MASTER DEVELOPMENT DRAINAGE PLAN

Colorado Springs Utilities Advanced Technology Campus Colorado Springs, CO

Prepared for:

Colorado Springs Utilities
456 West Fontanero Street
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Contact: Jessica Davis

Prepared by:

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Project #: 196030003

Prepared: November 13, 2020
Resubmitted: April 2, 2021
Resubmitted: May 18, 2021
Resubmitted: June 8, 2021

Kimley»Horn

CERTIFICATION

ENGINEER'S STATEMENT

This report and plan for the drainage design of Lot 1 Colorado Centre Foreign Trade Zone and Business Park Filing No. 1 and Unplatted Book 5222 was prepared by me (or under my direct supervision) and is correct to the best of my knowledge and belief. Said report and plan has been prepared in accordance with the City of Colorado Springs Drainage Criteria Manual and is in conformity with the master plan of the drainage basin. I understand that the City of Colorado Springs does not and will not assume liability for drainage facilities designed by others. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

SIGNATURE (Affix Seal): _____

Colorado P.E. No. 42227 Date

DEVELOPER'S STATEMENT

Colorado Springs Utilities hereby certifies that the drainage facilities for Lot 1 Colorado Centre Foreign Trade Zone and Business Park Filing No. 1 and Unplatted Book 5222 shall be constructed according to the design presented in this report. I understand that the City of Colorado Springs does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that are submitted to the City of Colorado Springs pursuant to section 7.7.906 of the City Code; and cannot, on behalf of Lot 1 Colorado Centre Foreign Trade Zone and Business Park Filing No. 1 and Unplatted Book 5222 guarantee that final drainage design review will absolve Colorado Springs Utilities and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the final plat does not imply approval of my engineer's drainage design.

Colorado Springs Utilities
Name of Developer

Jessica K. Davis 06/10/2021
Authorized Signature Date

Jessica K. Davis
Printed Name

Land Resource and Facility Manager
Title

456 West Fontanero Street, 80907
Address:

CITY OF COLORADO SPRINGS STATEMENT

Filed in accordance with Section 7.7.906 of the Code of the City of Colorado Springs, 2001, as amended.

Jonathan B. Adelberg — 06/16/2021

For City Engineer — Date

Conditions:

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INTRODUCTION

PURPOSE AND SCOPE OF STUDY

The purpose of this report is to outline the Master Drainage Development Plan (the "MDDP") for Colorado Springs Utilities Advanced Technology Center (the "CSU ATC") located on two parcels near 8655 Drennan Road (the "Site"), City of Colorado Springs, Colorado (the "City"). The Site is proceeding through the annexation process into the City of Colorado Springs. The Site will ultimately be replatted into a single parcel. A separate Final Drainage Report (FDR) will be submitted in support of the platting process.

This Drainage Study identifies on-site and offsite drainage patterns, areas tributary to the site and proposes to safely route developed storm water to adequate outfalls at or less than historic flow rates. The Project will be processed through the City of Colorado Springs. Additional outside agency review or processing is not anticipated as part of the Project due to the annexation of the Site into the City of Colorado Springs.

GENERAL PROJECT DESCRIPTION

The proposed improvements consist of the construction of a solar field, three buildings for utility infrastructure (aeroderivative CT's, hydrogen cell, and microgrid platform), a substation, a service center building, and an office building (the "Project") within the Site. The Project will include construction of internal roadways and reconstruction of approximately 3,000 linear feet of the existing public roadway, Foreign Trade Zone Boulevard, which provides access to the Site.

The platted Site is 160.05 acres and is located within Jimmy Camp Creek Basin which is mostly vacant land. The drainage basin total area is 229.88 acres, which includes the platted Site, the portion of Foreign Trade Zone Boulevard being reconstructed, and two upstream offsite areas. The Site is ultimately tributary to Jimmy Camp Creek, approximately 5,000 feet to the east of the Site.

The Project is located in the northeast quarter and a portion of the southeast quarter of Section 4, Township 15 South, Range 65 West of the 6th Principal Meridian, within the City of Colorado Springs, County of El Paso, State of Colorado. **Appendix A** includes a vicinity map for the Project. The Site will be split into four phases:

1. Phase 1 consisting of the construction of the Horizon substation, proposed private full spectrum detention pond, and northern portion of Foreign Trade Boulevard;
2. Phase 2 consisting of the construction of the Advanced Technology Campus and Innovation and Collaboration Park and the southern portion of Foreign Trade Boulevard;
3. Phase 3 consisting of the construction of the Solar field, Hydrogen Cell, Aeroderivative CT's, and Microgrid Platform;
4. Phase 4 consisting of three smaller labs / office buildings; and Phase 5 consisting of the construction of the service center.

This site is not located within a streamside zone.

The Site is currently undeveloped and consists of natural vegetation. The following provides plat and use information for the adjacent properties:

- South of the Site (vacant land): Reception #200900268
- North of the Site (Drennan Road and north of Drennan Road is vacant land): Tract of Land,

reference El Paso County Assessor
- West of the Site (vacant land): Lot 7 of Colorado Springs Airport Filing No. 10
- East of the Site (vacant land): Tract of Land, reference El Paso County Assessor

The Site consists of two parcels (Lot 1 Colorado Centre Foreign Trade Zone and Business Park Filing No. 1 and Unplatted Book 5222 – Page 374) and is planned to be replatted into a single parcel per the Advanced Technology Campus plat consisting of 160.05 acres.

PROJECT CHARACTERISTICS

The Project Site is 160.05 acres and involves the construction of a solar field, three buildings of utility infrastructure (aeroderivative CT's, hydrogen cell, and microgrid platform), a substation, a service center building, and an office building. Additionally, offsite improvements include reconstructing the portion of Foreign Trade Boulevard adjacent to the Site. The existing pavement width of the road will be maintained.

The proposed buildings, pavements, and other impervious surfaces comprise 24.6 percent (2,463,712 square feet) of the overall Project Site. Landscape and open space areas comprise 75.4 percent (7,549,679 square feet) of the overall Project Site.

The proposed Project will route stormwater for the entire development, offsite roadway improvements, and offsite upstream sub-basins to a proposed private full spectrum detention pond (EDB) located in the center and east portion of the Site. Portions of the proposed private EDB will be maintained by CSU.

The proposed private EDB is sized to detain flow to pre-development flow rate, as determined utilizing HEC-HMS version 4.3 software. The southern portion of Foreign Trade Zone Boulevard cannot be routed to the proposed private EDB due to existing grade constraints. Therefore, the proposed private EDB will be sized to overdetain for these flows. The proposed private EDB will be size to treat the water quality control volume (WQCV) from only those sub-basins directly tributary to the proposed private EDB. The WQCV from the southern portion of Foreign Trade Zone Boulevard will be treated in a separate permanent water quality facility, to be designed in a future phase. Flows from the proposed private EDB will outfall from a proposed outlet structure to the existing box culvert beneath Foreign Trade Zone Boulevard and eventually continuing east to Jimmy Camp Creek.

There are no major irrigation facilities within the Site. The Site does not currently provide on-site water quality or detention for the Project area. There is no regional detention pond for the Project Site. The existing land use is vacant land. The proposed land use is public facility.

SOILS CONDITIONS

NRCS soil data is available for this Site and it has been noted that soils onsite are generally USCS Type A and B. The NRSC Soils map is provided in **Appendix B**.

DRAINAGE DESIGN CRITERIA

Regulations

Water quality and detention are required for this Project per the City of Colorado Springs Drainage

Criteria Manual (the "Criteria"), dated May 2014, and revised January 2021. The Project proposes a private EDB to serve all Phases of this development, which will be installed during Phase 1. The southern portion of the improvements to Foreign Trade Zone Boulevard cannot be treated in the proposed private EDB; therefore, a separate permanent water quality facility will be designed for this portion of the roadway in a future phase. A future FDR will be submitted for that phase.

There currently are no publicly available existing drainage reports or Master Drainage Development Plans associated with this Site. The Jimmy Camp Creek Drainage Basin Planning Study, dated March 9, 2015 by Kiowa Engineering DBPS has been approved by the City for this watershed however no DPBS improvements are identified for this Project area.

Design Criteria Reference and Constraints

The Project follows the City of Colorado Springs Storm Drainage Criteria Manual, Volumes 1 and 2 (the "CRITERIA") and the Urban Storm Drainage Criteria Manual Volumes 1, 2, and 3 (the "MANUAL"). Project area drainage is not significantly impacted by such constraints as utilities or existing development. Further detail regarding onsite drainage patterns is provided in the Proposed Drainage Conditions Section.

HYDROLOGIC CRITERIA

The 5-year and 100-year design storm events were used in determining rainfall and runoff for the proposed drainage system per section 6 of the CRITERIA. Table 6-2 of the CRITERIA is the source for rainfall data for the 5-year and 100-year design storm events. Design runoff was calculated using the Rational Method for developed conditions as established in the CRITERIA and MANUAL. Runoff coefficients for the proposed development were determined using Table 6-6 of the CRITERIA by calculating weighted impervious values for each specific site basin.

The site was also analyzed for the 5-yr and 100-yr using the NRCS curve number method for existing conditions and proposed conditions. The runoff curve numbers for the existing and proposed drainage basins were determined from Table 6-9 and Table 6-10 per the CRITERIA. The rainfall was determine using Table 6-2 and Table 6-3 per the CRITERIA to create a site specific 2-Hour Design Storm Distribution. The time of concentration was determined using the velocity method per Chapter 15 of the NRCS Part 630 Hydrology National Engineering Handbook. Results of the hydrologic calculations are summarized in **Appendix C.** HEC-HMS version 4.3 software was utilized for the NRCS curve number method.

HYDRAULIC CRITERIA

The proposed drainage facilities are designed in accordance with the CRITERIA and MANUAL. Floodplain identification was determined using FIRM panels by FEMA (see **Appendix B**) and information provided in the CRITERIA. Hydraulic calculations will be computed in the Final Drainage Report required during the Development Plan process for each proposed phase respectively using StormCAD implementing the standard step method and Mile High Flood Control District spreadsheets.

VARIANCES FROM CRITERIA

There are no proposed variances from the Criteria.

EXISTING DRAINAGE CONDITIONS

EXISTING DRAINAGE BASIN

The Site is located in the Jimmy Camp Creek watershed and generally slopes from west to east at approximately 2.0-7.0%. Currently, the site which consists of natural vegetation. The existing runoff from the Site is captured by two culverts beneath Foreign Trade Zone Boulevard. The runoff then continues east and eventually outfalls to Jimmy Camp Creek.

The portion of Foreign Trade Zone Boulevard adjacent to the Site was previously constructed with sub-base, one layer of asphalt, and concrete curb and gutter. The final asphalt layers were never completed. This portion of the roadway is barricade from use and the existing pavement is unusable. The existing pavement was constructed to the full proposed width.

There are no known major irrigation facilities within 100 feet of the property. The Site has been divided into five existing sub-basins, as described below and shown in the existing conditions map in **Appendix D**.

EXISTING RATIONAL SUB-BASIN DESCRIPTIONS

Sub-Basin E1

Sub-basin E1 is 86.49 acres and consists of the north portion of the Site. The runoff from this sub-basin surface flows to the east to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point E1). The 5-year and 100-year storm event runoffs are 17.81 cfs and 130.77 cfs, respectively. The runoff within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin E2

Sub-basin E2 is 58.79 acres and consists of the south portion of the Site. The runoff within this sub-basin surface flows east to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point E2). The 5-year and 100-year storm event runoffs are 12.62 cfs and 92.70 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin E3

Sub-basin E3 is 14.54 acres and consists of a small portion in the southeast corner of the Site. The runoff within this sub-basin surface flows east to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point E3). The 5-year and 100-year storm event runoffs are 4.03 cfs and 29.57 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin R1

Sub-basin R1 is 3.22 acres and consists of a north portion of Foreign trade Zone Blvd. R1 is adjacent to the east side of the proposed Site. The runoff within this sub-basin surface flows south west to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point R1). The 5-year and 100-year storm event runoffs are 10.78 cfs and 19.31 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin R2

Sub-basin R2 is 3.98 acres and consists of a south portion of Foreign Trade Zone Blvd. R2 is adjacent to the southeast corner of the proposed Site. The runoff within this sub-basin surface flows northwest to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point R2). The 5-year and 100-year storm event runoffs are 14.81 cfs and 26.53 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

OFFSITE FLOWS

Offsite flows consist of a portion of land west and south of the Site. These areas were divided into two sub-basins OS1 and OS2 and sheet flow onto the Site. Adjacent areas north of the Site flow to Drennan Road and are contained within Drennan Road by existing curb. Adjacent areas to the East flow to Jimmy Camp Creek.

Sub-Basin OS1

Sub-basin OS1 is 25.79 acres and consists of the northwest portion of the offsite flows which sheet flow east onto the Site. The 5-year and 100-year storm event runoffs are 7.48 cfs and 54.91 cfs, respectively. The runoff within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin OS2

Sub-basin OS2 is 37.03 acres and consists of the southwest and south portion of the offsite flows which sheet flow east and north onto the Site. The 5-year and 100-year storm event runoffs are 10.75 cfs and 78.94 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

EXISTING HEC-HMS SUB- BASIN DESCRIPTIONS

Sub-Basin E10

Sub-basin E10 is 115.5 acres and consists of the north portion of the Site. It is made up of rational basins OS1, E1, and R1. The runoff from this sub-basin surface flows to the east to an existing culvert within Foreign Trade Zone Boulevard (Design Point E20). The 5-year and 100-year storm event runoffs are 16 cfs and 58 cfs, respectively. The runoff within this sub-basin is ultimately discharged into Jimmy Camp Creek.

Sub-Basin E20

Sub-basin E20 is 95.9 acres and consists of the south portion of the Site. It is made up of rational basins OS2 and E2. The runoff from this sub-basin surface flows to the east to an existing culvert within Foreign Trade Zone Boulevard (Design Point E20). The 5-year and 100-year storm event runoffs are 12 cfs and 55 cfs, respectively. The runoff within this sub-basin is ultimately discharged into Jimmy Camp Creek.

Sub-Basin E30

Sub-basin E30 is 18.5 acres and consists of a small portion on the southeast corner of the Site. It is made up of rational basins E3 and R2. The runoff from this sub-basin surface flows to the east to an existing culvert within Foreign Trade Zone Boulevard (Design Point E30). The 5-year and 100-year storm event runoffs are 17 cfs and 37 cfs, respectively. The runoff within this sub-basin is ultimately discharged into Jimmy Camp Creek. proposed drainage conditions

PROPOSED DRAINAGE CONDITIONS

PROPSOED RATIONAL SUB- BASIN DESCRIPTIONS

The proposed Site has been divided into eight sub-basins, Sub-Basin P1-P4, Sub-Basins R1-R2, and Sub-Basins OS1-OS2. Sub-Basins OS1 and OS2 are described in the Offsite Flows section. In the proposed condition, sub-basins OS1 and OS2 are assumed to have an imperviousness of 72%, based on the current zoning of industrial per the CRITERIA. A proposed conditions map is provided in Appendix D.

Sub-Basin P1

Sub-basin P1 is 37.38 acres and consists of the Phase 1 development. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB at Design Point P1. The 5-year and 100-year storm event runoffs are 31.24 cfs and 103.52 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek. Additional details and final design calculations will be included in a final drainage report to be submitted with the Development Plan for each phase.

Sub-Basin P2

Sub-basin P2 is 33.94 acres and consists of the Phase 2 development with a small portion of Phase 4 developments. The runoff within this sub-basin will be collected via a storm sewer system and routed to the proposed private EDB at Design Point P1. The 5-year and 100-year storm event runoffs are 64.90 cfs and 141.43 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek. Additional details and final design calculations will be included in a final drainage report to be submitted with the Development Plan for each phase.

Sub-Basin P3

Sub-basin P3 is 79.88 acres and consists of the Phase 3 development with a small portion of Phase 4 developments. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB at Design Point P1. The 5-year and 100-year storm event runoffs are 73.16 cfs and 219.24 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek. Additional details and final design calculations will be included in a final drainage report to be submitted with the Development Plan for each phase.

Sub-Basin P4

Sub-basin P4 is 8.63 acres and consists of the Phase 5 development. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB at Design Point P1. The 5-year and 100-year storm event runoffs are 10.53 cfs and 27.71 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek. Additional details and final design calculations will be included in a final drainage report to be submitted with the Development Plan for each phase.

Sub-Basin R1

Sub-basin R1 is 3.22 acres and consists of a north portion of Foreign trade Zone Blvd. adjacent to the east side of the proposed Site. The runoff within this sub-basin will be collected via a

storm sewer system to the proposed private EDB at Design Point P1. The 5-year and 100-year storm event runoffs are 10.78 cfs and 19.31 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

Sub-Basin R2

Sub-basin R2 is 3.98 acres and consists of a south portion of Foreign Trade Zone Blvd. adjacent to the southeast corner of the proposed Site. The runoff within this sub-basin surface flows northwest to an existing culvert beneath Foreign Trade Zone Boulevard (Design Point R2). This sub-basin is included in detention sizing of the proposed private EDB. Water quality treatment of runoff from this basin will be provided by a separate permanent water quality facility to be designed with a future phase of this project. The Final Drainage Report that analyzes this portion of the Site will include design details of the future water quality facility for this basin. The 5-year and 100-year storm event runoffs are 14.54 cfs and 26.53 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek.

PROPOSED HEC-HMS SUB-BASIN DESCRIPTIONS

Sub-Basin P10

Sub-basin P10 is 50 acres and consists of the Phase 1 and Phase 5 development. This basin is made up of rational basins P1, P4, and R2. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB (Pond A), expect for flows from R2, as described above. The 5-year and 100-year storm event runoffs are 68 cfs and 136 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek from outfall point OF1.

Sub-Basin P20

Sub-basin P20 is 37.2 acres and consists of the Phase 2 development. This basin is made up of rational basins P2 and R1. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB (Pond A). The 5-year and 100-year storm event runoffs are 68 cfs and 136 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek from outfall point OF1.

Sub-Basin P30

Sub-basin P30 is 79.9 acres and consists of the Phase 3 development with a small portion of Phase 4 developments. This basin is made up of rational basins P3. The runoff within this sub-basin will be collected via a storm sewer system to the proposed private EDB (Pond A). The 5-year and 100-year storm event runoffs are 94 cfs and 204 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek from outfall point OF1.

Sub-Basin P40

Sub-basin P40 is 25.8 acres and consists of the northwest portion of the offsite flows which sheet flow east onto the Site. This basin is currently zoned as industrial with an impervious value of 72% per the CRITERIA. The runoff within this sub-basin will be collected via a future storm sewer system to the proposed private EDB (Pond A). This land use and percent impervious value was used for the proposed conditions analysis for this basin. The 5-year and 100-year storm event runoffs are 66 cfs and 117 cfs, respectively. The runoff within this sub-basin ultimately discharges into Jimmy Camp Creek from outfall point OF1.

Sub-Basin P50

Sub-basin P50 is 37.1 acres and consists of the southwest and south portion of the offsite flows which sheet flow east and north onto the Site. This basin is currently zoned as industrial with an impervious value of 72% per the CRITERIA. The runoff within this sub-basin will be collected via a future storm sewer system to the proposed private EDB (Pond A). This land use and percent impervious value was used for the proposed conditions analysis for this basin. The 5-year and 100-year storm event runoffs are 82 cfs and 146 cfs, respectively. The runoff developed within this sub-basin ultimately discharges into Jimmy Camp Creek from outfall point OF1.

MAJOR DRAINAGEWAYS

There are no major drainageways on site or adjacent to the site.

HYDRAULIC ANALYSIS METHODOLOGY

The proposed drainage facilities are designed in accordance with the CRITERIA and MANUAL. Floodplain identification was determined using FIRM panels by FEMA and information provided in the CRITERIA. StormCAD calculations implementing the standard step method are provided in **Appendix E** for the pond outlet pipe. Culvert capacity calculations for the existing box culvert beneath Foreign Trade Zone Boulevard are provided in **Appendix E.** Additional hydraulic calculations will be provided with each FDR associated with each phase of development.

Four-Step Process

The four-step process per the MANUAL provides guidance and requirements for the selection of siting of structural Best Management Practices (BMPs) for new development and significant redevelopment.

Step 1: Employ Runoff Reduction Practices
Landscaping and open space areas are implemented throughout the Project Site and make up a large portion of the Site. Proposed landscaping and open space areas will help slow runoff and encourage infiltration. An IRF spreadsheet will be included with each FDR.

Step 2: Implement BMPs That Provide a Water Quality Capture Volume with Slow Release
The water quality capture volume will be provided and slowly released within the proposed private EDB for the majority of the Site. A future permanent water quality facility will be designed to treat the WQCV for runoff from the southern portion of Foreign Trade Boulevard, that cannot be routed to the proposed private EDB. WQCV calculations for both permanent water quality treatment facilities have been completed. Additionally, the MHFD-Detention spreadsheet is included for the sizing of the proposed private EDB. Refer to **Appendix C** for these calculations. Additional details for both permanent water quality facilities will be provided in future FDRs. An IRF spreadsheet will be included with each FDR.

Step 3: Stabilize Drainageways
The Project Site is located more than 500’ away from any major drainageways and there are no open channels located on or adjacent to the Site. In addition, all flows will be released from the proposed private EDB at historical rates into the existing culvert. Therefore, stabilization of drainageways is not required. The Project outfall is to the existing culverts beneath Foreign Trade Zone Boulevard and ultimately to Jimmy Camp Creek. There are no

existing roadside ditches along Foreign Trade Zone Boulevard. Existing runoff from the Site sheet flows to low points at the upstream end of the two existing culverts or sheet flows directly into existing Foreign Trade Zone Boulevard.

Step 4: Implement Site Specific and Other Source Control BMPs
The Site does not require "Covering of Storage/Handling Areas" or "Spill Containment and Control" (specialized BMPs) in the final constructed condition. There is no proposed material storage or other site operations that would introduce contaminants to the City's MS4 that would require site specific control or source control BMP for the proposed project.

The existing channel downstream of the Site is Jimmy Camp Creek and is located approximately 5,000 feet from the Site. The Site is located within the Jimmy Camp Creek watershed and was accounted for in the Jimmy Camp Creek Drainage Basin Planning Study, dated March 9, 2015 by Kiowa Engineering.

All flows leaving the Site will be released at the historic rates and will cause no impact to downstream facilities and additional offsite improvements are not required by this Project. Channel improvements of Jimmy Camp Creek will be the responsibility of the City and/or future development planning and submittals.

Water Quality and Detention

Detention
A private full spectrum detention pond (EDB) is proposed to provide detention for the entire Site and offsite sub-basins (229.88 acres) and is designed in accordance with DCM Volume 2. An assumed imperviousness of 45% was used in the Mile High Flood District detention spreadsheet to determine the 100-year detention volume for the Site. This imperviousness was assumed to ensure adequate pond volume for future development of the Project Site. The Colorado Springs Utilities Advanced Technology Campus (the "CSU ATC") Master Plan will include an ATC laboratory building, the new Horizon Substation, a potential future service center building, a solar array, a microgrid platform, a potential hydrogen cell facility, an aeroderivative facility, potentially three smaller lab/office buildings, and a potential Innovation and Collaboration Park for Utility and City employee use.

The existing conditions HEC-HMS results were used to determine the maximum allowable 100-year release rate from the proposed private EDB. The 100-year pre-development release rate is 112 CFS, which is the maximum release rate from the proposed private EDB. The proposed EDB was entered into the HEC-HMS model and verified that the maximum allowable release rate is not exceeded.

The required storage volume with an assumed imperviousness of 45% is 25.153 acre feet. The provided storage volume is 25.597 acre feet. The calculations for the pond volume are provided in the **Appendix C**.

The project area is located within proximity to the Colorado Springs Regional Airport (COS). The U.S. Department of Transportation Federal Aviation Administration (FAA) Advisory Circular (AC) No. 150/5200-33C recommends the use of this AC guidance for development and activities near airports. Sections 1-2 through 1-4 of the AC define the recommended perimeter from airport boundaries to alleviate hazardous wildlife attractants. The ATC project, and proposed private EDB, is located within roughly 3,000 LF from the COS airport perimeter, which falls within Perimeters A and B of this guidance.

For detention facilities within the FAA boundary, the recommendation is to modify stormwater ponds for a maximum drain time of 48 hours. This is however in conflict with the City of Colorado Springs Drainage Criteria Manual and the obligations of their MS4 permit. In this case, the CRITERIA supersede the FAA guidance. The stormwater facilities included in this report are designed per the CRITERIA.

Water Quality

Water quality treatment is proposed to be provided in two permanent facilities. The majority of the Site will be treated in the proposed private EDB. The southern portion of the Foreign Trade Boulevard improvements will be treated in a separate water quality only facility, to be designed in a future phase. Separate WQCV calculations are provided for each area.

The EDB detention structure and water quality outlet structure will be designed per the specifications in section 13.5.10 of the CRITERIA. The orifice plate of the structure will be designed based on section 13.4.2.2 of the CRITERIA. The orifice plate will allow the Water Quality Capture Volume to be drained from the structure in 40 hours and the EURV to be drained within 72 hours. A 246-foot-long emergency overflow spillway will allow the bypass of a storm event in excess of the 100-year event. Additional details for both facilities will be provided in future FDRs.

EROSION CONTROL PLAN

Erosion Control Plans will be submitted separately as a standalone construction document.

FLOODPLAIN STATEMENT

The Flood Insurance Rate Maps (FIRM) 08041C0768G effective date December 7, 2018, by FEMA, indicates that the Site is located in Zone X (outside of the 500-year flood plain) and no portion of this Site is located within the 100-year floodplain. This panel is included in **Appendix B**.

FEES DEVELOPMENT

DRAINAGE AND BRIDGE FEES

The Project Site is located in the Jimmy Camp Creek Basin. The Jimmy Camp Creek requires fees which will be paid prior to final plat recordation of the entire 160.05 acre Site. The total 2021 drainage, bridge, and pond fee amount for this Site is $1,821,689.10, as summarized below.

Fee Type	Fee/Acre	Total
Drainage	$8,584	$1,373,869.20
Bridge	--	--
Pond Land	--	--
Pond Facility	$2,798	$447,819.90
Surcharge	--	--
	Total	**$1,821,689.10**

MAINTENANCE AND OPERATIONS

An Inspection and Maintenance Agreement will be submitted to the City of Colorado Springs for the proposed private EDB. The proposed private EDB will be maintained by Colorado Springs Utilities.

GROUNDWATER CONSIDERATIONS

Groundwater is not anticipated to be encountered. A perimeter drain system will not be provided for this Project.

SUMMARY

COMPLIANCE WITH STANDARDS

The drainage design presented within this report for CSU ATC conforms to the City of Colorado Springs Storm Drainage Criteria Manual, Volumes 1 and 2 and the Mile High Flood District Manual. Additionally, the Site runoff and storm drain facilities will not adversely affect the downstream and surrounding developments.

This report and findings are in general conformance with all previously approved reports and/or studies which include this Site. The proposed Project does not adversely impact the peak flows downstream within Jimmy Camp Creek.

REFERENCES

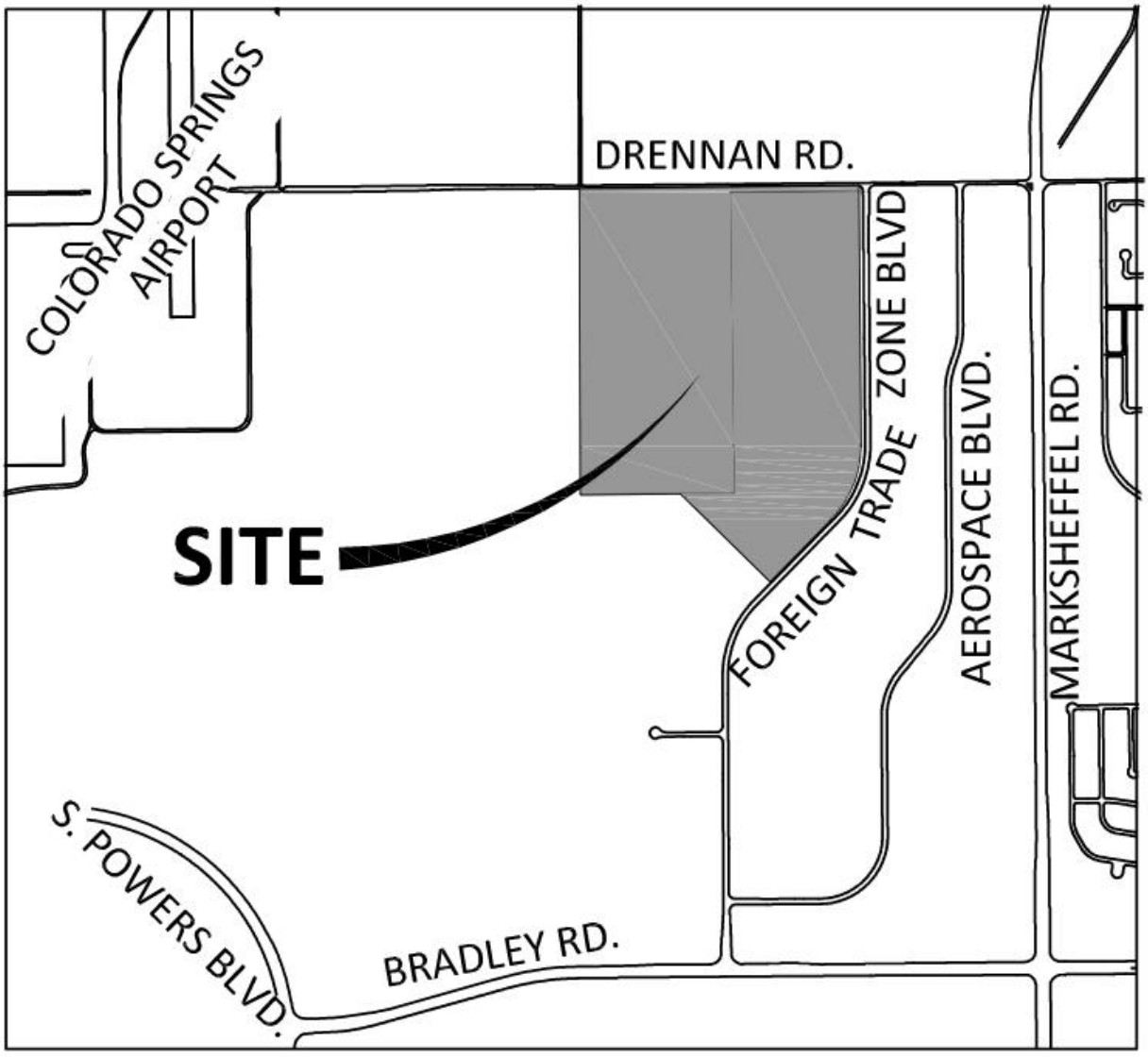
1. City of Colorado Springs Drainage Criteria Manual, May 2014.

2. Mile High Flood District Drainage Criteria Manual Vol. 1, prepared by Wright-McLaughlin Engineers, June 2001, with latest revisions.

3. Flood Insurance Rate Map, El Paso County, Colorado and Incorporated Areas, Map Number 08041C0768G, Effective Date December 7, 2018, prepared by the Federal Emergency Management Agency (FEMA).

4. U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular AC No: 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, 8/28/2007

APPENDIX A – VICINITY MAP



VICINITY MAP - N.T.S.

APPENDIX B – SOILS MAP AND FEMA FIRM PANEL

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

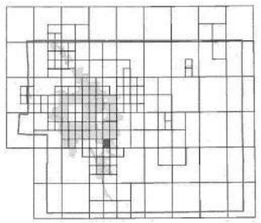
Contact **FEMA Map Service Center** (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

El Paso County Vertical Datum Offset Table

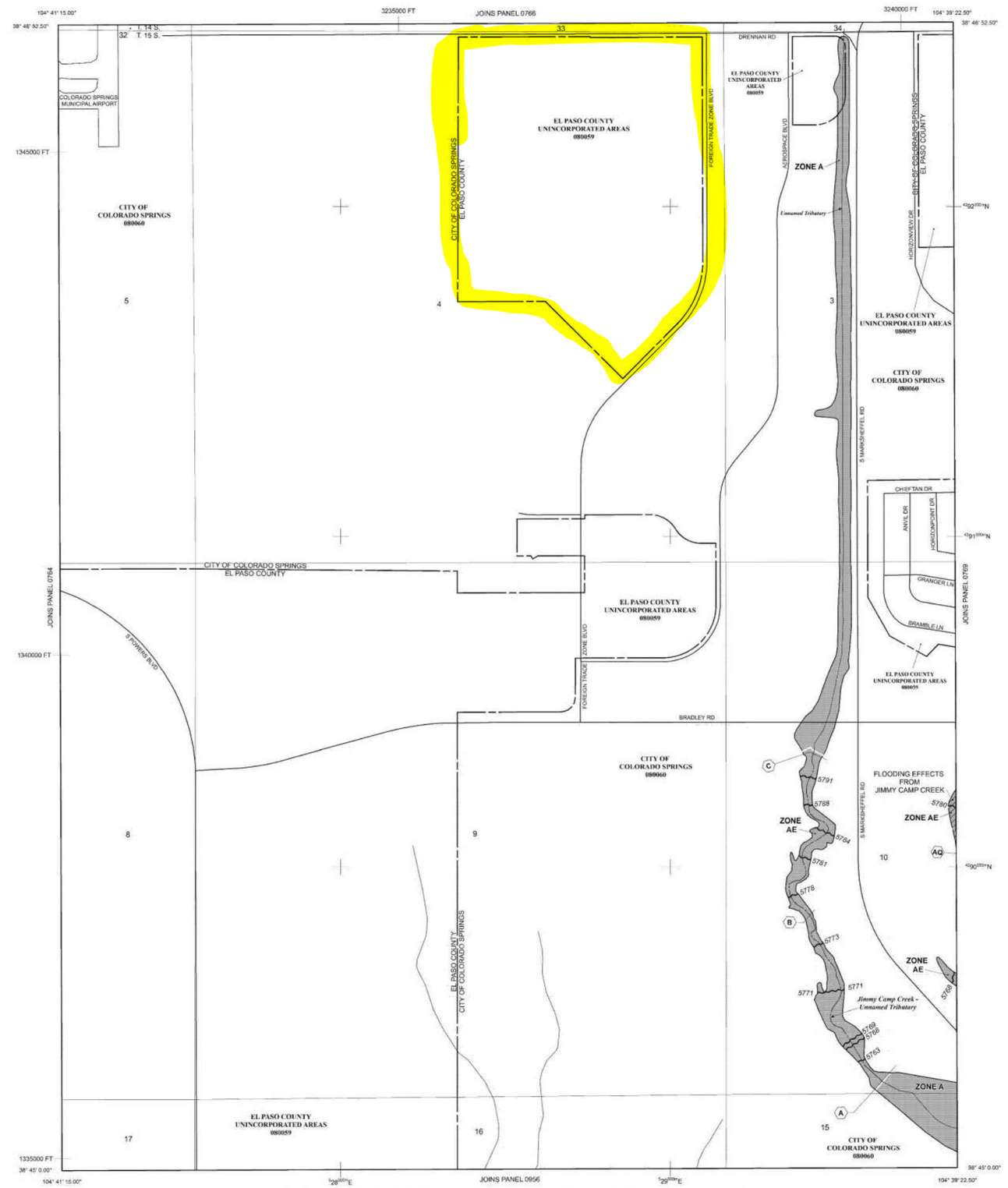
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 14 SOUTH, RANGE 65 WEST, AND TOWNSHIP 15 SOUTH, RANGE 65 WEST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30.00" / 32° 22' 30.00" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 6000000 FT — 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0768G

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 768 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0768	G
EL PASO COUNTY	080059	0768	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 08041C0768G

MAP REVISED DECEMBER 7, 2018

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM


104° 40' 28" W
104° 39' 50" W
38° 46' 55" N
38° 46' 16" N
528300
528400
528500
528600
528700
528800
528900
529000
529100
4292600
4292500
4292400
4292300
4292200
4292100
4292000
4291900
4291800
4291700
4291600
4291500
Drennan Rd
97
56
96
2
3
104
75
Soil Map may not be valid at this scale.
Map Scale: 1:5,830 if printed on A portrait (8.5" x 11") sheet.
Meters
0 50 100 200 300
N
Feet
0 250 500 1000 1500
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 1:24,000.

