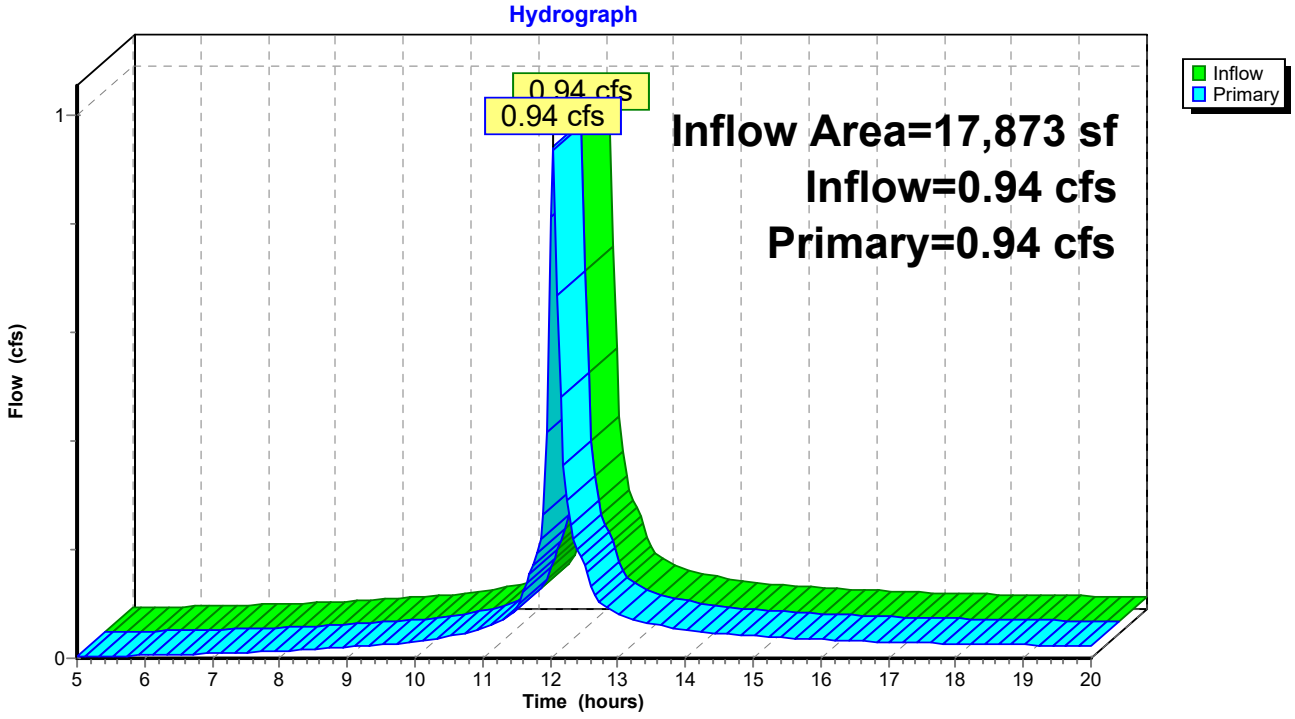
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.00 | **0.00** | 0.00 |
| 5.25 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 |
| 5.75 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 |
| 6.25 | 0.00 | 0.00 | 0.00 |
| 6.50 | 0.00 | 0.00 | 0.00 |
| 6.75 | 0.00 | 0.00 | 0.00 |
| 7.00 | 0.00 | 0.00 | 0.00 |
| 7.25 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.01 | 0.00 | 0.01 |
| 7.75 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.01 | 0.00 | 0.01 |
| 8.25 | 0.01 | 0.00 | 0.01 |
| 8.50 | 0.01 | 0.00 | 0.01 |
| 8.75 | 0.01 | 0.00 | 0.01 |
| 9.00 | 0.01 | 0.00 | 0.01 |
| 9.25 | 0.01 | 0.00 | 0.01 |
| 9.50 | 0.01 | 0.00 | 0.01 |
| 9.75 | 0.02 | 0.00 | 0.02 |
| 10.00 | 0.02 | 0.00 | 0.02 |
| 10.25 | 0.02 | 0.00 | 0.02 |
| 10.50 | 0.02 | 0.00 | 0.02 |
| 10.75 | 0.03 | 0.00 | 0.03 |
| 11.00 | 0.03 | 0.00 | 0.03 |
| 11.25 | 0.04 | 0.00 | 0.04 |
| 11.50 | 0.05 | 0.00 | 0.05 |
| 11.75 | 0.09 | 0.00 | 0.09 |
| 12.00 | **0.44** | 0.00 | **0.44** |
| 12.25 | **0.16** | 0.00 | **0.16** |
| 12.50 | 0.09 | 0.00 | 0.09 |
| 12.75 | 0.06 | 0.00 | 0.06 |
| 13.00 | 0.05 | 0.00 | 0.05 |
| 13.25 | 0.04 | 0.00 | 0.04 |
| 13.50 | 0.03 | 0.00 | 0.03 |
| 13.75 | 0.03 | 0.00 | 0.03 |
| 14.00 | 0.03 | 0.00 | 0.03 |
| 14.25 | 0.03 | 0.00 | 0.03 |
| 14.50 | 0.03 | 0.00 | 0.03 |
| 14.75 | 0.02 | 0.00 | 0.02 |
| 15.00 | 0.02 | 0.00 | 0.02 |
| 15.25 | 0.02 | 0.00 | 0.02 |
| 15.50 | 0.02 | 0.00 | 0.02 |
| 15.75 | 0.02 | 0.00 | 0.02 |
| 16.00 | 0.02 | 0.00 | 0.02 |
| 16.25 | 0.02 | 0.00 | 0.02 |
| 16.50 | 0.02 | 0.00 | 0.02 |
| 16.75 | 0.02 | 0.00 | 0.02 |
| 17.00 | 0.02 | 0.00 | 0.02 |
| 17.25 | 0.02 | 0.00 | 0.02 |
| 17.50 | 0.02 | 0.00 | 0.02 |
| 17.75 | 0.02 | 0.00 | 0.02 |
| 18.00 | 0.02 | 0.00 | 0.02 |
| 18.25 | 0.01 | 0.00 | 0.01 |
| 18.50 | 0.01 | 0.00 | 0.01 |
| 18.75 | 0.01 | 0.00 | 0.01 |
| 19.00 | 0.01 | 0.00 | 0.01 |
| 19.25 | 0.01 | 0.00 | 0.01 |
| 19.50 | 0.01 | 0.00 | 0.01 |
| 19.75 | 0.01 | 0.00 | 0.01 |
| 20.00 | 0.01 | 0.00 | 0.01 |