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: El Paso County Area, Colorado
Survey Area Data: Version 18, Jun 5, 2020

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

Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ascalon sandy loam, 1 to 3 percent slopes	B	52.0	33.9%
3	Ascalon sandy loam, 3 to 9 percent slopes	B	13.4	8.8%
56	Nelson-Tassel fine sandy loams, 3 to 18 percent slopes	B	12.1	7.9%
75	Razor-Midway complex	D	15.1	9.8%
96	Truckton sandy loam, 0 to 3 percent slopes	A	25.1	16.4%
97	Truckton sandy loam, 3 to 9 percent slopes	A	9.5	6.2%
104	Vona sandy loam, warm, 0 to 3 percent slopes	A	26.1	17.0%
Totals for Area of Interest			**153.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C – HYDROLOGIC CALCULATIONS

IDF Equations:

I_{100} = -2.52ln(D) + 12.735
I_{50} = -2.25ln(D) + 11.375
I_{25} -2.00ln(D) + 10.111
I_{10} -1.75ln(D) + 8.847
I_{5} -1.50ln(D) + 7.583
I_{2} -1.19ln(D) + 6.035

Where:
I = Rainfall Intensity (in/hr)
D= Duration (minutes)

	2-yr	5-yr	10-yr	100-yr
P_1 =	1.19	1.5	1.75	2.52

Time Intensity Frequency Tabulation

Time	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
5	4.12	5.17	6.03	6.89	7.75	8.68
10	3.29	4.13	4.82	5.51	6.19	6.93
15	2.81	3.52	4.11	4.69	5.28	5.91
30	1.99	2.48	2.89	3.31	3.72	4.16
60	1.16	1.44	1.68	1.92	2.16	2.42
120	0.34	0.40	0.47	0.54	0.60	0.67

*The Design Point Rainfall Values and Time Intensity Frequency Tabulation are found in Table 6-2 and Figure 6-5 respectively, of the Colorado Springs Drainage Criteria Manual, Volume 1

Weighted Imperviousness Calculations

SUB-BASIN	AREA (SF)	AREA (Acres)	ROOF AREA	ROOF IMPERVIOUSNESS	ROOF C2	ROOF C5	ROOF C10	ROOF C100	LANDSCAPE AREA	LANDSCAPE IMPERVIOUSNESS	LANDSCAPE C2	LANDSCAPE C5	LANDSCAPE C10	LANDSCAPE C100	PAVEMENT AREA	PAVEMENT IMPERVIOUSNESS	PAVEMENT C2	PAVEMENT C5	PAVEMENT C10	PAVEMENT C100	WEIGHTED IMPERVIOUSNESS	WEIGHTED COEFFICIENTS C2	WEIGHTED COEFFICIENTS C5	WEIGHTED COEFFICIENTS C10	WEIGHTED COEFFICIENTS C100
E1	3,767,569	86.49	0	90%	0.71	0.73	0.75	0.81	3,767,569	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	2.0%	0.02	0.08	0.15	0.35
E2	2,560,812	58.79	0	90%	0.71	0.73	0.75	0.81	2,560,812	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	2.0%	0.02	0.08	0.15	0.35
E3	633,316	14.54	0	90%	0.71	0.73	0.75	0.81	633,316	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	2.0%	0.02	0.08	0.15	0.35
OS1	1,123,247	25.79	0	90%	0.71	0.73	0.75	0.81	1,123,247	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	2.0%	0.02	0.08	0.15	0.35
OS2	1,614,739	37.07	0	90%	0.71	0.73	0.75	0.81	1,614,739	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	2.0%	0.02	0.08	0.15	0.35
R1	140,212	3.22	0	90%	0.71	0.73	0.75	0.81	0	2%	0.02	0.08	0.15	0.35	140,212	100%	0.89	0.90	0.92	0.96	100.0%	0.89	0.90	0.92	0.96
R2	173,500	3.98	0	90%	0.71	0.73	0.75	0.81	0	2%	0.02	0.08	0.15	0.35	173,500	100%	0.89	0.90	0.92	0.96	100.0%	0.89	0.90	0.92	0.96
TOTAL	10,013,395	229.88	0	90%	0.71	0.73	0.75	0.81	9,699,683	2%	0.02	0.08	0.15	0.35	313,712	100%	0.89	0.90	0.92	0.96	5.1%	0.05	0.11	0.17	0.37

CSU ATC - Drainage Report
Proposed Runoff Calculations
Time of Concentration

Watercourse Coefficient

Forest & Meadow	2.50	Short Grass Pasture & Lawns	7.00			Grassed Waterway	15.00
Fallow or Cultivation	5.00	Nearly Bare Ground	10.00			Paved Area & Shallow Gutter	20.00

	SUB-BASIN DATA				INITIAL / OVERLAND TIME			TRAVEL TIME T(t)					T(c) CHECK (URBANIZED BASINS)			FINAL T(c)
DESIGN POINT	DRAIN BASIN	AREA sq. ft.	AREA ac.	C(5)	Length ft.	Slope %	T(i) min	Length ft.	Slope %	Coeff.	Velocity fps	T(t) min.	COMP. T(c)	TOTAL LENGTH	L/180+10	min.
E1	E1	3,767,569	86.49	0.08	100	4.5%	11.3	3169	2.4%	10.00	1.5	34.2	45.5	3269	28.2	28.2
E2	E2	2,560,812	58.79	0.08	100	2.0%	14.8	2809	2.7%	10.00	1.7	28.3	43.1	2909	26.2	26.2
E3	E3	633,316	14.54	0.08	100	4.0%	11.8	910	5.4%	10.00	2.3	6.5	18.3	1010	15.6	15.6
OS1	OS1	1,123,247	25.79	0.08	100	4.0%	11.8	622	3.5%	10.00	1.9	5.5	17.3	722	14.0	14.0
OS2	OS2	1,614,739	37.07	0.08	100	4.0%	11.8	626	6.7%	22.00	5.7	1.8	13.6	726	14.0	13.6
R1	R1	140,212	3.22	0.90	100	2.0%	2.9	1443	1.4%	20.00	2.4	10.2	13.1	1543	18.6	13.1
R2	R2	173,500	3.98	0.90	100	0.5%	4.6	1160	3.2%	20.00	3.6	5.4	10.0	1260	17.0	10.0

CSU ATC - Drainage Report
Proposed Runoff Calculations
(Rational Method Procedure)

Design Storm 5 Year

BASIN INFORMATION				DIRECT RUNOFF				CUMMULATIVE RUNOFF				NOTES
DESIGN POINT	DRAIN BASIN	AREA ac.	RUNOFF COEFF	T(c) min	C x A	I in/hr	Q cfs	T(c) min	C x A	I in/hr	Q cfs	
E1	E1	86.49	0.08	28.2	6.92	2.57	17.81					
E2	E2	58.79	0.08	26.2	4.70	2.68	12.62					
E3	E3	14.54	0.08	15.6	1.16	3.46	4.03					
OS1	OS1	25.79	0.08	14.0	2.06	3.62	7.48					
OS2	OS2	37.07	0.08	13.6	2.97	3.66	10.87					
R1	R1	3.22	0.90	13.1	2.90	3.72	10.78					
R2	R2	3.98	0.90	10.0	3.58	4.13	14.81					

CSU ATC - Drainage Report
Proposed Runoff Calculations
(Rational Method Procedure)

Design Storm 100 Year

BASIN INFORMATION				DIRECT RUNOFF				CUMMULATIVE RUNOFF				NOTES
DESIGN POINT	DRAIN BASIN	AREA ac.	RUNOFF COEFF	T(c) min	C x A	I in/hr	Q cfs	T(c) min	C x A	I in/hr	Q cfs	
E1	E1	86.49	0.35	28.2	30.27	4.32	130.77					
E2	E2	58.79	0.35	26.2	20.58	4.51	92.70					
E3	E3	14.54	0.35	15.6	5.09	5.81	29.57					
OS1	OS1	25.79	0.35	14.0	9.03	6.08	54.91					
OS2	OS2	37.07	0.35	13.6	12.97	6.15	79.82					
R1	R1	3.22	0.96	13.1	3.09	6.25	19.31					
R2	R2	3.98	0.96	10.0	3.82	6.94	26.53					

SUMMARY - EXISTING RUNOFF TABLE						
DESIGN POINT	BASIN DESIGNATION	BASIN AREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)	CUMULATIVE 5-YR RUNOFF (CFS)	CUMULATIVE 100-YR RUNOFF (CFS)
E1	E1	86.49	17.81	130.77	17.81	130.77
E2	E2	58.79	12.62	92.70	12.62	92.70
E3	E3	14.54	4.03	29.57	4.03	29.57
OS1	OS1	25.79	7.48	54.91	7.48	54.91
OS2	OS2	37.07	10.87	79.82	10.87	79.82
R1	R1	3.22	10.78	19.31	10.78	19.31
R2	R2	3.98	14.81	26.53	14.81	26.53

IDF Equations:

I_{100} = -2.52ln(D) + 12.735
I_{50} = -2.25ln(D) + 11.375
I_{25} -2.00ln(D) + 10.111
I_{10} -1.75ln(D) + 8.847
I_{5} -1.50ln(D) + 7.583
I_{2} -1.19ln(D) + 6.035

Where:
I = Rainfall Intensity (in/hr)
D= Duration (minutes)

	2-yr	5-yr	10-yr	100-yr
P_1 =	1.19	1.5	1.75	2.52

*The Design Point Rainfall Values and Time Intensity Frequency Tabulation are found in Table 6-2 and Figure 6-5 respectively, of the Colorado Springs Drainage Criteria Manual, Volume 1

Weighted Imperviousness Calculations - Proposed Basins

SUB-BASIN	AREA (SF)	AREA (Acres)	ROOF AREA	ROOF IMPERVIOUSNESS	ROOF C2	ROOF C5	ROOF C10	ROOF C100	LANDSCAPE AREA	LANDSCAPE IMPERVIOUSNESS	LANDSCAPE C2	LANDSCAPE C5	LANDSCAPE C10	LANDSCAPE C100	PAVEMENT AREA	PAVEMENT IMPERVIOUSNESS	PAVEMENT C2	PAVEMENT C5	PAVEMENT C10	PAVEMENT C100	WEIGHTED IMPERVIOUSNESS	WEIGHTED COEFFICIENTS C2	WEIGHTED COEFFICIENTS C5	WEIGHTED COEFFICIENTS C10	WEIGHTED COEFFICIENTS C100
P1	1,628,069	37.38	0	90%	0.71	0.73	0.75	0.81	1,318,069	2%	0.02	0.08	0.15	0.35	310,000	100%	0.89	0.90	0.92	0.96	20.7%	0.19	0.24	0.30	0.47
P2	1,478,300	33.94	60,000	90%	0.71	0.73	0.75	0.81	668,300	2%	0.02	0.08	0.15	0.35	750,000	100%	0.89	0.90	0.92	0.96	55.3%	0.49	0.52	0.57	0.68
P3	3,479,561	79.88	310,000	90%	0.71	0.73	0.75	0.81	2,579,561	2%	0.02	0.08	0.15	0.35	590,000	100%	0.89	0.90	0.92	0.96	26.5%	0.23	0.28	0.33	0.49
P4	375,763	8.63	30,000	90%	0.71	0.73	0.75	0.81	245,763	2%	0.02	0.08	0.15	0.35	100,000	100%	0.89	0.90	0.92	0.96	35.1%	0.31	0.35	0.40	0.55
OS1	1,123,247	25.79	0	90%	0.71	0.73	0.75	0.81	1,123,247	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	72.0%	0.02	0.08	0.15	0.35
OS2	1,614,739	37.07	0	90%	0.71	0.73	0.75	0.81	1,614,739	2%	0.02	0.08	0.15	0.35	0	100%	0.89	0.90	0.92	0.96	72.0%	0.02	0.08	0.15	0.35
R1	140,212	3.22	0	90%	0.71	0.73	0.75	0.81	0	2%	0.02	0.08	0.15	0.35	140,212	100%	0.89	0.90	0.92	0.96	100.0%	0.89	0.90	0.92	0.96
R2	173,500	3.98	0	90%	0.71	0.73	0.75	0.81	0	2%	0.02	0.08	0.15	0.35	173,500	100%	0.89	0.90	0.92	0.96	100.0%	0.89	0.90	0.92	0.96
TOTAL	10,013,391	229.88	400,000	90%	0.71	0.73	0.75	0.81	7,549,679	2%	0.02	0.08	0.15	0.35	2,063,712	100%	0.89	0.90	0.92	0.96	25.7%	0.23	0.27	0.33	0.49

CSU ATC - Drainage Report
Proposed Runoff Calculations
Time of Concentration

Watercourse Coefficient

Forest & Meadow	2.50	Short Grass Pasture & Lawns	7.00	Grassed Waterway 15.00
Fallow or Cultivation	5.00	Nearly Bare Ground	10.00	Paved Area & Shallow Gutter 20.00

	SUB-BASIN DATA				INITIAL / OVERLAND TIME			TRAVEL TIME T(t)					T(c) CHECK (URBANIZED BASINS)			FINAL T(c)
DESIGN POINT	DRAIN BASIN	AREA sq. ft.	AREA ac.	C(5)	Length ft.	Slope %	T(i) min	Length ft.	Slope %	Coeff.	Velocity fps	T(t) min.	COMP. T(c)	TOTAL LENGTH	L/180+10	min.
P1	P1	1,628,069	37.38	0.24	100	4.0%	10.0	954	2.7%	20.00	3.3	4.8	14.8	1054	15.9	14.8
P2	P2	1,478,300	33.94	0.52	100	2.0%	8.4	1038	2.7%	20.00	3.3	5.3	13.7	1138	16.3	13.7
P3	P3	3,479,561	79.88	0.28	100	2.0%	12.0	1222	2.9%	20.00	3.4	5.9	17.9	1322	17.3	17.3
P4	P4	375,763	8.63	0.35	100	2.0%	10.9	971	3.3%	20.00	3.6	4.5	15.4	1071	16.0	15.4
OS1	OS1	1,123,247	25.79	0.08	100	4.0%	11.8	622	3.5%	10.00	1.9	5.5	17.3	722	14.0	14.0
OS2	OS2	1,614,739	37.07	0.08	100	4.0%	11.8	626	6.7%	10.00	2.6	4.0	15.8	726	14.0	14.0
R1	R1	140,212	3.22	0.90	100	2.0%	2.9	1443	1.4%	20.00	2.4	10.2	13.1	1543	18.6	13.1
R2	R2	173,500	3.98	0.90	100	0.5%	4.6	1160	3.2%	20.00	3.6	5.4	10.0	1260	17.0	10.0

CSU ATC - Drainage Report
Proposed Runoff Calculations
(Rational Method Procedure)

Design Storm 5 Year

BASIN INFORMATION				DIRECT RUNOFF				CUMMULATIVE RUNOFF				NOTES
DESIGN POINT	DRAIN BASIN	AREA ac.	RUNOFF COEFF	T(c) min	C x A	I in/hr	Q cfs	T(c) min	C x A	I in/hr	Q cfs	
P1	P1	37.38	0.24	14.8	8.83	3.54	31.24					
P2	P2	33.94	0.52	13.7	17.73	3.66	64.90					
P3	P3	79.88	0.28	17.3	22.12	3.31	73.16					
P4	P4	8.63	0.35	15.4	3.02	3.49	10.53					
OS1	OS1	25.79	0.08	14.0	2.06	3.62	7.48					
OS2	OS2	37.07	0.08	14.0	2.97	3.62	10.75					
R1	R1	3.22	0.90	13.1	2.90	3.72	10.78					
R2	R2	3.98	0.90	10.0	3.58	4.13	14.81					

CSU ATC - Drainage Report
Proposed Runoff Calculations
(Rational Method Procedure)

Design Storm *100 Year*

BASIN INFORMATION				DIRECT RUNOFF				CUMMULATIVE RUNOFF				NOTES
DESIGN POINT	DRAIN BASIN	AREA ac.	RUNOFF COEFF	T(c) min	C x A	I in/hr	Q cfs	T(c) min	C x A	I in/hr	Q cfs	
P1	P1	37.38	0.47	14.8	17.42	5.94	103.52					
P2	P2	33.94	0.68	13.7	23.01	6.15	141.43					
P3	P3	79.88	0.49	17.3	39.49	5.55	219.24					
P4	P4	8.63	0.55	15.4	4.74	5.85	27.71					
OS1	OS1	25.79	0.35	14.0	9.03	6.08	54.91					
OS2	OS2	37.07	0.35	14.0	12.97	6.08	78.94					
R1	R1	3.22	0.96	13.1	3.09	6.25	19.31					
R2	R2	3.98	0.96	10.0	3.82	6.94	26.53					

SUMMARY - PROPOSED RUNOFF TABLE				
DESIGN POINT	BASIN DESIGNATION	BASIN AREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)
P1	P1	37.38	31.24	103.52
P2	P2	33.94	64.90	141.43
P3	P3	79.88	73.16	219.24
P4	P4	8.63	10.53	27.71
OS1	OS1	25.79	7.48	54.91
OS2	OS2	37.07	10.75	78.94
R1	R1	3.22	10.78	19.31
R2	R2	3.98	14.81	26.53

Project: CSU ATC
Subject: Curve Number Calculations
Designed by: MEP Date: 3/11/2021
Checked by: BAH Date: 3/11/2021

Drainage Area ID	Area (mi^2)	Area (ac)	Area (ft^2)	HSG	CN	Percent (%)	Initial Abstration
E10	0.18	115.47	5029781	A/B	51	100%	0.95
E20	0.15	95.87	4175933	A/B/D	54	100%	0.84
E30	0.03	18.52	806805	B/D	59	100%	0.70

Soils data obtained from NRCS Web Soil Survey, version 7 (Aug 2014)

Land cover estimated from aerials and National Land Cover Database (2001)

Project: CSU ATC
Subject: Curve Number Calculations
Designed by: MEP Date: 3/9/2021
Checked by: BAH Date: 3/11/2021

Drainage Area ID	Area (mi^2)	Area (ac)	Area (ft^2)	HSG	CN	Percent (%)	Initial Abstraction
P40	0.04	25.79	1123247	A/B	86	100%	0.16
P50	0.06	37.07	1614739	A/B	86	100%	0.16
P10	0.08	49.98	2177332	A/B/D	85	100%	0.18
P20	0.06	37.16	1618512	A/B	78	100%	0.28
P30	0.125	79.88	3479561	A/B/D	73	100%	0.38

Soils data obtained from NRCS Web Soil Survey, version 7 (Aug 2014)

Land cover estimated from aerials and National Land Cover Database (2001)

Project: CSU ATC
Subject: Percent Impervious Calculations
Designed by: MEP Date: 3/11/2021
Checked by: BAH Date: 3/11/2021

EXISTING HEC-HMS SUMMARY						
Drainage Area ID	Area (ft2)	Open Space	Roof	Streets/Roads	Industrial	Weighted Total % Impervious
% Impervious	--	2	90	100	72	--
E10	5,029,781	4,930,434	0	139,347	0	4.7
E20	4,175,933	4,175,933	0	0	0	2.0
E30	806,805	633,317	0	173,487	0	23.1
					Total % Imp:	5.1

Project: CSU ATC
Subject: Percent Impervious Calculations
Designed by: MEP Date: 3/11/2021
Checked by: BAH Date: 3/11/2021

PROPOSED HEC-HMS SUMMARY						
Drainage	Area (ft2)	Open Space	Roof	Streets/Roads	Industrial	Weighted Total %
% Impervious	--	2	90	100	72	--
P10	2,177,332	1,563,832	60,000	890,212	0	44.8
P20	1,618,512	668,300	30,000	583,500	0	38.5
P30	3,479,561	2,579,561	310,000	590,000	0	26.5
P40	1,123,247	0	0	0	1,123,247	72.0
P50	1,614,739	0	0	0	1,614,739	72.0
					Total % Imp:	44.9

Project 2-hr Design Storm Dsitribution

City of Colorado Springs Table 6-3 2-Hour Design Storm Distribution, < 1 mi^2

Time [minutes]	Fraction of 1-hour Rainfall Depth	5-yr	100-yr
5	0.014	0.021	0.03528
10	0.046	0.069	0.11592
15	0.079	0.1185	0.19908
20	0.120	0.18	0.3024
25	0.179	0.2685	0.45108
30	0.258	0.387	0.65016
35	0.421	0.6315	1.06092
40	0.712	1.068	1.79424
45	0.824	1.236	2.07648
50	0.892	1.338	2.24784
55	0.935	1.4025	2.3562
60	0.972	1.458	2.44944
65	1.004	1.506	2.53008
70	1.018	1.527	2.56536
75	1.030	1.545	2.5956
80	1.041	1.5615	2.62332
85	1.052	1.578	2.65104
90	1.063	1.5945	2.67876
95	1.072	1.608	2.70144
100	1.082	1.623	2.72664
105	1.091	1.6365	2.74932
110	1.100	1.65	2.772
115	1.109	1.6635	2.79468
120	1.119	1.6785	2.81988

Table 6-2. Rainfall Depths for Colorado Springs

Return Period	1-Hour Depth
2	1.19
5	1.5
10	1.75
25	2
50	2.25
100	2.52

For Colorado Springs and much of the Fountain Creek watershed, the 1-hour depths are fairly uniform and are summarized in Table 6-2. Depending on the location of the project, rainfall depths may be calculated using the described method and the NOAA Atlas maps shown in Figures 6-6 through 6-17.

Table 6-2. Rainfall Depths for Colorado Springs

Return Period	1-Hour Depth	6-Hour Depth	24-Hour Depth
2	1.19	1.70	2.10
5	1.50	2.10	2.70
10	1.75	2.40	3.20
25	2.00	2.90	3.60
50	2.25	3.20	4.20
100	2.52	3.50	4.60

Where Z= 6,840 ft/100

These depths can be applied to the design storms or converted to intensities (inches/hour) for the Rational Method as described below. However, as the basin area increases, it is unlikely that the reported point rainfalls will occur uniformly over the entire basin. To account for this characteristic of rain storms an adjustment factor, the Depth Area Reduction Factor (DARF) is applied. This adjustment to rainfall depth and its effect on design storms is also described below. The UDFCD UD-Rain spreadsheet, available on UDFCD's website, also provides tools to calculate point rainfall depths and Intensity-Duration-Frequency curves[2] and should produce similar depth calculation results.

2.2 Design Storms

Design storms are used as input into rainfall/runoff models and provide a representation of the typical temporal distribution of rainfall events when the creation or routing of runoff hydrographs is required. It has long been observed that rainstorms in the Front Range of Colorado tend to occur as either short-duration, high-intensity, localized, convective thunderstorms (cloud bursts) or longer-duration, lower-intensity, broader, frontal (general) storms. The significance of these two types of events is primarily determined by the size of the drainage basin being studied. Thunderstorms can create high rates of runoff within a relatively small area, quickly, but their influence may not be significant very far downstream. Frontal storms may not create high rates of runoff within smaller drainage basins due to their lower intensity, but tend to produce larger flood flows that can be hazardous over a broader area and extend further downstream.

- **Thunderstorms**: Based on the extensive evaluation of rain storms completed in the Carlton study (Carlton 2011), it was determined that typical thunderstorms have a duration of about 2 hours. The study evaluated over 300,000 storm cells using gage-adjusted NEXRAD data, collected over a 14-year period (1994 to 2008). Storms lasting longer than 3 hours were rarely found. Therefore, the results of the Carlton study have been used to define the shorter duration design storms.

  To determine the temporal distribution of thunderstorms, 22 gage-adjusted NEXRAD storm cells were studied in detail. Through a process described in a technical memorandum prepared by the City of Colorado Springs (City of Colorado Springs 2012), the results of this analysis were interpreted and normalized to the 1-hour rainfall depth to create the distribution shown in Table 6-3 with a 5 minute time interval for drainage basins up to 1 square mile in size. This distribution represents the rainfall

depths over the duration of the storm as a fraction of the 1-hour depth and is also shown in Figure 6-19. By applying the 1-hour depths shown in Table 6-2 to the values shown in Table 6-3, a short-duration project design storm can be developed for any return period storm from a 2-year up to 100-year frequency. By applying the appropriate 1-hour depth for other project locations, a project design storm can be created for any location.

Table 6-3. 2-Hour Design Storm Distribution, ≤ 1 mi^2

Time (minutes)	Fraction of 1-Hour Rainfall Depth	Time (minutes)	Fraction of 1-Hour Rainfall Depth
5	0.014	65	1.004
10	0.046	70	1.018
15	0.079	75	1.030
20	0.120	80	1.041
25	0.179	85	1.052
30	0.258	90	1.063
35	0.421	95	1.072
40	0.712	100	1.082
45	0.824	105	1.091
50	0.892	110	1.100
55	0.935	115	1.109
60	0.972	120	1.119

- **Frontal Storms**: The characteristics of longer-duration "frontal storms" (general) is less well understood than the shorter duration thunderstorms and should be studied further. However, some events of this nature have been observed, such as the April 1999 storm which produced flooding on Fountain Creek, showing that these types of events do occur and tend to produce hazardous flood flows. In addition, modeling of the Jimmy Camp Creek drainage basin using the 24-hour, Type II distribution shows that it produces results reasonably comparably to recorded flow data. Therefore, the NRCS 24-hour Type II distribution has replaced the Type IIa distribution as the standard, long-duration design storm. This distribution can be applied to drainage basins up to 10 square miles without a DARF correction and is shown in Table 6-4. This distribution is included as a standard storm option in the HEC-HMS program.

distinct differences in runoff characteristics. Note that the composite curve number values shown in Table 6-10 for various land uses types do not include the adjacent streets and sidewalks. These areas, and their corresponding curve numbers, should be incorporated into the calculation of the overall composite curve number with the areas and curve numbers for the other land use types within a subarea.

Some software programs, including HEC-HMS, provide an option to represent directly connected impervious areas by entering a percent imperviousness for a subarea. In this case, the runoff volume from the directly connected impervious area is calculated separately from the remaining portion of the subarea which is represented by a composite curve number. When applying this method only directly connected impervious areas such as streets, sidewalks, driveways, parking areas and roof sections that are hydraulically connected should be included in the percent impervious value. The composite curve number used incorporates the curve number values for the various pervious areas and any disconnected impervious areas not included in the percent impervious value. This method may provide a more accurate representation of the effect of urbanization and directly connected imperviousness, especially for the more frequent storm events (ie. 5-year or less).

4.5 Initial Abstraction

The initial abstraction (Ia) represents a volume of rainfall that must fall to satisfy losses in a drainage basin before runoff begins. The default value for Ia is 0.20 times the potential maximum retention (S). Through modeling of the Jimmy Camp Creek drainage basin using gage-adjusted, NEXRAD-generated rainfall input and comparing model results with recorded flow data, it was determined that a more appropriate value for Ia is 0.10·S. Therefore, this value shall replace the default value for any evaluations that apply the NRCS curve number method for rainfall losses. To apply this adjustment when using HEC-HMS it will be necessary to provide the initial abstraction as a depth in inches rather to a fraction of the potential maximum retention. The initial abstraction in inches is calculated using Equation 6-12.

$$Ia = 0.1\ [(1000/CN) - 10] \qquad \text{(Eq. 6-12)}$$

Table 6-9. NRCS Curve Numbers for Pre-Development Thunderstorms Conditions (ARC I)

Fully Developed Urban Areas (vegetation established)[1]	Treatment	Hydrologic Condition	% I	Pre-Development CN			
				HSG A	HSG B	HSG C	HSG D
Open space (lawns, parks, golf courses, cemeteries, etc.):							
Poor condition (grass cover < 50%)	-----	-----	---	47	61	72	77
Fair condition (grass cover 50% to 75%)	-----	-----	---	29	48	61	69
Good condition (grass cover > 75%)	-----	-----	---	21	40	54	63
Impervious areas:							
Paved parking lots, roofs, driveways, etc. (excluding right-of-way	-----	-----	---	95	95	95	95
Streets and roads:							
Paved; curbs and storm sewers (excluding right-of-way)	-----	-----	---	95	95	95	95
Paved; open ditches (including right-of-way)	-----	-----	---	67	77	83	85
Gravel (including right-of-way)	-----	-----	---	57	70	77	81
Dirt (including right-of-way)	-----	-----	---	52	66	74	77
Western desert urban areas:							
Natural desert landscaping (pervious areas only)	-----	-----	---	42	58	70	75
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)	-----	-----	---	91	91	91	91
Developing Urban Areas[1]	**Treatment[2]**	**Hydrologic Condition[3]**	**% I**	**HSG A**	**HSG B**	**HSG C**	**HSG D**
Newly graded areas (pervious areas only, no vegetation)	-----	-----	---	58	72	81	87
Cultivated Agricultural Lands[1]	**Treatment**	**Hydrologic Condition**	**% I**	**HSG A**	**HSG B**	**HSG C**	**HSG D**
Fallow	Bare soil	-----	---	58	72	81	87
	Crop residue cover (CR)	Poor	---	57	70	79	85
		Good	---	54	67	75	79
Row crops	Straight row (SR)	Poor	---	52	64	75	81
		Good	---	46	60	70	77
	SR + CR	Poor	---	51	63	74	79
		Good	---	43	56	66	70
	Contoured (C)	Poor	---	49	61	69	75
		Good	---	44	56	66	72
	C + CR	Poor	---	48	60	67	74
		Good	---	43	54	64	70
	Contoured & terraced (C&T)	Poor	---	45	54	63	66
		Good	---	41	51	60	64
	C&T+ CR	Poor	---	44	53	61	64
		Good	---	40	49	58	63
Small grain	SR	Poor	---	44	57	69	75
		Good	---	42	56	67	74
	SR + CR	Poor	---	43	56	67	72
		Good	---	39	52	63	69
	C	Poor	---	42	54	66	70
		Good	---	40	53	64	69
	C + CR Poor	Poor	---	41	53	64	69
		Good	---	39	52	63	67
	C&T	Poor	---	40	52	61	66
		Good	---	38	49	60	64
	C&T+ CR	Poor	---	39	51	60	64
		Good	---	37	48	58	63
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	---	45	58	70	77
		Good	---	37	52	64	70
	C	Poor	---	43	56	67	70
		Good	---	34	48	60	67
	C&T	Poor	---	42	53	63	67
		Good	---	30	46	57	63

Table 6-10. NRCS Curve Numbers for Frontal Storms & Thunderstorms for Developed Conditions (ARCII)

Fully Developed Urban Areas (vegetation established)[1]	Treatment	Hydrologic Condition	% I	Pre-Development CN			
				HSG A	HSG B	HSG C	HSG D
Open space (lawns, parks, golf courses, cemeteries, etc.):							
Poor condition (grass cover < 50%)	-----	-----	---	68	79	86	89
Fair condition (grass cover 50% to 75%)	-----	-----	---	49	69	79	84
Good condition (grass cover > 75%)	-----	-----	---	39	61	74	80
Impervious areas:							
Paved parking lots, roofs, driveways, etc. (excluding right-of-way	-----	-----	---	98	98	98	98
Streets and roads:							
Paved; curbs and storm sewers (excluding right-of-way)	-----	-----	---	98	98	98	98
Paved; open ditches (including right-of-way)	-----	-----	---	83	89	92	93
Gravel (including right-of-way)	-----	-----	---	76	85	89	91
Dirt (including right-of-way)	-----	-----	---	72	82	87	89
Western desert urban areas:							
Natural desert landscaping (pervious areas only)	-----	-----	---	63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)	-----	-----	---	96	96	96	96
Urban districts:							
Commercial and business	-----	-----	85	89	92	94	95
Industrial	-----	-----	72	81	88	91	93
Residential districts by average lot size:							
1/8 acre or less (town houses)	-----	-----	65	77	85	90	92
1/4 acre	-----	-----	38	61	75	83	87
1/3 acre	-----	-----	30	57	72	81	86
1/2 acre	-----	-----	25	54	70	80	85
1 acre	-----	-----	20	51	68	79	84
2 acres	-----	-----	12	46	65	77	82
Developing Urban Areas[1]	**Treatment[2]**	**Hydrologic Condition[3]**	**% I**	**HSG A**	**HSG B**	**HSG C**	**HSG D**
Newly graded areas (pervious areas only, no vegetation)	-----	-----	---	77	86	91	94
Cultivated Agricultural Lands[1]	**Treatment**	**Hydrologic Condition**	**% I**	**HSG A**	**HSG B**	**HSG C**	**HSG D**
Fallow	Bare soil	-----	---	77	86	91	94
	Crop residue cover (CR)	Poor	---	76	85	90	93
		Good	---	74	83	88	90
Row crops	Straight row (SR)	Poor	---	72	81	88	91
		Good	---	67	78	85	89
	SR + CR	Poor	---	71	80	87	90
		Good	---	64	75	82	85
	Contoured (C)	Poor	---	70	79	84	88
		Good	---	65	75	82	86
	C + CR	Poor	---	69	78	83	87
		Good	---	64	74	81	85
	Contoured & terraced (C&T)	Poor	---	66	74	80	82
		Good	---	62	71	78	81
	C&T+ CR	Poor	---	65	73	79	81
		Good	---	61	70	77	80
Small grain	SR	Poor	---	65	76	84	88
		Good	---	63	75	83	87
	SR + CR	Poor	---	64	75	83	86
		Good	---	60	72	80	84
	C	Poor	---	63	74	82	85
		Good	---	61	73	81	84
	C + CR Poor	Poor	---	62	73	81	84
		Good	---	60	72	80	83
	C&T	Poor	---	61	72	79	82
		Good	---	59	70	78	81
	C&T+ CR	Poor	---	60	71	78	81
		Good	---	58	69	77	80

4.6.3 Concentrated Flow

Once flow enters a storm sewer or open channel, it becomes concentrated and its travel time can also be estimated by dividing its travel length into segments. Travel time is the ratio of flow length to flow velocity.

$$T_t = L / (3600 \cdot V) \quad \text{(Eq. 6-16)}$$

Where:

T_t = travel time (hr)

L = flow length (ft)

V = velocity (ft/s)

3,600 = conversion factor from seconds to hours

The average velocity in concentrated flow segments can be estimated by Manning's equation:

$$V = 1.49 R_h^{2/3} S^{1/2} / n \quad \text{(Eq. 6-17)}$$

Where:

V = average velocity (ft/s)

A_w = Area of cross section conveying flow (ft^2)

R_h = hydraulic radius (ft) equal to A_w/P_w

P_w = wetted perimeter (ft)

S = friction slope/slope of energy grade line (typically assumed to be equivalent to channel bottom slope for uniform flow) (ft/ft)

n = Manning's roughness coefficient for open channel flow

As a general rule, and when sufficiently detailed development plans are not available, the post-development time of concentration can be estimated to be 75% of the pre-development value within the areas of the basin that are to be urbanized.

4.7 Peak Flow Estimation

For preliminary design purposes or for estimating allowable release rates, peak flows may be estimated using the NRCS method by calculating the parameters for curve number and t_c as described above. The following equations provide an estimate of peak flows for a given return period:

$$q = q_p \cdot A \cdot Q \quad \text{(Eq. 6-18)}$$

$$q_p = 484 \cdot A \cdot Q / t_p \quad \text{(Eq. 6-19)}$$

$$Q = (P - 0.1 \cdot S)^2 / (P + (1\text{-}0.9 \cdot S)) \quad \text{(Eq. 6-20)}$$

$$S = 1{,}000/CN - 10 \text{ for } I_a = 0.1 \cdot S \quad \text{(Eq. 6-21)}$$

$$t_p = D/2 + 0.06\ t_c = 0.67\ t_c \text{ , where } (D = 0.133\ t_c) \quad \text{(Eq. 6-22)}$$

Where:

- If SWMM is used, it is recommended that the user follow the guidance in the Runoff chapter (and Volume 3) of the UDFCD Manual for selection of proper infiltration parameters.
- Regardless of the infiltration method used, it is incumbent on the design engineer to demonstrate reasonable equivalency between SWMM results and those that would be obtained from the standard NRCS procedure in terms of runoff rates and volumes. Justification must be provided for why the SWMM model is being used.
- The SWMM model should not be applied by inexperienced users.
- Proprietary versions of SWMM for which there is no valid software license to conduct a detailed review and run of the model are not permitted.

For additional guidance, refer to the Runoff chapter and Volume 3 of the UDFCD Manual and/or the EPA SWMM manual available on EPA's website.

6.0 Sub-basin Delineation and Hydrograph Routing

Rainfall/runoff models such as the NRCS dimensionless unit hydrograph method within the HEC-HMS program and EPA SWMM require that a systematic approach be used to delineate and combine sub-basins within the larger drainage basin being evaluated. Sub-basins should be about 130 acres in size and be delineated to represent areas of the basin that are relatively homogeneous. Besides topography, features that might be used to identify sub-basins are land uses (existing and future), soil types and land cover. Identifying locations or design points where flow information is important may also determine sub-basin delineation.

Hydrographs from each sub-area must be routed and combined to determine the hydrograph for the entire drainage area contributing to design points. Sub-basins are joined by routing elements that may have a wide variety of characteristics, but are typically open channels. Hydrograph routing must account for the effects of flow traveling in channels, through storage areas and other features, such as diversion channels that change the hydrograph. The designer should identify sub-basins and routing elements prior to coding a model so that element numbers and descriptions are systematic and help in the interpretation of model results.

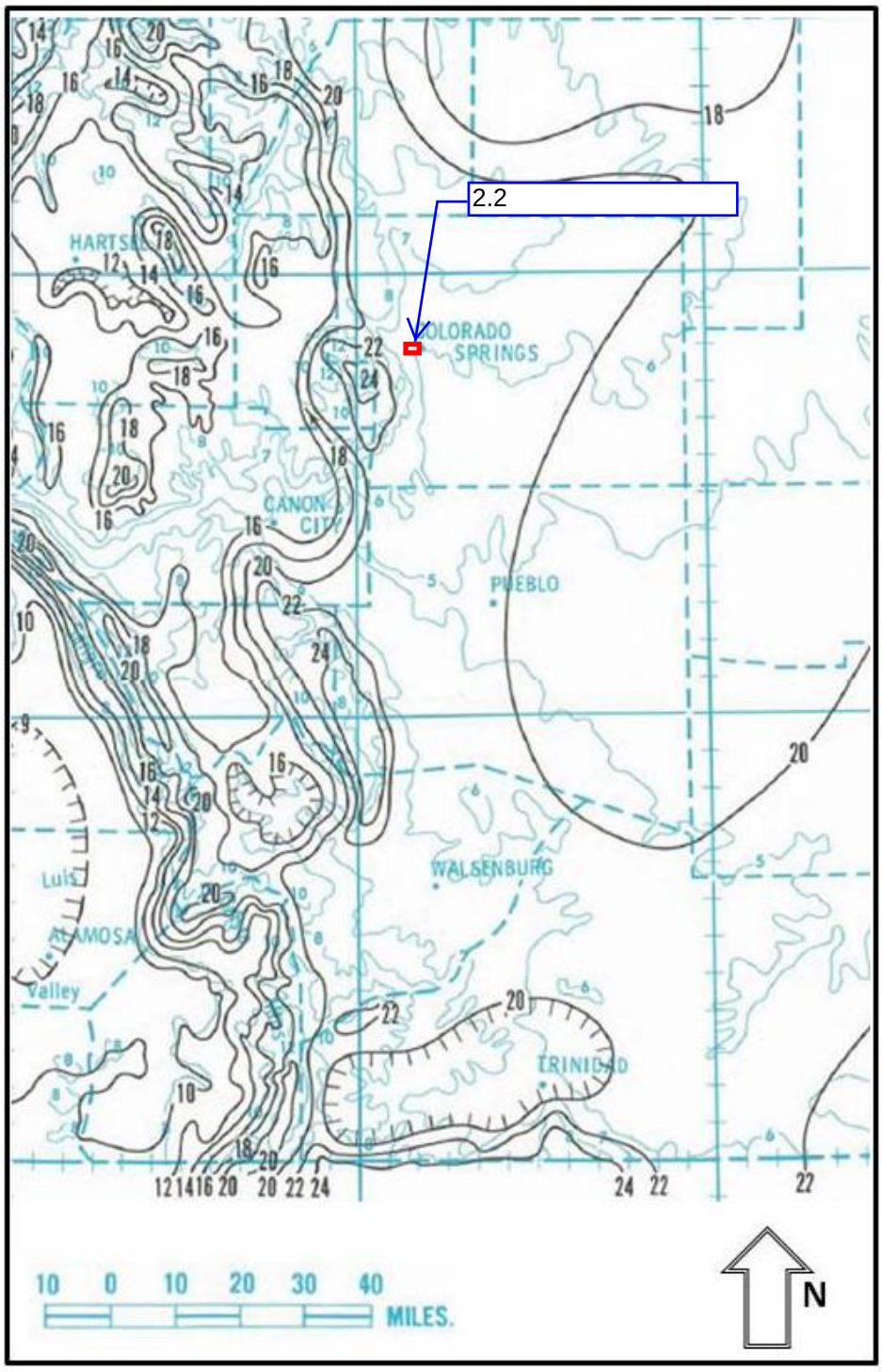
6.1 Channel Routing

The Kinematic Wave Channel Routing Method or the Muskingum-Cunge Method are the preferred methods, although other methods may be acceptable upon approval on a case-by-case basis. Where appreciable hydrograph attenuation is anticipated due to storage effects along a reach, a method that explicitly accounts for channel storage effects, such as the Modified-Puls method, may also be applied.

6.1.1 Kinematic Wave Channel Routing

The Kinematic Wave Channel Routing Method is used to route an upstream inflow hydrograph through a reach with known geometric characteristics. Theoretically, a flood wave routed by the Kinematic Wave Channel Routing Method is translated, but not attenuated, through a reach (although a degree of attenuation is introduced by the finite difference solution to the governing equations). The lack of significant peak attenuation during hydrograph translation is a fairly common characteristic of urban conveyances. Table 6-13 summarizes input parameters required for the Kinematic Wave Channel Routing Method. Manning's roughness values should be selected in accordance with the Open Channels chapter.

Figure 6-12. 2-Year, 24-Hour Precipitation
Tenths of an Inch (NOAA Atlas 2)



Project: **CSU ATC**
Subject: **Lag Time Calculations (Velocity Method)**
Designed by: BAH Date: 3/11/2021
Checked by: Date: 3/11/2021

2-yr, 24-hr Rainfall (in) = 2.2

Lag Time

Eq (6-13) City of Colorado Springs DCM, Volume 1

$t_{lag} = 0.6*t_c$

Channel Velocity (Equation 15-10)

Manning's equation is:

$$V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n} \quad \text{(eq. 15–10)}$$

Sheet Flow Equation (TR-55 Equation 3-3)

$$T_t = \frac{0.007(n\ell)^{0.8}}{(P_2)^{0.5} S^{0.4}}$$

Concentrated Flow (TR-55 Equation 3-1)

$$T_t = \frac{\ell}{3{,}600V}$$

Time of Concentration Calculation: Existing Conditions

Drainage Area ID	Area (mi^2)	Sheet Flow[1]					Shallow Concentrated Flow[2]				Channelized Flow[3]						Tc	Lag
		n	Length (ft)	Slope (ft/ft)	P_2 (in)	Tt (hr)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Tt[4] (hr)	Length (ft)	Slope (ft/ft)	r	n	Velocity (ft/s)	Tt[4] (hr)	(hr)	(hr)
E10	0.18	0.1	100	8.3%	2.2	0.1	n/a	n/a	n/a	0	3471	2.1%	0.23	0.04	2.05	0.47	0.55	0.33
E20	0.15	0.1	100	5.5%	2.2	0.1	n/a	n/a	n/a	0	3258	2.8%	0.26	0.04	2.53	0.36	0.45	0.27
E30	0.03	0.1	100	0.9%	2.2	0.2	440	0.075	4.42	0.03	261	4.5%	0.21	0.04	2.78	0.03	0.25	0.15

Calculated using the Velocity Method in chapter 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010

1. Calculated using the Velocity Method in chapter 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010

2. Per Table 15-3 in Ch 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010 Flow type assumed to be Grassed waterways to determine velocity

3. Per Ch 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010. Channel velocity was determined using mannings equation 15-10

4. Tt = L/3600*V

Project: **CSU ATC**
Subject: **Lag Time Calculations (Velocity Method)**
Designed by: Date: 3/11/2021
Checked by: Date: 3/11/2021

2-yr, 24-hr Rainfall (in) = 2.2

Lag Time

Eq (6-13) City of Colorado Springs DCM, Volume 1

$t_{lag} = 0.6*t_c$

Channel Velocity (Equation 15-10)

Manning's equation is:

$$V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n} \qquad \text{(eq. 15–10)}$$

Sheet Flow Equation (TR-55 Equation 3-3)

$$T_t = \frac{0.007(n\ell)^{0.8}}{(P_2)^{0.5} S^{0.4}}$$

Concentrated Flow (TR-55 Equation 3-1)

$$T_t = \frac{\ell}{3{,}600V}$$

Time of Concentration Calculation: Proposed Conditions

Drainage Area ID	Area (mi^2)	Sheet Flow[1]					Shallow Concentrated Flow[2]				Concentrated Flow[3]				Tc	Lag
		n	Length (ft)	Slope (ft/ft)	P_2 (in)	Tt (hr)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Tt[4] (hr)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Tt[4] (hr)	(hr)	(hr)
P10	0.04	0.1	100	2.0%	2.2	0.14	500	0.015	2.49	0.06	1837	1.0%	2.19	0.23	0.38	0.23
P20	0.06	0.1	100	2.0%	2.2	0.14	600	0.020	2.87	0.06	1417	1.0%	3.19	0.12	0.27	0.16
P30	0.08	0.1	100	3.6%	2.2	0.11	580	0.020	2.87	0.06	1839	0.7%	2.94	0.17	0.29	0.17
P40	0.06	0.1	100	2.0%	2.2	0.14	500	0.015	2.49	0.06	1260	1.0%	2.25	0.16	0.30	0.18
P50	0.12	0.1	100	2.0%	2.2	0.14	500	0.015	2.49	0.06	1260	1.0%	1.20	0.29	0.43	0.26

Calculated using the Velocity Method in chapter 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010

1. Calculated using the Velocity Method in chapter 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010

2. Per Table 15-3 in Ch 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010 Flow type assumed to be Grassed waterways to determine velocity

3. Per Ch 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010. Channel velocity was determined using mannings equation 15-10

4. Tt = L/3600*V

Proposed R-40 Reach Routing

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data		
Roughness Coefficient	0.013	
Channel Slope	0.010	ft/ft
Normal Depth	54.0	in
Diameter	60.0	in

Results		
Discharge	277.56	cfs
Flow Area	18.6	ft^2
Wetted Perimeter	12.5	ft
Hydraulic Radius	17.9	in
Top Width	3.00	ft
Critical Depth	54.9	in
Percent Full	90.0	%
Critical Slope	0.010	ft/ft
Velocity	14.91	ft/s
Velocity Head	3.46	ft
Specific Energy	7.96	ft
Froude Number	1.055	
Maximum Discharge	280.14	cfs
Discharge Full	260.43	cfs
Slope Full	0.011	ft/ft
Flow Type	Supercritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	90.0	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	54.0	in
Critical Depth	54.9	in
Channel Slope	0.010	ft/ft
Critical Slope	0.010	ft/ft

Existing Conditions E10 Channel Routing Geometry

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Channel Slope	0.028	ft/ft
Discharge	24.00	cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	5,910.07
1+08	5,907.61
1+64	5,906.00
1+72	5,905.73
1+86	5,906.00
3+05	5,910.11

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 5,910.07)	(3+05, 5,910.11)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results		
Normal Depth	5.9	in
Roughness Coefficient	0.040	
Elevation	5,906.23	ft
Elevation Range	5,905.7 to 5,910.1	ft
Flow Area	9.4	ft^2
Wetted Perimeter	36.0	ft
Hydraulic Radius	3.1	in
Top Width	36.00	ft
Normal Depth	5.9	in
Critical Depth	5.6	in
Critical Slope	0.037	ft/ft
Velocity	2.54	ft/s
Velocity Head	0.10	ft
Specific Energy	0.60	ft
Froude Number	0.877	

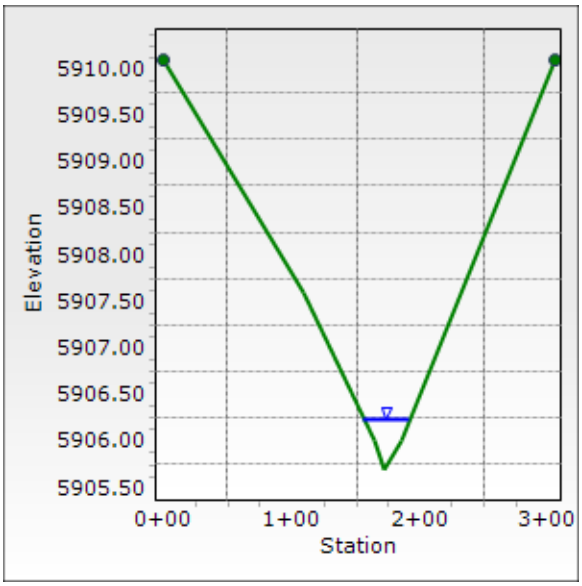
Existing Conditions E10 Channel Routing Geometry

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	5.9 in
Critical Depth	5.6 in
Channel Slope	0.028 ft/ft
Critical Slope	0.037 ft/ft

Cross Section for E10 Channel

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.028 ft/ft
Normal Depth	5.9 in
Discharge	24.00 cfs



Existing Conditions E20 Channel Routing Geometry

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Channel Slope	0.021	ft/ft
Discharge	26.00	cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	5,896.18
1+70	5,892.51
1+81	5,892.53
2+32	5,893.33
3+55	5,896.33

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 5,896.18)	(3+55, 5,896.33)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results		
Normal Depth	4.9	in
Roughness Coefficient	0.040	
Elevation	5,892.92	ft
Elevation Range	5,892.5 to 5,896.3	ft
Flow Area	12.7	ft²
Wetted Perimeter	54.0	ft
Hydraulic Radius	2.8	in
Top Width	54.03	ft
Normal Depth	4.9	in
Critical Depth	4.3	in
Critical Slope	0.039	ft/ft
Velocity	2.05	ft/s
Velocity Head	0.07	ft
Specific Energy	0.47	ft
Froude Number	0.746	
Flow Type	Subcritical	

Existing Conditions E20 Channel Routing Geometry

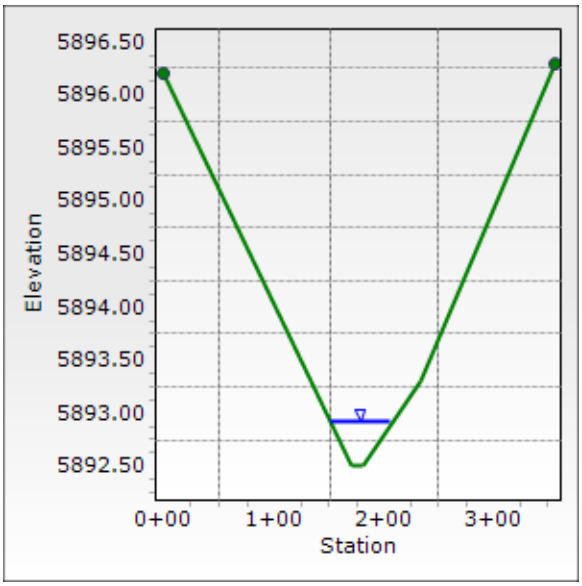
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	4.9 in
Critical Depth	4.3 in
Channel Slope	0.021 ft/ft
Critical Slope	0.039 ft/ft

Cross Section for E20 Channel

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.021 ft/ft
Normal Depth	4.9 in
Discharge	26.00 cfs



Existing Conditions E30 Channel Routing Geometry

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Channel Slope	0.045	ft/ft
Discharge	19.00	cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	5,866.53
0+95	5,862.00
1+15	5,862.00
1+74	5,864.03
2+00	5,866.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 5,866.53)	(2+00, 5,866.00)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results		
Normal Depth	3.1	in
Roughness Coefficient	0.040	
Elevation	5,862.26	ft
Elevation Range	5,862.0 to 5,866.5	ft
Flow Area	6.9	ft²
Wetted Perimeter	33.0	ft
Hydraulic Radius	2.5	in
Top Width	33.02	ft
Normal Depth	3.1	in
Critical Depth	3.2	in
Critical Slope	0.039	ft/ft
Velocity	2.76	ft/s
Velocity Head	0.12	ft
Specific Energy	0.38	ft
Froude Number	1.068	
Flow Type	Supercritical	

Existing Conditions E30 Channel Routing Geometry

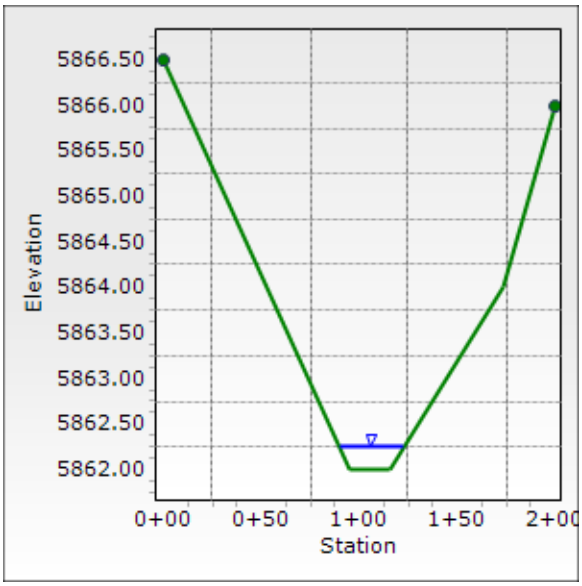
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	3.1 in
Critical Depth	3.2 in
Channel Slope	0.045 ft/ft
Critical Slope	0.039 ft/ft

Cross Section for E30 Channel

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.045 ft/ft
Normal Depth	3.1 in
Discharge	19.00 cfs



HEC-HMS Curve Data		
Stage-Area Realationship for Pond A		
Depth [ft]	Elevation [ft]	Acres
0	5859	2.29
0.25	5859.25	2.32
0.5	5859.5	2.35
0.75	5859.75	2.38
1	5860	2.41
1.25	5860.25	2.44
1.5	5860.5	2.47
1.75	5860.75	2.50
2	5861	2.53
2.25	5861.25	2.56
2.5	5861.5	2.59
2.75	5861.75	2.62
3	5862	2.65
3.25	5862.25	2.68
3.5	5862.5	2.71
3.75	5862.75	2.74
4	5863	2.77
4.25	5863.25	2.81
4.5	5863.5	2.84
4.75	5863.75	2.87
5	5864	2.90
5.25	5864.25	2.93
5.5	5864.5	2.97
5.75	5864.75	3.00
6	5865	3.03
6.25	5865.25	3.06
6.5	5865.5	3.09
6.75	5865.75	3.13
7	5866	3.16
7.25	5866.25	3.19
7.5	5866.5	3.23
7.75	5866.75	3.26
8	5867	3.29
8.25	5867.25	3.33
8.5	5867.5	3.36
8.75	5867.75	3.39
9	5868	3.43
9.25	5868.25	3.46
9.5	5868.5	3.49
9.75	5868.75	3.53
10	5869	3.56

HEC-HMS Curve Data		
Stage-Discharge Realationship for Pond A		
Depth [ft]	Elevation [ft]	Discharge [cfs]
0	5859	0.00
0.25	5859.25	0.67
0.5	5859.5	0.95
0.75	5859.75	1.16
1	5860	1.34
1.25	5860.25	1.50
1.5	5860.5	1.64
1.75	5860.75	1.77
2	5861	1.89
2.25	5861.25	2.01
2.5	5861.5	2.11
2.75	5861.75	2.97
3	5862	3.38
3.25	5862.25	3.71
3.5	5862.5	4.01
3.75	5862.75	4.27
4	5863	4.52
4.25	5863.25	5.58
4.5	5863.5	6.15
4.75	5863.75	6.62
5	5864	7.04
5.25	5864.25	7.41
5.5	5864.5	7.79
5.75	5864.75	14.17
6	5865	25.54
6.25	5865.25	40.15
6.5	5865.5	57.39
6.75	5865.75	76.89
7	5866	91.06
7.25	5866.25	93.00
7.5	5866.5	94.91
7.75	5866.75	96.78
8	5867	98.62
8.25	5867.25	100.42
8.5	5867.5	102.19
8.75	5867.75	103.93
9	5868	105.64
9.25	5868.25	107.32
9.5	5868.5	108.98
9.75	5868.75	110.61
10	5869	112.22

CSU ATC – HEC–HMS SCHEMATIC

LEGEND

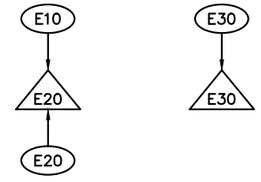
462 DESIGN POINT

205 CONVEYANCE ELEMENT

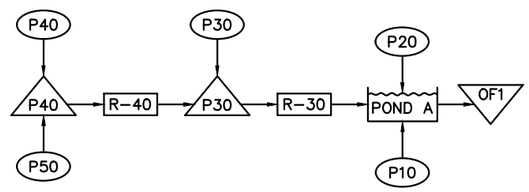
1433 SUBBASIN

ONFW OUTFALL

POND A DETENTION FACILITY

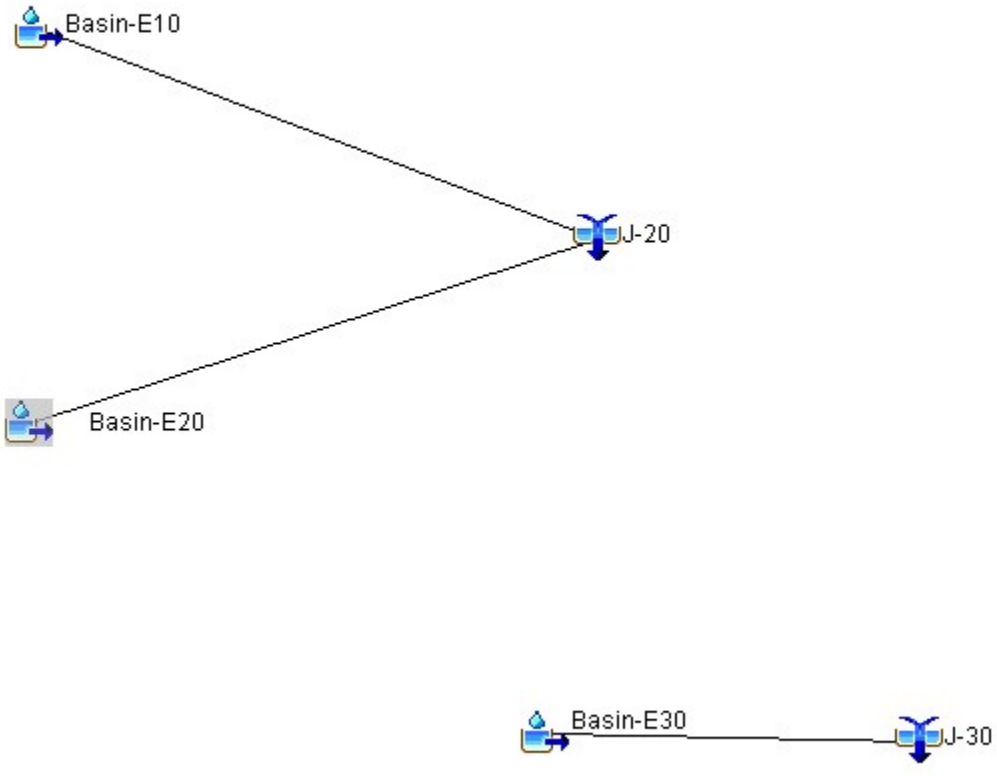


CSU ATC – EXISTING CONDITIONS HEC–HMS SCHEMATIC

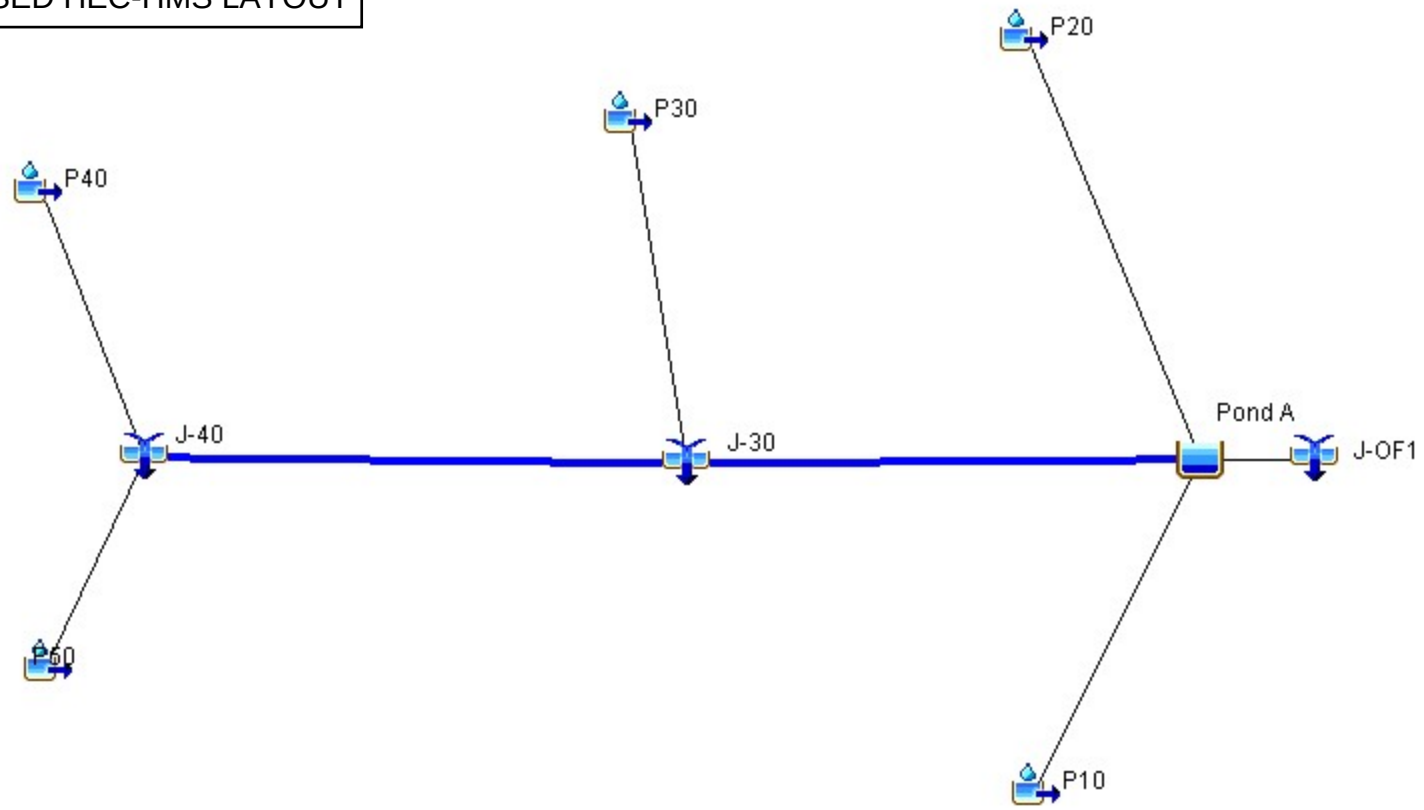


CSU ATC – PROPOSED CONDITIONS HEC–HMS SCHEMATIC

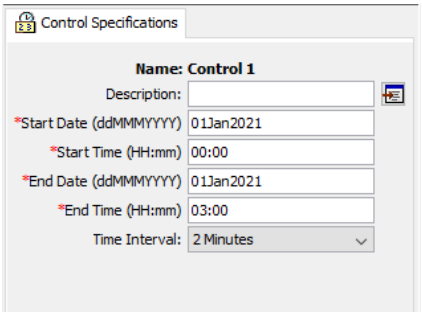
EXISTING HEC-HMS LAYOUT



PROPOSED HEC-HMS LAYOUT



HEC-HMS OVERALL STORM DATA



5-YR, 2 HR STORM DATA

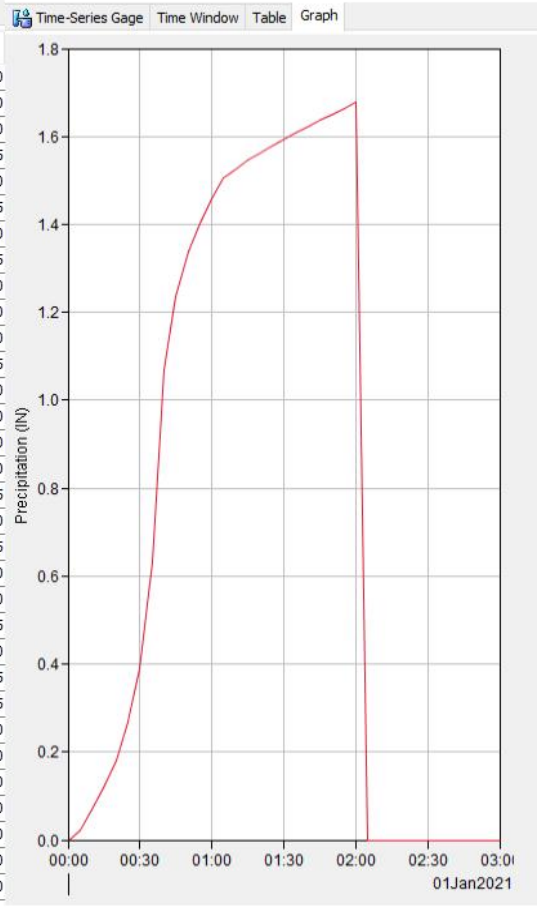
Specified Hyetograph

Met Name: 5yr_2Hr

Subbasin Name	Gage
Basin-E10	5yr_2Hr
Basin-E20	5yr_2Hr
Basin-E30	5yr_2Hr
P10	5yr_2Hr
P20	5yr_2Hr
P30	5yr_2Hr
P40	5yr_2Hr
P50	5yr_2Hr

Time-Series Gage | Time Window | Table | Graph

Time (ddMMMYYYY, HH:mm)	Precipitation (IN)
01Jan2021, 00:00	0.0000
01Jan2021, 00:05	0.0210
01Jan2021, 00:10	0.0690
01Jan2021, 00:15	0.1185
01Jan2021, 00:20	0.1800
01Jan2021, 00:25	0.2685
01Jan2021, 00:30	0.3870
01Jan2021, 00:35	0.6315
01Jan2021, 00:40	1.0680
01Jan2021, 00:45	1.2360
01Jan2021, 00:50	1.3380
01Jan2021, 00:55	1.4025
01Jan2021, 01:00	1.4580
01Jan2021, 01:05	1.5060
01Jan2021, 01:10	1.5270
01Jan2021, 01:15	1.5450
01Jan2021, 01:20	1.5615
01Jan2021, 01:25	1.5780
01Jan2021, 01:30	1.5945
01Jan2021, 01:35	1.6080
01Jan2021, 01:40	1.6230
01Jan2021, 01:45	1.6365
01Jan2021, 01:50	1.6500
01Jan2021, 01:55	1.6635
01Jan2021, 02:00	1.6785
01Jan2021, 02:05	0.0000
01Jan2021, 02:10	0.0000
01Jan2021, 02:15	0.0000
01Jan2021, 02:20	0.0000
01Jan2021, 02:25	0.0000
01Jan2021, 02:30	0.0000
01Jan2021, 02:35	0.0000



100-YR, 2-HR STORM DATA

Specified Hyetograph

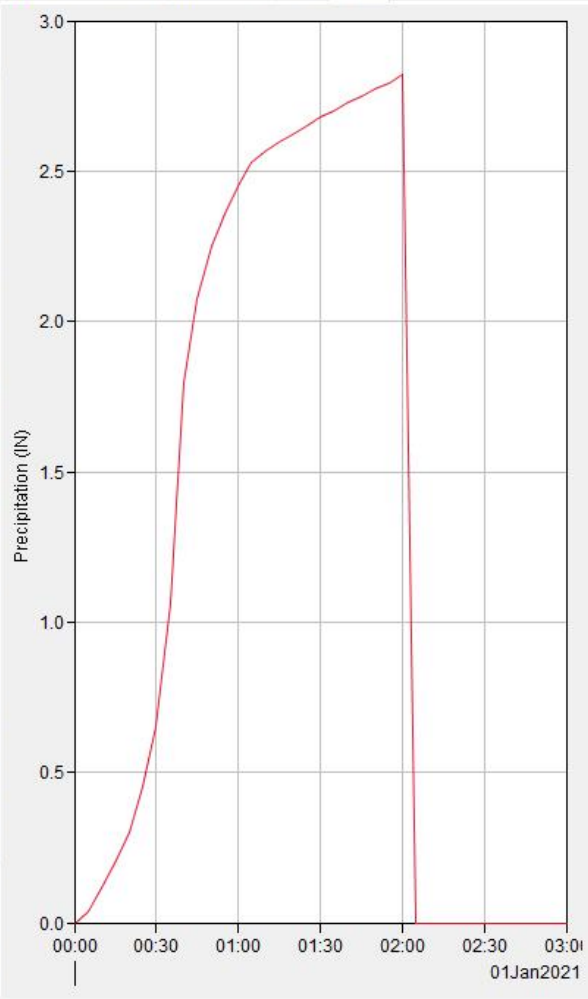
Met Name: 100yr_2-Hr

Subbasin Name	Gage
Basin-E10	100yr_2Hr
Basin-E20	100yr_2Hr
Basin-E30	100yr_2Hr
P10	100yr_2Hr
P20	100yr_2Hr
P30	100yr_2Hr
P40	100yr_2Hr
P50	100yr_2Hr

Time-Series Gage | Time Window | Table | Graph

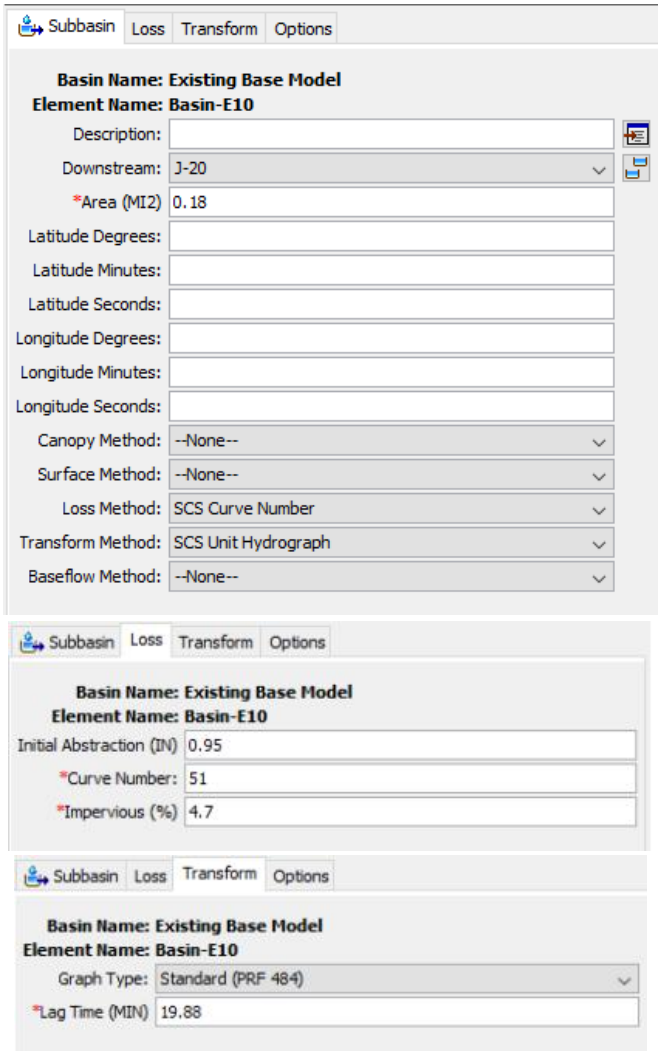
Time (ddMMMYYYY, HH:mm)	Precipitation (IN)
01Jan2021, 00:00	0.00000
01Jan2021, 00:05	0.03528
01Jan2021, 00:10	0.11592
01Jan2021, 00:15	0.19908
01Jan2021, 00:20	0.30240
01Jan2021, 00:25	0.45108
01Jan2021, 00:30	0.65016
01Jan2021, 00:35	1.06092
01Jan2021, 00:40	1.79424
01Jan2021, 00:45	2.07648
01Jan2021, 00:50	2.24784
01Jan2021, 00:55	2.35620
01Jan2021, 01:00	2.44944
01Jan2021, 01:05	2.53008
01Jan2021, 01:10	2.56536
01Jan2021, 01:15	2.59560
01Jan2021, 01:20	2.62332
01Jan2021, 01:25	2.65104
01Jan2021, 01:30	2.67876
01Jan2021, 01:35	2.70144
01Jan2021, 01:40	2.72664
01Jan2021, 01:45	2.74932
01Jan2021, 01:50	2.77200
01Jan2021, 01:55	2.79468
01Jan2021, 02:00	2.81988
01Jan2021, 02:05	0.00000
01Jan2021, 02:10	0.00000
01Jan2021, 02:15	0.00000
01Jan2021, 02:20	0.00000
01Jan2021, 02:25	0.00000
01Jan2021, 02:30	0.00000
01Jan2021, 02:35	0.00000

Time-Series Gage | Time Window | Table | Graph

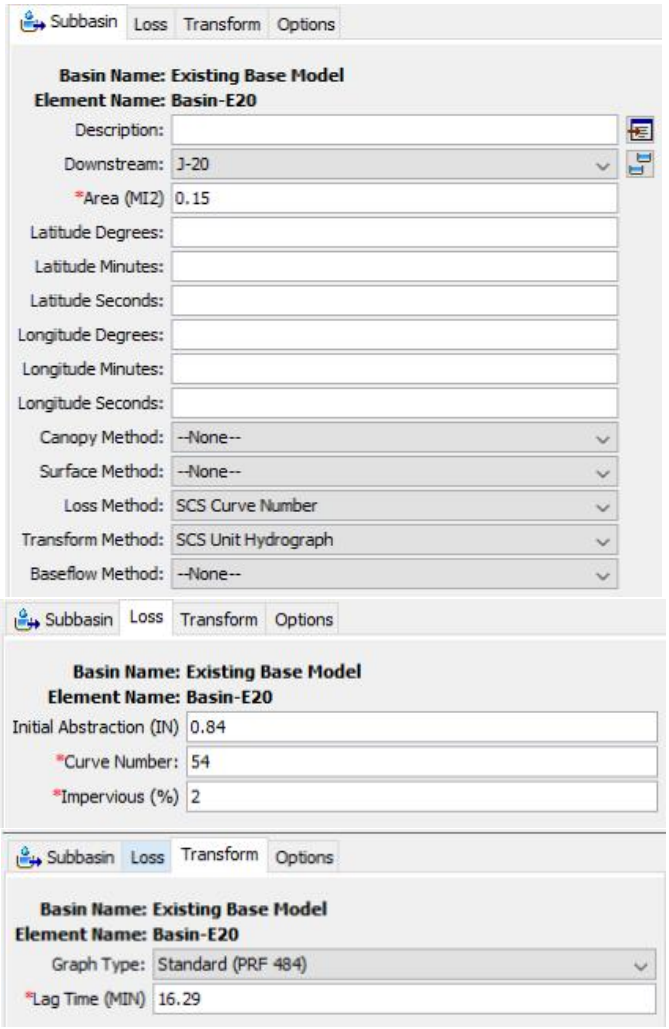


EXISTING BASIN MODEL

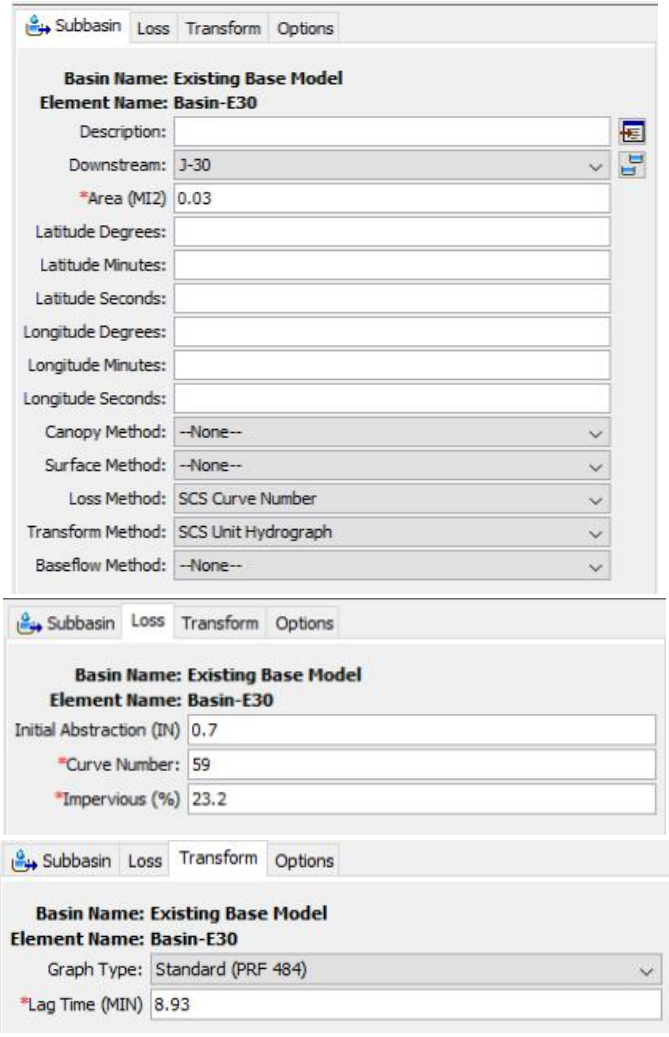
BASIN -E10


Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Description:
Downstream: J-20
*Area (MI2) 0.18
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Initial Abstraction (IN) 0.95
*Curve Number: 51
*Impervious (%) 4.7
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 19.88

BASIN-E20

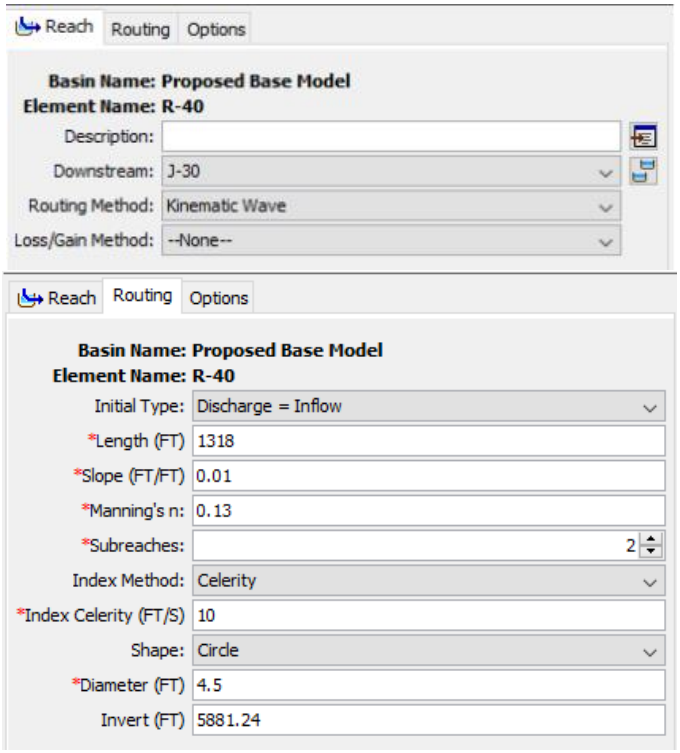

Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Description:
Downstream: J-20
*Area (MI2) 0.15
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Initial Abstraction (IN) 0.84
*Curve Number: 54
*Impervious (%) 2
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 16.29

BASIN-E30

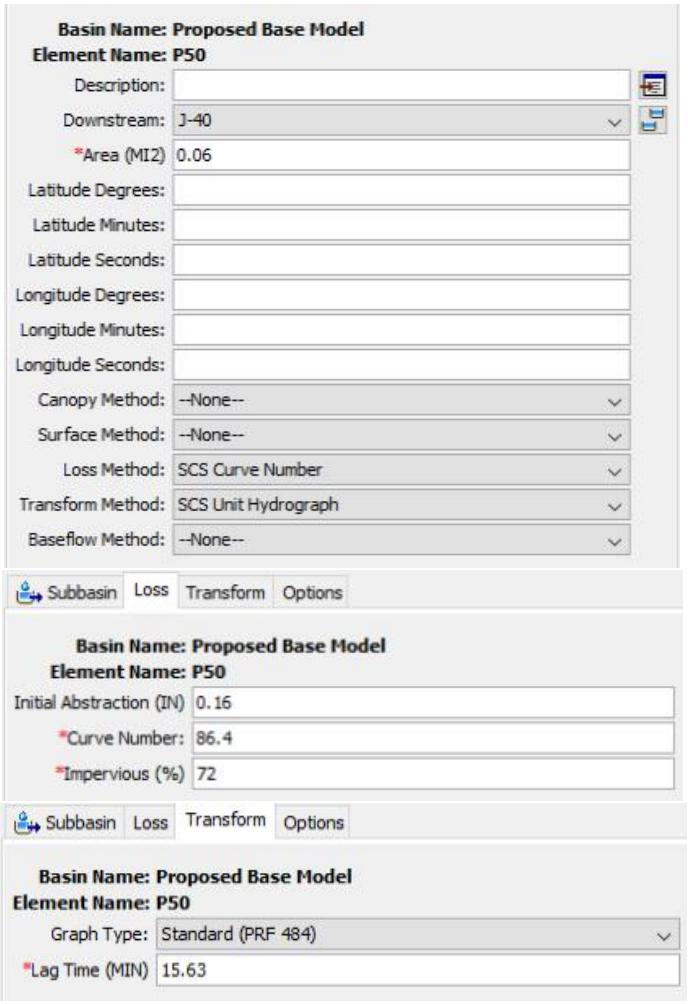

Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Description:
Downstream: J-30
*Area (MI2) 0.03
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Initial Abstraction (IN) 0.7
*Curve Number: 59
*Impervious (%) 23.2
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 8.93