## Summary for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

Inflow Area = 17,873 sf, 35.90% Impervious, Inflow Depth > 1.86" for Custom event
Inflow = 0.94 cfs @ 12.04 hrs, Volume= 2,764 cf
Primary = 0.94 cfs @ 12.04 hrs, Volume= 2,764 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

## Link PSAT: PROP. SUBAREA TOTAL OFFSITE



## Hydrograph for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 5.00 | 0.00 | **0.00** | 0.00 |
| 5.25 | 0.00 | 0.00 | 0.00 |
| 5.50 | 0.00 | 0.00 | 0.00 |
| 5.75 | 0.00 | 0.00 | 0.00 |
| 6.00 | 0.01 | 0.00 | 0.01 |
| 6.25 | 0.01 | 0.00 | 0.01 |
| 6.50 | 0.01 | 0.00 | 0.01 |
| 6.75 | 0.01 | 0.00 | 0.01 |
| 7.00 | 0.01 | 0.00 | 0.01 |
| 7.25 | 0.01 | 0.00 | 0.01 |
| 7.50 | 0.01 | 0.00 | 0.01 |
| 7.75 | 0.01 | 0.00 | 0.01 |
| 8.00 | 0.01 | 0.00 | 0.01 |
| 8.25 | 0.01 | 0.00 | 0.01 |
| 8.50 | 0.02 | 0.00 | 0.02 |
| 8.75 | 0.02 | 0.00 | 0.02 |
| 9.00 | 0.02 | 0.00 | 0.02 |
| 9.25 | 0.02 | 0.00 | 0.02 |
| 9.50 | 0.02 | 0.00 | 0.02 |
| 9.75 | 0.03 | 0.00 | 0.03 |
| 10.00 | 0.03 | 0.00 | 0.03 |
| 10.25 | 0.03 | 0.00 | 0.03 |
| 10.50 | 0.04 | 0.00 | 0.04 |
| 10.75 | 0.05 | 0.00 | 0.05 |
| 11.00 | 0.06 | 0.00 | 0.06 |
| 11.25 | 0.07 | 0.00 | 0.07 |
| 11.50 | 0.09 | 0.00 | 0.09 |
| 11.75 | 0.17 | 0.00 | 0.17 |
| 12.00 | **0.81** | 0.00 | **0.81** |
| 12.25 | **0.29** | 0.00 | **0.29** |
| 12.50 | 0.17 | 0.00 | 0.17 |
| 12.75 | 0.10 | 0.00 | 0.10 |
| 13.00 | 0.08 | 0.00 | 0.08 |
| 13.25 | 0.07 | 0.00 | 0.07 |
| 13.50 | 0.06 | 0.00 | 0.06 |
| 13.75 | 0.06 | 0.00 | 0.06 |
| 14.00 | 0.05 | 0.00 | 0.05 |
| 14.25 | 0.05 | 0.00 | 0.05 |
| 14.50 | 0.05 | 0.00 | 0.05 |
| 14.75 | 0.04 | 0.00 | 0.04 |
| 15.00 | 0.04 | 0.00 | 0.04 |
| 15.25 | 0.04 | 0.00 | 0.04 |
| 15.50 | 0.04 | 0.00 | 0.04 |
| 15.75 | 0.04 | 0.00 | 0.04 |
| 16.00 | 0.03 | 0.00 | 0.03 |
| 16.25 | 0.03 | 0.00 | 0.03 |
| 16.50 | 0.03 | 0.00 | 0.03 |
| 16.75 | 0.03 | 0.00 | 0.03 |
| 17.00 | 0.03 | 0.00 | 0.03 |
| 17.25 | 0.03 | 0.00 | 0.03 |
| 17.50 | 0.03 | 0.00 | 0.03 |
| 17.75 | 0.03 | 0.00 | 0.03 |
| 18.00 | 0.03 | 0.00 | 0.03 |
| 18.25 | 0.03 | 0.00 | 0.03 |
| 18.50 | 0.03 | 0.00 | 0.03 |
| 18.75 | 0.02 | 0.00 | 0.02 |
| 19.00 | 0.02 | 0.00 | 0.02 |
| 19.25 | 0.02 | 0.00 | 0.02 |
| 19.50 | 0.02 | 0.00 | 0.02 |
| 19.75 | 0.02 | 0.00 | 0.02 |
| 20.00 | 0.02 | 0.00 | 0.02 |

## Events for Subcatchment ESA1: EXIST. SUBAREA 1

| Event | Rainfall (inches) | Runoff (cfs) | Volume (cubic-feet) | Depth (inches) |
|---|---|---|---|---|
| 2-yr | 3.40 | 0.43 | 1,241 | 2.14 |
| 10-yr | 5.02 | 0.75 | 2,069 | 3.57 |
| 25-yr | 6.03 | 0.94 | 2,592 | 4.47 |
| 100-yr | **7.59** | **1.25** | **3,401** | **5.87** |
| Custom | 3.40 | 0.43 | 1,241 | 2.14 |

## Events for Subcatchment ESA2: EXIST. SUBAREA 2

| Event | Rainfall (inches) | Runoff (cfs) | Volume (cubic-feet) | Depth (inches) |
|---|---|---|---|---|
| 2-yr | 3.40 | 0.82 | 2,557 | 2.81 |
| 10-yr | 5.02 | 1.31 | 3,864 | 4.25 |
| 25-yr | 6.03 | 1.61 | 4,675 | 5.14 |
| 100-yr | **7.59** | **2.08** | **5,923** | **6.51** |
| Custom | 3.40 | 0.82 | 2,557 | 2.81 |