PROPOSED BASIN MODEL

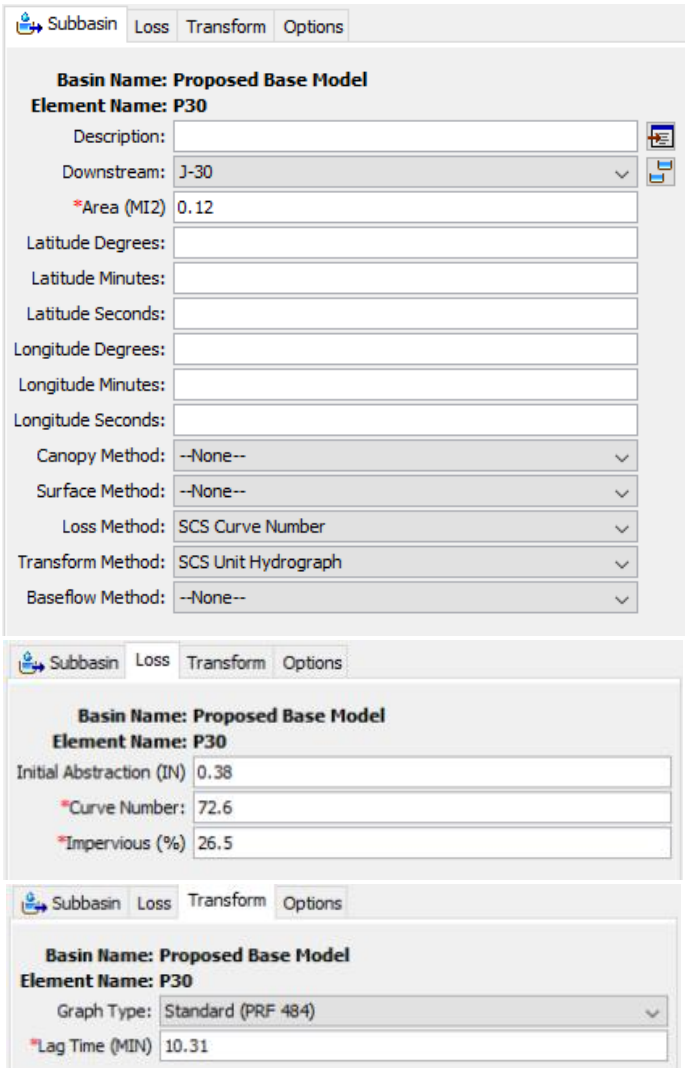
R-40


Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-40
Description:
Downstream: J-30
Routing Method: Kinematic Wave
Loss/Gain Method: --None--
Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-40
Initial Type: Discharge = Inflow
*Length (FT) 1318
*Slope (FT/FT) 0.01
*Manning's n: 0.13
*Subreaches: 2
Index Method: Celerity
*Index Celerity (FT/S) 10
Shape: Circle
*Diameter (FT) 4.5
Invert (FT) 5881.24

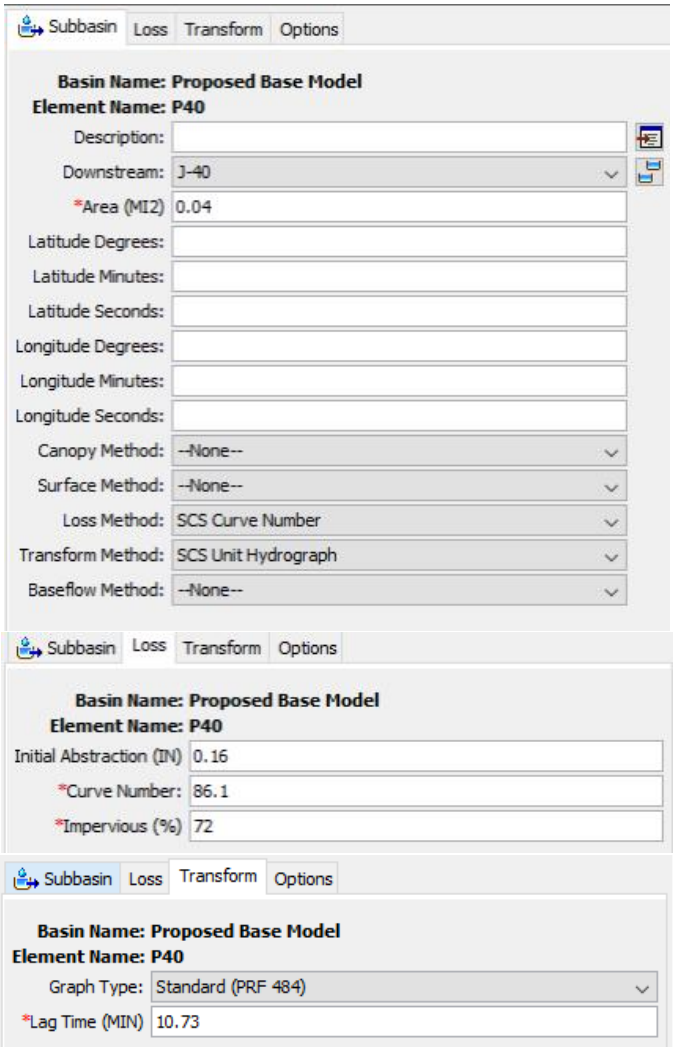
P50


Basin Name: Proposed Base Model
Element Name: P50
Description:
Downstream: J-40
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P50
Initial Abstraction (IN) 0.16
*Curve Number: 86.4
*Impervious (%) 72
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P50
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 15.63

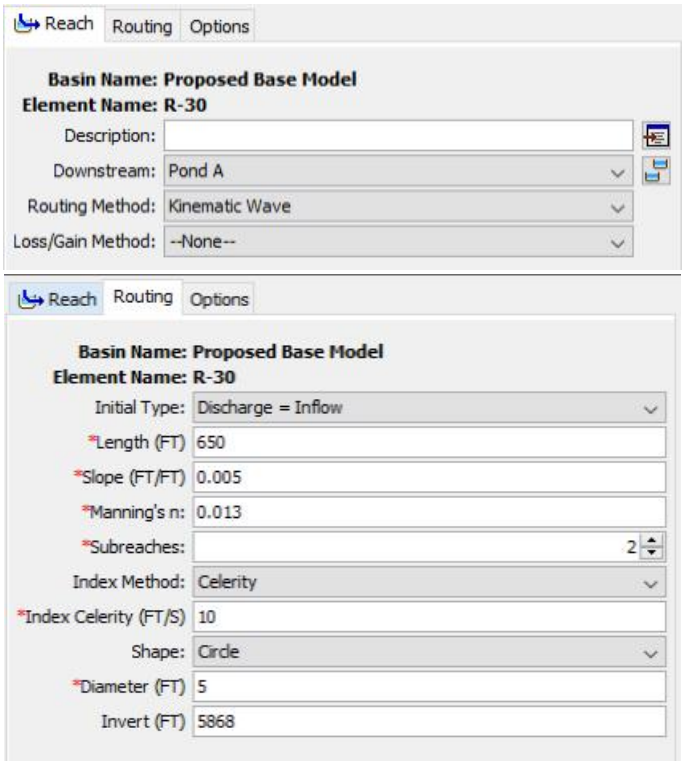
P30


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Description:
Downstream: J-30
*Area (MI2) 0.12
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Initial Abstraction (IN) 0.38
*Curve Number: 72.6
*Impervious (%) 26.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 10.31

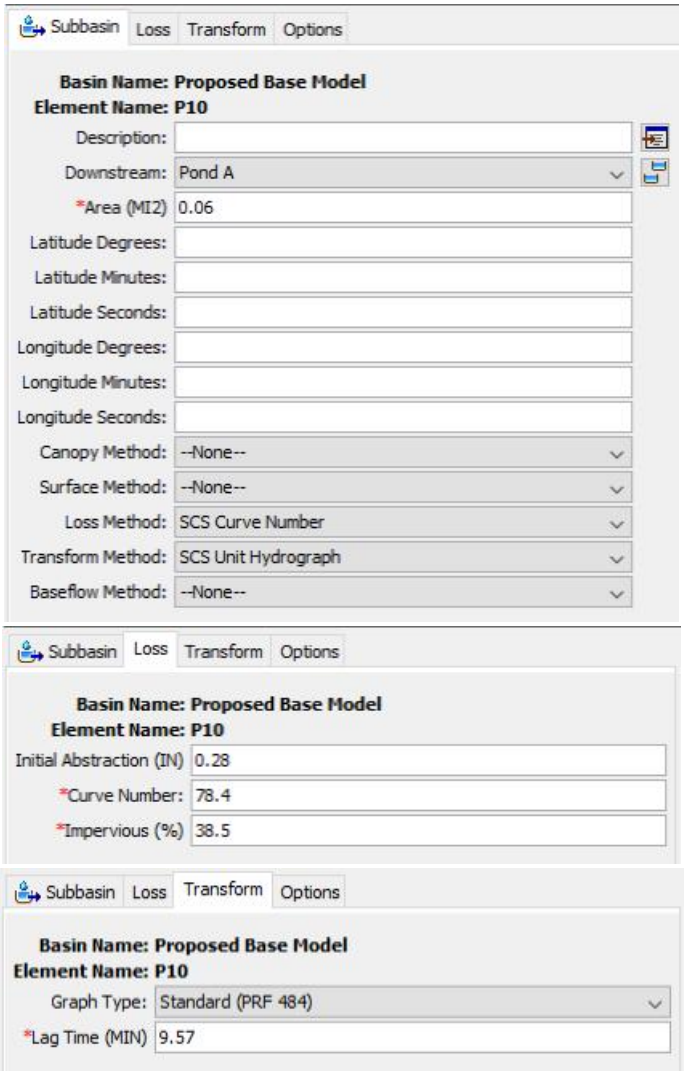
P40


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Description:
Downstream: J-40
*Area (MI2) 0.04
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Initial Abstraction (IN) 0.16
*Curve Number: 86.1
*Impervious (%) 72
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 10.73

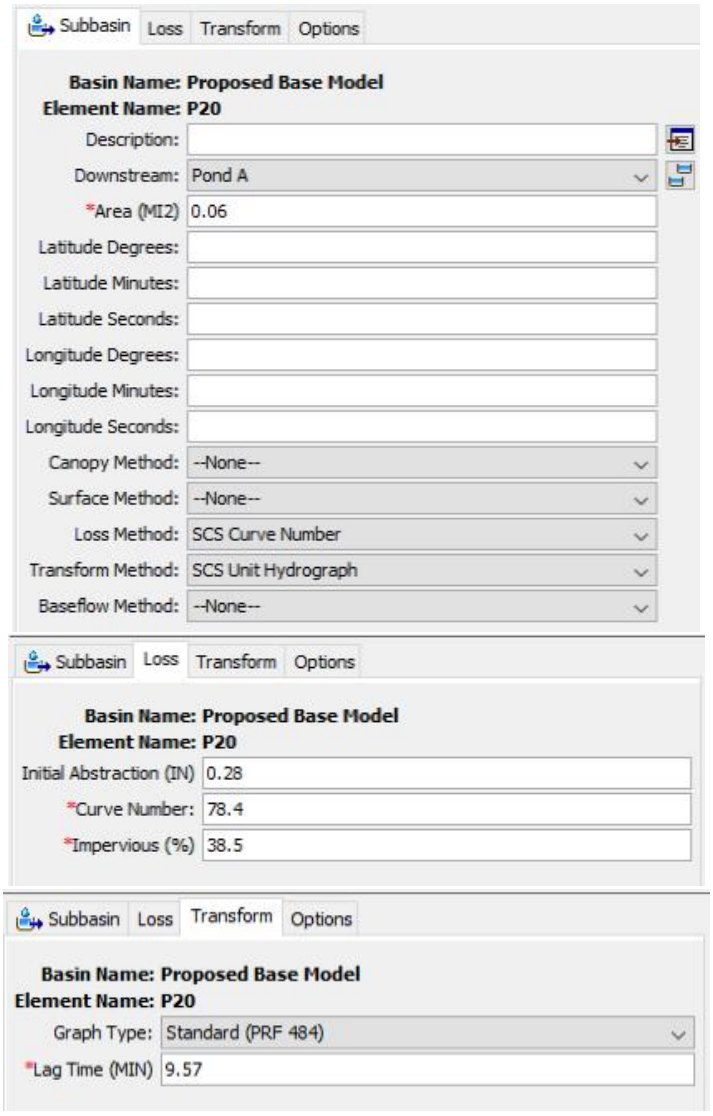
R-30


Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-30
Description:
Downstream: Pond A
Routing Method: Kinematic Wave
Loss/Gain Method: --None--
Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-30
Initial Type: Discharge = Inflow
*Length (FT) 650
*Slope (FT/FT) 0.005
*Manning's n: 0.013
*Subreaches: 2
Index Method: Celerity
*Index Celerity (FT/S) 10
Shape: Circle
*Diameter (FT) 5
Invert (FT) 5868

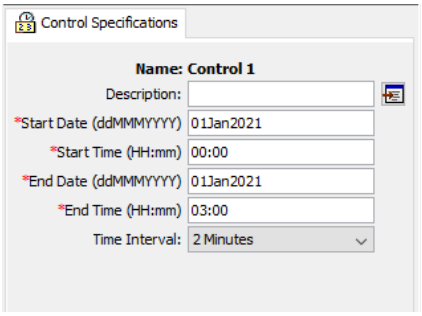
P10


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Description:
Downstream: Pond A
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Initial Abstraction (IN) 0.28
*Curve Number: 78.4
*Impervious (%) 38.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 9.57

P20


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Description:
Downstream: Pond A
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Initial Abstraction (IN) 0.28
*Curve Number: 78.4
*Impervious (%) 38.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 9.57

HEC-HMS OVERALL STORM DATA



5-YR, 2 HR STORM DATA

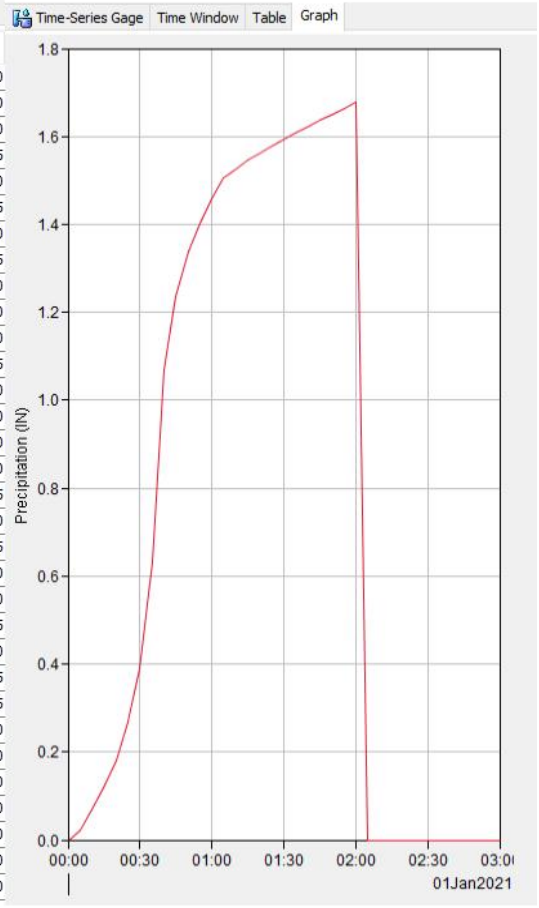
Specified Hyetograph

Met Name: 5yr_2Hr

Subbasin Name	Gage
Basin-E10	5yr_2Hr
Basin-E20	5yr_2Hr
Basin-E30	5yr_2Hr
P10	5yr_2Hr
P20	5yr_2Hr
P30	5yr_2Hr
P40	5yr_2Hr
P50	5yr_2Hr

Time-Series Gage | Time Window | Table | Graph

Time (ddMMMYYYY, HH:mm)	Precipitation (IN)
01Jan2021, 00:00	0.0000
01Jan2021, 00:05	0.0210
01Jan2021, 00:10	0.0690
01Jan2021, 00:15	0.1185
01Jan2021, 00:20	0.1800
01Jan2021, 00:25	0.2685
01Jan2021, 00:30	0.3870
01Jan2021, 00:35	0.6315
01Jan2021, 00:40	1.0680
01Jan2021, 00:45	1.2360
01Jan2021, 00:50	1.3380
01Jan2021, 00:55	1.4025
01Jan2021, 01:00	1.4580
01Jan2021, 01:05	1.5060
01Jan2021, 01:10	1.5270
01Jan2021, 01:15	1.5450
01Jan2021, 01:20	1.5615
01Jan2021, 01:25	1.5780
01Jan2021, 01:30	1.5945
01Jan2021, 01:35	1.6080
01Jan2021, 01:40	1.6230
01Jan2021, 01:45	1.6365
01Jan2021, 01:50	1.6500
01Jan2021, 01:55	1.6635
01Jan2021, 02:00	1.6785
01Jan2021, 02:05	0.0000
01Jan2021, 02:10	0.0000
01Jan2021, 02:15	0.0000
01Jan2021, 02:20	0.0000
01Jan2021, 02:25	0.0000
01Jan2021, 02:30	0.0000
01Jan2021, 02:35	0.0000



100-YR, 2-HR STORM DATA

Specified Hyetograph

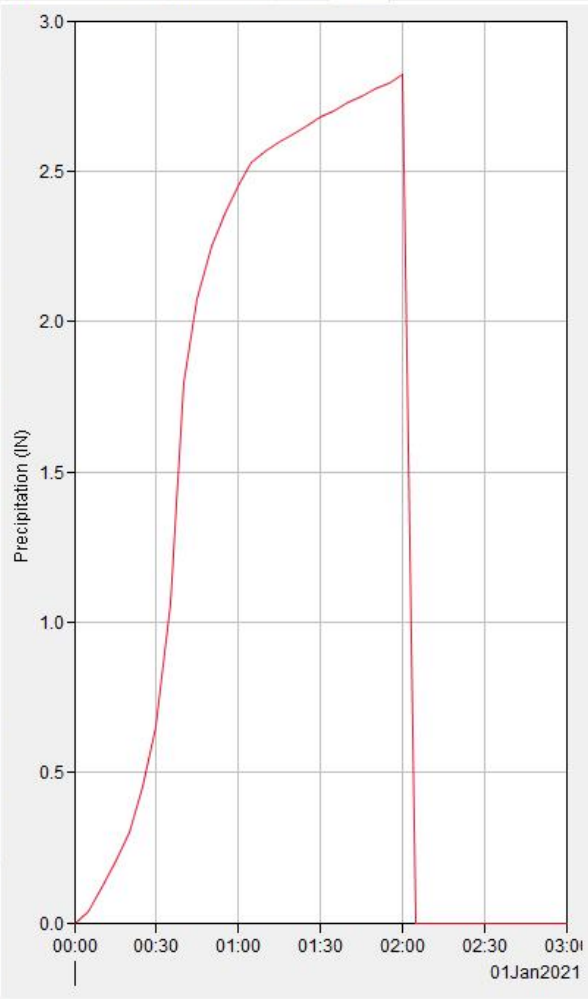
Met Name: 100yr_2-Hr

Subbasin Name	Gage
Basin-E10	100yr_2Hr
Basin-E20	100yr_2Hr
Basin-E30	100yr_2Hr
P10	100yr_2Hr
P20	100yr_2Hr
P30	100yr_2Hr
P40	100yr_2Hr
P50	100yr_2Hr

Time-Series Gage | Time Window | Table | Graph

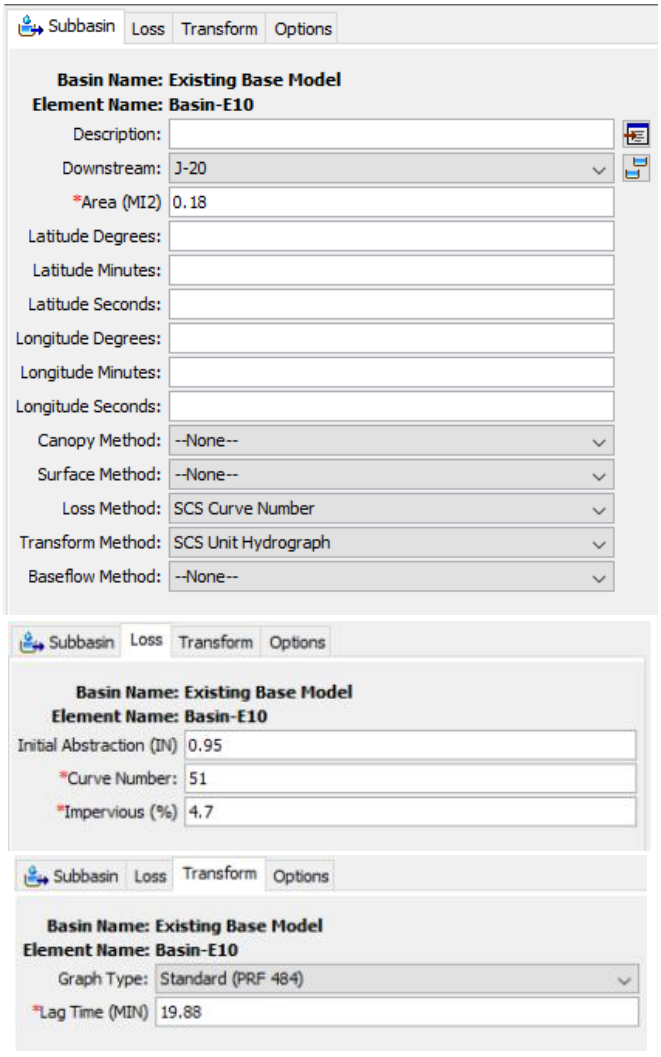
Time (ddMMMYYYY, HH:mm)	Precipitation (IN)
01Jan2021, 00:00	0.00000
01Jan2021, 00:05	0.03528
01Jan2021, 00:10	0.11592
01Jan2021, 00:15	0.19908
01Jan2021, 00:20	0.30240
01Jan2021, 00:25	0.45108
01Jan2021, 00:30	0.65016
01Jan2021, 00:35	1.06092
01Jan2021, 00:40	1.79424
01Jan2021, 00:45	2.07648
01Jan2021, 00:50	2.24784
01Jan2021, 00:55	2.35620
01Jan2021, 01:00	2.44944
01Jan2021, 01:05	2.53008
01Jan2021, 01:10	2.56536
01Jan2021, 01:15	2.59560
01Jan2021, 01:20	2.62332
01Jan2021, 01:25	2.65104
01Jan2021, 01:30	2.67876
01Jan2021, 01:35	2.70144
01Jan2021, 01:40	2.72664
01Jan2021, 01:45	2.74932
01Jan2021, 01:50	2.77200
01Jan2021, 01:55	2.79468
01Jan2021, 02:00	2.81988
01Jan2021, 02:05	0.00000
01Jan2021, 02:10	0.00000
01Jan2021, 02:15	0.00000
01Jan2021, 02:20	0.00000
01Jan2021, 02:25	0.00000
01Jan2021, 02:30	0.00000
01Jan2021, 02:35	0.00000

Time-Series Gage | Time Window | Table | Graph

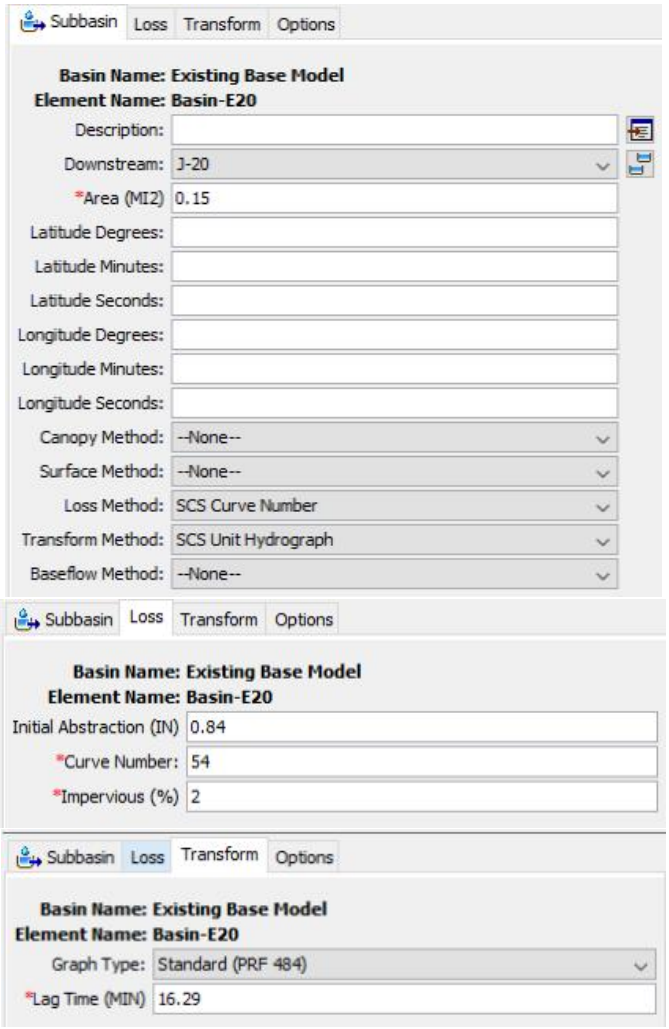


EXISTING BASIN MODEL

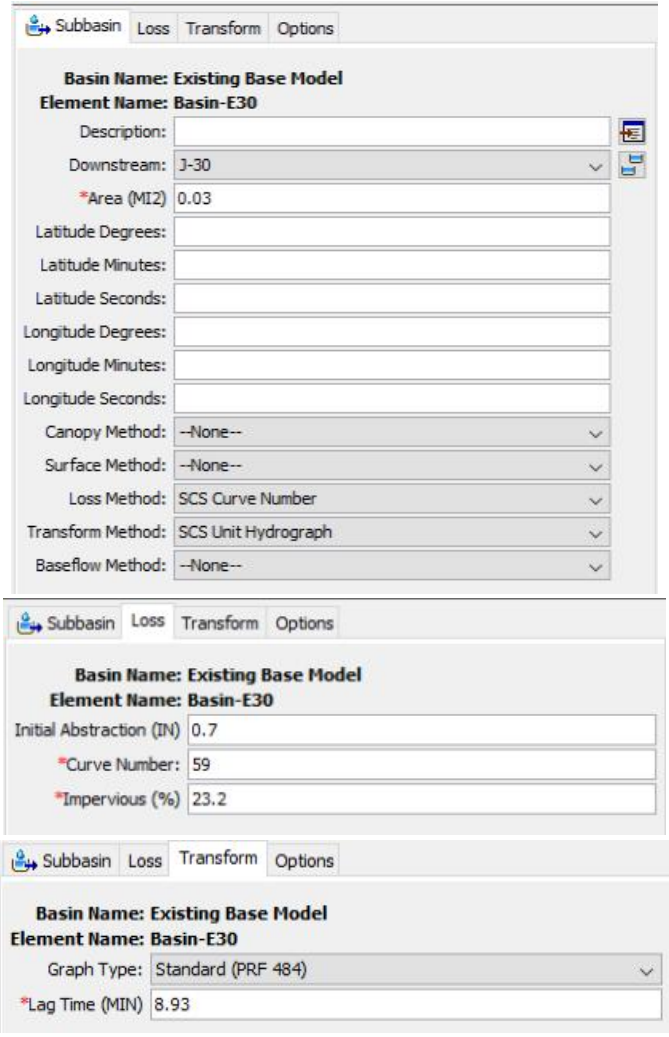
BASIN -E10


Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Description:
Downstream: J-20
*Area (MI2) 0.18
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Initial Abstraction (IN) 0.95
*Curve Number: 51
*Impervious (%) 4.7
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E10
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 19.88

BASIN-E20

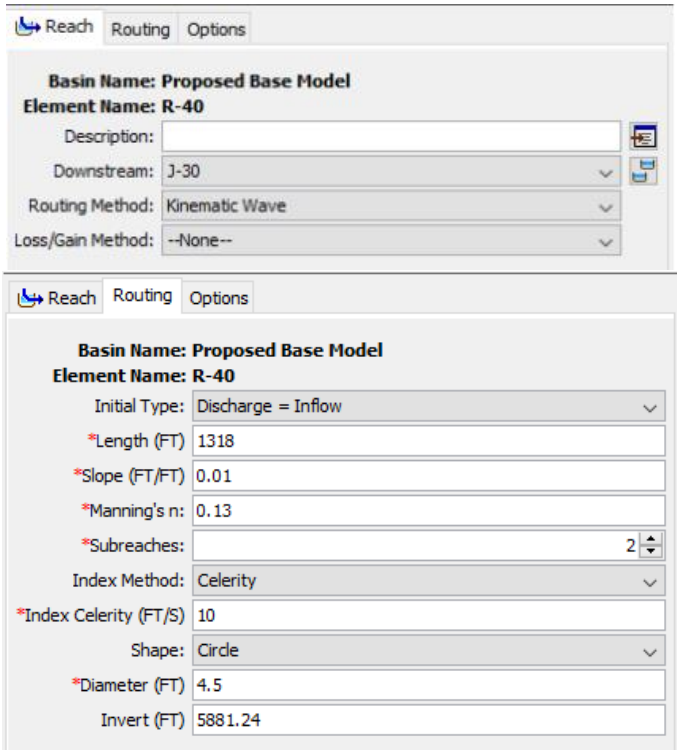

Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Description:
Downstream: J-20
*Area (MI2) 0.15
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Initial Abstraction (IN) 0.84
*Curve Number: 54
*Impervious (%) 2
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E20
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 16.29

BASIN-E30

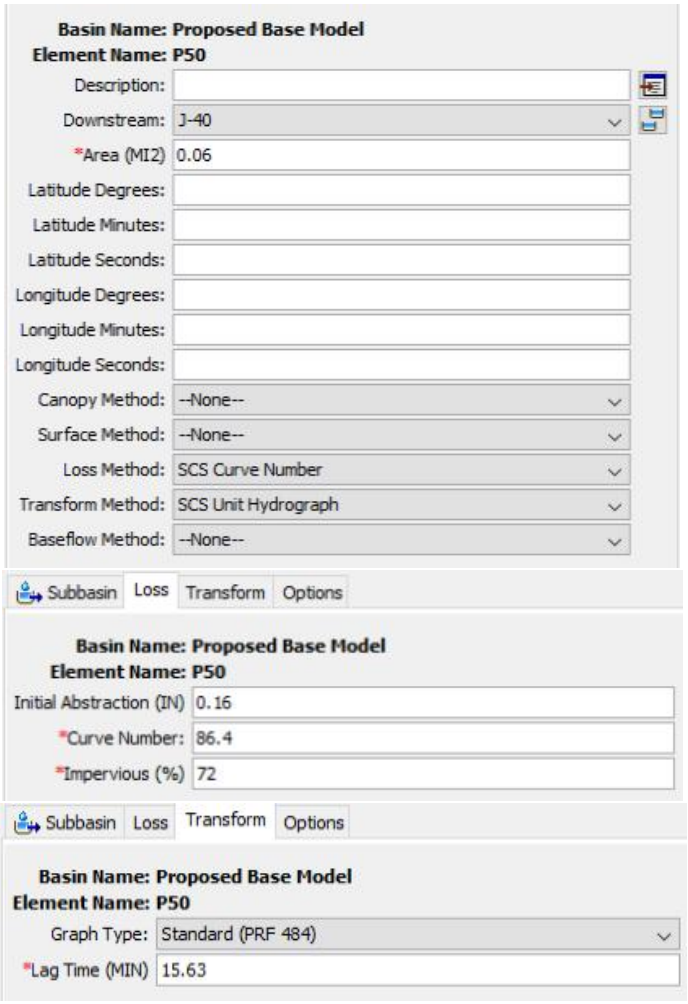

Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Description:
Downstream: J-30
*Area (MI2) 0.03
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Initial Abstraction (IN) 0.7
*Curve Number: 59
*Impervious (%) 23.2
Subbasin
Loss
Transform
Options
Basin Name: Existing Base Model
Element Name: Basin-E30
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 8.93

PROPOSED BASIN MODEL

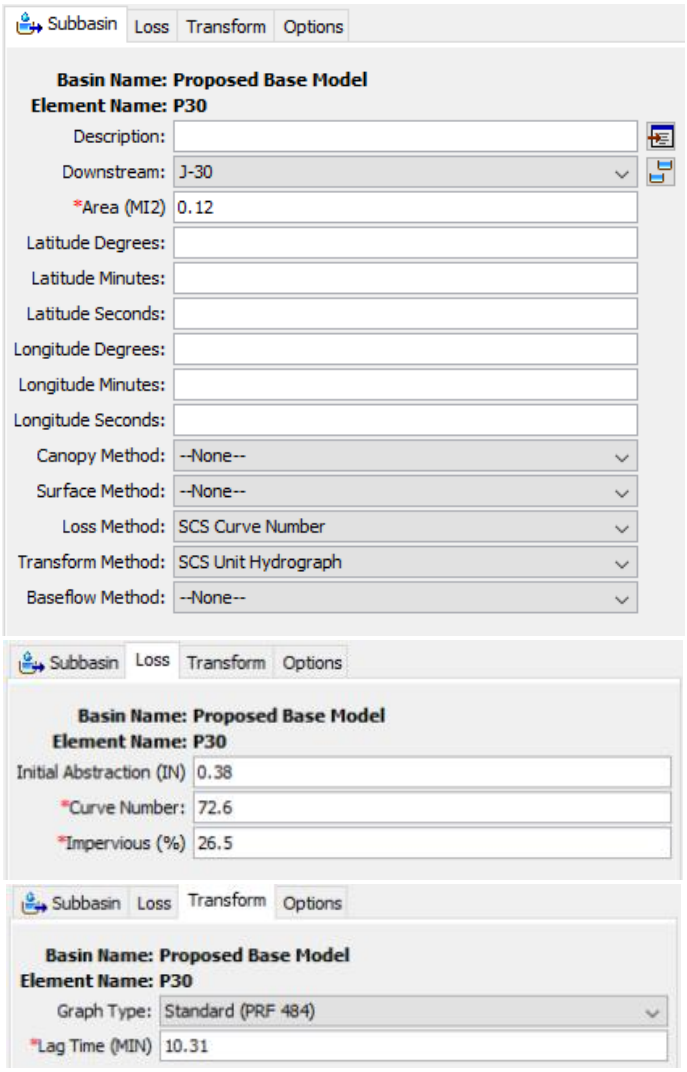
R-40


Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-40
Description:
Downstream: J-30
Routing Method: Kinematic Wave
Loss/Gain Method: --None--
Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-40
Initial Type: Discharge = Inflow
*Length (FT) 1318
*Slope (FT/FT) 0.01
*Manning's n: 0.13
*Subreaches: 2
Index Method: Celerity
*Index Celerity (FT/S) 10
Shape: Circle
*Diameter (FT) 4.5
Invert (FT) 5881.24

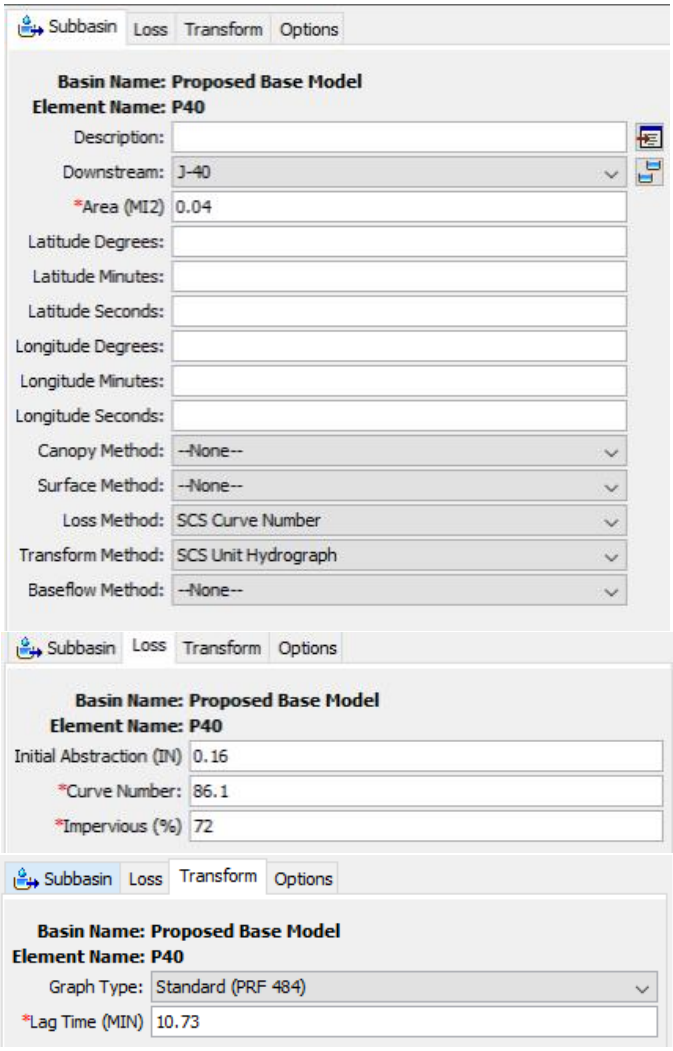
P50


Basin Name: Proposed Base Model
Element Name: P50
Description:
Downstream: J-40
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P50
Initial Abstraction (IN) 0.16
*Curve Number: 86.4
*Impervious (%) 72
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P50
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 15.63

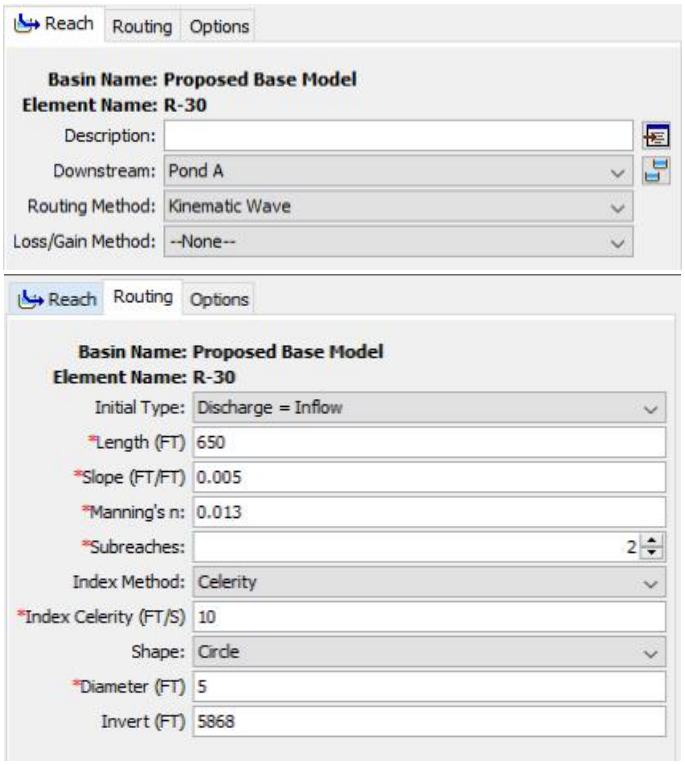
P30


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Description:
Downstream: J-30
*Area (MI2) 0.12
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Initial Abstraction (IN) 0.38
*Curve Number: 72.6
*Impervious (%) 26.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P30
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 10.31

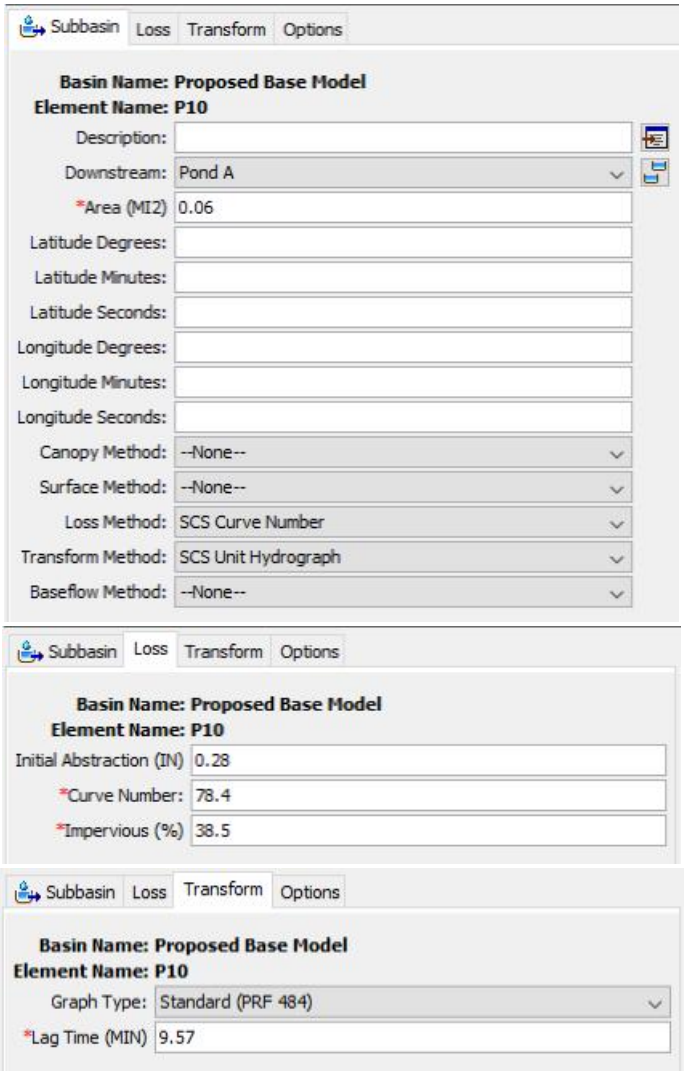
P40


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Description:
Downstream: J-40
*Area (MI2) 0.04
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Initial Abstraction (IN) 0.16
*Curve Number: 86.1
*Impervious (%) 72
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P40
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 10.73

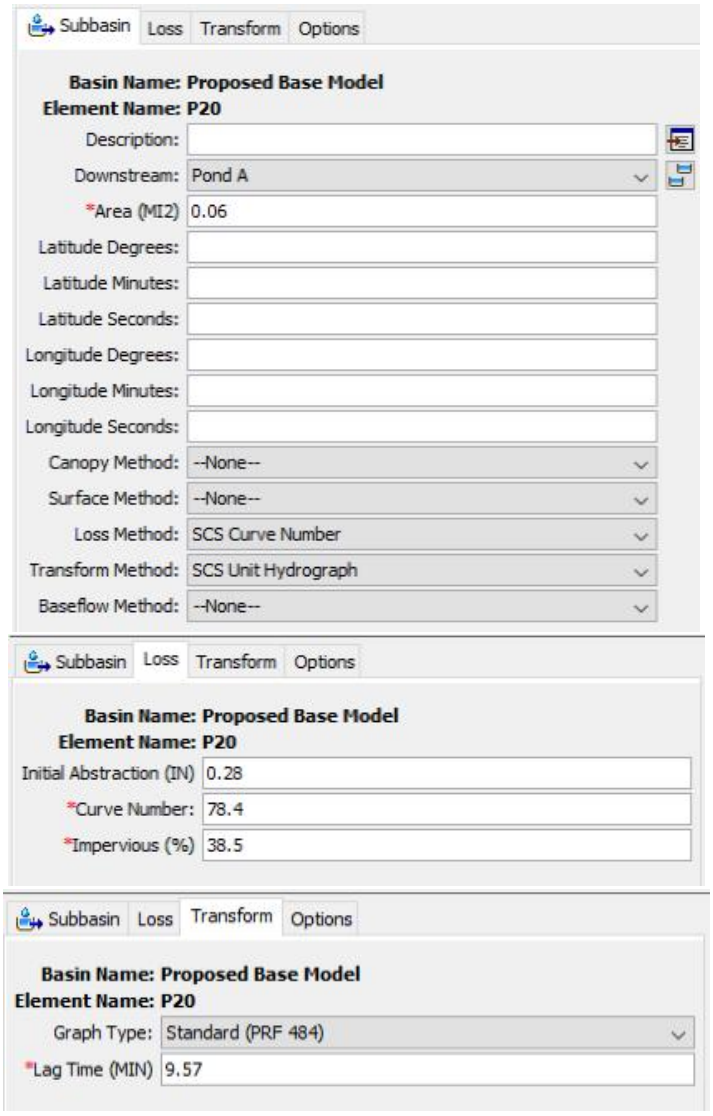
R-30


Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-30
Description:
Downstream: Pond A
Routing Method: Kinematic Wave
Loss/Gain Method: --None--
Reach
Routing
Options
Basin Name: Proposed Base Model
Element Name: R-30
Initial Type: Discharge = Inflow
*Length (FT) 650
*Slope (FT/FT) 0.005
*Manning's n: 0.013
*Subreaches: 2
Index Method: Celerity
*Index Celerity (FT/S) 10
Shape: Circle
*Diameter (FT) 5
Invert (FT) 5868

P10


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Description:
Downstream: Pond A
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Initial Abstraction (IN) 0.28
*Curve Number: 78.4
*Impervious (%) 38.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P10
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 9.57

P20


Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Description:
Downstream: Pond A
*Area (MI2) 0.06
Latitude Degrees:
Latitude Minutes:
Latitude Seconds:
Longitude Degrees:
Longitude Minutes:
Longitude Seconds:
Canopy Method: --None--
Surface Method: --None--
Loss Method: SCS Curve Number
Transform Method: SCS Unit Hydrograph
Baseflow Method: --None--
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Initial Abstraction (IN) 0.28
*Curve Number: 78.4
*Impervious (%) 38.5
Subbasin
Loss
Transform
Options
Basin Name: Proposed Base Model
Element Name: P20
Graph Type: Standard (PRF 484)
*Lag Time (MIN) 9.57

Project: CSU ATC Simulation Run: Existing_5yr

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Model
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Basin-E10	0.18	15.6	01Jan2021, 01:02	1.2
Basin-E20	0.15	11.7	01Jan2021, 01:02	0.9
J-20	0.33	27.4	01Jan2021, 01:02	2.1
Basin-E30	0.03	16.5	01Jan2021, 00:48	0.8
J-30	0.03	16.5	01Jan2021, 00:48	0.8

Project: CSU ATC Simulation Run: Existing_5yr

Subbasin: Basin-E10

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:02:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	15.6 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:02
Precipitation Volume	16.1 (AC-FT)	Direct Runoff Volume:	1.2 (AC-FT)
Loss Volume:	14.9 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	1.2 (AC-FT)	Discharge Volume:	1.2 (AC-FT)

Project: CSU ATC Simulation Run: Existing_5yr
Subbasin: Basin-E10

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:06	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:08	0.02	0.02	0.00	0.1	0.0	0.1
01Jan2021	00:10	0.02	0.02	0.00	0.1	0.0	0.1
01Jan2021	00:12	0.02	0.02	0.00	0.2	0.0	0.2
01Jan2021	00:14	0.02	0.02	0.00	0.3	0.0	0.3
01Jan2021	00:16	0.02	0.02	0.00	0.5	0.0	0.5
01Jan2021	00:18	0.02	0.02	0.00	0.7	0.0	0.7
01Jan2021	00:20	0.02	0.02	0.00	0.9	0.0	0.9
01Jan2021	00:22	0.04	0.03	0.00	1.1	0.0	1.1
01Jan2021	00:24	0.04	0.03	0.00	1.4	0.0	1.4
01Jan2021	00:26	0.04	0.04	0.00	1.7	0.0	1.7
01Jan2021	00:28	0.05	0.05	0.00	2.0	0.0	2.0
01Jan2021	00:30	0.05	0.05	0.00	2.3	0.0	2.3
01Jan2021	00:32	0.10	0.09	0.00	2.7	0.0	2.7
01Jan2021	00:34	0.10	0.09	0.00	3.1	0.0	3.1
01Jan2021	00:36	0.14	0.13	0.01	3.6	0.0	3.6
01Jan2021	00:38	0.17	0.17	0.01	4.2	0.0	4.2
01Jan2021	00:40	0.17	0.17	0.01	5.0	0.0	5.0
01Jan2021	00:42	0.07	0.06	0.01	5.9	0.0	5.9
01Jan2021	00:44	0.07	0.06	0.01	7.1	0.0	7.1
01Jan2021	00:46	0.05	0.05	0.01	8.3	0.0	8.3
01Jan2021	00:48	0.04	0.04	0.00	9.7	0.0	9.7
01Jan2021	00:50	0.04	0.04	0.00	11.1	0.0	11.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.02	0.00	12.4	0.0	12.4
01Jan2021	00:54	0.03	0.02	0.00	13.5	0.0	13.5
01Jan2021	00:56	0.02	0.02	0.00	14.4	0.0	14.4
01Jan2021	00:58	0.02	0.02	0.00	15.1	0.0	15.1
01Jan2021	01:00	0.02	0.02	0.00	15.5	0.0	15.5
01Jan2021	01:02	0.02	0.02	0.00	15.6	0.0	15.6
01Jan2021	01:04	0.02	0.02	0.00	15.6	0.0	15.6
01Jan2021	01:06	0.01	0.01	0.00	15.4	0.0	15.4
01Jan2021	01:08	0.01	0.01	0.00	15.0	0.0	15.0
01Jan2021	01:10	0.01	0.01	0.00	14.4	0.0	14.4
01Jan2021	01:12	0.01	0.01	0.00	13.8	0.0	13.8
01Jan2021	01:14	0.01	0.01	0.00	13.2	0.0	13.2
01Jan2021	01:16	0.01	0.01	0.00	12.5	0.0	12.5
01Jan2021	01:18	0.01	0.01	0.00	11.8	0.0	11.8
01Jan2021	01:20	0.01	0.01	0.00	11.1	0.0	11.1
01Jan2021	01:22	0.01	0.01	0.00	10.3	0.0	10.3
01Jan2021	01:24	0.01	0.01	0.00	9.6	0.0	9.6
01Jan2021	01:26	0.01	0.01	0.00	8.9	0.0	8.9
01Jan2021	01:28	0.01	0.01	0.00	8.3	0.0	8.3
01Jan2021	01:30	0.01	0.01	0.00	7.7	0.0	7.7
01Jan2021	01:32	0.01	0.00	0.00	7.1	0.0	7.1
01Jan2021	01:34	0.01	0.00	0.00	6.6	0.0	6.6
01Jan2021	01:36	0.01	0.00	0.00	6.2	0.0	6.2
01Jan2021	01:38	0.01	0.01	0.00	5.8	0.0	5.8
01Jan2021	01:40	0.01	0.00	0.00	5.5	0.0	5.5
01Jan2021	01:42	0.01	0.00	0.00	5.2	0.0	5.2
01Jan2021	01:44	0.01	0.00	0.00	4.9	0.0	4.9
01Jan2021	01:46	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:48	0.01	0.00	0.00	4.5	0.0	4.5
01Jan2021	01:50	0.01	0.00	0.00	4.4	0.0	4.4
01Jan2021	01:52	0.01	0.00	0.00	4.2	0.0	4.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	4.1	0.0	4.1
01Jan2021	01:56	0.01	0.00	0.00	4.0	0.0	4.0
01Jan2021	01:58	0.01	0.00	0.00	3.9	0.0	3.9
01Jan2021	02:00	0.01	0.00	0.00	3.8	0.0	3.8
01Jan2021	02:02	0.00	0.00	0.00	3.7	0.0	3.7
01Jan2021	02:04	0.00	0.00	0.00	3.6	0.0	3.6
01Jan2021	02:06	0.00	0.00	0.00	3.5	0.0	3.5
01Jan2021	02:08	0.00	0.00	0.00	3.4	0.0	3.4
01Jan2021	02:10	0.00	0.00	0.00	3.3	0.0	3.3
01Jan2021	02:12	0.00	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:14	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:16	0.00	0.00	0.00	2.7	0.0	2.7
01Jan2021	02:18	0.00	0.00	0.00	2.4	0.0	2.4
01Jan2021	02:20	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:22	0.00	0.00	0.00	1.9	0.0	1.9
01Jan2021	02:24	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:26	0.00	0.00	0.00	1.5	0.0	1.5
01Jan2021	02:28	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:30	0.00	0.00	0.00	1.1	0.0	1.1
01Jan2021	02:32	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:34	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:36	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:38	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:40	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:42	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:44	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:46	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:48	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:50	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:52	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:54	0.00	0.00	0.00	0.2	0.0	0.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:58	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	03:00	0.00	0.00	0.00	0.1	0.0	0.1

Project: CSU ATC Simulation Run: Existing_5yr

Subbasin: Basin-E20

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:02:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	11.7 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:02
Precipitation Volume:	13.4 (AC-FT)	Direct Runoff Volume:	0.9 (AC-FT)
Loss Volume:	12.6 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.9 (AC-FT)	Discharge Volume:	0.9 (AC-FT)

Project: CSU ATC Simulation Run: Existing_5yr
Subbasin: Basin-E20

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:06	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:08	0.02	0.02	0.00	0.0	0.0	0.0
01Jan2021	00:10	0.02	0.02	0.00	0.1	0.0	0.1
01Jan2021	00:12	0.02	0.02	0.00	0.1	0.0	0.1
01Jan2021	00:14	0.02	0.02	0.00	0.2	0.0	0.2
01Jan2021	00:16	0.02	0.02	0.00	0.3	0.0	0.3
01Jan2021	00:18	0.02	0.02	0.00	0.4	0.0	0.4
01Jan2021	00:20	0.02	0.02	0.00	0.5	0.0	0.5
01Jan2021	00:22	0.04	0.03	0.00	0.6	0.0	0.6
01Jan2021	00:24	0.04	0.03	0.00	0.7	0.0	0.7
01Jan2021	00:26	0.04	0.04	0.00	0.8	0.0	0.8
01Jan2021	00:28	0.05	0.05	0.00	0.9	0.0	0.9
01Jan2021	00:30	0.05	0.05	0.00	1.0	0.0	1.0
01Jan2021	00:32	0.10	0.10	0.00	1.2	0.0	1.2
01Jan2021	00:34	0.10	0.10	0.00	1.4	0.0	1.4
01Jan2021	00:36	0.14	0.13	0.00	1.6	0.0	1.6
01Jan2021	00:38	0.17	0.17	0.00	1.9	0.0	1.9
01Jan2021	00:40	0.17	0.17	0.01	2.3	0.0	2.3
01Jan2021	00:42	0.07	0.06	0.01	2.9	0.0	2.9
01Jan2021	00:44	0.07	0.06	0.01	3.8	0.0	3.8
01Jan2021	00:46	0.05	0.05	0.01	4.8	0.0	4.8
01Jan2021	00:48	0.04	0.04	0.00	6.0	0.0	6.0
01Jan2021	00:50	0.04	0.04	0.00	7.3	0.0	7.3

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.02	0.00	8.5	0.0	8.5
01Jan2021	00:54	0.03	0.02	0.00	9.6	0.0	9.6
01Jan2021	00:56	0.02	0.02	0.00	10.5	0.0	10.5
01Jan2021	00:58	0.02	0.02	0.00	11.1	0.0	11.1
01Jan2021	01:00	0.02	0.02	0.00	11.5	0.0	11.5
01Jan2021	01:02	0.02	0.02	0.00	11.7	0.0	11.7
01Jan2021	01:04	0.02	0.02	0.00	11.7	0.0	11.7
01Jan2021	01:06	0.01	0.01	0.00	11.5	0.0	11.5
01Jan2021	01:08	0.01	0.01	0.00	11.2	0.0	11.2
01Jan2021	01:10	0.01	0.01	0.00	10.8	0.0	10.8
01Jan2021	01:12	0.01	0.01	0.00	10.3	0.0	10.3
01Jan2021	01:14	0.01	0.01	0.00	9.8	0.0	9.8
01Jan2021	01:16	0.01	0.01	0.00	9.2	0.0	9.2
01Jan2021	01:18	0.01	0.01	0.00	8.6	0.0	8.6
01Jan2021	01:20	0.01	0.01	0.00	8.0	0.0	8.0
01Jan2021	01:22	0.01	0.01	0.00	7.4	0.0	7.4
01Jan2021	01:24	0.01	0.01	0.00	6.8	0.0	6.8
01Jan2021	01:26	0.01	0.01	0.00	6.3	0.0	6.3
01Jan2021	01:28	0.01	0.01	0.00	5.8	0.0	5.8
01Jan2021	01:30	0.01	0.01	0.00	5.3	0.0	5.3
01Jan2021	01:32	0.01	0.00	0.00	5.0	0.0	5.0
01Jan2021	01:34	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:36	0.01	0.00	0.00	4.4	0.0	4.4
01Jan2021	01:38	0.01	0.00	0.00	4.2	0.0	4.2
01Jan2021	01:40	0.01	0.00	0.00	4.0	0.0	4.0
01Jan2021	01:42	0.01	0.00	0.00	3.8	0.0	3.8
01Jan2021	01:44	0.01	0.00	0.00	3.7	0.0	3.7
01Jan2021	01:46	0.01	0.00	0.00	3.6	0.0	3.6
01Jan2021	01:48	0.01	0.00	0.00	3.5	0.0	3.5
01Jan2021	01:50	0.01	0.00	0.00	3.4	0.0	3.4
01Jan2021	01:52	0.01	0.00	0.00	3.3	0.0	3.3

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	3.2	0.0	3.2
01Jan2021	01:56	0.01	0.00	0.00	3.2	0.0	3.2
01Jan2021	01:58	0.01	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:00	0.01	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:02	0.00	0.00	0.00	3.0	0.0	3.0
01Jan2021	02:04	0.00	0.00	0.00	3.0	0.0	3.0
01Jan2021	02:06	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:08	0.00	0.00	0.00	2.8	0.0	2.8
01Jan2021	02:10	0.00	0.00	0.00	2.7	0.0	2.7
01Jan2021	02:12	0.00	0.00	0.00	2.4	0.0	2.4
01Jan2021	02:14	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:16	0.00	0.00	0.00	1.9	0.0	1.9
01Jan2021	02:18	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:20	0.00	0.00	0.00	1.4	0.0	1.4
01Jan2021	02:22	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:24	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:26	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:28	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:30	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:32	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:34	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:36	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:38	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:40	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:42	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:44	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:46	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:48	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:50	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:52	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:54	0.00	0.00	0.00	0.1	0.0	0.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Existing_5yr

Junction: J-20

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:02:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	27.4 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 01:02
Volume:	2.1 (AC-FT)		

Project: CSU ATC Simulation Run: Existing_5yr
Junction: J-20

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.0	0.0
01Jan2021	00:04	0.0	0.0	0.0
01Jan2021	00:06	0.0	0.0	0.0
01Jan2021	00:08	0.1	0.0	0.1
01Jan2021	00:10	0.1	0.1	0.2
01Jan2021	00:12	0.2	0.1	0.3
01Jan2021	00:14	0.3	0.2	0.5
01Jan2021	00:16	0.5	0.3	0.8
01Jan2021	00:18	0.7	0.4	1.1
01Jan2021	00:20	0.9	0.5	1.4
01Jan2021	00:22	1.1	0.6	1.7
01Jan2021	00:24	1.4	0.7	2.1
01Jan2021	00:26	1.7	0.8	2.5
01Jan2021	00:28	2.0	0.9	2.9
01Jan2021	00:30	2.3	1.0	3.3
01Jan2021	00:32	2.7	1.2	3.8
01Jan2021	00:34	3.1	1.4	4.4
01Jan2021	00:36	3.6	1.6	5.2
01Jan2021	00:38	4.2	1.9	6.1
01Jan2021	00:40	5.0	2.3	7.3
01Jan2021	00:42	5.9	2.9	8.9
01Jan2021	00:44	7.1	3.8	10.8
01Jan2021	00:46	8.3	4.8	13.1
01Jan2021	00:48	9.7	6.0	15.7
01Jan2021	00:50	11.1	7.3	18.4

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	00:52	12.4	8.5	20.9
01Jan2021	00:54	13.5	9.6	23.1
01Jan2021	00:56	14.4	10.5	24.9
01Jan2021	00:58	15.1	11.1	26.2
01Jan2021	01:00	15.5	11.5	27.0
01Jan2021	01:02	15.6	11.7	27.4
01Jan2021	01:04	15.6	11.7	27.3
01Jan2021	01:06	15.4	11.5	26.8
01Jan2021	01:08	15.0	11.2	26.1
01Jan2021	01:10	14.4	10.8	25.2
01Jan2021	01:12	13.8	10.3	24.2
01Jan2021	01:14	13.2	9.8	23.0
01Jan2021	01:16	12.5	9.2	21.8
01Jan2021	01:18	11.8	8.6	20.4
01Jan2021	01:20	11.1	8.0	19.1
01Jan2021	01:22	10.3	7.4	17.7
01Jan2021	01:24	9.6	6.8	16.4
01Jan2021	01:26	8.9	6.3	15.2
01Jan2021	01:28	8.3	5.8	14.1
01Jan2021	01:30	7.7	5.3	13.0
01Jan2021	01:32	7.1	5.0	12.1
01Jan2021	01:34	6.6	4.7	11.3
01Jan2021	01:36	6.2	4.4	10.6
01Jan2021	01:38	5.8	4.2	10.0
01Jan2021	01:40	5.5	4.0	9.5
01Jan2021	01:42	5.2	3.8	9.0
01Jan2021	01:44	4.9	3.7	8.6
01Jan2021	01:46	4.7	3.6	8.3
01Jan2021	01:48	4.5	3.5	8.0
01Jan2021	01:50	4.4	3.4	7.7
01Jan2021	01:52	4.2	3.3	7.5

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	01:54	4.1	3.2	7.3
01Jan2021	01:56	4.0	3.2	7.1
01Jan2021	01:58	3.9	3.1	7.0
01Jan2021	02:00	3.8	3.1	6.9
01Jan2021	02:02	3.7	3.0	6.7
01Jan2021	02:04	3.6	3.0	6.6
01Jan2021	02:06	3.5	2.9	6.5
01Jan2021	02:08	3.4	2.8	6.2
01Jan2021	02:10	3.3	2.7	6.0
01Jan2021	02:12	3.1	2.4	5.6
01Jan2021	02:14	2.9	2.2	5.1
01Jan2021	02:16	2.7	1.9	4.6
01Jan2021	02:18	2.4	1.7	4.1
01Jan2021	02:20	2.2	1.4	3.6
01Jan2021	02:22	1.9	1.2	3.1
01Jan2021	02:24	1.7	1.0	2.7
01Jan2021	02:26	1.5	0.8	2.3
01Jan2021	02:28	1.2	0.7	1.9
01Jan2021	02:30	1.1	0.5	1.6
01Jan2021	02:32	0.9	0.5	1.3
01Jan2021	02:34	0.8	0.4	1.1
01Jan2021	02:36	0.6	0.3	1.0
01Jan2021	02:38	0.6	0.3	0.8
01Jan2021	02:40	0.5	0.2	0.7
01Jan2021	02:42	0.4	0.2	0.6
01Jan2021	02:44	0.3	0.1	0.5
01Jan2021	02:46	0.3	0.1	0.4
01Jan2021	02:48	0.2	0.1	0.3
01Jan2021	02:50	0.2	0.1	0.3
01Jan2021	02:52	0.2	0.1	0.2
01Jan2021	02:54	0.2	0.1	0.2

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.1	0.0	0.2
01Jan2021	02:58	0.1	0.0	0.1
01Jan2021	03:00	0.1	0.0	0.1

Project: CSU ATC Simulation Run: Existing_5yr

Subbasin: Basin-E30

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:02:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	16.5 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:48
Precipitation Volume:	2.7 (AC-FT)	Direct Runoff Volume:	0.8 (AC-FT)
Loss Volume:	1.9 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.8 (AC-FT)	Discharge Volume:	0.8 (AC-FT)

Project: CSU ATC Simulation Run: Existing_5yr
Subbasin: Basin-E30

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.1	0.0	0.1
01Jan2021	00:06	0.01	0.01	0.00	0.2	0.0	0.2
01Jan2021	00:08	0.02	0.01	0.00	0.4	0.0	0.4
01Jan2021	00:10	0.02	0.01	0.00	0.7	0.0	0.7
01Jan2021	00:12	0.02	0.02	0.00	1.0	0.0	1.0
01Jan2021	00:14	0.02	0.02	0.00	1.4	0.0	1.4
01Jan2021	00:16	0.02	0.02	0.01	1.7	0.0	1.7
01Jan2021	00:18	0.02	0.02	0.01	2.0	0.0	2.0
01Jan2021	00:20	0.02	0.02	0.01	2.2	0.0	2.2
01Jan2021	00:22	0.04	0.03	0.01	2.5	0.0	2.5
01Jan2021	00:24	0.04	0.03	0.01	2.7	0.0	2.7
01Jan2021	00:26	0.04	0.03	0.01	3.1	0.0	3.1
01Jan2021	00:28	0.05	0.04	0.01	3.5	0.0	3.5
01Jan2021	00:30	0.05	0.04	0.01	3.9	0.0	3.9
01Jan2021	00:32	0.10	0.08	0.02	4.5	0.0	4.5
01Jan2021	00:34	0.10	0.08	0.02	5.3	0.0	5.3
01Jan2021	00:36	0.14	0.10	0.03	6.4	0.0	6.4
01Jan2021	00:38	0.17	0.13	0.04	8.1	0.0	8.1
01Jan2021	00:40	0.17	0.12	0.05	10.3	0.0	10.3
01Jan2021	00:42	0.07	0.05	0.02	12.8	0.0	12.8
01Jan2021	00:44	0.07	0.05	0.02	15.1	0.0	15.1
01Jan2021	00:46	0.05	0.04	0.02	16.3	0.0	16.3
01Jan2021	00:48	0.04	0.03	0.01	16.5	0.0	16.5
01Jan2021	00:50	0.04	0.03	0.01	15.7	0.0	15.7

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.02	0.01	14.4	0.0	14.4
01Jan2021	00:54	0.03	0.02	0.01	12.8	0.0	12.8
01Jan2021	00:56	0.02	0.02	0.01	11.3	0.0	11.3
01Jan2021	00:58	0.02	0.01	0.01	9.9	0.0	9.9
01Jan2021	01:00	0.02	0.01	0.01	8.7	0.0	8.7
01Jan2021	01:02	0.02	0.01	0.01	7.7	0.0	7.7
01Jan2021	01:04	0.02	0.01	0.01	6.9	0.0	6.9
01Jan2021	01:06	0.01	0.01	0.01	6.2	0.0	6.2
01Jan2021	01:08	0.01	0.01	0.00	5.7	0.0	5.7
01Jan2021	01:10	0.01	0.01	0.00	5.1	0.0	5.1
01Jan2021	01:12	0.01	0.00	0.00	4.5	0.0	4.5
01Jan2021	01:14	0.01	0.00	0.00	3.9	0.0	3.9
01Jan2021	01:16	0.01	0.00	0.00	3.4	0.0	3.4
01Jan2021	01:18	0.01	0.00	0.00	2.9	0.0	2.9
01Jan2021	01:20	0.01	0.00	0.00	2.5	0.0	2.5
01Jan2021	01:22	0.01	0.00	0.00	2.3	0.0	2.3
01Jan2021	01:24	0.01	0.00	0.00	2.1	0.0	2.1
01Jan2021	01:26	0.01	0.00	0.00	1.9	0.0	1.9
01Jan2021	01:28	0.01	0.00	0.00	1.8	0.0	1.8
01Jan2021	01:30	0.01	0.00	0.00	1.7	0.0	1.7
01Jan2021	01:32	0.01	0.00	0.00	1.6	0.0	1.6
01Jan2021	01:34	0.01	0.00	0.00	1.6	0.0	1.6
01Jan2021	01:36	0.01	0.00	0.00	1.5	0.0	1.5
01Jan2021	01:38	0.01	0.00	0.00	1.5	0.0	1.5
01Jan2021	01:40	0.01	0.00	0.00	1.4	0.0	1.4
01Jan2021	01:42	0.01	0.00	0.00	1.4	0.0	1.4
01Jan2021	01:44	0.01	0.00	0.00	1.4	0.0	1.4
01Jan2021	01:46	0.01	0.00	0.00	1.4	0.0	1.4
01Jan2021	01:48	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	01:50	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	01:52	0.01	0.00	0.00	1.3	0.0	1.3

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	01:56	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	01:58	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:00	0.01	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:02	0.00	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:04	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:06	0.00	0.00	0.00	1.1	0.0	1.1
01Jan2021	02:08	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:10	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:12	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:14	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:16	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:18	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:20	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:22	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:24	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:26	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:28	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:30	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:32	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:34	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:36	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:38	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Existing_5yr

Junction: J-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:02:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	16.5 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Volume:	0.8 (AC-FT)		

Project: CSU ATC Simulation Run: Existing_5yr
Junction: J-30

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:02:35 Control Specifications: Control 1

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.0	0.0
01Jan2021	00:04	0.1	0.1
01Jan2021	00:06	0.2	0.2
01Jan2021	00:08	0.4	0.4
01Jan2021	00:10	0.7	0.7
01Jan2021	00:12	1.0	1.0
01Jan2021	00:14	1.4	1.4
01Jan2021	00:16	1.7	1.7
01Jan2021	00:18	2.0	2.0
01Jan2021	00:20	2.2	2.2
01Jan2021	00:22	2.5	2.5
01Jan2021	00:24	2.7	2.7
01Jan2021	00:26	3.1	3.1
01Jan2021	00:28	3.5	3.5
01Jan2021	00:30	3.9	3.9
01Jan2021	00:32	4.5	4.5
01Jan2021	00:34	5.3	5.3
01Jan2021	00:36	6.4	6.4
01Jan2021	00:38	8.1	8.1
01Jan2021	00:40	10.3	10.3
01Jan2021	00:42	12.8	12.8
01Jan2021	00:44	15.1	15.1
01Jan2021	00:46	16.3	16.3
01Jan2021	00:48	16.5	16.5
01Jan2021	00:50	15.7	15.7

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	00:52	14.4	14.4
01Jan2021	00:54	12.8	12.8
01Jan2021	00:56	11.3	11.3
01Jan2021	00:58	9.9	9.9
01Jan2021	01:00	8.7	8.7
01Jan2021	01:02	7.7	7.7
01Jan2021	01:04	6.9	6.9
01Jan2021	01:06	6.2	6.2
01Jan2021	01:08	5.7	5.7
01Jan2021	01:10	5.1	5.1
01Jan2021	01:12	4.5	4.5
01Jan2021	01:14	3.9	3.9
01Jan2021	01:16	3.4	3.4
01Jan2021	01:18	2.9	2.9
01Jan2021	01:20	2.5	2.5
01Jan2021	01:22	2.3	2.3
01Jan2021	01:24	2.1	2.1
01Jan2021	01:26	1.9	1.9
01Jan2021	01:28	1.8	1.8
01Jan2021	01:30	1.7	1.7
01Jan2021	01:32	1.6	1.6
01Jan2021	01:34	1.6	1.6
01Jan2021	01:36	1.5	1.5
01Jan2021	01:38	1.5	1.5
01Jan2021	01:40	1.4	1.4
01Jan2021	01:42	1.4	1.4
01Jan2021	01:44	1.4	1.4
01Jan2021	01:46	1.4	1.4
01Jan2021	01:48	1.3	1.3
01Jan2021	01:50	1.3	1.3
01Jan2021	01:52	1.3	1.3

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	01:54	1.3	1.3
01Jan2021	01:56	1.3	1.3
01Jan2021	01:58	1.3	1.3
01Jan2021	02:00	1.3	1.3
01Jan2021	02:02	1.3	1.3
01Jan2021	02:04	1.2	1.2
01Jan2021	02:06	1.1	1.1
01Jan2021	02:08	0.9	0.9
01Jan2021	02:10	0.7	0.7
01Jan2021	02:12	0.6	0.6
01Jan2021	02:14	0.4	0.4
01Jan2021	02:16	0.3	0.3
01Jan2021	02:18	0.2	0.2
01Jan2021	02:20	0.1	0.1
01Jan2021	02:22	0.1	0.1
01Jan2021	02:24	0.1	0.1
01Jan2021	02:26	0.1	0.1
01Jan2021	02:28	0.0	0.0
01Jan2021	02:30	0.0	0.0
01Jan2021	02:32	0.0	0.0
01Jan2021	02:34	0.0	0.0
01Jan2021	02:36	0.0	0.0
01Jan2021	02:38	0.0	0.0
01Jan2021	02:40	0.0	0.0
01Jan2021	02:42	0.0	0.0
01Jan2021	02:44	0.0	0.0
01Jan2021	02:46	0.0	0.0
01Jan2021	02:48	0.0	0.0
01Jan2021	02:50	0.0	0.0
01Jan2021	02:52	0.0	0.0
01Jan2021	02:54	0.0	0.0

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.0	0.0
01Jan2021	02:58	0.0	0.0
01Jan2021	03:00	0.0	0.0

Project: CSU ATC Simulation Run: Existing_100yr

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Model
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Basin-E10	0.18	57.9	01Jan2021, 01:04	4.1
Basin-E20	0.15	54.7	01Jan2021, 01:00	3.4
J-20	0.33	111.5	01Jan2021, 01:02	7.4
Basin-E30	0.03	37.0	01Jan2021, 00:48	1.7
J-30	0.03	37.0	01Jan2021, 00:48	1.7

Project: CSU ATC Simulation Run: Existing_100yr

Subbasin: Basin-E10

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:02:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	57.9 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 01:04
Precipitation Volume:	27.1 (AC-FT)	Direct Runoff Volume:	4.1 (AC-FT)
Loss Volume:	23.0 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	4.1 (AC-FT)	Discharge Volume:	4.1 (AC-FT)

Project: CSU ATC Simulation Run: Existing_100yr
Subbasin: Basin-E10

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:06	0.02	0.02	0.00	0.1	0.0	0.1
01Jan2021	00:08	0.03	0.03	0.00	0.1	0.0	0.1
01Jan2021	00:10	0.03	0.03	0.00	0.2	0.0	0.2
01Jan2021	00:12	0.03	0.03	0.00	0.4	0.0	0.4
01Jan2021	00:14	0.03	0.03	0.00	0.6	0.0	0.6
01Jan2021	00:16	0.04	0.04	0.00	0.8	0.0	0.8
01Jan2021	00:18	0.04	0.04	0.00	1.2	0.0	1.2
01Jan2021	00:20	0.04	0.04	0.00	1.5	0.0	1.5
01Jan2021	00:22	0.06	0.06	0.00	1.9	0.0	1.9
01Jan2021	00:24	0.06	0.06	0.00	2.4	0.0	2.4
01Jan2021	00:26	0.07	0.07	0.00	2.8	0.0	2.8
01Jan2021	00:28	0.08	0.08	0.00	3.3	0.0	3.3
01Jan2021	00:30	0.08	0.08	0.00	3.9	0.0	3.9
01Jan2021	00:32	0.16	0.16	0.01	4.5	0.0	4.5
01Jan2021	00:34	0.16	0.16	0.01	5.2	0.0	5.2
01Jan2021	00:36	0.23	0.21	0.02	6.0	0.0	6.0
01Jan2021	00:38	0.29	0.26	0.04	7.3	0.0	7.3
01Jan2021	00:40	0.29	0.24	0.05	9.4	0.0	9.4
01Jan2021	00:42	0.11	0.09	0.02	12.3	0.0	12.3
01Jan2021	00:44	0.11	0.09	0.02	16.1	0.0	16.1
01Jan2021	00:46	0.09	0.07	0.02	20.9	0.0	20.9
01Jan2021	00:48	0.07	0.05	0.02	26.7	0.0	26.7
01Jan2021	00:50	0.07	0.05	0.02	33.1	0.0	33.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.03	0.01	39.4	0.0	39.4
01Jan2021	00:54	0.04	0.03	0.01	45.0	0.0	45.0
01Jan2021	00:56	0.04	0.03	0.01	49.8	0.0	49.8
01Jan2021	00:58	0.04	0.03	0.01	53.5	0.0	53.5
01Jan2021	01:00	0.04	0.03	0.01	56.1	0.0	56.1
01Jan2021	01:02	0.03	0.02	0.01	57.5	0.0	57.5
01Jan2021	01:04	0.03	0.02	0.01	57.9	0.0	57.9
01Jan2021	01:06	0.02	0.02	0.01	57.4	0.0	57.4
01Jan2021	01:08	0.01	0.01	0.00	56.0	0.0	56.0
01Jan2021	01:10	0.01	0.01	0.00	53.8	0.0	53.8
01Jan2021	01:12	0.01	0.01	0.00	51.2	0.0	51.2
01Jan2021	01:14	0.01	0.01	0.00	48.5	0.0	48.5
01Jan2021	01:16	0.01	0.01	0.00	45.8	0.0	45.8
01Jan2021	01:18	0.01	0.01	0.00	42.9	0.0	42.9
01Jan2021	01:20	0.01	0.01	0.00	40.0	0.0	40.0
01Jan2021	01:22	0.01	0.01	0.00	37.2	0.0	37.2
01Jan2021	01:24	0.01	0.01	0.00	34.4	0.0	34.4
01Jan2021	01:26	0.01	0.01	0.00	31.8	0.0	31.8
01Jan2021	01:28	0.01	0.01	0.00	29.3	0.0	29.3
01Jan2021	01:30	0.01	0.01	0.00	27.1	0.0	27.1
01Jan2021	01:32	0.01	0.01	0.00	25.0	0.0	25.0
01Jan2021	01:34	0.01	0.01	0.00	23.2	0.0	23.2
01Jan2021	01:36	0.01	0.01	0.00	21.5	0.0	21.5
01Jan2021	01:38	0.01	0.01	0.00	20.1	0.0	20.1
01Jan2021	01:40	0.01	0.01	0.00	18.8	0.0	18.8
01Jan2021	01:42	0.01	0.01	0.00	17.8	0.0	17.8
01Jan2021	01:44	0.01	0.01	0.00	16.8	0.0	16.8
01Jan2021	01:46	0.01	0.01	0.00	16.0	0.0	16.0
01Jan2021	01:48	0.01	0.01	0.00	15.3	0.0	15.3
01Jan2021	01:50	0.01	0.01	0.00	14.6	0.0	14.6
01Jan2021	01:52	0.01	0.01	0.00	14.1	0.0	14.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.01	0.00	13.6	0.0	13.6
01Jan2021	01:56	0.01	0.01	0.00	13.1	0.0	13.1
01Jan2021	01:58	0.01	0.01	0.00	12.7	0.0	12.7
01Jan2021	02:00	0.01	0.01	0.00	12.4	0.0	12.4
01Jan2021	02:02	0.00	0.00	0.00	12.1	0.0	12.1
01Jan2021	02:04	0.00	0.00	0.00	11.8	0.0	11.8
01Jan2021	02:06	0.00	0.00	0.00	11.5	0.0	11.5
01Jan2021	02:08	0.00	0.00	0.00	11.2	0.0	11.2
01Jan2021	02:10	0.00	0.00	0.00	10.7	0.0	10.7
01Jan2021	02:12	0.00	0.00	0.00	10.1	0.0	10.1
01Jan2021	02:14	0.00	0.00	0.00	9.5	0.0	9.5
01Jan2021	02:16	0.00	0.00	0.00	8.7	0.0	8.7
01Jan2021	02:18	0.00	0.00	0.00	7.9	0.0	7.9
01Jan2021	02:20	0.00	0.00	0.00	7.0	0.0	7.0
01Jan2021	02:22	0.00	0.00	0.00	6.2	0.0	6.2
01Jan2021	02:24	0.00	0.00	0.00	5.4	0.0	5.4
01Jan2021	02:26	0.00	0.00	0.00	4.7	0.0	4.7
01Jan2021	02:28	0.00	0.00	0.00	4.0	0.0	4.0
01Jan2021	02:30	0.00	0.00	0.00	3.4	0.0	3.4
01Jan2021	02:32	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:34	0.00	0.00	0.00	2.4	0.0	2.4
01Jan2021	02:36	0.00	0.00	0.00	2.1	0.0	2.1
01Jan2021	02:38	0.00	0.00	0.00	1.8	0.0	1.8
01Jan2021	02:40	0.00	0.00	0.00	1.5	0.0	1.5
01Jan2021	02:42	0.00	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:44	0.00	0.00	0.00	1.1	0.0	1.1
01Jan2021	02:46	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:48	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:50	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:52	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:54	0.00	0.00	0.00	0.5	0.0	0.5

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:58	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	03:00	0.00	0.00	0.00	0.3	0.0	0.3

Project: CSU ATC Simulation Run: Existing_100yr

Subbasin: Basin-E20

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:02:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	54.7 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:00
Precipitation Volume	22.6 (AC-FT)	Direct Runoff Volume:	3.4 (AC-FT)
Loss Volume:	19.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	3.4 (AC-FT)	Discharge Volume:	3.4 (AC-FT)