## Events for Subcatchment PSA1: PROP. SUBAREA 1

| Event | Rainfall (inches) | Runoff (cfs) | Volume (cubic-feet) | Depth (inches) |
|---|---|---|---|---|
| 2-yr | 3.40 | 0.43 | 1,248 | 2.14 |
| 10-yr | 5.02 | 0.75 | 2,081 | 3.57 |
| 25-yr | 6.03 | 0.95 | 2,607 | 4.47 |
| 100-yr | **7.59** | **1.26** | **3,421** | **5.87** |
| Custom | 3.40 | 0.43 | 1,248 | 2.14 |

## Events for Subcatchment PSA2: PROP. SUBAREA 2

| Event | Rainfall (inches) | Runoff (cfs) | Volume (cubic-feet) | Depth (inches) |
|---|---|---|---|---|
| 2-yr | 3.40 | 0.51 | 1,460 | 2.14 |
| 10-yr | 5.02 | 0.88 | 2,435 | 3.57 |
| 25-yr | 6.03 | 1.11 | 3,051 | 4.47 |
| 100-yr | **7.59** | **1.47** | **4,004** | **5.87** |
| Custom | 3.40 | 0.51 | 1,460 | 2.14 |

## Events for Subcatchment PSA2R: RAIN BARREL ROOF. SUBAREA 2

| Event | Rainfall (inches) | Runoff (cfs) | Volume (cubic-feet) | Depth (inches) |
|---|---|---|---|---|
| 2-yr | 3.40 | 0.11 | 310 | 1.38 |
| 10-yr | 5.02 | 0.22 | 592 | 2.64 |
| 25-yr | 6.03 | 0.30 | 780 | 3.48 |
| 100-yr | **7.59** | **0.41** | **1,080** | **4.81** |
| Custom | 3.40 | 0.11 | 310 | 1.38 |

## Events for Pond RB: RAIN BARRELLS

| Event | Inflow (cfs) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|---|
| 2-yr | 0.11 | 0.10 | **0.00** | 0.10 | 14.59 | **49** |
| 10-yr | 0.22 | 0.22 | 0.00 | 0.22 | 14.64 | 49 |
| 25-yr | 0.30 | 0.29 | 0.00 | 0.29 | 14.67 | 49 |
| 100-yr | **0.41** | **0.42** | 0.00 | **0.42** | **14.71** | 49 |
| Custom | 0.11 | 0.10 | 0.00 | 0.10 | 14.59 | 49 |

## Events for Link ESAT: EXIST. SUBAREA TOTAL OFFSITE

| Event | Inflow (cfs) | Primary (cfs) | Elevation (feet) |
|---|---|---|---|
| 2-yr | 1.25 | 1.25 | **0.00** |
| 10-yr | 2.06 | 2.06 | 0.00 |
| 25-yr | 2.56 | 2.56 | 0.00 |
| 100-yr | **3.33** | **3.33** | 0.00 |
| Custom | 1.25 | 1.25 | 0.00 |

## Events for Link PSA2(T): PROP SUB-AREA 2 (TOTAL)

| Event | Inflow (cfs) | Primary (cfs) | Elevation (feet) |
|---|---|---|---|
| 2-yr | 0.51 | 0.51 | **0.00** |
| 10-yr | 0.88 | 0.88 | 0.00 |
| 25-yr | 1.11 | 1.11 | 0.00 |
| 100-yr | **1.47** | **1.47** | 0.00 |
| Custom | 0.51 | 0.51 | 0.00 |

## Events for Link PSAT: PROP. SUBAREA TOTAL OFFSITE

| Event | Inflow (cfs) | Primary (cfs) | Elevation (feet) |
|---|---|---|---|
| 2-yr | 0.94 | 0.94 | **0.00** |
| 10-yr | 1.63 | 1.63 | 0.00 |
| 25-yr | 2.06 | 2.06 | 0.00 |
| 100-yr | **2.73** | **2.73** | 0.00 |
| Custom | 0.94 | 0.94 | 0.00 |