Project: CSU ATC Simulation Run: Existing_100yr
Subbasin: Basin-E20

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:06	0.02	0.02	0.00	0.0	0.0	0.0
01Jan2021	00:08	0.03	0.03	0.00	0.1	0.0	0.1
01Jan2021	00:10	0.03	0.03	0.00	0.1	0.0	0.1
01Jan2021	00:12	0.03	0.03	0.00	0.2	0.0	0.2
01Jan2021	00:14	0.03	0.03	0.00	0.3	0.0	0.3
01Jan2021	00:16	0.04	0.04	0.00	0.5	0.0	0.5
01Jan2021	00:18	0.04	0.04	0.00	0.6	0.0	0.6
01Jan2021	00:20	0.04	0.04	0.00	0.8	0.0	0.8
01Jan2021	00:22	0.06	0.06	0.00	1.0	0.0	1.0
01Jan2021	00:24	0.06	0.06	0.00	1.1	0.0	1.1
01Jan2021	00:26	0.07	0.07	0.00	1.3	0.0	1.3
01Jan2021	00:28	0.08	0.08	0.00	1.5	0.0	1.5
01Jan2021	00:30	0.08	0.08	0.00	1.8	0.0	1.8
01Jan2021	00:32	0.16	0.16	0.00	2.0	0.0	2.0
01Jan2021	00:34	0.16	0.16	0.01	2.3	0.0	2.3
01Jan2021	00:36	0.23	0.21	0.02	2.9	0.0	2.9
01Jan2021	00:38	0.29	0.26	0.04	4.0	0.0	4.0
01Jan2021	00:40	0.29	0.24	0.05	6.3	0.0	6.3
01Jan2021	00:42	0.11	0.09	0.02	9.9	0.0	9.9
01Jan2021	00:44	0.11	0.09	0.03	14.9	0.0	14.9
01Jan2021	00:46	0.09	0.07	0.02	21.5	0.0	21.5
01Jan2021	00:48	0.07	0.05	0.02	29.1	0.0	29.1
01Jan2021	00:50	0.07	0.05	0.02	36.5	0.0	36.5

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.03	0.01	43.0	0.0	43.0
01Jan2021	00:54	0.04	0.03	0.01	48.2	0.0	48.2
01Jan2021	00:56	0.04	0.03	0.01	51.9	0.0	51.9
01Jan2021	00:58	0.04	0.03	0.01	54.0	0.0	54.0
01Jan2021	01:00	0.04	0.03	0.01	54.7	0.0	54.7
01Jan2021	01:02	0.03	0.02	0.01	54.0	0.0	54.0
01Jan2021	01:04	0.03	0.02	0.01	52.2	0.0	52.2
01Jan2021	01:06	0.02	0.02	0.01	49.7	0.0	49.7
01Jan2021	01:08	0.01	0.01	0.00	47.1	0.0	47.1
01Jan2021	01:10	0.01	0.01	0.00	44.4	0.0	44.4
01Jan2021	01:12	0.01	0.01	0.00	41.7	0.0	41.7
01Jan2021	01:14	0.01	0.01	0.00	39.0	0.0	39.0
01Jan2021	01:16	0.01	0.01	0.00	36.1	0.0	36.1
01Jan2021	01:18	0.01	0.01	0.00	33.3	0.0	33.3
01Jan2021	01:20	0.01	0.01	0.00	30.5	0.0	30.5
01Jan2021	01:22	0.01	0.01	0.00	27.8	0.0	27.8
01Jan2021	01:24	0.01	0.01	0.00	25.4	0.0	25.4
01Jan2021	01:26	0.01	0.01	0.00	23.1	0.0	23.1
01Jan2021	01:28	0.01	0.01	0.00	21.1	0.0	21.1
01Jan2021	01:30	0.01	0.01	0.00	19.3	0.0	19.3
01Jan2021	01:32	0.01	0.01	0.00	17.8	0.0	17.8
01Jan2021	01:34	0.01	0.01	0.00	16.6	0.0	16.6
01Jan2021	01:36	0.01	0.01	0.00	15.5	0.0	15.5
01Jan2021	01:38	0.01	0.01	0.00	14.6	0.0	14.6
01Jan2021	01:40	0.01	0.01	0.00	13.9	0.0	13.9
01Jan2021	01:42	0.01	0.01	0.00	13.2	0.0	13.2
01Jan2021	01:44	0.01	0.01	0.00	12.6	0.0	12.6
01Jan2021	01:46	0.01	0.01	0.00	12.1	0.0	12.1
01Jan2021	01:48	0.01	0.01	0.00	11.7	0.0	11.7
01Jan2021	01:50	0.01	0.01	0.00	11.3	0.0	11.3
01Jan2021	01:52	0.01	0.01	0.00	11.0	0.0	11.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.01	0.00	10.7	0.0	10.7
01Jan2021	01:56	0.01	0.01	0.00	10.4	0.0	10.4
01Jan2021	01:58	0.01	0.01	0.00	10.2	0.0	10.2
01Jan2021	02:00	0.01	0.01	0.00	10.1	0.0	10.1
01Jan2021	02:02	0.00	0.00	0.00	9.9	0.0	9.9
01Jan2021	02:04	0.00	0.00	0.00	9.7	0.0	9.7
01Jan2021	02:06	0.00	0.00	0.00	9.4	0.0	9.4
01Jan2021	02:08	0.00	0.00	0.00	9.1	0.0	9.1
01Jan2021	02:10	0.00	0.00	0.00	8.6	0.0	8.6
01Jan2021	02:12	0.00	0.00	0.00	7.9	0.0	7.9
01Jan2021	02:14	0.00	0.00	0.00	7.1	0.0	7.1
01Jan2021	02:16	0.00	0.00	0.00	6.2	0.0	6.2
01Jan2021	02:18	0.00	0.00	0.00	5.4	0.0	5.4
01Jan2021	02:20	0.00	0.00	0.00	4.6	0.0	4.6
01Jan2021	02:22	0.00	0.00	0.00	3.8	0.0	3.8
01Jan2021	02:24	0.00	0.00	0.00	3.2	0.0	3.2
01Jan2021	02:26	0.00	0.00	0.00	2.6	0.0	2.6
01Jan2021	02:28	0.00	0.00	0.00	2.1	0.0	2.1
01Jan2021	02:30	0.00	0.00	0.00	1.8	0.0	1.8
01Jan2021	02:32	0.00	0.00	0.00	1.5	0.0	1.5
01Jan2021	02:34	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:36	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:38	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:40	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:42	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:44	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:46	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:48	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:50	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:52	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:54	0.00	0.00	0.00	0.2	0.0	0.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:58	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	03:00	0.00	0.00	0.00	0.1	0.0	0.1

Project: CSU ATC Simulation Run: Existing_100yr

Junction: J-20

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:02:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	111.5 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:02
Volume:	7.4 (AC-FT)		

Project: CSU ATC Simulation Run: Existing_100yr
Junction: J-20

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.0	0.0
01Jan2021	00:04	0.0	0.0	0.0
01Jan2021	00:06	0.1	0.0	0.1
01Jan2021	00:08	0.1	0.1	0.2
01Jan2021	00:10	0.2	0.1	0.3
01Jan2021	00:12	0.4	0.2	0.6
01Jan2021	00:14	0.6	0.3	0.9
01Jan2021	00:16	0.8	0.5	1.3
01Jan2021	00:18	1.2	0.6	1.8
01Jan2021	00:20	1.5	0.8	2.3
01Jan2021	00:22	1.9	1.0	2.9
01Jan2021	00:24	2.4	1.1	3.5
01Jan2021	00:26	2.8	1.3	4.2
01Jan2021	00:28	3.3	1.5	4.9
01Jan2021	00:30	3.9	1.8	5.6
01Jan2021	00:32	4.5	2.0	6.5
01Jan2021	00:34	5.2	2.3	7.5
01Jan2021	00:36	6.0	2.9	8.9
01Jan2021	00:38	7.3	4.0	11.4
01Jan2021	00:40	9.4	6.3	15.7
01Jan2021	00:42	12.3	9.9	22.2
01Jan2021	00:44	16.1	14.9	31.0
01Jan2021	00:46	20.9	21.5	42.4
01Jan2021	00:48	26.7	29.1	55.8
01Jan2021	00:50	33.1	36.5	69.6

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	00:52	39.4	43.0	82.4
01Jan2021	00:54	45.0	48.2	93.2
01Jan2021	00:56	49.8	51.9	101.7
01Jan2021	00:58	53.5	54.0	107.5
01Jan2021	01:00	56.1	54.7	110.8
01Jan2021	01:02	57.5	54.0	111.5
01Jan2021	01:04	57.9	52.2	110.1
01Jan2021	01:06	57.4	49.7	107.1
01Jan2021	01:08	56.0	47.1	103.1
01Jan2021	01:10	53.8	44.4	98.3
01Jan2021	01:12	51.2	41.7	93.0
01Jan2021	01:14	48.5	39.0	87.5
01Jan2021	01:16	45.8	36.1	81.9
01Jan2021	01:18	42.9	33.3	76.1
01Jan2021	01:20	40.0	30.5	70.5
01Jan2021	01:22	37.2	27.8	65.0
01Jan2021	01:24	34.4	25.4	59.8
01Jan2021	01:26	31.8	23.1	54.9
01Jan2021	01:28	29.3	21.1	50.4
01Jan2021	01:30	27.1	19.3	46.4
01Jan2021	01:32	25.0	17.8	42.8
01Jan2021	01:34	23.2	16.6	39.7
01Jan2021	01:36	21.5	15.5	37.0
01Jan2021	01:38	20.1	14.6	34.7
01Jan2021	01:40	18.8	13.9	32.7
01Jan2021	01:42	17.8	13.2	31.0
01Jan2021	01:44	16.8	12.6	29.4
01Jan2021	01:46	16.0	12.1	28.1
01Jan2021	01:48	15.3	11.7	27.0
01Jan2021	01:50	14.6	11.3	26.0
01Jan2021	01:52	14.1	11.0	25.1

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	01:54	13.6	10.7	24.3
01Jan2021	01:56	13.1	10.4	23.6
01Jan2021	01:58	12.7	10.2	23.0
01Jan2021	02:00	12.4	10.1	22.5
01Jan2021	02:02	12.1	9.9	22.0
01Jan2021	02:04	11.8	9.7	21.5
01Jan2021	02:06	11.5	9.4	21.0
01Jan2021	02:08	11.2	9.1	20.2
01Jan2021	02:10	10.7	8.6	19.3
01Jan2021	02:12	10.1	7.9	18.0
01Jan2021	02:14	9.5	7.1	16.5
01Jan2021	02:16	8.7	6.2	14.9
01Jan2021	02:18	7.9	5.4	13.3
01Jan2021	02:20	7.0	4.6	11.6
01Jan2021	02:22	6.2	3.8	10.0
01Jan2021	02:24	5.4	3.2	8.6
01Jan2021	02:26	4.7	2.6	7.3
01Jan2021	02:28	4.0	2.1	6.1
01Jan2021	02:30	3.4	1.8	5.2
01Jan2021	02:32	2.9	1.5	4.3
01Jan2021	02:34	2.4	1.2	3.6
01Jan2021	02:36	2.1	1.0	3.1
01Jan2021	02:38	1.8	0.8	2.6
01Jan2021	02:40	1.5	0.7	2.2
01Jan2021	02:42	1.3	0.6	1.9
01Jan2021	02:44	1.1	0.5	1.6
01Jan2021	02:46	0.9	0.4	1.3
01Jan2021	02:48	0.8	0.3	1.1
01Jan2021	02:50	0.7	0.3	0.9
01Jan2021	02:52	0.6	0.2	0.8
01Jan2021	02:54	0.5	0.2	0.7

Date	Time	Inflow from Basin-E10 (CFS)	Inflow from Basin-E20 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.4	0.1	0.6
01Jan2021	02:58	0.4	0.1	0.5
01Jan2021	03:00	0.3	0.1	0.4

Project: CSU ATC Simulation Run: Existing_100yr

Subbasin: Basin-E30

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:02:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	37.0 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:48
Precipitation Volume:	4.5 (AC-FT)	Direct Runoff Volume:	1.7 (AC-FT)
Loss Volume:	2.9 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	1.7 (AC-FT)	Discharge Volume:	1.7 (AC-FT)

Project: CSU ATC Simulation Run: Existing_100yr
Subbasin: Basin-E30

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.1	0.0	0.1
01Jan2021	00:06	0.02	0.02	0.01	0.3	0.0	0.3
01Jan2021	00:08	0.03	0.02	0.01	0.7	0.0	0.7
01Jan2021	00:10	0.03	0.02	0.01	1.1	0.0	1.1
01Jan2021	00:12	0.03	0.03	0.01	1.7	0.0	1.7
01Jan2021	00:14	0.03	0.03	0.01	2.3	0.0	2.3
01Jan2021	00:16	0.04	0.03	0.01	2.8	0.0	2.8
01Jan2021	00:18	0.04	0.03	0.01	3.3	0.0	3.3
01Jan2021	00:20	0.04	0.03	0.01	3.7	0.0	3.7
01Jan2021	00:22	0.06	0.05	0.01	4.1	0.0	4.1
01Jan2021	00:24	0.06	0.05	0.01	4.6	0.0	4.6
01Jan2021	00:26	0.07	0.05	0.02	5.1	0.0	5.1
01Jan2021	00:28	0.08	0.06	0.02	5.8	0.0	5.8
01Jan2021	00:30	0.08	0.06	0.02	6.6	0.0	6.6
01Jan2021	00:32	0.16	0.12	0.04	7.5	0.0	7.5
01Jan2021	00:34	0.16	0.12	0.04	8.9	0.0	8.9
01Jan2021	00:36	0.23	0.16	0.07	11.2	0.0	11.2
01Jan2021	00:38	0.29	0.19	0.11	14.8	0.0	14.8
01Jan2021	00:40	0.29	0.17	0.12	20.1	0.0	20.1
01Jan2021	00:42	0.11	0.06	0.05	26.5	0.0	26.5
01Jan2021	00:44	0.11	0.06	0.05	32.5	0.0	32.5
01Jan2021	00:46	0.09	0.05	0.04	36.2	0.0	36.2
01Jan2021	00:48	0.07	0.04	0.03	37.0	0.0	37.0
01Jan2021	00:50	0.07	0.04	0.03	35.7	0.0	35.7

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.02	0.02	32.8	0.0	32.8
01Jan2021	00:54	0.04	0.02	0.02	29.2	0.0	29.2
01Jan2021	00:56	0.04	0.02	0.02	25.8	0.0	25.8
01Jan2021	00:58	0.04	0.02	0.02	22.7	0.0	22.7
01Jan2021	01:00	0.04	0.02	0.02	20.0	0.0	20.0
01Jan2021	01:02	0.03	0.02	0.02	17.7	0.0	17.7
01Jan2021	01:04	0.03	0.02	0.02	15.8	0.0	15.8
01Jan2021	01:06	0.02	0.01	0.01	14.3	0.0	14.3
01Jan2021	01:08	0.01	0.01	0.01	12.9	0.0	12.9
01Jan2021	01:10	0.01	0.01	0.01	11.6	0.0	11.6
01Jan2021	01:12	0.01	0.01	0.01	10.3	0.0	10.3
01Jan2021	01:14	0.01	0.01	0.01	8.9	0.0	8.9
01Jan2021	01:16	0.01	0.01	0.01	7.7	0.0	7.7
01Jan2021	01:18	0.01	0.01	0.01	6.6	0.0	6.6
01Jan2021	01:20	0.01	0.01	0.01	5.8	0.0	5.8
01Jan2021	01:22	0.01	0.01	0.01	5.2	0.0	5.2
01Jan2021	01:24	0.01	0.01	0.01	4.7	0.0	4.7
01Jan2021	01:26	0.01	0.01	0.01	4.3	0.0	4.3
01Jan2021	01:28	0.01	0.01	0.01	4.0	0.0	4.0
01Jan2021	01:30	0.01	0.01	0.01	3.9	0.0	3.9
01Jan2021	01:32	0.01	0.00	0.00	3.7	0.0	3.7
01Jan2021	01:34	0.01	0.00	0.00	3.6	0.0	3.6
01Jan2021	01:36	0.01	0.00	0.01	3.5	0.0	3.5
01Jan2021	01:38	0.01	0.00	0.01	3.4	0.0	3.4
01Jan2021	01:40	0.01	0.00	0.01	3.3	0.0	3.3
01Jan2021	01:42	0.01	0.00	0.00	3.2	0.0	3.2
01Jan2021	01:44	0.01	0.00	0.00	3.1	0.0	3.1
01Jan2021	01:46	0.01	0.00	0.00	3.1	0.0	3.1
01Jan2021	01:48	0.01	0.00	0.00	3.0	0.0	3.0
01Jan2021	01:50	0.01	0.00	0.00	3.0	0.0	3.0
01Jan2021	01:52	0.01	0.00	0.00	3.0	0.0	3.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	2.9	0.0	2.9
01Jan2021	01:56	0.01	0.00	0.01	2.9	0.0	2.9
01Jan2021	01:58	0.01	0.00	0.01	2.9	0.0	2.9
01Jan2021	02:00	0.01	0.00	0.01	2.9	0.0	2.9
01Jan2021	02:02	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:04	0.00	0.00	0.00	2.8	0.0	2.8
01Jan2021	02:06	0.00	0.00	0.00	2.5	0.0	2.5
01Jan2021	02:08	0.00	0.00	0.00	2.1	0.0	2.1
01Jan2021	02:10	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:12	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:14	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:16	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:18	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:20	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:22	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:24	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:26	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:28	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:30	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:32	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:34	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:36	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:38	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Existing_100yr

Junction: J-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Existing Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:02:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	37.0 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Volume:	1.7 (AC-FT)		

Project: CSU ATC Simulation Run: Existing_100yr
Junction: J-30

Start of Run: 01Jan2021, 00:00 Basin Model: Existing Base Mode
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:02:18 Control Specifications: Control 1

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.0	0.0
01Jan2021	00:04	0.1	0.1
01Jan2021	00:06	0.3	0.3
01Jan2021	00:08	0.7	0.7
01Jan2021	00:10	1.1	1.1
01Jan2021	00:12	1.7	1.7
01Jan2021	00:14	2.3	2.3
01Jan2021	00:16	2.8	2.8
01Jan2021	00:18	3.3	3.3
01Jan2021	00:20	3.7	3.7
01Jan2021	00:22	4.1	4.1
01Jan2021	00:24	4.6	4.6
01Jan2021	00:26	5.1	5.1
01Jan2021	00:28	5.8	5.8
01Jan2021	00:30	6.6	6.6
01Jan2021	00:32	7.5	7.5
01Jan2021	00:34	8.9	8.9
01Jan2021	00:36	11.2	11.2
01Jan2021	00:38	14.8	14.8
01Jan2021	00:40	20.1	20.1
01Jan2021	00:42	26.5	26.5
01Jan2021	00:44	32.5	32.5
01Jan2021	00:46	36.2	36.2
01Jan2021	00:48	37.0	37.0
01Jan2021	00:50	35.7	35.7

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	00:52	32.8	32.8
01Jan2021	00:54	29.2	29.2
01Jan2021	00:56	25.8	25.8
01Jan2021	00:58	22.7	22.7
01Jan2021	01:00	20.0	20.0
01Jan2021	01:02	17.7	17.7
01Jan2021	01:04	15.8	15.8
01Jan2021	01:06	14.3	14.3
01Jan2021	01:08	12.9	12.9
01Jan2021	01:10	11.6	11.6
01Jan2021	01:12	10.3	10.3
01Jan2021	01:14	8.9	8.9
01Jan2021	01:16	7.7	7.7
01Jan2021	01:18	6.6	6.6
01Jan2021	01:20	5.8	5.8
01Jan2021	01:22	5.2	5.2
01Jan2021	01:24	4.7	4.7
01Jan2021	01:26	4.3	4.3
01Jan2021	01:28	4.0	4.0
01Jan2021	01:30	3.9	3.9
01Jan2021	01:32	3.7	3.7
01Jan2021	01:34	3.6	3.6
01Jan2021	01:36	3.5	3.5
01Jan2021	01:38	3.4	3.4
01Jan2021	01:40	3.3	3.3
01Jan2021	01:42	3.2	3.2
01Jan2021	01:44	3.1	3.1
01Jan2021	01:46	3.1	3.1
01Jan2021	01:48	3.0	3.0
01Jan2021	01:50	3.0	3.0
01Jan2021	01:52	3.0	3.0

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	01:54	2.9	2.9
01Jan2021	01:56	2.9	2.9
01Jan2021	01:58	2.9	2.9
01Jan2021	02:00	2.9	2.9
01Jan2021	02:02	2.9	2.9
01Jan2021	02:04	2.8	2.8
01Jan2021	02:06	2.5	2.5
01Jan2021	02:08	2.1	2.1
01Jan2021	02:10	1.7	1.7
01Jan2021	02:12	1.2	1.2
01Jan2021	02:14	0.9	0.9
01Jan2021	02:16	0.6	0.6
01Jan2021	02:18	0.5	0.5
01Jan2021	02:20	0.3	0.3
01Jan2021	02:22	0.2	0.2
01Jan2021	02:24	0.2	0.2
01Jan2021	02:26	0.1	0.1
01Jan2021	02:28	0.1	0.1
01Jan2021	02:30	0.1	0.1
01Jan2021	02:32	0.0	0.0
01Jan2021	02:34	0.0	0.0
01Jan2021	02:36	0.0	0.0
01Jan2021	02:38	0.0	0.0
01Jan2021	02:40	0.0	0.0
01Jan2021	02:42	0.0	0.0
01Jan2021	02:44	0.0	0.0
01Jan2021	02:46	0.0	0.0
01Jan2021	02:48	0.0	0.0
01Jan2021	02:50	0.0	0.0
01Jan2021	02:52	0.0	0.0
01Jan2021	02:54	0.0	0.0

Date	Time	Inflow from Basin-E30 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.0	0.0
01Jan2021	02:58	0.0	0.0
01Jan2021	03:00	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Model
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 13May2021, 18:06:06 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
R-40	0.10	138.7	01Jan2021, 01:00	1.41
J-30	0.22	204.1	01Jan2021, 00:56	1.02
P50	0.06	82.3	01Jan2021, 00:54	1.42
P30	0.12	93.5	01Jan2021, 00:50	0.69
P40	0.04	65.6	01Jan2021, 00:48	1.41
J-40	0.10	142.9	01Jan2021, 00:50	1.42
R-30	0.22	203.4	01Jan2021, 00:58	1.02
P10	0.06	67.5	01Jan2021, 00:48	0.94
P20	0.06	67.5	01Jan2021, 00:48	0.94
Pond A	0.34	25.0	01Jan2021, 02:08	0.16
J-OF1	0.34	25.0	01Jan2021, 02:08	0.16

Project: CSU ATC Simulation Run: Proposed_5yr

Reach: R-40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	142.9 (CFS)	Date/Time of Peak Inflow	01Jan2021, 00:48
Peak Discharge:	138.7 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:00
Inflow Volume:	7.6 (AC-FT)	Discharge Volume:	7.5 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Reach: R-40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.1	0.0
01Jan2021	00:04	0.3	0.0
01Jan2021	00:06	0.8	0.0
01Jan2021	00:08	1.7	0.0
01Jan2021	00:10	3.2	0.0
01Jan2021	00:12	5.1	0.0
01Jan2021	00:14	7.4	0.0
01Jan2021	00:16	10.0	0.0
01Jan2021	00:18	12.6	0.2
01Jan2021	00:20	15.2	0.5
01Jan2021	00:22	17.8	1.2
01Jan2021	00:24	20.5	2.4
01Jan2021	00:26	23.5	4.1
01Jan2021	00:28	26.8	6.5
01Jan2021	00:30	30.5	9.3
01Jan2021	00:32	35.1	12.4
01Jan2021	00:34	41.0	15.8
01Jan2021	00:36	49.1	19.4
01Jan2021	00:38	60.3	23.4
01Jan2021	00:40	75.2	27.9
01Jan2021	00:42	92.7	33.5
01Jan2021	00:44	110.8	40.9
01Jan2021	00:46	126.8	51.1
01Jan2021	00:48	137.9	64.8
01Jan2021	00:50	142.9	81.8

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:52	142.6	100.5
01Jan2021	00:54	137.8	117.6
01Jan2021	00:56	129.8	130.3
01Jan2021	00:58	119.9	137.3
01Jan2021	01:00	109.7	138.7
01Jan2021	01:02	99.2	135.6
01Jan2021	01:04	89.0	129.2
01Jan2021	01:06	79.9	121.1
01Jan2021	01:08	71.9	112.1
01Jan2021	01:10	64.7	102.8
01Jan2021	01:12	58.1	93.7
01Jan2021	01:14	51.9	85.3
01Jan2021	01:16	46.1	77.6
01Jan2021	01:18	40.8	70.5
01Jan2021	01:20	36.1	63.9
01Jan2021	01:22	32.0	57.9
01Jan2021	01:24	28.4	52.3
01Jan2021	01:26	25.4	47.2
01Jan2021	01:28	22.9	42.5
01Jan2021	01:30	20.8	38.3
01Jan2021	01:32	19.1	34.5
01Jan2021	01:34	17.6	31.2
01Jan2021	01:36	16.4	28.2
01Jan2021	01:38	15.4	25.7
01Jan2021	01:40	14.5	23.5
01Jan2021	01:42	13.8	21.6
01Jan2021	01:44	13.1	20.0
01Jan2021	01:46	12.6	18.5
01Jan2021	01:48	12.1	17.3
01Jan2021	01:50	11.7	16.3
01Jan2021	01:52	11.4	15.4

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	01:54	11.0	14.6
01Jan2021	01:56	10.8	13.9
01Jan2021	01:58	10.6	13.3
01Jan2021	02:00	10.4	12.7
01Jan2021	02:02	10.2	12.3
01Jan2021	02:04	10.0	11.9
01Jan2021	02:06	9.6	11.5
01Jan2021	02:08	8.9	11.2
01Jan2021	02:10	8.1	11.0
01Jan2021	02:12	7.1	10.7
01Jan2021	02:14	6.1	10.4
01Jan2021	02:16	5.1	10.0
01Jan2021	02:18	4.2	9.6
01Jan2021	02:20	3.4	9.0
01Jan2021	02:22	2.8	8.4
01Jan2021	02:24	2.2	7.7
01Jan2021	02:26	1.8	7.0
01Jan2021	02:28	1.4	6.3
01Jan2021	02:30	1.2	5.7
01Jan2021	02:32	1.0	5.0
01Jan2021	02:34	0.8	4.4
01Jan2021	02:36	0.6	3.9
01Jan2021	02:38	0.5	3.4
01Jan2021	02:40	0.4	3.0
01Jan2021	02:42	0.3	2.6
01Jan2021	02:44	0.3	2.3
01Jan2021	02:46	0.2	2.0
01Jan2021	02:48	0.2	1.8
01Jan2021	02:50	0.1	1.6
01Jan2021	02:52	0.1	1.4
01Jan2021	02:54	0.1	1.2

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	02:56	0.1	1.1
01Jan2021	02:58	0.1	0.9
01Jan2021	03:00	0.0	0.8

Project: CSU ATC Simulation Run: Proposed_5yr

Junction: J-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	204.1 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:56
Volume:	11.9 (AC-FT)		

Project: CSU ATC Simulation Run: Proposed_5yr
Junction: J-30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.1	0.1
01Jan2021	00:04	0.0	0.2	0.2
01Jan2021	00:06	0.0	0.6	0.6
01Jan2021	00:08	0.0	1.3	1.3
01Jan2021	00:10	0.0	2.4	2.4
01Jan2021	00:12	0.0	3.6	3.6
01Jan2021	00:14	0.0	5.1	5.1
01Jan2021	00:16	0.0	6.5	6.6
01Jan2021	00:18	0.2	7.8	8.0
01Jan2021	00:20	0.5	9.1	9.6
01Jan2021	00:22	1.2	10.2	11.4
01Jan2021	00:24	2.4	11.5	13.8
01Jan2021	00:26	4.1	12.8	17.0
01Jan2021	00:28	6.5	14.4	20.9
01Jan2021	00:30	9.3	16.3	25.6
01Jan2021	00:32	12.4	18.7	31.1
01Jan2021	00:34	15.8	22.0	37.8
01Jan2021	00:36	19.4	27.1	46.5
01Jan2021	00:38	23.4	35.1	58.5
01Jan2021	00:40	27.9	46.7	74.7
01Jan2021	00:42	33.5	61.0	94.6
01Jan2021	00:44	40.9	75.8	116.7
01Jan2021	00:46	51.1	87.5	138.6
01Jan2021	00:48	64.8	93.1	157.9
01Jan2021	00:50	81.8	93.5	175.3

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	00:52	100.5	89.4	189.8
01Jan2021	00:54	117.6	82.4	200.0
01Jan2021	00:56	130.3	73.8	204.1
01Jan2021	00:58	137.3	65.6	202.9
01Jan2021	01:00	138.7	58.3	197.0
01Jan2021	01:02	135.6	51.8	187.4
01Jan2021	01:04	129.2	46.3	175.6
01Jan2021	01:06	121.1	41.6	162.7
01Jan2021	01:08	112.1	37.6	149.7
01Jan2021	01:10	102.8	33.8	136.6
01Jan2021	01:12	93.7	30.2	123.9
01Jan2021	01:14	85.3	26.6	111.9
01Jan2021	01:16	77.6	23.2	100.8
01Jan2021	01:18	70.5	20.2	90.7
01Jan2021	01:20	63.9	17.6	81.6
01Jan2021	01:22	57.9	15.5	73.4
01Jan2021	01:24	52.3	13.9	66.2
01Jan2021	01:26	47.2	12.6	59.8
01Jan2021	01:28	42.5	11.7	54.2
01Jan2021	01:30	38.3	10.9	49.2
01Jan2021	01:32	34.5	10.3	44.8
01Jan2021	01:34	31.2	9.9	41.0
01Jan2021	01:36	28.2	9.5	37.7
01Jan2021	01:38	25.7	9.1	34.8
01Jan2021	01:40	23.5	8.8	32.3
01Jan2021	01:42	21.6	8.5	30.1
01Jan2021	01:44	20.0	8.3	28.3
01Jan2021	01:46	18.5	8.2	26.7
01Jan2021	01:48	17.3	8.0	25.3
01Jan2021	01:50	16.3	7.9	24.2
01Jan2021	01:52	15.4	7.8	23.1

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	01:54	14.6	7.7	22.2
01Jan2021	01:56	13.9	7.6	21.5
01Jan2021	01:58	13.3	7.6	20.8
01Jan2021	02:00	12.7	7.6	20.3
01Jan2021	02:02	12.3	7.5	19.8
01Jan2021	02:04	11.9	7.3	19.2
01Jan2021	02:06	11.5	6.9	18.4
01Jan2021	02:08	11.2	6.0	17.3
01Jan2021	02:10	11.0	5.1	16.0
01Jan2021	02:12	10.7	4.0	14.7
01Jan2021	02:14	10.4	3.1	13.5
01Jan2021	02:16	10.0	2.3	12.3
01Jan2021	02:18	9.6	1.7	11.3
01Jan2021	02:20	9.0	1.3	10.3
01Jan2021	02:22	8.4	1.0	9.4
01Jan2021	02:24	7.7	0.7	8.5
01Jan2021	02:26	7.0	0.5	7.6
01Jan2021	02:28	6.3	0.4	6.7
01Jan2021	02:30	5.7	0.3	6.0
01Jan2021	02:32	5.0	0.2	5.3
01Jan2021	02:34	4.4	0.2	4.6
01Jan2021	02:36	3.9	0.1	4.0
01Jan2021	02:38	3.4	0.1	3.5
01Jan2021	02:40	3.0	0.1	3.1
01Jan2021	02:42	2.6	0.0	2.7
01Jan2021	02:44	2.3	0.0	2.3
01Jan2021	02:46	2.0	0.0	2.0
01Jan2021	02:48	1.8	0.0	1.8
01Jan2021	02:50	1.6	0.0	1.6
01Jan2021	02:52	1.4	0.0	1.4
01Jan2021	02:54	1.2	0.0	1.2

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	02:56	1.1	0.0	1.1
01Jan2021	02:58	0.9	0.0	0.9
01Jan2021	03:00	0.8	0.0	0.8

Project: CSU ATC Simulation Run: Proposed_5yr

Subbasin: P50

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	82.3 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:54
Precipitation Volume:	5.4 (AC-FT)	Direct Runoff Volume:	4.5 (AC-FT)
Loss Volume:	0.8 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	4.5 (AC-FT)	Discharge Volume:	4.5 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Subbasin: P50

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.00	0.01	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.00	0.01	0.1	0.0	0.1
01Jan2021	00:06	0.01	0.00	0.01	0.3	0.0	0.3
01Jan2021	00:08	0.02	0.01	0.01	0.6	0.0	0.6
01Jan2021	00:10	0.02	0.01	0.01	1.2	0.0	1.2
01Jan2021	00:12	0.02	0.01	0.01	2.0	0.0	2.0
01Jan2021	00:14	0.02	0.01	0.01	3.1	0.0	3.1
01Jan2021	00:16	0.02	0.01	0.02	4.4	0.0	4.4
01Jan2021	00:18	0.02	0.01	0.02	5.8	0.0	5.8
01Jan2021	00:20	0.02	0.01	0.02	7.3	0.0	7.3
01Jan2021	00:22	0.04	0.01	0.03	8.8	0.0	8.8
01Jan2021	00:24	0.04	0.01	0.03	10.4	0.0	10.4
01Jan2021	00:26	0.04	0.01	0.03	12.1	0.0	12.1
01Jan2021	00:28	0.05	0.01	0.04	13.9	0.0	13.9
01Jan2021	00:30	0.05	0.01	0.04	15.9	0.0	15.9
01Jan2021	00:32	0.10	0.02	0.08	18.2	0.0	18.2
01Jan2021	00:34	0.10	0.02	0.08	21.2	0.0	21.2
01Jan2021	00:36	0.14	0.02	0.11	24.9	0.0	24.9
01Jan2021	00:38	0.17	0.02	0.15	30.1	0.0	30.1
01Jan2021	00:40	0.17	0.02	0.15	36.9	0.0	36.9
01Jan2021	00:42	0.07	0.01	0.06	45.2	0.0	45.2
01Jan2021	00:44	0.07	0.01	0.06	54.4	0.0	54.4
01Jan2021	00:46	0.05	0.01	0.05	63.8	0.0	63.8
01Jan2021	00:48	0.04	0.00	0.04	72.2	0.0	72.2
01Jan2021	00:50	0.04	0.00	0.04	78.3	0.0	78.3

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.00	0.02	81.6	0.0	81.6
01Jan2021	00:54	0.03	0.00	0.02	82.3	0.0	82.3
01Jan2021	00:56	0.02	0.00	0.02	80.7	0.0	80.7
01Jan2021	00:58	0.02	0.00	0.02	77.0	0.0	77.0
01Jan2021	01:00	0.02	0.00	0.02	72.1	0.0	72.1
01Jan2021	01:02	0.02	0.00	0.02	66.2	0.0	66.2
01Jan2021	01:04	0.02	0.00	0.02	59.9	0.0	59.9
01Jan2021	01:06	0.01	0.00	0.01	54.1	0.0	54.1
01Jan2021	01:08	0.01	0.00	0.01	49.0	0.0	49.0
01Jan2021	01:10	0.01	0.00	0.01	44.3	0.0	44.3
01Jan2021	01:12	0.01	0.00	0.01	40.0	0.0	40.0
01Jan2021	01:14	0.01	0.00	0.01	36.0	0.0	36.0
01Jan2021	01:16	0.01	0.00	0.01	32.3	0.0	32.3
01Jan2021	01:18	0.01	0.00	0.01	28.9	0.0	28.9
01Jan2021	01:20	0.01	0.00	0.01	25.8	0.0	25.8
01Jan2021	01:22	0.01	0.00	0.01	22.9	0.0	22.9
01Jan2021	01:24	0.01	0.00	0.01	20.4	0.0	20.4
01Jan2021	01:26	0.01	0.00	0.01	18.2	0.0	18.2
01Jan2021	01:28	0.01	0.00	0.01	16.3	0.0	16.3
01Jan2021	01:30	0.01	0.00	0.01	14.6	0.0	14.6
01Jan2021	01:32	0.01	0.00	0.00	13.3	0.0	13.3
01Jan2021	01:34	0.01	0.00	0.00	12.2	0.0	12.2
01Jan2021	01:36	0.01	0.00	0.01	11.2	0.0	11.2
01Jan2021	01:38	0.01	0.00	0.01	10.4	0.0	10.4
01Jan2021	01:40	0.01	0.00	0.01	9.8	0.0	9.8
01Jan2021	01:42	0.01	0.00	0.00	9.2	0.0	9.2
01Jan2021	01:44	0.01	0.00	0.00	8.7	0.0	8.7
01Jan2021	01:46	0.01	0.00	0.00	8.2	0.0	8.2
01Jan2021	01:48	0.01	0.00	0.00	7.9	0.0	7.9
01Jan2021	01:50	0.01	0.00	0.01	7.5	0.0	7.5
01Jan2021	01:52	0.01	0.00	0.01	7.2	0.0	7.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	7.0	0.0	7.0
01Jan2021	01:56	0.01	0.00	0.01	6.8	0.0	6.8
01Jan2021	01:58	0.01	0.00	0.01	6.6	0.0	6.6
01Jan2021	02:00	0.01	0.00	0.01	6.4	0.0	6.4
01Jan2021	02:02	0.00	0.00	0.00	6.3	0.0	6.3
01Jan2021	02:04	0.00	0.00	0.00	6.2	0.0	6.2
01Jan2021	02:06	0.00	0.00	0.00	6.0	0.0	6.0
01Jan2021	02:08	0.00	0.00	0.00	5.7	0.0	5.7
01Jan2021	02:10	0.00	0.00	0.00	5.3	0.0	5.3
01Jan2021	02:12	0.00	0.00	0.00	4.9	0.0	4.9
01Jan2021	02:14	0.00	0.00	0.00	4.3	0.0	4.3
01Jan2021	02:16	0.00	0.00	0.00	3.8	0.0	3.8
01Jan2021	02:18	0.00	0.00	0.00	3.2	0.0	3.2
01Jan2021	02:20	0.00	0.00	0.00	2.7	0.0	2.7
01Jan2021	02:22	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:24	0.00	0.00	0.00	1.8	0.0	1.8
01Jan2021	02:26	0.00	0.00	0.00	1.5	0.0	1.5
01Jan2021	02:28	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:30	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:32	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:34	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:36	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:38	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:40	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:42	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:44	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:46	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:48	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:50	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:52	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:54	0.00	0.00	0.00	0.1	0.0	0.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:58	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Subbasin: P30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	93.5 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:50
Precipitation Volume:	10.7 (AC-FT)	Direct Runoff Volume:	4.4 (AC-FT)
Loss Volume:	6.3 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	4.4 (AC-FT)	Discharge Volume:	4.4 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Subbasin: P30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.1	0.0	0.1
01Jan2021	00:04	0.01	0.01	0.00	0.2	0.0	0.2
01Jan2021	00:06	0.01	0.01	0.00	0.6	0.0	0.6
01Jan2021	00:08	0.02	0.01	0.01	1.3	0.0	1.3
01Jan2021	00:10	0.02	0.01	0.01	2.4	0.0	2.4
01Jan2021	00:12	0.02	0.01	0.01	3.6	0.0	3.6
01Jan2021	00:14	0.02	0.01	0.01	5.1	0.0	5.1
01Jan2021	00:16	0.02	0.02	0.01	6.5	0.0	6.5
01Jan2021	00:18	0.02	0.02	0.01	7.8	0.0	7.8
01Jan2021	00:20	0.02	0.02	0.01	9.1	0.0	9.1
01Jan2021	00:22	0.04	0.03	0.01	10.2	0.0	10.2
01Jan2021	00:24	0.04	0.03	0.01	11.5	0.0	11.5
01Jan2021	00:26	0.04	0.03	0.01	12.8	0.0	12.8
01Jan2021	00:28	0.05	0.03	0.01	14.4	0.0	14.4
01Jan2021	00:30	0.05	0.03	0.01	16.3	0.0	16.3
01Jan2021	00:32	0.10	0.07	0.03	18.7	0.0	18.7
01Jan2021	00:34	0.10	0.07	0.03	22.0	0.0	22.0
01Jan2021	00:36	0.14	0.09	0.05	27.1	0.0	27.1
01Jan2021	00:38	0.17	0.10	0.07	35.1	0.0	35.1
01Jan2021	00:40	0.17	0.10	0.08	46.7	0.0	46.7
01Jan2021	00:42	0.07	0.03	0.03	61.0	0.0	61.0
01Jan2021	00:44	0.07	0.03	0.03	75.8	0.0	75.8
01Jan2021	00:46	0.05	0.03	0.03	87.5	0.0	87.5
01Jan2021	00:48	0.04	0.02	0.02	93.1	0.0	93.1
01Jan2021	00:50	0.04	0.02	0.02	93.5	0.0	93.5