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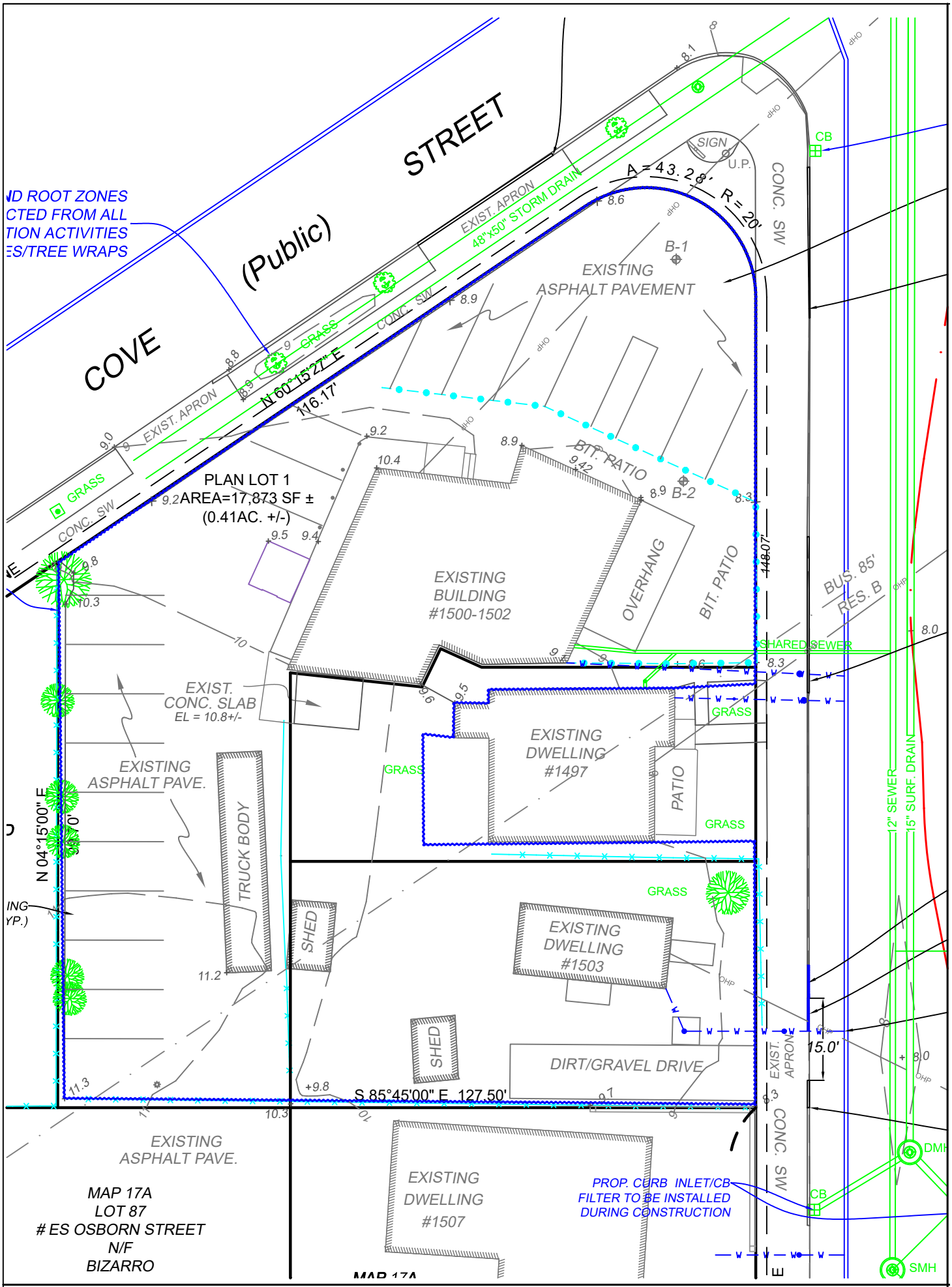
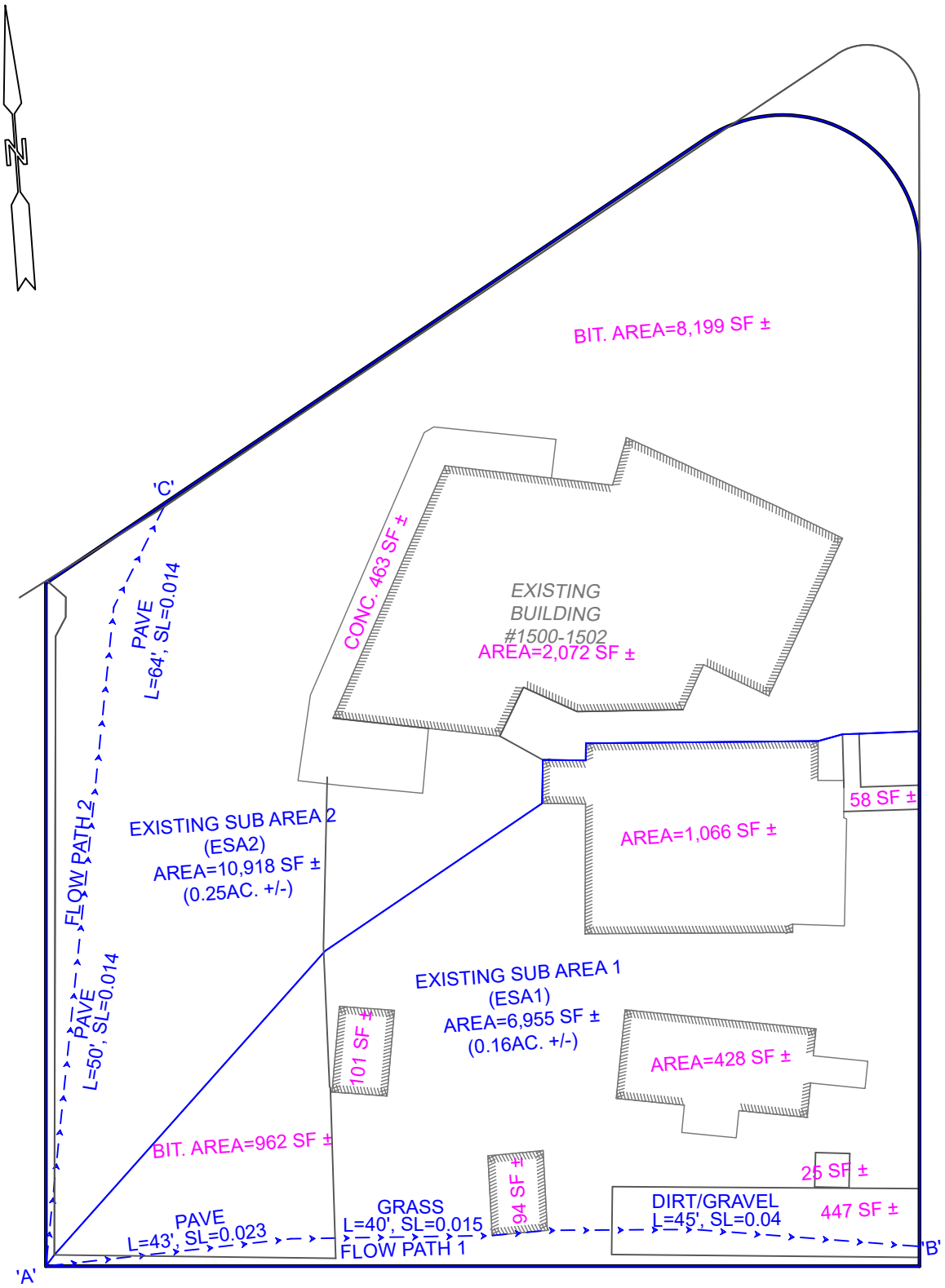
**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
**Cove Rd & Padanaram Ave, New Bedford, MA**

# Exhibit "D"

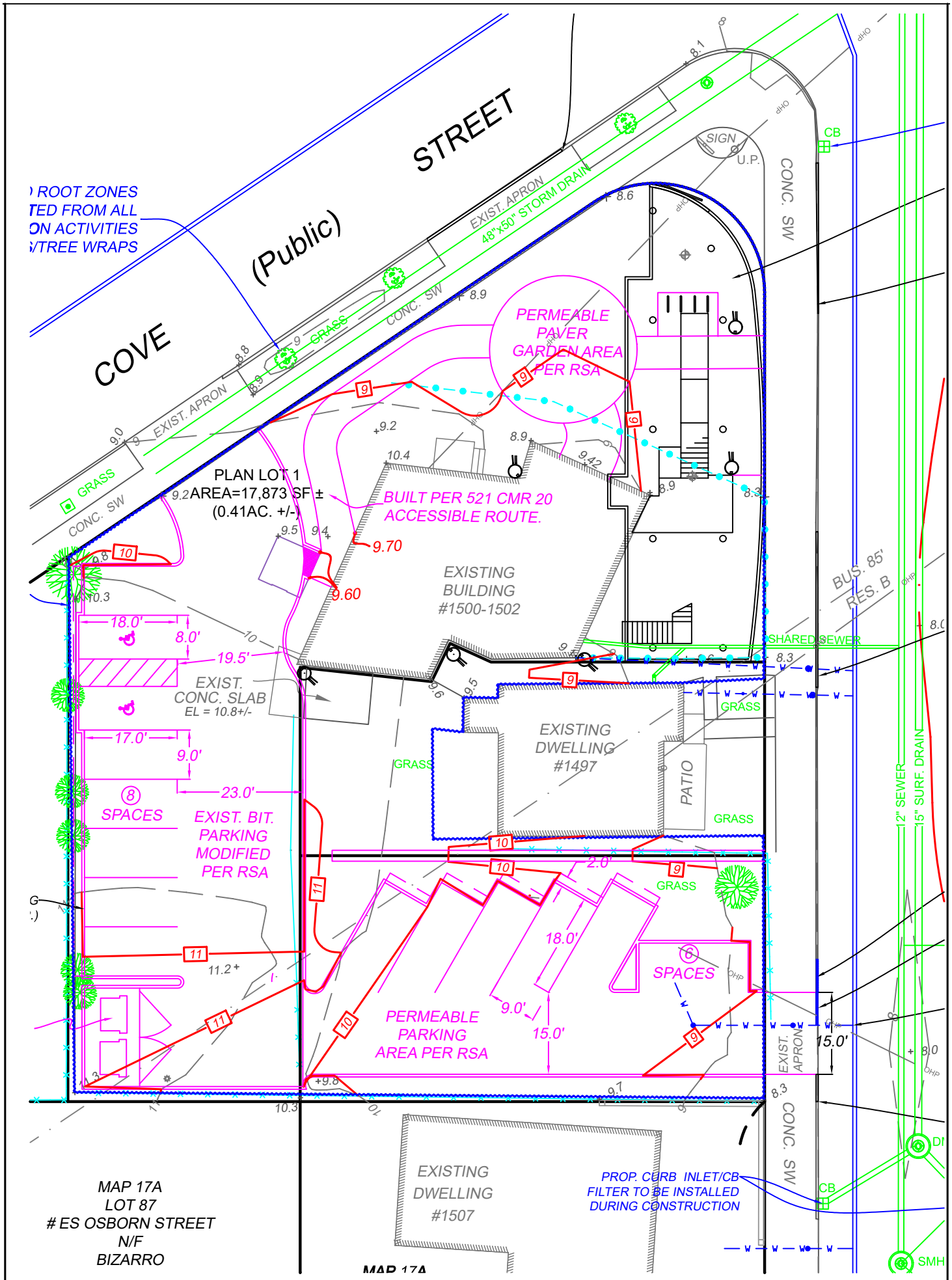
## "Pre and Post Development Watershed Plans"