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.01	0.01	89.4	0.0	89.4
01Jan2021	00:54	0.03	0.01	0.01	82.4	0.0	82.4
01Jan2021	00:56	0.02	0.01	0.01	73.8	0.0	73.8
01Jan2021	00:58	0.02	0.01	0.01	65.6	0.0	65.6
01Jan2021	01:00	0.02	0.01	0.01	58.3	0.0	58.3
01Jan2021	01:02	0.02	0.01	0.01	51.8	0.0	51.8
01Jan2021	01:04	0.02	0.01	0.01	46.3	0.0	46.3
01Jan2021	01:06	0.01	0.01	0.01	41.6	0.0	41.6
01Jan2021	01:08	0.01	0.00	0.00	37.6	0.0	37.6
01Jan2021	01:10	0.01	0.00	0.00	33.8	0.0	33.8
01Jan2021	01:12	0.01	0.00	0.00	30.2	0.0	30.2
01Jan2021	01:14	0.01	0.00	0.00	26.6	0.0	26.6
01Jan2021	01:16	0.01	0.00	0.00	23.2	0.0	23.2
01Jan2021	01:18	0.01	0.00	0.00	20.2	0.0	20.2
01Jan2021	01:20	0.01	0.00	0.00	17.6	0.0	17.6
01Jan2021	01:22	0.01	0.00	0.00	15.5	0.0	15.5
01Jan2021	01:24	0.01	0.00	0.00	13.9	0.0	13.9
01Jan2021	01:26	0.01	0.00	0.00	12.6	0.0	12.6
01Jan2021	01:28	0.01	0.00	0.00	11.7	0.0	11.7
01Jan2021	01:30	0.01	0.00	0.00	10.9	0.0	10.9
01Jan2021	01:32	0.01	0.00	0.00	10.3	0.0	10.3
01Jan2021	01:34	0.01	0.00	0.00	9.9	0.0	9.9
01Jan2021	01:36	0.01	0.00	0.00	9.5	0.0	9.5
01Jan2021	01:38	0.01	0.00	0.00	9.1	0.0	9.1
01Jan2021	01:40	0.01	0.00	0.00	8.8	0.0	8.8
01Jan2021	01:42	0.01	0.00	0.00	8.5	0.0	8.5
01Jan2021	01:44	0.01	0.00	0.00	8.3	0.0	8.3
01Jan2021	01:46	0.01	0.00	0.00	8.2	0.0	8.2
01Jan2021	01:48	0.01	0.00	0.00	8.0	0.0	8.0
01Jan2021	01:50	0.01	0.00	0.00	7.9	0.0	7.9
01Jan2021	01:52	0.01	0.00	0.00	7.8	0.0	7.8

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	7.7	0.0	7.7
01Jan2021	01:56	0.01	0.00	0.00	7.6	0.0	7.6
01Jan2021	01:58	0.01	0.00	0.00	7.6	0.0	7.6
01Jan2021	02:00	0.01	0.00	0.00	7.6	0.0	7.6
01Jan2021	02:02	0.00	0.00	0.00	7.5	0.0	7.5
01Jan2021	02:04	0.00	0.00	0.00	7.3	0.0	7.3
01Jan2021	02:06	0.00	0.00	0.00	6.9	0.0	6.9
01Jan2021	02:08	0.00	0.00	0.00	6.0	0.0	6.0
01Jan2021	02:10	0.00	0.00	0.00	5.1	0.0	5.1
01Jan2021	02:12	0.00	0.00	0.00	4.0	0.0	4.0
01Jan2021	02:14	0.00	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:16	0.00	0.00	0.00	2.3	0.0	2.3
01Jan2021	02:18	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:20	0.00	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:22	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:24	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:26	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:28	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:30	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:32	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:34	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:36	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:38	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:40	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Subbasin: P40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	65.6 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:48
Precipitation Volume:	3.6 (AC-FT)	Direct Runoff Volume:	3.0 (AC-FT)
Loss Volume:	0.6 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	3.0 (AC-FT)	Discharge Volume:	3.0 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Subbasin: P40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.00	0.01	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.00	0.01	0.2	0.0	0.2
01Jan2021	00:06	0.01	0.00	0.01	0.5	0.0	0.5
01Jan2021	00:08	0.02	0.01	0.01	1.1	0.0	1.1
01Jan2021	00:10	0.02	0.01	0.01	2.0	0.0	2.0
01Jan2021	00:12	0.02	0.01	0.01	3.1	0.0	3.1
01Jan2021	00:14	0.02	0.01	0.01	4.3	0.0	4.3
01Jan2021	00:16	0.02	0.01	0.02	5.6	0.0	5.6
01Jan2021	00:18	0.02	0.01	0.02	6.8	0.0	6.8
01Jan2021	00:20	0.02	0.01	0.02	7.9	0.0	7.9
01Jan2021	00:22	0.04	0.01	0.03	9.0	0.0	9.0
01Jan2021	00:24	0.04	0.01	0.03	10.1	0.0	10.1
01Jan2021	00:26	0.04	0.01	0.03	11.4	0.0	11.4
01Jan2021	00:28	0.05	0.01	0.04	12.9	0.0	12.9
01Jan2021	00:30	0.05	0.01	0.04	14.6	0.0	14.6
01Jan2021	00:32	0.10	0.02	0.08	16.9	0.0	16.9
01Jan2021	00:34	0.10	0.02	0.08	19.9	0.0	19.9
01Jan2021	00:36	0.14	0.02	0.11	24.1	0.0	24.1
01Jan2021	00:38	0.17	0.02	0.15	30.3	0.0	30.3
01Jan2021	00:40	0.17	0.02	0.15	38.3	0.0	38.3
01Jan2021	00:42	0.07	0.01	0.06	47.5	0.0	47.5
01Jan2021	00:44	0.07	0.01	0.06	56.5	0.0	56.5
01Jan2021	00:46	0.05	0.01	0.05	63.1	0.0	63.1
01Jan2021	00:48	0.04	0.00	0.04	65.6	0.0	65.6
01Jan2021	00:50	0.04	0.00	0.04	64.6	0.0	64.6

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.00	0.02	61.0	0.0	61.0
01Jan2021	00:54	0.03	0.00	0.02	55.5	0.0	55.5
01Jan2021	00:56	0.02	0.00	0.02	49.1	0.0	49.1
01Jan2021	00:58	0.02	0.00	0.02	42.9	0.0	42.9
01Jan2021	01:00	0.02	0.00	0.02	37.6	0.0	37.6
01Jan2021	01:02	0.02	0.00	0.02	33.0	0.0	33.0
01Jan2021	01:04	0.02	0.00	0.02	29.1	0.0	29.1
01Jan2021	01:06	0.01	0.00	0.01	25.8	0.0	25.8
01Jan2021	01:08	0.01	0.00	0.01	22.9	0.0	22.9
01Jan2021	01:10	0.01	0.00	0.01	20.4	0.0	20.4
01Jan2021	01:12	0.01	0.00	0.01	18.1	0.0	18.1
01Jan2021	01:14	0.01	0.00	0.01	15.8	0.0	15.8
01Jan2021	01:16	0.01	0.00	0.01	13.8	0.0	13.8
01Jan2021	01:18	0.01	0.00	0.01	11.9	0.0	11.9
01Jan2021	01:20	0.01	0.00	0.01	10.4	0.0	10.4
01Jan2021	01:22	0.01	0.00	0.01	9.1	0.0	9.1
01Jan2021	01:24	0.01	0.00	0.01	8.0	0.0	8.0
01Jan2021	01:26	0.01	0.00	0.01	7.3	0.0	7.3
01Jan2021	01:28	0.01	0.00	0.01	6.6	0.0	6.6
01Jan2021	01:30	0.01	0.00	0.01	6.1	0.0	6.1
01Jan2021	01:32	0.01	0.00	0.00	5.8	0.0	5.8
01Jan2021	01:34	0.01	0.00	0.00	5.4	0.0	5.4
01Jan2021	01:36	0.01	0.00	0.01	5.2	0.0	5.2
01Jan2021	01:38	0.01	0.00	0.01	4.9	0.0	4.9
01Jan2021	01:40	0.01	0.00	0.01	4.8	0.0	4.8
01Jan2021	01:42	0.01	0.00	0.00	4.6	0.0	4.6
01Jan2021	01:44	0.01	0.00	0.00	4.5	0.0	4.5
01Jan2021	01:46	0.01	0.00	0.00	4.4	0.0	4.4
01Jan2021	01:48	0.01	0.00	0.00	4.3	0.0	4.3
01Jan2021	01:50	0.01	0.00	0.00	4.2	0.0	4.2
01Jan2021	01:52	0.01	0.00	0.00	4.1	0.0	4.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	4.1	0.0	4.1
01Jan2021	01:56	0.01	0.00	0.01	4.0	0.0	4.0
01Jan2021	01:58	0.01	0.00	0.01	4.0	0.0	4.0
01Jan2021	02:00	0.01	0.00	0.01	4.0	0.0	4.0
01Jan2021	02:02	0.00	0.00	0.00	3.9	0.0	3.9
01Jan2021	02:04	0.00	0.00	0.00	3.9	0.0	3.9
01Jan2021	02:06	0.00	0.00	0.00	3.6	0.0	3.6
01Jan2021	02:08	0.00	0.00	0.00	3.2	0.0	3.2
01Jan2021	02:10	0.00	0.00	0.00	2.7	0.0	2.7
01Jan2021	02:12	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:14	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:16	0.00	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:18	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:20	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:22	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:24	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:26	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:28	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:30	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:32	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:34	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:36	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:38	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Junction: J-40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	142.9 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:50
Volume:	7.6 (AC-FT)		

Project: CSU ATC Simulation Run: Proposed_5yr
Junction: J-40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.0	0.1
01Jan2021	00:04	0.1	0.2	0.3
01Jan2021	00:06	0.3	0.5	0.8
01Jan2021	00:08	0.6	1.1	1.7
01Jan2021	00:10	1.2	2.0	3.2
01Jan2021	00:12	2.0	3.1	5.1
01Jan2021	00:14	3.1	4.3	7.4
01Jan2021	00:16	4.4	5.6	10.0
01Jan2021	00:18	5.8	6.8	12.6
01Jan2021	00:20	7.3	7.9	15.2
01Jan2021	00:22	8.8	9.0	17.8
01Jan2021	00:24	10.4	10.1	20.5
01Jan2021	00:26	12.1	11.4	23.5
01Jan2021	00:28	13.9	12.9	26.8
01Jan2021	00:30	15.9	14.6	30.5
01Jan2021	00:32	18.2	16.9	35.1
01Jan2021	00:34	21.2	19.9	41.0
01Jan2021	00:36	24.9	24.1	49.1
01Jan2021	00:38	30.1	30.3	60.3
01Jan2021	00:40	36.9	38.3	75.2
01Jan2021	00:42	45.2	47.5	92.7
01Jan2021	00:44	54.4	56.5	110.8
01Jan2021	00:46	63.8	63.1	126.8
01Jan2021	00:48	72.2	65.6	137.9
01Jan2021	00:50	78.3	64.6	142.9

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	00:52	81.6	61.0	142.6
01Jan2021	00:54	82.3	55.5	137.8
01Jan2021	00:56	80.7	49.1	129.8
01Jan2021	00:58	77.0	42.9	119.9
01Jan2021	01:00	72.1	37.6	109.7
01Jan2021	01:02	66.2	33.0	99.2
01Jan2021	01:04	59.9	29.1	89.0
01Jan2021	01:06	54.1	25.8	79.9
01Jan2021	01:08	49.0	22.9	71.9
01Jan2021	01:10	44.3	20.4	64.7
01Jan2021	01:12	40.0	18.1	58.1
01Jan2021	01:14	36.0	15.8	51.9
01Jan2021	01:16	32.3	13.8	46.1
01Jan2021	01:18	28.9	11.9	40.8
01Jan2021	01:20	25.8	10.4	36.1
01Jan2021	01:22	22.9	9.1	32.0
01Jan2021	01:24	20.4	8.0	28.4
01Jan2021	01:26	18.2	7.3	25.4
01Jan2021	01:28	16.3	6.6	22.9
01Jan2021	01:30	14.6	6.1	20.8
01Jan2021	01:32	13.3	5.8	19.1
01Jan2021	01:34	12.2	5.4	17.6
01Jan2021	01:36	11.2	5.2	16.4
01Jan2021	01:38	10.4	4.9	15.4
01Jan2021	01:40	9.8	4.8	14.5
01Jan2021	01:42	9.2	4.6	13.8
01Jan2021	01:44	8.7	4.5	13.1
01Jan2021	01:46	8.2	4.4	12.6
01Jan2021	01:48	7.9	4.3	12.1
01Jan2021	01:50	7.5	4.2	11.7
01Jan2021	01:52	7.2	4.1	11.4

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	01:54	7.0	4.1	11.0
01Jan2021	01:56	6.8	4.0	10.8
01Jan2021	01:58	6.6	4.0	10.6
01Jan2021	02:00	6.4	4.0	10.4
01Jan2021	02:02	6.3	3.9	10.2
01Jan2021	02:04	6.2	3.9	10.0
01Jan2021	02:06	6.0	3.6	9.6
01Jan2021	02:08	5.7	3.2	8.9
01Jan2021	02:10	5.3	2.7	8.1
01Jan2021	02:12	4.9	2.2	7.1
01Jan2021	02:14	4.3	1.7	6.1
01Jan2021	02:16	3.8	1.3	5.1
01Jan2021	02:18	3.2	1.0	4.2
01Jan2021	02:20	2.7	0.7	3.4
01Jan2021	02:22	2.2	0.6	2.8
01Jan2021	02:24	1.8	0.4	2.2
01Jan2021	02:26	1.5	0.3	1.8
01Jan2021	02:28	1.2	0.2	1.4
01Jan2021	02:30	1.0	0.2	1.2
01Jan2021	02:32	0.8	0.1	1.0
01Jan2021	02:34	0.7	0.1	0.8
01Jan2021	02:36	0.5	0.1	0.6
01Jan2021	02:38	0.4	0.1	0.5
01Jan2021	02:40	0.4	0.0	0.4
01Jan2021	02:42	0.3	0.0	0.3
01Jan2021	02:44	0.2	0.0	0.3
01Jan2021	02:46	0.2	0.0	0.2
01Jan2021	02:48	0.2	0.0	0.2
01Jan2021	02:50	0.1	0.0	0.1
01Jan2021	02:52	0.1	0.0	0.1
01Jan2021	02:54	0.1	0.0	0.1

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.1	0.0	0.1
01Jan2021	02:58	0.1	0.0	0.1
01Jan2021	03:00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Reach: R-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	204.1 (CFS)	Date/Time of Peak Inflow	01Jan2021, 00:54
Peak Discharge:	203.4 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:58
Inflow Volume:	11.9 (AC-FT)	Discharge Volume:	11.9 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Reach: R-30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.1	0.0
01Jan2021	00:04	0.2	0.0
01Jan2021	00:06	0.6	0.1
01Jan2021	00:08	1.3	0.5
01Jan2021	00:10	2.4	1.3
01Jan2021	00:12	3.6	2.4
01Jan2021	00:14	5.1	3.8
01Jan2021	00:16	6.6	5.4
01Jan2021	00:18	8.0	6.9
01Jan2021	00:20	9.6	8.4
01Jan2021	00:22	11.4	10.1
01Jan2021	00:24	13.8	12.2
01Jan2021	00:26	17.0	14.9
01Jan2021	00:28	20.9	18.4
01Jan2021	00:30	25.6	22.7
01Jan2021	00:32	31.1	27.9
01Jan2021	00:34	37.8	34.0
01Jan2021	00:36	46.5	41.8
01Jan2021	00:38	58.5	52.3
01Jan2021	00:40	74.7	66.7
01Jan2021	00:42	94.6	85.2
01Jan2021	00:44	116.7	106.8
01Jan2021	00:46	138.6	129.2
01Jan2021	00:48	157.9	149.8
01Jan2021	00:50	175.3	168.2

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:52	189.8	184.0
01Jan2021	00:54	200.0	196.0
01Jan2021	00:56	204.1	202.5
01Jan2021	00:58	202.9	203.4
01Jan2021	01:00	197.0	199.3
01Jan2021	01:02	187.4	191.2
01Jan2021	01:04	175.6	180.3
01Jan2021	01:06	162.7	168.0
01Jan2021	01:08	149.7	155.1
01Jan2021	01:10	136.6	142.1
01Jan2021	01:12	123.9	129.4
01Jan2021	01:14	111.9	117.2
01Jan2021	01:16	100.8	105.8
01Jan2021	01:18	90.7	95.3
01Jan2021	01:20	81.6	85.8
01Jan2021	01:22	73.4	77.3
01Jan2021	01:24	66.2	69.7
01Jan2021	01:26	59.8	63.0
01Jan2021	01:28	54.2	57.0
01Jan2021	01:30	49.2	51.8
01Jan2021	01:32	44.8	47.1
01Jan2021	01:34	41.0	43.1
01Jan2021	01:36	37.7	39.5
01Jan2021	01:38	34.8	36.4
01Jan2021	01:40	32.3	33.7
01Jan2021	01:42	30.1	31.3
01Jan2021	01:44	28.3	29.3
01Jan2021	01:46	26.7	27.6
01Jan2021	01:48	25.3	26.1
01Jan2021	01:50	24.2	24.9
01Jan2021	01:52	23.1	23.8

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	01:54	22.2	22.8
01Jan2021	01:56	21.5	21.9
01Jan2021	01:58	20.8	21.2
01Jan2021	02:00	20.3	20.6
01Jan2021	02:02	19.8	20.1
01Jan2021	02:04	19.2	19.6
01Jan2021	02:06	18.4	18.9
01Jan2021	02:08	17.3	18.0
01Jan2021	02:10	16.0	16.8
01Jan2021	02:12	14.7	15.6
01Jan2021	02:14	13.5	14.3
01Jan2021	02:16	12.3	13.1
01Jan2021	02:18	11.3	12.0
01Jan2021	02:20	10.3	11.0
01Jan2021	02:22	9.4	10.1
01Jan2021	02:24	8.5	9.1
01Jan2021	02:26	7.6	8.2
01Jan2021	02:28	6.7	7.4
01Jan2021	02:30	6.0	6.6
01Jan2021	02:32	5.3	5.8
01Jan2021	02:34	4.6	5.1
01Jan2021	02:36	4.0	4.5
01Jan2021	02:38	3.5	4.0
01Jan2021	02:40	3.1	3.5
01Jan2021	02:42	2.7	3.0
01Jan2021	02:44	2.3	2.7
01Jan2021	02:46	2.0	2.3
01Jan2021	02:48	1.8	2.0
01Jan2021	02:50	1.6	1.8
01Jan2021	02:52	1.4	1.6
01Jan2021	02:54	1.2	1.4

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	02:56	1.1	1.2
01Jan2021	02:58	0.9	1.1
01Jan2021	03:00	0.8	1.0

Project: CSU ATC Simulation Run: Proposed_5yr

Subbasin: P10

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	67.5 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Precipitation Volume	5.4 (AC-FT)	Direct Runoff Volume:	3.0 (AC-FT)
Loss Volume:	2.4 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	3.0 (AC-FT)	Discharge Volume:	3.0 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Subbasin: P10

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.2	0.0	0.2
01Jan2021	00:06	0.01	0.01	0.01	0.5	0.0	0.5
01Jan2021	00:08	0.02	0.01	0.01	1.1	0.0	1.1
01Jan2021	00:10	0.02	0.01	0.01	2.0	0.0	2.0
01Jan2021	00:12	0.02	0.01	0.01	3.0	0.0	3.0
01Jan2021	00:14	0.02	0.01	0.01	4.1	0.0	4.1
01Jan2021	00:16	0.02	0.01	0.01	5.2	0.0	5.2
01Jan2021	00:18	0.02	0.02	0.01	6.1	0.0	6.1
01Jan2021	00:20	0.02	0.02	0.01	7.0	0.0	7.0
01Jan2021	00:22	0.04	0.02	0.01	7.8	0.0	7.8
01Jan2021	00:24	0.04	0.02	0.01	8.7	0.0	8.7
01Jan2021	00:26	0.04	0.03	0.02	9.8	0.0	9.8
01Jan2021	00:28	0.05	0.03	0.02	11.0	0.0	11.0
01Jan2021	00:30	0.05	0.03	0.02	12.5	0.0	12.5
01Jan2021	00:32	0.10	0.05	0.04	14.5	0.0	14.5
01Jan2021	00:34	0.10	0.05	0.05	17.3	0.0	17.3
01Jan2021	00:36	0.14	0.07	0.07	21.8	0.0	21.8
01Jan2021	00:38	0.17	0.08	0.10	28.6	0.0	28.6
01Jan2021	00:40	0.17	0.07	0.11	37.9	0.0	37.9
01Jan2021	00:42	0.07	0.02	0.04	48.8	0.0	48.8
01Jan2021	00:44	0.07	0.02	0.04	59.0	0.0	59.0
01Jan2021	00:46	0.05	0.02	0.04	65.7	0.0	65.7
01Jan2021	00:48	0.04	0.01	0.03	67.5	0.0	67.5
01Jan2021	00:50	0.04	0.01	0.03	65.4	0.0	65.4

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.01	0.02	60.5	0.0	60.5
01Jan2021	00:54	0.03	0.01	0.02	54.1	0.0	54.1
01Jan2021	00:56	0.02	0.01	0.02	47.4	0.0	47.4
01Jan2021	00:58	0.02	0.01	0.02	41.6	0.0	41.6
01Jan2021	01:00	0.02	0.01	0.02	36.4	0.0	36.4
01Jan2021	01:02	0.02	0.01	0.01	32.1	0.0	32.1
01Jan2021	01:04	0.02	0.01	0.01	28.4	0.0	28.4
01Jan2021	01:06	0.01	0.00	0.01	25.4	0.0	25.4
01Jan2021	01:08	0.01	0.00	0.01	22.8	0.0	22.8
01Jan2021	01:10	0.01	0.00	0.01	20.4	0.0	20.4
01Jan2021	01:12	0.01	0.00	0.01	18.1	0.0	18.1
01Jan2021	01:14	0.01	0.00	0.01	15.7	0.0	15.7
01Jan2021	01:16	0.01	0.00	0.00	13.6	0.0	13.6
01Jan2021	01:18	0.01	0.00	0.00	11.8	0.0	11.8
01Jan2021	01:20	0.01	0.00	0.00	10.2	0.0	10.2
01Jan2021	01:22	0.01	0.00	0.00	9.0	0.0	9.0
01Jan2021	01:24	0.01	0.00	0.00	8.1	0.0	8.1
01Jan2021	01:26	0.01	0.00	0.00	7.4	0.0	7.4
01Jan2021	01:28	0.01	0.00	0.00	6.9	0.0	6.9
01Jan2021	01:30	0.01	0.00	0.00	6.5	0.0	6.5
01Jan2021	01:32	0.01	0.00	0.00	6.2	0.0	6.2
01Jan2021	01:34	0.01	0.00	0.00	5.9	0.0	5.9
01Jan2021	01:36	0.01	0.00	0.00	5.7	0.0	5.7
01Jan2021	01:38	0.01	0.00	0.00	5.5	0.0	5.5
01Jan2021	01:40	0.01	0.00	0.00	5.3	0.0	5.3
01Jan2021	01:42	0.01	0.00	0.00	5.2	0.0	5.2
01Jan2021	01:44	0.01	0.00	0.00	5.1	0.0	5.1
01Jan2021	01:46	0.01	0.00	0.00	5.0	0.0	5.0
01Jan2021	01:48	0.01	0.00	0.00	4.9	0.0	4.9
01Jan2021	01:50	0.01	0.00	0.00	4.8	0.0	4.8
01Jan2021	01:52	0.01	0.00	0.00	4.8	0.0	4.8

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:56	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:58	0.01	0.00	0.00	4.6	0.0	4.6
01Jan2021	02:00	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	02:02	0.00	0.00	0.00	4.6	0.0	4.6
01Jan2021	02:04	0.00	0.00	0.00	4.5	0.0	4.5
01Jan2021	02:06	0.00	0.00	0.00	4.1	0.0	4.1
01Jan2021	02:08	0.00	0.00	0.00	3.5	0.0	3.5
01Jan2021	02:10	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:12	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:14	0.00	0.00	0.00	1.6	0.0	1.6
01Jan2021	02:16	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:18	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:20	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:22	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:24	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:26	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:28	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:30	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:32	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:34	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:36	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:38	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Subbasin: P20

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	11Mar2021, 15:31:48	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	67.5 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Precipitation Volume	5.4 (AC-FT)	Direct Runoff Volume:	3.0 (AC-FT)
Loss Volume:	2.4 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	3.0 (AC-FT)	Discharge Volume:	3.0 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Subbasin: P20

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 11Mar2021, 15:31:48 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.01	0.00	0.2	0.0	0.2
01Jan2021	00:06	0.01	0.01	0.01	0.5	0.0	0.5
01Jan2021	00:08	0.02	0.01	0.01	1.1	0.0	1.1
01Jan2021	00:10	0.02	0.01	0.01	2.0	0.0	2.0
01Jan2021	00:12	0.02	0.01	0.01	3.0	0.0	3.0
01Jan2021	00:14	0.02	0.01	0.01	4.1	0.0	4.1
01Jan2021	00:16	0.02	0.01	0.01	5.2	0.0	5.2
01Jan2021	00:18	0.02	0.02	0.01	6.1	0.0	6.1
01Jan2021	00:20	0.02	0.02	0.01	7.0	0.0	7.0
01Jan2021	00:22	0.04	0.02	0.01	7.8	0.0	7.8
01Jan2021	00:24	0.04	0.02	0.01	8.7	0.0	8.7
01Jan2021	00:26	0.04	0.03	0.02	9.8	0.0	9.8
01Jan2021	00:28	0.05	0.03	0.02	11.0	0.0	11.0
01Jan2021	00:30	0.05	0.03	0.02	12.5	0.0	12.5
01Jan2021	00:32	0.10	0.05	0.04	14.5	0.0	14.5
01Jan2021	00:34	0.10	0.05	0.05	17.3	0.0	17.3
01Jan2021	00:36	0.14	0.07	0.07	21.8	0.0	21.8
01Jan2021	00:38	0.17	0.08	0.10	28.6	0.0	28.6
01Jan2021	00:40	0.17	0.07	0.11	37.9	0.0	37.9
01Jan2021	00:42	0.07	0.02	0.04	48.8	0.0	48.8
01Jan2021	00:44	0.07	0.02	0.04	59.0	0.0	59.0
01Jan2021	00:46	0.05	0.02	0.04	65.7	0.0	65.7
01Jan2021	00:48	0.04	0.01	0.03	67.5	0.0	67.5
01Jan2021	00:50	0.04	0.01	0.03	65.4	0.0	65.4

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.03	0.01	0.02	60.5	0.0	60.5
01Jan2021	00:54	0.03	0.01	0.02	54.1	0.0	54.1
01Jan2021	00:56	0.02	0.01	0.02	47.4	0.0	47.4
01Jan2021	00:58	0.02	0.01	0.02	41.6	0.0	41.6
01Jan2021	01:00	0.02	0.01	0.02	36.4	0.0	36.4
01Jan2021	01:02	0.02	0.01	0.01	32.1	0.0	32.1
01Jan2021	01:04	0.02	0.01	0.01	28.4	0.0	28.4
01Jan2021	01:06	0.01	0.00	0.01	25.4	0.0	25.4
01Jan2021	01:08	0.01	0.00	0.01	22.8	0.0	22.8
01Jan2021	01:10	0.01	0.00	0.01	20.4	0.0	20.4
01Jan2021	01:12	0.01	0.00	0.01	18.1	0.0	18.1
01Jan2021	01:14	0.01	0.00	0.01	15.7	0.0	15.7
01Jan2021	01:16	0.01	0.00	0.00	13.6	0.0	13.6
01Jan2021	01:18	0.01	0.00	0.00	11.8	0.0	11.8
01Jan2021	01:20	0.01	0.00	0.00	10.2	0.0	10.2
01Jan2021	01:22	0.01	0.00	0.00	9.0	0.0	9.0
01Jan2021	01:24	0.01	0.00	0.00	8.1	0.0	8.1
01Jan2021	01:26	0.01	0.00	0.00	7.4	0.0	7.4
01Jan2021	01:28	0.01	0.00	0.00	6.9	0.0	6.9
01Jan2021	01:30	0.01	0.00	0.00	6.5	0.0	6.5
01Jan2021	01:32	0.01	0.00	0.00	6.2	0.0	6.2
01Jan2021	01:34	0.01	0.00	0.00	5.9	0.0	5.9
01Jan2021	01:36	0.01	0.00	0.00	5.7	0.0	5.7
01Jan2021	01:38	0.01	0.00	0.00	5.5	0.0	5.5
01Jan2021	01:40	0.01	0.00	0.00	5.3	0.0	5.3
01Jan2021	01:42	0.01	0.00	0.00	5.2	0.0	5.2
01Jan2021	01:44	0.01	0.00	0.00	5.1	0.0	5.1
01Jan2021	01:46	0.01	0.00	0.00	5.0	0.0	5.0
01Jan2021	01:48	0.01	0.00	0.00	4.9	0.0	4.9
01Jan2021	01:50	0.01	0.00	0.00	4.8	0.0	4.8
01Jan2021	01:52	0.01	0.00	0.00	4.8	0.0	4.8

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:56	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	01:58	0.01	0.00	0.00	4.6	0.0	4.6
01Jan2021	02:00	0.01	0.00	0.00	4.7	0.0	4.7
01Jan2021	02:02	0.00	0.00	0.00	4.6	0.0	4.6
01Jan2021	02:04	0.00	0.00	0.00	4.5	0.0	4.5
01Jan2021	02:06	0.00	0.00	0.00	4.1	0.0	4.1
01Jan2021	02:08	0.00	0.00	0.00	3.5	0.0	3.5
01Jan2021	02:10	0.00	0.00	0.00	2.9	0.0	2.9
01Jan2021	02:12	0.00	0.00	0.00	2.2	0.0	2.2
01Jan2021	02:14	0.00	0.00	0.00	1.6	0.0	1.6
01Jan2021	02:16	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:18	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:20	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:22	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:24	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:26	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:28	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:30	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:32	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:34	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:36	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:38	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_5yr

Reservoir: Pond A

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	31Mar2021, 14:14:52	Control Specifications:	Control 1

Volume Units: IN

Computed Results

Peak Inflow:	304.9 (CFS)	Date/Time of Peak Inflow:	01Jan2021, 00:50
Peak Discharge:	25.0 (CFS)	Date/Time of Peak Discharge	01Jan2021, 02:08
Inflow Volume:	0.99 (IN)	Peak Storage:	15.9 (AC-FT)
Discharge Volume	0.16 (IN)	Peak Elevation:	5865.0 (FT)

Project: CSU ATC Simulation Run: Proposed_5yr
Reservoir: Pond A

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 31Mar2021, 14:14:52 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	5859.0	0.0
01Jan2021	00:02	0.1	0.0	5859.0	0.0
01Jan2021	00:04	0.4	0.0	5859.0	0.0
01Jan2021	00:06	1.2	0.0	5859.0	0.0
01Jan2021	00:08	2.8	0.0	5859.0	0.0
01Jan2021	00:10	5.2	0.0	5859.0	0.0
01Jan2021	00:12	8.4	0.0	5859.0	0.0
01Jan2021	00:14	12.1	0.1	5859.0	0.1
01Jan2021	00:16	15.7	0.1	5859.0	0.1
01Jan2021	00:18	19.2	0.2	5859.1	0.2
01Jan2021	00:20	22.4	0.2	5859.1	0.2
01Jan2021	00:22	25.8	0.3	5859.1	0.3
01Jan2021	00:24	29.6	0.3	5859.2	0.4
01Jan2021	00:26	34.4	0.4	5859.2	0.5
01Jan2021	00:28	40.5	0.5	5859.2	0.6
01Jan2021	00:30	47.7	0.7	5859.3	0.7
01Jan2021	00:32	56.8	0.8	5859.3	0.8
01Jan2021	00:34	68.7	1.0	5859.4	0.9
01Jan2021	00:36	85.5	1.2	5859.5	1.0
01Jan2021	00:38	109.5	1.4	5859.6	1.1
01Jan2021	00:40	142.5	1.8	5859.8	1.2
01Jan2021	00:42	182.8	2.2	5860.0	1.3
01Jan2021	00:44	224.9	2.8	5860.2	1.5
01Jan2021	00:46	260.6	3.5	5860.5	1.6
01Jan2021	00:48	284.8	4.2	5860.8	1.8
01Jan2021	00:50	299.1	5.0	5861.1	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	00:52	304.9	5.8	5861.4	2.1
01Jan2021	00:54	304.1	6.7	5861.7	2.9
01Jan2021	00:56	297.3	7.5	5862.0	3.4
01Jan2021	00:58	286.6	8.3	5862.3	3.8
01Jan2021	01:00	272.2	9.0	5862.6	4.1
01Jan2021	01:02	255.3	9.7	5862.9	4.4
01Jan2021	01:04	237.2	10.4	5863.1	5.0
01Jan2021	01:06	218.8	11.0	5863.3	5.7
01Jan2021	01:08	200.8	11.6	5863.5	6.2
01Jan2021	01:10	183.0	12.1	5863.7	6.5
01Jan2021	01:12	165.5	12.6	5863.9	6.8
01Jan2021	01:14	148.7	13.0	5864.0	7.0
01Jan2021	01:16	133.0	13.3	5864.1	7.2
01Jan2021	01:18	118.8	13.7	5864.2	7.4
01Jan2021	01:20	106.3	14.0	5864.3	7.6
01Jan2021	01:22	95.4	14.2	5864.4	7.7
01Jan2021	01:24	85.9	14.4	5864.5	8.0
01Jan2021	01:26	77.8	14.6	5864.6	9.7
01Jan2021	01:28	70.7	14.8	5864.6	11.2
01Jan2021	01:30	64.7	15.0	5864.7	12.5
01Jan2021	01:32	59.5	15.1	5864.7	13.6
01Jan2021	01:34	54.9	15.2	5864.8	15.0
01Jan2021	01:36	50.9	15.3	5864.8	16.6
01Jan2021	01:38	47.4	15.4	5864.8	17.9
01Jan2021	01:40	44.3	15.5	5864.9	19.0
01Jan2021	01:42	41.7	15.6	5864.9	20.0
01Jan2021	01:44	39.5	15.6	5864.9	20.9
01Jan2021	01:46	37.6	15.7	5864.9	21.6
01Jan2021	01:48	36.0	15.7	5864.9	22.2
01Jan2021	01:50	34.5	15.7	5864.9	22.7
01Jan2021	01:52	33.3	15.8	5864.9	23.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	01:54	32.2	15.8	5865.0	23.6
01Jan2021	01:56	31.3	15.8	5865.0	23.9
01Jan2021	01:58	30.5	15.8	5865.0	24.2
01Jan2021	02:00	29.9	15.9	5865.0	24.4
01Jan2021	02:02	29.4	15.9	5865.0	24.6
01Jan2021	02:04	28.6	15.9	5865.0	24.8
01Jan2021	02:06	27.2	15.9	5865.0	24.9
01Jan2021	02:08	25.1	15.9	5865.0	25.0
01Jan2021	02:10	22.6	15.9	5865.0	24.9
01Jan2021	02:12	20.0	15.9	5865.0	24.8
01Jan2021	02:14	17.6	15.9	5865.0	24.5
01Jan2021	02:16	15.5	15.8	5865.0	24.2
01Jan2021	02:18	13.7	15.8	5865.0	23.8
01Jan2021	02:20	12.3	15.8	5865.0	23.4
01Jan2021	02:22	11.0	15.8	5864.9	22.9
01Jan2021	02:24	9.8	15.7	5864.9	22.4
01Jan2021	02:26	8.7	15.7	5864.9	21.9
01Jan2021	02:28	7.7	15.6	5864.9	21.3
01Jan2021	02:30	6.8	15.6	5864.9	20.7
01Jan2021	02:32	6.0	15.6	5864.9	20.2
01Jan2021	02:34	5.3	15.5	5864.9	19.6
01Jan2021	02:36	4.6	15.5	5864.9	19.0
01Jan2021	02:38	4.0	15.5	5864.8	18.4
01Jan2021	02:40	3.5	15.4	5864.8	17.8
01Jan2021	02:42	3.1	15.4	5864.8	17.2
01Jan2021	02:44	2.7	15.3	5864.8	16.6
01Jan2021	02:46	2.3	15.3	5864.8	16.0
01Jan2021	02:48	2.0	15.3	5864.8	15.5
01Jan2021	02:50	1.8	15.2	5864.8	14.9
01Jan2021	02:52	1.6	15.2	5864.8	14.4
01Jan2021	02:54	1.4	15.2	5864.7	14.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	02:56	1.2	15.1	5864.7	13.7
01Jan2021	02:58	1.1	15.1	5864.7	13.4
01Jan2021	03:00	1.0	15.0	5864.7	13.1

Project: CSU ATC Simulation Run: Proposed_5yr

Junction: J-OF1

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	5yr_2Hr
Compute Time:	31Mar2021, 14:14:52	Control Specifications:	Control 1

Volume Units: IN

Computed Results

Peak Discharge:	25.0 (CFS)	Date/Time of Peak Discharge	01Jan2021, 02:08
Volume:	0.16 (IN)		

Project: CSU ATC Simulation Run: Proposed_5yr
Junction: J-OF1

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 5yr_2Hr
Compute Time: 31Mar2021, 14:14:52 Control Specifications: Control 1

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.0	0.0
01Jan2021	00:04	0.0	0.0
01Jan2021	00:06	0.0	0.0
01Jan2021	00:08	0.0	0.0
01Jan2021	00:10	0.0	0.0
01Jan2021	00:12	0.0	0.0
01Jan2021	00:14	0.1	0.1
01Jan2021	00:16	0.1	0.1
01Jan2021	00:18	0.2	0.2
01Jan2021	00:20	0.2	0.2
01Jan2021	00:22	0.3	0.3
01Jan2021	00:24	0.4	0.4
01Jan2021	00:26	0.5	0.5
01Jan2021	00:28	0.6	0.6
01Jan2021	00:30	0.7	0.7
01Jan2021	00:32	0.8	0.8
01Jan2021	00:34	0.9	0.9
01Jan2021	00:36	1.0	1.0
01Jan2021	00:38	1.1	1.1
01Jan2021	00:40	1.2	1.2
01Jan2021	00:42	1.3	1.3
01Jan2021	00:44	1.5	1.5
01Jan2021	00:46	1.6	1.6
01Jan2021	00:48	1.8	1.8
01Jan2021	00:50	1.9	1.9

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	00:52	2.1	2.1
01Jan2021	00:54	2.9	2.9
01Jan2021	00:56	3.4	3.4
01Jan2021	00:58	3.8	3.8
01Jan2021	01:00	4.1	4.1
01Jan2021	01:02	4.4	4.4
01Jan2021	01:04	5.0	5.0
01Jan2021	01:06	5.7	5.7
01Jan2021	01:08	6.2	6.2
01Jan2021	01:10	6.5	6.5
01Jan2021	01:12	6.8	6.8
01Jan2021	01:14	7.0	7.0
01Jan2021	01:16	7.2	7.2
01Jan2021	01:18	7.4	7.4
01Jan2021	01:20	7.6	7.6
01Jan2021	01:22	7.7	7.7
01Jan2021	01:24	8.0	8.0
01Jan2021	01:26	9.7	9.7
01Jan2021	01:28	11.2	11.2
01Jan2021	01:30	12.5	12.5
01Jan2021	01:32	13.6	13.6
01Jan2021	01:34	15.0	15.0
01Jan2021	01:36	16.6	16.6
01Jan2021	01:38	17.9	17.9
01Jan2021	01:40	19.0	19.0
01Jan2021	01:42	20.0	20.0
01Jan2021	01:44	20.9	20.9
01Jan2021	01:46	21.6	21.6
01Jan2021	01:48	22.2	22.2
01Jan2021	01:50	22.7	22.7
01Jan2021	01:52	23.2	23.2