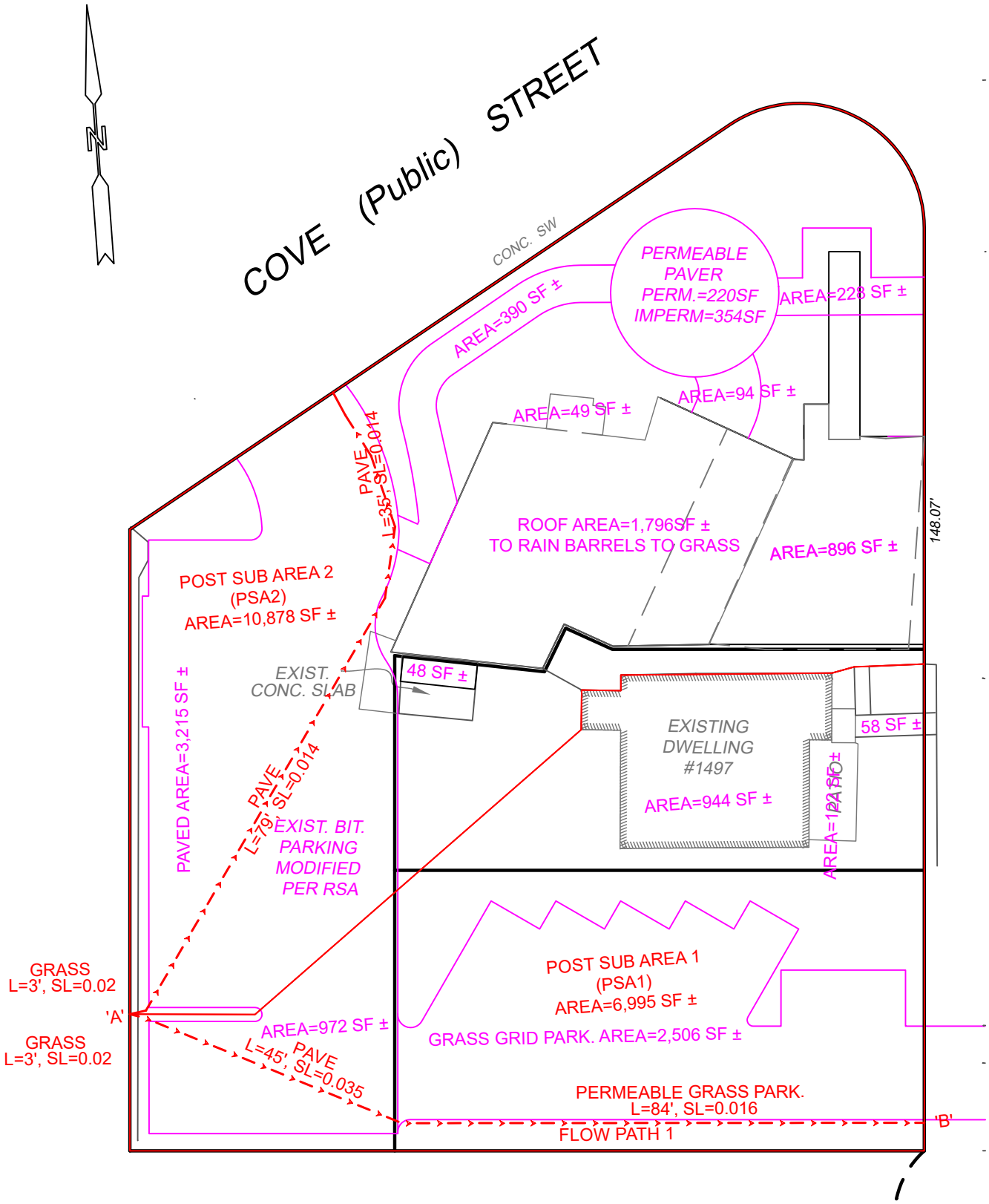

# EXIST. SITE PLAN




# EXIST. AREA BREAKDOWN/FLOWPATH




# PROP. SITE PLAN




# PROP. AREA BREAKDOWN/FLOWPATH

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
**Cove Rd & Padanaram Ave, New Bedford, MA**

# Exhibit "E"

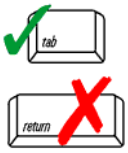
## "Stormwater Management check list to accompany Local Regulation Filing"

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands Program

# Checklist for Stormwater Report

## A. Introduction

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.




A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands Program

# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

## Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature


8/12/2024
Signature and Date

## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

# Checklist for Stormwater Report

## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- [x] No disturbance to any Wetland Resource Areas
- [x] Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- [x] Reduced Impervious Area (Redevelopment Only)
- [x] Minimizing disturbance to existing trees and shrubs
- [ ] LID Site Design Credit Requested:
  - [ ] Credit 1
  - [ ] Credit 2
  - [ ] Credit 3
- [ ] Use of "country drainage" versus curb and gutter conveyance and pipe
- [ ] Bioretention Cells (includes Rain Gardens)
- [ ] Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- [ ] Treebox Filter
- [ ] Water Quality Swale
- [ ] Grass Channel
- [ ] Green Roof
- [x] Other (describe): RAIN BARRELS

**Standard 1: No New Untreated Discharges**

- [x] No new untreated discharges
- [ ] Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- [ ] Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 2: Peak Rate Attenuation**

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

**Standard 3: Recharge** NOT APPLICABLE

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 3: Recharge** (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

**Standard 4: Water Quality**

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☒ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 4: Water Quality** (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

**Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)** NOT APPLICABLE

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

**Standard 6: Critical Areas** NOT APPLICABLE

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable**

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

**Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control**

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report. SEE PLAN/NOTES

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control** (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

**Standard 9: Operation and Maintenance Plan**

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information: SEE PLAN NOTES

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

**Standard 10: Prohibition of Illicit Discharges**

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

**1500-1502 Cove Rd, LLC – Cove Surf & Turf**
**Assessor Lot 103, 102, $ 101, Map 17a**
**Cove Rd & Padanaram Ave, New Bedford, MA**

# Exhibit "F"

# NOAA Atlas 14, Volume 10, Version 3
**Location name: New Bedford, Massachusetts, USA***
**Latitude: 41.6121°, Longitude: -70.9311°**
**Elevation: 9 ft****
* source: ESRI Maps
** source: USGS

## POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

# PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | **0.295** (0.238-0.364) | **0.366** (0.295-0.452) | **0.482** (0.388-0.598) | **0.578** (0.463-0.721) | **0.710** (0.548-0.924) | **0.808** (0.611-1.07) | **0.914** (0.672-1.26) | **1.04** (0.714-1.45) | **1.24** (0.815-1.78) | **1.42** (0.904-2.05) |
| 10-min | **0.418** (0.338-0.516) | **0.518** (0.418-0.641) | **0.682** (0.549-0.846) | **0.818** (0.654-1.02) | **1.00** (0.777-1.31) | **1.14** (0.865-1.52) | **1.29** (0.952-1.79) | **1.48** (1.01-2.05) | **1.76** (1.15-2.52) | **2.00** (1.28-2.91) |
| 15-min | **0.491** (0.397-0.607) | **0.609** (0.492-0.754) | **0.802** (0.646-0.995) | **0.962** (0.769-1.20) | **1.18** (0.914-1.54) | **1.35** (1.02-1.79) | **1.52** (1.12-2.10) | **1.74** (1.19-2.41) | **2.07** (1.36-2.96) | **2.36** (1.51-3.42) |
| 30-min | **0.701** (0.567-0.867) | **0.870** (0.703-1.08) | **1.15** (0.922-1.42) | **1.37** (1.10-1.71) | **1.69** (1.30-2.20) | **1.92** (1.45-2.56) | **2.17** (1.60-3.00) | **2.48** (1.70-3.44) | **2.96** (1.94-4.22) | **3.36** (2.15-4.88) |
| 60-min | **0.912** (0.737-1.13) | **1.13** (0.913-1.40) | **1.49** (1.20-1.85) | **1.79** (1.43-2.23) | **2.20** (1.70-2.86) | **2.50** (1.89-3.32) | **2.82** (2.08-3.90) | **3.23** (2.20-4.47) | **3.84** (2.51-5.48) | **4.37** (2.79-6.34) |
| 2-hr | **1.24** (1.01-1.53) | **1.54** (1.25-1.89) | **2.03** (1.64-2.50) | **2.43** (1.96-3.01) | **2.98** (2.32-3.85) | **3.39** (2.59-4.47) | **3.84** (2.85-5.24) | **4.38** (3.02-6.00) | **5.21** (3.45-7.34) | **5.92** (3.82-8.48) |
| 3-hr | **1.47** (1.20-1.80) | **1.82** (1.48-2.22) | **2.38** (1.93-2.92) | **2.84** (2.30-3.50) | **3.48** (2.72-4.48) | **3.96** (3.03-5.19) | **4.47** (3.33-6.07) | **5.10** (3.54-6.94) | **6.05** (4.03-8.47) | **6.86** (4.46-9.76) |
| 6-hr | **1.91** (1.57-2.32) | **2.33** (1.91-2.83) | **3.01** (2.46-3.67) | **3.57** (2.91-4.38) | **4.35** (3.43-5.54) | **4.93** (3.80-6.39) | **5.55** (4.17-7.44) | **6.30** (4.42-8.48) | **7.43** (5.01-10.3) | **8.39** (5.52-11.8) |
| 12-hr | **2.39** (1.98-2.89) | **2.87** (2.37-3.46) | **3.65** (3.00-4.42) | **4.29** (3.51-5.22) | **5.18** (4.11-6.53) | **5.85** (4.54-7.50) | **6.56** (4.96-8.68) | **7.39** (5.25-9.85) | **8.64** (5.90-11.8) | **9.69** (6.45-13.4) |
| 24-hr | **2.85** (2.38-3.42) | **3.40** (2.82-4.07) | **4.28** (3.55-5.15) | **5.02** (4.13-6.06) | **6.03** (4.81-7.52) | **6.79** (5.31-8.60) | **7.59** (5.77-9.90) | **8.51** (6.11-11.2) | **9.85** (6.80-13.3) | **11.0** (7.39-15.0) |
| 2-day | **3.28** (2.75-3.91) | **3.90** (3.26-4.65) | **4.91** (4.10-5.86) | **5.75** (4.76-6.89) | **6.90** (5.54-8.52) | **7.77** (6.12-9.73) | **8.67** (6.64-11.2) | **9.68** (7.03-12.6) | **11.1** (7.78-14.8) | **12.3** (8.40-16.6) |
| 3-day | **3.61** (3.03-4.28) | **4.25** (3.57-5.04) | **5.30** (4.44-6.30) | **6.17** (5.14-7.36) | **7.37** (5.94-9.05) | **8.27** (6.54-10.3) | **9.21** (7.08-11.8) | **10.3** (7.49-13.3) | **11.7** (8.25-15.5) | **12.9** (8.88-17.3) |
| 4-day | **3.89** (3.28-4.60) | **4.54** (3.82-5.38) | **5.61** (4.71-6.66) | **6.50** (5.43-7.74) | **7.72** (6.25-9.44) | **8.65** (6.86-10.7) | **9.60** (7.40-12.2) | **10.6** (7.82-13.7) | **12.1** (8.58-15.9) | **13.3** (9.19-17.7) |
| 7-day | **4.61** (3.91-5.42) | **5.30** (4.48-6.23) | **6.41** (5.41-7.57) | **7.34** (6.16-8.69) | **8.62** (7.01-10.4) | **9.60** (7.65-11.8) | **10.6** (8.19-13.3) | **11.6** (8.62-14.8) | **13.0** (9.32-17.0) | **14.1** (9.86-18.6) |
| 10-day | **5.29** (4.50-6.20) | **6.00** (5.09-7.03) | **7.16** (6.06-8.41) | **8.12** (6.84-9.57) | **9.44** (7.71-11.4) | **10.5** (8.36-12.7) | **11.5** (8.90-14.2) | **12.5** (9.33-15.8) | **13.9** (9.98-17.9) | **14.9** (10.5-19.5) |
| 20-day | **7.32** (6.26-8.52) | **8.10** (6.92-9.43) | **9.36** (7.98-10.9) | **10.4** (8.84-12.2) | **11.9** (9.75-14.1) | **13.0** (10.5-15.6) | **14.1** (11.0-17.2) | **15.1** (11.4-18.9) | **16.4** (12.0-20.9) | **17.3** (12.3-22.4) |
| 30-day | **9.02** (7.75-10.5) | **9.85** (8.46-11.4) | **11.2** (9.60-13.0) | **12.4** (10.5-14.4) | **13.9** (11.5-16.5) | **15.2** (12.3-18.1) | **16.3** (12.8-19.8) | **17.4** (13.2-21.6) | **18.7** (13.7-23.6) | **19.5** (14.0-25.0) |
| 45-day | **11.1** (9.60-12.9) | **12.1** (10.4-13.9) | **13.6** (11.7-15.7) | **14.8** (12.7-17.2) | **16.6** (13.7-19.5) | **17.9** (14.6-21.3) | **19.2** (15.1-23.1) | **20.3** (15.6-25.1) | **21.6** (16.0-27.2) | **22.5** (16.3-28.6) |
| 60-day | **12.9** (11.2-14.9) | **13.9** (12.0-16.0) | **15.6** (13.4-18.0) | **16.9** (14.5-19.6) | **18.8** (15.7-22.1) | **20.3** (16.6-24.0) | **21.7** (17.1-25.9) | **22.9** (17.6-28.1) | **24.2** (18.1-30.3) | **25.1** (18.3-31.7) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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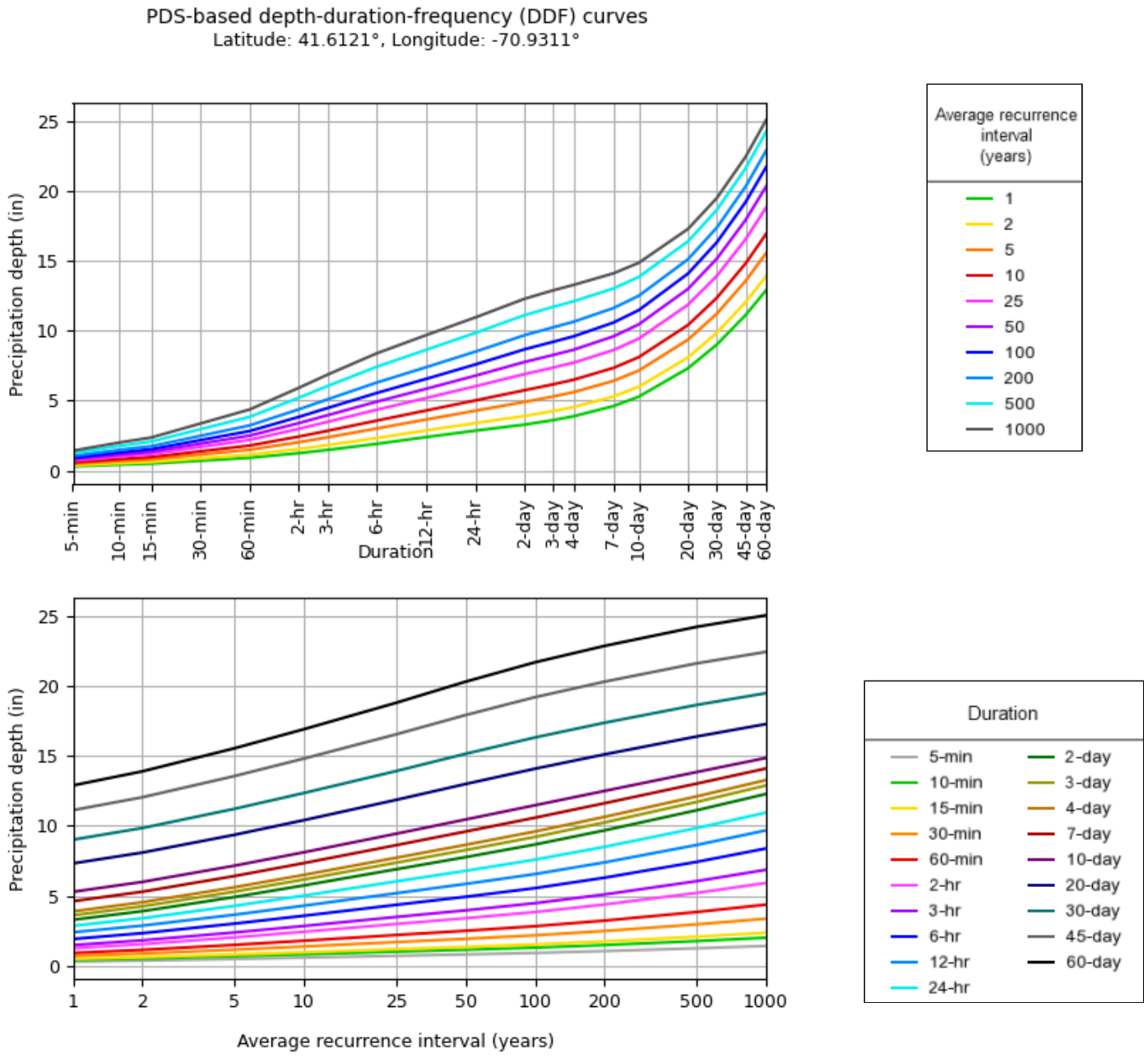
# PF graphical

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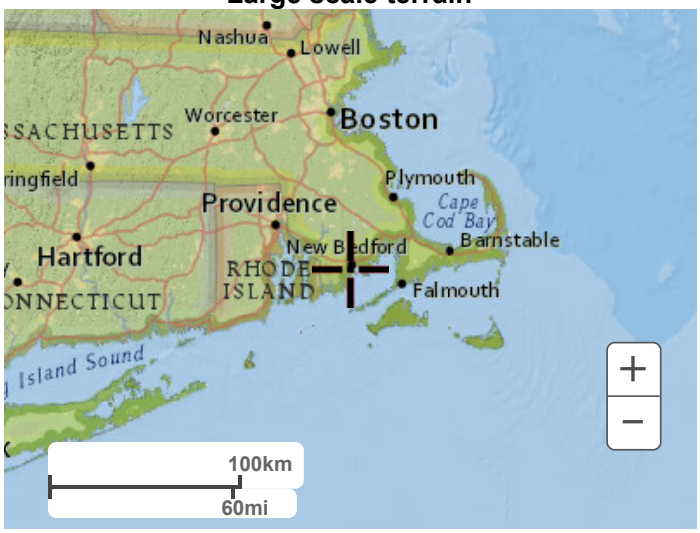
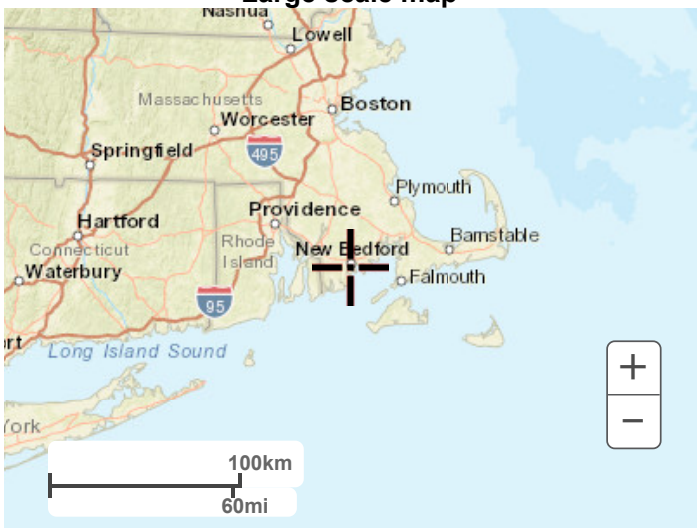
# Maps & aerials

### Small scale terrain

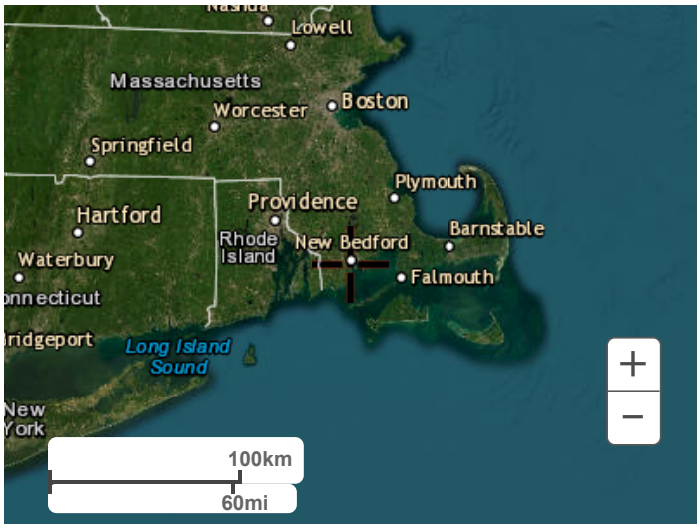

**Large scale terrain**




**Large scale map**




**Large scale aerial**

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