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	01:54	23.6	23.6
01Jan2021	01:56	23.9	23.9
01Jan2021	01:58	24.2	24.2
01Jan2021	02:00	24.4	24.4
01Jan2021	02:02	24.6	24.6
01Jan2021	02:04	24.8	24.8
01Jan2021	02:06	24.9	24.9
01Jan2021	02:08	25.0	25.0
01Jan2021	02:10	24.9	24.9
01Jan2021	02:12	24.8	24.8
01Jan2021	02:14	24.5	24.5
01Jan2021	02:16	24.2	24.2
01Jan2021	02:18	23.8	23.8
01Jan2021	02:20	23.4	23.4
01Jan2021	02:22	22.9	22.9
01Jan2021	02:24	22.4	22.4
01Jan2021	02:26	21.9	21.9
01Jan2021	02:28	21.3	21.3
01Jan2021	02:30	20.7	20.7
01Jan2021	02:32	20.2	20.2
01Jan2021	02:34	19.6	19.6
01Jan2021	02:36	19.0	19.0
01Jan2021	02:38	18.4	18.4
01Jan2021	02:40	17.8	17.8
01Jan2021	02:42	17.2	17.2
01Jan2021	02:44	16.6	16.6
01Jan2021	02:46	16.0	16.0
01Jan2021	02:48	15.5	15.5
01Jan2021	02:50	14.9	14.9
01Jan2021	02:52	14.4	14.4
01Jan2021	02:54	14.0	14.0

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	02:56	13.7	13.7
01Jan2021	02:58	13.4	13.4
01Jan2021	03:00	13.1	13.1

Project: CSU ATC Simulation Run: Proposed_100yr

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Model
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 13May2021, 18:06:01 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
R-40	0.10	249.8	01Jan2021, 00:58	2.49
J-30	0.22	403.0	01Jan2021, 00:54	1.92
P50	0.06	146.1	01Jan2021, 00:54	2.50
P30	0.12	204.1	01Jan2021, 00:50	1.45
P40	0.04	116.7	01Jan2021, 00:48	2.49
J-40	0.10	253.8	01Jan2021, 00:50	2.50
R-30	0.22	402.5	01Jan2021, 00:56	1.92
P10	0.06	135.6	01Jan2021, 00:48	1.83
P20	0.06	135.6	01Jan2021, 00:48	1.83
Pond A	0.34	104.9	01Jan2021, 01:32	0.91
J-OF1	0.34	104.9	01Jan2021, 01:32	0.91

Project: CSU ATC Simulation Run: Proposed_100yr
Reach: R-40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	253.8 (CFS)	Date/Time of Peak Inflow	01Jan2021, 00:48
Peak Discharge:	249.8 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:58
Inflow Volume:	13.3 (AC-FT)	Discharge Volume:	13.3 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Reach: R-40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.1	0.0
01Jan2021	00:04	0.5	0.0
01Jan2021	00:06	1.3	0.0
01Jan2021	00:08	2.9	0.0
01Jan2021	00:10	5.3	0.0
01Jan2021	00:12	8.6	0.0
01Jan2021	00:14	12.5	0.0
01Jan2021	00:16	16.7	0.1
01Jan2021	00:18	21.2	0.4
01Jan2021	00:20	25.6	1.2
01Jan2021	00:22	30.2	2.8
01Jan2021	00:24	35.0	5.5
01Jan2021	00:26	40.2	9.2
01Jan2021	00:28	46.2	13.8
01Jan2021	00:30	53.0	19.1
01Jan2021	00:32	61.3	24.8
01Jan2021	00:34	72.1	30.9
01Jan2021	00:36	86.7	37.4
01Jan2021	00:38	106.9	44.8
01Jan2021	00:40	133.6	53.4
01Jan2021	00:42	164.8	64.4
01Jan2021	00:44	197.2	79.3
01Jan2021	00:46	225.6	100.2
01Jan2021	00:48	245.0	128.0
01Jan2021	00:50	253.8	161.3

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:52	253.0	195.5
01Jan2021	00:54	244.3	224.2
01Jan2021	00:56	229.9	242.6
01Jan2021	00:58	212.3	249.8
01Jan2021	01:00	194.0	247.5
01Jan2021	01:02	175.2	238.1
01Jan2021	01:04	157.2	224.2
01Jan2021	01:06	141.0	208.1
01Jan2021	01:08	126.8	191.1
01Jan2021	01:10	113.9	174.1
01Jan2021	01:12	102.2	158.0
01Jan2021	01:14	91.2	143.3
01Jan2021	01:16	81.0	130.0
01Jan2021	01:18	71.8	117.9
01Jan2021	01:20	63.5	106.7
01Jan2021	01:22	56.2	96.4
01Jan2021	01:24	49.9	86.8
01Jan2021	01:26	44.6	78.1
01Jan2021	01:28	40.1	70.1
01Jan2021	01:30	36.4	63.0
01Jan2021	01:32	33.4	56.7
01Jan2021	01:34	30.8	51.2
01Jan2021	01:36	28.7	46.4
01Jan2021	01:38	26.9	42.2
01Jan2021	01:40	25.4	38.6
01Jan2021	01:42	24.1	35.6
01Jan2021	01:44	23.0	33.0
01Jan2021	01:46	22.0	30.7
01Jan2021	01:48	21.2	28.8
01Jan2021	01:50	20.5	27.1
01Jan2021	01:52	19.8	25.7

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	01:54	19.3	24.4
01Jan2021	01:56	18.8	23.3
01Jan2021	01:58	18.4	22.4
01Jan2021	02:00	18.1	21.5
01Jan2021	02:02	17.9	20.8
01Jan2021	02:04	17.4	20.2
01Jan2021	02:06	16.7	19.6
01Jan2021	02:08	15.6	19.1
01Jan2021	02:10	14.1	18.7
01Jan2021	02:12	12.4	18.3
01Jan2021	02:14	10.6	17.8
01Jan2021	02:16	8.9	17.1
01Jan2021	02:18	7.3	16.2
01Jan2021	02:20	6.0	15.2
01Jan2021	02:22	4.9	14.0
01Jan2021	02:24	3.9	12.7
01Jan2021	02:26	3.1	11.4
01Jan2021	02:28	2.5	10.2
01Jan2021	02:30	2.0	9.0
01Jan2021	02:32	1.7	7.9
01Jan2021	02:34	1.3	6.9
01Jan2021	02:36	1.1	6.0
01Jan2021	02:38	0.9	5.2
01Jan2021	02:40	0.7	4.5
01Jan2021	02:42	0.6	3.9
01Jan2021	02:44	0.5	3.4
01Jan2021	02:46	0.4	3.0
01Jan2021	02:48	0.3	2.6
01Jan2021	02:50	0.2	2.3
01Jan2021	02:52	0.2	2.0
01Jan2021	02:54	0.2	1.7

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	02:56	0.1	1.5
01Jan2021	02:58	0.1	1.3
01Jan2021	03:00	0.1	1.2

Project: CSU ATC Simulation Run: Proposed_100yr

Junction: J-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	403.0 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:54
Volume:	22.6 (AC-FT)		

Project: CSU ATC Simulation Run: Proposed_100yr
Junction: J-30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.1	0.1
01Jan2021	00:04	0.0	0.4	0.4
01Jan2021	00:06	0.0	1.0	1.0
01Jan2021	00:08	0.0	2.2	2.2
01Jan2021	00:10	0.0	4.0	4.0
01Jan2021	00:12	0.0	6.1	6.1
01Jan2021	00:14	0.0	8.5	8.5
01Jan2021	00:16	0.1	10.9	11.1
01Jan2021	00:18	0.4	13.2	13.6
01Jan2021	00:20	1.2	15.2	16.5
01Jan2021	00:22	2.8	17.2	20.0
01Jan2021	00:24	5.5	19.3	24.7
01Jan2021	00:26	9.2	21.6	30.8
01Jan2021	00:28	13.8	24.6	38.4
01Jan2021	00:30	19.1	28.3	47.3
01Jan2021	00:32	24.8	33.6	58.4
01Jan2021	00:34	30.9	41.5	72.4
01Jan2021	00:36	37.4	53.9	91.4
01Jan2021	00:38	44.8	73.1	117.8
01Jan2021	00:40	53.4	100.1	153.5
01Jan2021	00:42	64.4	132.8	197.2
01Jan2021	00:44	79.3	166.0	245.4
01Jan2021	00:46	100.2	191.8	292.0
01Jan2021	00:48	128.0	203.9	331.9
01Jan2021	00:50	161.3	204.1	365.4

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	00:52	195.5	194.6	390.2
01Jan2021	00:54	224.2	178.8	403.0
01Jan2021	00:56	242.6	159.6	402.2
01Jan2021	00:58	249.8	141.4	391.3
01Jan2021	01:00	247.5	125.3	372.8
01Jan2021	01:02	238.1	111.1	349.2
01Jan2021	01:04	224.2	99.0	323.2
01Jan2021	01:06	208.1	88.7	296.8
01Jan2021	01:08	191.1	79.9	271.0
01Jan2021	01:10	174.1	71.7	245.8
01Jan2021	01:12	158.0	63.9	221.9
01Jan2021	01:14	143.3	56.2	199.5
01Jan2021	01:16	130.0	49.0	179.0
01Jan2021	01:18	117.9	42.6	160.5
01Jan2021	01:20	106.7	37.1	143.8
01Jan2021	01:22	96.4	32.6	129.0
01Jan2021	01:24	86.8	29.2	116.0
01Jan2021	01:26	78.1	26.5	104.5
01Jan2021	01:28	70.1	24.4	94.5
01Jan2021	01:30	63.0	22.8	85.8
01Jan2021	01:32	56.7	21.6	78.3
01Jan2021	01:34	51.2	20.6	71.7
01Jan2021	01:36	46.4	19.7	66.1
01Jan2021	01:38	42.2	18.9	61.1
01Jan2021	01:40	38.6	18.2	56.9
01Jan2021	01:42	35.6	17.7	53.3
01Jan2021	01:44	33.0	17.3	50.3
01Jan2021	01:46	30.7	16.9	47.7
01Jan2021	01:48	28.8	16.6	45.4
01Jan2021	01:50	27.1	16.4	43.5
01Jan2021	01:52	25.7	16.1	41.8

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	01:54	24.4	15.9	40.3
01Jan2021	01:56	23.3	15.7	39.1
01Jan2021	01:58	22.4	15.6	38.0
01Jan2021	02:00	21.5	15.6	37.2
01Jan2021	02:02	20.8	15.6	36.4
01Jan2021	02:04	20.2	15.2	35.3
01Jan2021	02:06	19.6	14.2	33.8
01Jan2021	02:08	19.1	12.5	31.6
01Jan2021	02:10	18.7	10.5	29.2
01Jan2021	02:12	18.3	8.3	26.6
01Jan2021	02:14	17.8	6.4	24.2
01Jan2021	02:16	17.1	4.8	21.8
01Jan2021	02:18	16.2	3.5	19.7
01Jan2021	02:20	15.2	2.6	17.8
01Jan2021	02:22	14.0	2.0	16.0
01Jan2021	02:24	12.7	1.5	14.2
01Jan2021	02:26	11.4	1.1	12.5
01Jan2021	02:28	10.2	0.8	11.0
01Jan2021	02:30	9.0	0.6	9.6
01Jan2021	02:32	7.9	0.5	8.3
01Jan2021	02:34	6.9	0.3	7.2
01Jan2021	02:36	6.0	0.2	6.2
01Jan2021	02:38	5.2	0.2	5.4
01Jan2021	02:40	4.5	0.1	4.7
01Jan2021	02:42	3.9	0.1	4.0
01Jan2021	02:44	3.4	0.1	3.5
01Jan2021	02:46	3.0	0.0	3.0
01Jan2021	02:48	2.6	0.0	2.6
01Jan2021	02:50	2.3	0.0	2.3
01Jan2021	02:52	2.0	0.0	2.0
01Jan2021	02:54	1.7	0.0	1.7

Date	Time	Inflow from R-40 (CFS)	Inflow from P30 (CFS)	Outflow (CFS)
01Jan2021	02:56	1.5	0.0	1.5
01Jan2021	02:58	1.3	0.0	1.3
01Jan2021	03:00	1.2	0.0	1.2

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P50

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	146.1 (CFS)	Date/Time of Peak Discharge:	01Jan2021, 00:54
Precipitation Volume:	9.0 (AC-FT)	Direct Runoff Volume:	8.0 (AC-FT)
Loss Volume:	1.0 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	8.0 (AC-FT)	Discharge Volume:	8.0 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P50

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.00	0.01	0.0	0.0	0.0
01Jan2021	00:04	0.01	0.00	0.01	0.2	0.0	0.2
01Jan2021	00:06	0.02	0.01	0.02	0.5	0.0	0.5
01Jan2021	00:08	0.03	0.01	0.02	1.1	0.0	1.1
01Jan2021	00:10	0.03	0.01	0.02	2.0	0.0	2.0
01Jan2021	00:12	0.03	0.01	0.02	3.4	0.0	3.4
01Jan2021	00:14	0.03	0.01	0.02	5.2	0.0	5.2
01Jan2021	00:16	0.04	0.01	0.03	7.3	0.0	7.3
01Jan2021	00:18	0.04	0.01	0.03	9.7	0.0	9.7
01Jan2021	00:20	0.04	0.01	0.03	12.3	0.0	12.3
01Jan2021	00:22	0.06	0.01	0.05	14.9	0.0	14.9
01Jan2021	00:24	0.06	0.01	0.05	17.7	0.0	17.7
01Jan2021	00:26	0.07	0.01	0.06	20.6	0.0	20.6
01Jan2021	00:28	0.08	0.01	0.07	23.8	0.0	23.8
01Jan2021	00:30	0.08	0.01	0.07	27.4	0.0	27.4
01Jan2021	00:32	0.16	0.02	0.14	31.7	0.0	31.7
01Jan2021	00:34	0.16	0.02	0.14	37.0	0.0	37.0
01Jan2021	00:36	0.23	0.03	0.20	43.9	0.0	43.9
01Jan2021	00:38	0.29	0.03	0.27	53.1	0.0	53.1
01Jan2021	00:40	0.29	0.02	0.27	65.4	0.0	65.4
01Jan2021	00:42	0.11	0.01	0.11	80.2	0.0	80.2
01Jan2021	00:44	0.11	0.01	0.11	96.6	0.0	96.6
01Jan2021	00:46	0.09	0.01	0.09	113.4	0.0	113.4
01Jan2021	00:48	0.07	0.00	0.06	128.4	0.0	128.4
01Jan2021	00:50	0.07	0.00	0.06	139.1	0.0	139.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.00	0.04	144.9	0.0	144.9
01Jan2021	00:54	0.04	0.00	0.04	146.1	0.0	146.1
01Jan2021	00:56	0.04	0.00	0.04	143.1	0.0	143.1
01Jan2021	00:58	0.04	0.00	0.04	136.4	0.0	136.4
01Jan2021	01:00	0.04	0.00	0.04	127.6	0.0	127.6
01Jan2021	01:02	0.03	0.00	0.03	117.0	0.0	117.0
01Jan2021	01:04	0.03	0.00	0.03	105.9	0.0	105.9
01Jan2021	01:06	0.02	0.00	0.02	95.6	0.0	95.6
01Jan2021	01:08	0.01	0.00	0.01	86.4	0.0	86.4
01Jan2021	01:10	0.01	0.00	0.01	78.0	0.0	78.0
01Jan2021	01:12	0.01	0.00	0.01	70.5	0.0	70.5
01Jan2021	01:14	0.01	0.00	0.01	63.4	0.0	63.4
01Jan2021	01:16	0.01	0.00	0.01	56.8	0.0	56.8
01Jan2021	01:18	0.01	0.00	0.01	50.8	0.0	50.8
01Jan2021	01:20	0.01	0.00	0.01	45.3	0.0	45.3
01Jan2021	01:22	0.01	0.00	0.01	40.3	0.0	40.3
01Jan2021	01:24	0.01	0.00	0.01	35.8	0.0	35.8
01Jan2021	01:26	0.01	0.00	0.01	31.9	0.0	31.9
01Jan2021	01:28	0.01	0.00	0.01	28.5	0.0	28.5
01Jan2021	01:30	0.01	0.00	0.01	25.7	0.0	25.7
01Jan2021	01:32	0.01	0.00	0.01	23.3	0.0	23.3
01Jan2021	01:34	0.01	0.00	0.01	21.3	0.0	21.3
01Jan2021	01:36	0.01	0.00	0.01	19.7	0.0	19.7
01Jan2021	01:38	0.01	0.00	0.01	18.3	0.0	18.3
01Jan2021	01:40	0.01	0.00	0.01	17.1	0.0	17.1
01Jan2021	01:42	0.01	0.00	0.01	16.0	0.0	16.0
01Jan2021	01:44	0.01	0.00	0.01	15.2	0.0	15.2
01Jan2021	01:46	0.01	0.00	0.01	14.4	0.0	14.4
01Jan2021	01:48	0.01	0.00	0.01	13.7	0.0	13.7
01Jan2021	01:50	0.01	0.00	0.01	13.2	0.0	13.2
01Jan2021	01:52	0.01	0.00	0.01	12.6	0.0	12.6

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	12.2	0.0	12.2
01Jan2021	01:56	0.01	0.00	0.01	11.8	0.0	11.8
01Jan2021	01:58	0.01	0.00	0.01	11.5	0.0	11.5
01Jan2021	02:00	0.01	0.00	0.01	11.2	0.0	11.2
01Jan2021	02:02	0.00	0.00	0.00	11.0	0.0	11.0
01Jan2021	02:04	0.00	0.00	0.00	10.7	0.0	10.7
01Jan2021	02:06	0.00	0.00	0.00	10.4	0.0	10.4
01Jan2021	02:08	0.00	0.00	0.00	9.9	0.0	9.9
01Jan2021	02:10	0.00	0.00	0.00	9.3	0.0	9.3
01Jan2021	02:12	0.00	0.00	0.00	8.5	0.0	8.5
01Jan2021	02:14	0.00	0.00	0.00	7.5	0.0	7.5
01Jan2021	02:16	0.00	0.00	0.00	6.6	0.0	6.6
01Jan2021	02:18	0.00	0.00	0.00	5.6	0.0	5.6
01Jan2021	02:20	0.00	0.00	0.00	4.7	0.0	4.7
01Jan2021	02:22	0.00	0.00	0.00	3.9	0.0	3.9
01Jan2021	02:24	0.00	0.00	0.00	3.2	0.0	3.2
01Jan2021	02:26	0.00	0.00	0.00	2.6	0.0	2.6
01Jan2021	02:28	0.00	0.00	0.00	2.1	0.0	2.1
01Jan2021	02:30	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:32	0.00	0.00	0.00	1.4	0.0	1.4
01Jan2021	02:34	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:36	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:38	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:40	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:42	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:44	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:46	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:48	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:50	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:52	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:54	0.00	0.00	0.00	0.2	0.0	0.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:58	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	03:00	0.00	0.00	0.00	0.1	0.0	0.1

Project: CSU ATC Simulation Run: Proposed_100yr

Subbasin: P30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	204.1 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:50
Precipitation Volume:	18.0 (AC-FT)	Direct Runoff Volume:	9.3 (AC-FT)
Loss Volume:	8.8 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	9.3 (AC-FT)	Discharge Volume:	9.3 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.00	0.1	0.0	0.1
01Jan2021	00:04	0.01	0.01	0.00	0.4	0.0	0.4
01Jan2021	00:06	0.02	0.02	0.01	1.0	0.0	1.0
01Jan2021	00:08	0.03	0.02	0.01	2.2	0.0	2.2
01Jan2021	00:10	0.03	0.02	0.01	4.0	0.0	4.0
01Jan2021	00:12	0.03	0.02	0.01	6.1	0.0	6.1
01Jan2021	00:14	0.03	0.02	0.01	8.5	0.0	8.5
01Jan2021	00:16	0.04	0.03	0.01	10.9	0.0	10.9
01Jan2021	00:18	0.04	0.03	0.01	13.2	0.0	13.2
01Jan2021	00:20	0.04	0.03	0.01	15.2	0.0	15.2
01Jan2021	00:22	0.06	0.04	0.02	17.2	0.0	17.2
01Jan2021	00:24	0.06	0.04	0.02	19.3	0.0	19.3
01Jan2021	00:26	0.07	0.05	0.02	21.6	0.0	21.6
01Jan2021	00:28	0.08	0.05	0.03	24.6	0.0	24.6
01Jan2021	00:30	0.08	0.05	0.03	28.3	0.0	28.3
01Jan2021	00:32	0.16	0.10	0.06	33.6	0.0	33.6
01Jan2021	00:34	0.16	0.09	0.07	41.5	0.0	41.5
01Jan2021	00:36	0.23	0.12	0.11	53.9	0.0	53.9
01Jan2021	00:38	0.29	0.14	0.16	73.1	0.0	73.1
01Jan2021	00:40	0.29	0.12	0.17	100.1	0.0	100.1
01Jan2021	00:42	0.11	0.04	0.07	132.8	0.0	132.8
01Jan2021	00:44	0.11	0.04	0.07	166.0	0.0	166.0
01Jan2021	00:46	0.09	0.03	0.06	191.8	0.0	191.8
01Jan2021	00:48	0.07	0.02	0.05	203.9	0.0	203.9
01Jan2021	00:50	0.07	0.02	0.05	204.1	0.0	204.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.01	0.03	194.6	0.0	194.6
01Jan2021	00:54	0.04	0.01	0.03	178.8	0.0	178.8
01Jan2021	00:56	0.04	0.01	0.03	159.6	0.0	159.6
01Jan2021	00:58	0.04	0.01	0.03	141.4	0.0	141.4
01Jan2021	01:00	0.04	0.01	0.03	125.3	0.0	125.3
01Jan2021	01:02	0.03	0.01	0.02	111.1	0.0	111.1
01Jan2021	01:04	0.03	0.01	0.02	99.0	0.0	99.0
01Jan2021	01:06	0.02	0.01	0.02	88.7	0.0	88.7
01Jan2021	01:08	0.01	0.00	0.01	79.9	0.0	79.9
01Jan2021	01:10	0.01	0.00	0.01	71.7	0.0	71.7
01Jan2021	01:12	0.01	0.00	0.01	63.9	0.0	63.9
01Jan2021	01:14	0.01	0.00	0.01	56.2	0.0	56.2
01Jan2021	01:16	0.01	0.00	0.01	49.0	0.0	49.0
01Jan2021	01:18	0.01	0.00	0.01	42.6	0.0	42.6
01Jan2021	01:20	0.01	0.00	0.01	37.1	0.0	37.1
01Jan2021	01:22	0.01	0.00	0.01	32.6	0.0	32.6
01Jan2021	01:24	0.01	0.00	0.01	29.2	0.0	29.2
01Jan2021	01:26	0.01	0.00	0.01	26.5	0.0	26.5
01Jan2021	01:28	0.01	0.00	0.01	24.4	0.0	24.4
01Jan2021	01:30	0.01	0.00	0.01	22.8	0.0	22.8
01Jan2021	01:32	0.01	0.00	0.01	21.6	0.0	21.6
01Jan2021	01:34	0.01	0.00	0.01	20.6	0.0	20.6
01Jan2021	01:36	0.01	0.00	0.01	19.7	0.0	19.7
01Jan2021	01:38	0.01	0.00	0.01	18.9	0.0	18.9
01Jan2021	01:40	0.01	0.00	0.01	18.2	0.0	18.2
01Jan2021	01:42	0.01	0.00	0.01	17.7	0.0	17.7
01Jan2021	01:44	0.01	0.00	0.01	17.3	0.0	17.3
01Jan2021	01:46	0.01	0.00	0.01	16.9	0.0	16.9
01Jan2021	01:48	0.01	0.00	0.01	16.6	0.0	16.6
01Jan2021	01:50	0.01	0.00	0.01	16.4	0.0	16.4
01Jan2021	01:52	0.01	0.00	0.01	16.1	0.0	16.1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	15.9	0.0	15.9
01Jan2021	01:56	0.01	0.00	0.01	15.7	0.0	15.7
01Jan2021	01:58	0.01	0.00	0.01	15.6	0.0	15.6
01Jan2021	02:00	0.01	0.00	0.01	15.6	0.0	15.6
01Jan2021	02:02	0.00	0.00	0.00	15.6	0.0	15.6
01Jan2021	02:04	0.00	0.00	0.00	15.2	0.0	15.2
01Jan2021	02:06	0.00	0.00	0.00	14.2	0.0	14.2
01Jan2021	02:08	0.00	0.00	0.00	12.5	0.0	12.5
01Jan2021	02:10	0.00	0.00	0.00	10.5	0.0	10.5
01Jan2021	02:12	0.00	0.00	0.00	8.3	0.0	8.3
01Jan2021	02:14	0.00	0.00	0.00	6.4	0.0	6.4
01Jan2021	02:16	0.00	0.00	0.00	4.8	0.0	4.8
01Jan2021	02:18	0.00	0.00	0.00	3.5	0.0	3.5
01Jan2021	02:20	0.00	0.00	0.00	2.6	0.0	2.6
01Jan2021	02:22	0.00	0.00	0.00	2.0	0.0	2.0
01Jan2021	02:24	0.00	0.00	0.00	1.5	0.0	1.5
01Jan2021	02:26	0.00	0.00	0.00	1.1	0.0	1.1
01Jan2021	02:28	0.00	0.00	0.00	0.8	0.0	0.8
01Jan2021	02:30	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:32	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:34	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:36	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:38	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:40	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:42	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:44	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_100yr

Subbasin: P40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	116.7 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Precipitation Volume	6.0 (AC-FT)	Direct Runoff Volume:	5.3 (AC-FT)
Loss Volume:	0.7 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	5.3 (AC-FT)	Discharge Volume:	5.3 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.00	0.01	0.1	0.0	0.1
01Jan2021	00:04	0.01	0.00	0.01	0.3	0.0	0.3
01Jan2021	00:06	0.02	0.01	0.02	0.9	0.0	0.9
01Jan2021	00:08	0.03	0.01	0.02	1.9	0.0	1.9
01Jan2021	00:10	0.03	0.01	0.02	3.3	0.0	3.3
01Jan2021	00:12	0.03	0.01	0.02	5.1	0.0	5.1
01Jan2021	00:14	0.03	0.01	0.02	7.2	0.0	7.2
01Jan2021	00:16	0.04	0.01	0.03	9.4	0.0	9.4
01Jan2021	00:18	0.04	0.01	0.03	11.4	0.0	11.4
01Jan2021	00:20	0.04	0.01	0.03	13.4	0.0	13.4
01Jan2021	00:22	0.06	0.01	0.05	15.3	0.0	15.3
01Jan2021	00:24	0.06	0.01	0.05	17.3	0.0	17.3
01Jan2021	00:26	0.07	0.01	0.06	19.6	0.0	19.6
01Jan2021	00:28	0.08	0.01	0.06	22.3	0.0	22.3
01Jan2021	00:30	0.08	0.01	0.07	25.5	0.0	25.5
01Jan2021	00:32	0.16	0.03	0.14	29.7	0.0	29.7
01Jan2021	00:34	0.16	0.02	0.14	35.1	0.0	35.1
01Jan2021	00:36	0.23	0.03	0.20	42.8	0.0	42.8
01Jan2021	00:38	0.29	0.03	0.27	53.8	0.0	53.8
01Jan2021	00:40	0.29	0.02	0.27	68.2	0.0	68.2
01Jan2021	00:42	0.11	0.01	0.11	84.6	0.0	84.6
01Jan2021	00:44	0.11	0.01	0.11	100.5	0.0	100.5
01Jan2021	00:46	0.09	0.01	0.09	112.2	0.0	112.2
01Jan2021	00:48	0.07	0.00	0.06	116.7	0.0	116.7
01Jan2021	00:50	0.07	0.00	0.06	114.7	0.0	114.7

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.00	0.04	108.1	0.0	108.1
01Jan2021	00:54	0.04	0.00	0.04	98.2	0.0	98.2
01Jan2021	00:56	0.04	0.00	0.04	86.9	0.0	86.9
01Jan2021	00:58	0.04	0.00	0.04	75.9	0.0	75.9
01Jan2021	01:00	0.04	0.00	0.04	66.4	0.0	66.4
01Jan2021	01:02	0.03	0.00	0.03	58.2	0.0	58.2
01Jan2021	01:04	0.03	0.00	0.03	51.3	0.0	51.3
01Jan2021	01:06	0.02	0.00	0.02	45.4	0.0	45.4
01Jan2021	01:08	0.01	0.00	0.01	40.3	0.0	40.3
01Jan2021	01:10	0.01	0.00	0.01	35.9	0.0	35.9
01Jan2021	01:12	0.01	0.00	0.01	31.7	0.0	31.7
01Jan2021	01:14	0.01	0.00	0.01	27.8	0.0	27.8
01Jan2021	01:16	0.01	0.00	0.01	24.2	0.0	24.2
01Jan2021	01:18	0.01	0.00	0.01	21.0	0.0	21.0
01Jan2021	01:20	0.01	0.00	0.01	18.2	0.0	18.2
01Jan2021	01:22	0.01	0.00	0.01	15.9	0.0	15.9
01Jan2021	01:24	0.01	0.00	0.01	14.1	0.0	14.1
01Jan2021	01:26	0.01	0.00	0.01	12.7	0.0	12.7
01Jan2021	01:28	0.01	0.00	0.01	11.6	0.0	11.6
01Jan2021	01:30	0.01	0.00	0.01	10.7	0.0	10.7
01Jan2021	01:32	0.01	0.00	0.01	10.1	0.0	10.1
01Jan2021	01:34	0.01	0.00	0.01	9.5	0.0	9.5
01Jan2021	01:36	0.01	0.00	0.01	9.0	0.0	9.0
01Jan2021	01:38	0.01	0.00	0.01	8.6	0.0	8.6
01Jan2021	01:40	0.01	0.00	0.01	8.3	0.0	8.3
01Jan2021	01:42	0.01	0.00	0.01	8.0	0.0	8.0
01Jan2021	01:44	0.01	0.00	0.01	7.8	0.0	7.8
01Jan2021	01:46	0.01	0.00	0.01	7.6	0.0	7.6
01Jan2021	01:48	0.01	0.00	0.01	7.5	0.0	7.5
01Jan2021	01:50	0.01	0.00	0.01	7.3	0.0	7.3
01Jan2021	01:52	0.01	0.00	0.01	7.2	0.0	7.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	7.1	0.0	7.1
01Jan2021	01:56	0.01	0.00	0.01	7.0	0.0	7.0
01Jan2021	01:58	0.01	0.00	0.01	6.9	0.0	6.9
01Jan2021	02:00	0.01	0.00	0.01	6.9	0.0	6.9
01Jan2021	02:02	0.00	0.00	0.00	6.9	0.0	6.9
01Jan2021	02:04	0.00	0.00	0.00	6.7	0.0	6.7
01Jan2021	02:06	0.00	0.00	0.00	6.3	0.0	6.3
01Jan2021	02:08	0.00	0.00	0.00	5.6	0.0	5.6
01Jan2021	02:10	0.00	0.00	0.00	4.8	0.0	4.8
01Jan2021	02:12	0.00	0.00	0.00	3.9	0.0	3.9
01Jan2021	02:14	0.00	0.00	0.00	3.0	0.0	3.0
01Jan2021	02:16	0.00	0.00	0.00	2.3	0.0	2.3
01Jan2021	02:18	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:20	0.00	0.00	0.00	1.3	0.0	1.3
01Jan2021	02:22	0.00	0.00	0.00	1.0	0.0	1.0
01Jan2021	02:24	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:26	0.00	0.00	0.00	0.6	0.0	0.6
01Jan2021	02:28	0.00	0.00	0.00	0.4	0.0	0.4
01Jan2021	02:30	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:32	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:34	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:36	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:38	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:40	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:42	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_100yr

Junction: J-40

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge: 253.8 (CFS) Date/Time of Peak Discharge 01Jan2021, 00:50

Volume: 13.3 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Junction: J-40

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	0.0
01Jan2021	00:02	0.0	0.1	0.1
01Jan2021	00:04	0.2	0.3	0.5
01Jan2021	00:06	0.5	0.9	1.3
01Jan2021	00:08	1.1	1.9	2.9
01Jan2021	00:10	2.0	3.3	5.3
01Jan2021	00:12	3.4	5.1	8.6
01Jan2021	00:14	5.2	7.2	12.5
01Jan2021	00:16	7.3	9.4	16.7
01Jan2021	00:18	9.7	11.4	21.2
01Jan2021	00:20	12.3	13.4	25.6
01Jan2021	00:22	14.9	15.3	30.2
01Jan2021	00:24	17.7	17.3	35.0
01Jan2021	00:26	20.6	19.6	40.2
01Jan2021	00:28	23.8	22.3	46.2
01Jan2021	00:30	27.4	25.5	53.0
01Jan2021	00:32	31.7	29.7	61.3
01Jan2021	00:34	37.0	35.1	72.1
01Jan2021	00:36	43.9	42.8	86.7
01Jan2021	00:38	53.1	53.8	106.9
01Jan2021	00:40	65.4	68.2	133.6
01Jan2021	00:42	80.2	84.6	164.8
01Jan2021	00:44	96.6	100.5	197.2
01Jan2021	00:46	113.4	112.2	225.6
01Jan2021	00:48	128.4	116.7	245.0
01Jan2021	00:50	139.1	114.7	253.8

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	00:52	144.9	108.1	253.0
01Jan2021	00:54	146.1	98.2	244.3
01Jan2021	00:56	143.1	86.9	229.9
01Jan2021	00:58	136.4	75.9	212.3
01Jan2021	01:00	127.6	66.4	194.0
01Jan2021	01:02	117.0	58.2	175.2
01Jan2021	01:04	105.9	51.3	157.2
01Jan2021	01:06	95.6	45.4	141.0
01Jan2021	01:08	86.4	40.3	126.8
01Jan2021	01:10	78.0	35.9	113.9
01Jan2021	01:12	70.5	31.7	102.2
01Jan2021	01:14	63.4	27.8	91.2
01Jan2021	01:16	56.8	24.2	81.0
01Jan2021	01:18	50.8	21.0	71.8
01Jan2021	01:20	45.3	18.2	63.5
01Jan2021	01:22	40.3	15.9	56.2
01Jan2021	01:24	35.8	14.1	49.9
01Jan2021	01:26	31.9	12.7	44.6
01Jan2021	01:28	28.5	11.6	40.1
01Jan2021	01:30	25.7	10.7	36.4
01Jan2021	01:32	23.3	10.1	33.4
01Jan2021	01:34	21.3	9.5	30.8
01Jan2021	01:36	19.7	9.0	28.7
01Jan2021	01:38	18.3	8.6	26.9
01Jan2021	01:40	17.1	8.3	25.4
01Jan2021	01:42	16.0	8.0	24.1
01Jan2021	01:44	15.2	7.8	23.0
01Jan2021	01:46	14.4	7.6	22.0
01Jan2021	01:48	13.7	7.5	21.2
01Jan2021	01:50	13.2	7.3	20.5
01Jan2021	01:52	12.6	7.2	19.8

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	01:54	12.2	7.1	19.3
01Jan2021	01:56	11.8	7.0	18.8
01Jan2021	01:58	11.5	6.9	18.4
01Jan2021	02:00	11.2	6.9	18.1
01Jan2021	02:02	11.0	6.9	17.9
01Jan2021	02:04	10.7	6.7	17.4
01Jan2021	02:06	10.4	6.3	16.7
01Jan2021	02:08	9.9	5.6	15.6
01Jan2021	02:10	9.3	4.8	14.1
01Jan2021	02:12	8.5	3.9	12.4
01Jan2021	02:14	7.5	3.0	10.6
01Jan2021	02:16	6.6	2.3	8.9
01Jan2021	02:18	5.6	1.7	7.3
01Jan2021	02:20	4.7	1.3	6.0
01Jan2021	02:22	3.9	1.0	4.9
01Jan2021	02:24	3.2	0.7	3.9
01Jan2021	02:26	2.6	0.6	3.1
01Jan2021	02:28	2.1	0.4	2.5
01Jan2021	02:30	1.7	0.3	2.0
01Jan2021	02:32	1.4	0.2	1.7
01Jan2021	02:34	1.2	0.2	1.3
01Jan2021	02:36	1.0	0.1	1.1
01Jan2021	02:38	0.8	0.1	0.9
01Jan2021	02:40	0.6	0.1	0.7
01Jan2021	02:42	0.5	0.1	0.6
01Jan2021	02:44	0.4	0.0	0.5
01Jan2021	02:46	0.3	0.0	0.4
01Jan2021	02:48	0.3	0.0	0.3
01Jan2021	02:50	0.2	0.0	0.2
01Jan2021	02:52	0.2	0.0	0.2
01Jan2021	02:54	0.2	0.0	0.2

Date	Time	Inflow from P50 (CFS)	Inflow from P40 (CFS)	Outflow (CFS)
01Jan2021	02:56	0.1	0.0	0.1
01Jan2021	02:58	0.1	0.0	0.1
01Jan2021	03:00	0.1	0.0	0.1

Project: CSU ATC Simulation Run: Proposed_100yr
Reach: R-30

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	403.0 (CFS)	Date/Time of Peak Inflow	01Jan2021, 00:52
Peak Discharge:	402.5 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:56
Inflow Volume:	22.6 (AC-FT)	Discharge Volume:	22.6 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Reach: R-30

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.1	0.0
01Jan2021	00:04	0.4	0.0
01Jan2021	00:06	1.0	0.2
01Jan2021	00:08	2.2	1.0
01Jan2021	00:10	4.0	2.3
01Jan2021	00:12	6.1	4.3
01Jan2021	00:14	8.5	6.6
01Jan2021	00:16	11.1	9.2
01Jan2021	00:18	13.6	11.8
01Jan2021	00:20	16.5	14.6
01Jan2021	00:22	20.0	17.8
01Jan2021	00:24	24.7	21.8
01Jan2021	00:26	30.8	27.2
01Jan2021	00:28	38.4	34.1
01Jan2021	00:30	47.3	42.5
01Jan2021	00:32	58.4	52.7
01Jan2021	00:34	72.4	65.5
01Jan2021	00:36	91.4	82.4
01Jan2021	00:38	117.8	106.0
01Jan2021	00:40	153.5	138.4
01Jan2021	00:42	197.2	179.6
01Jan2021	00:44	245.4	226.8
01Jan2021	00:46	292.0	274.7
01Jan2021	00:48	331.9	317.5
01Jan2021	00:50	365.4	353.6

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	00:52	390.2	381.6
01Jan2021	00:54	403.0	398.6
01Jan2021	00:56	402.2	402.5
01Jan2021	00:58	391.3	395.0
01Jan2021	01:00	372.8	379.2
01Jan2021	01:02	349.2	357.5
01Jan2021	01:04	323.2	332.4
01Jan2021	01:06	296.8	306.3
01Jan2021	01:08	271.0	280.5
01Jan2021	01:10	245.8	255.3
01Jan2021	01:12	221.9	231.1
01Jan2021	01:14	199.5	208.3
01Jan2021	01:16	179.0	187.2
01Jan2021	01:18	160.5	168.0
01Jan2021	01:20	143.8	150.7
01Jan2021	01:22	129.0	135.3
01Jan2021	01:24	116.0	121.6
01Jan2021	01:26	104.5	109.6
01Jan2021	01:28	94.5	99.1
01Jan2021	01:30	85.8	89.8
01Jan2021	01:32	78.3	81.8
01Jan2021	01:34	71.7	74.9
01Jan2021	01:36	66.1	68.8
01Jan2021	01:38	61.1	63.6
01Jan2021	01:40	56.9	59.0
01Jan2021	01:42	53.3	55.1
01Jan2021	01:44	50.3	51.8
01Jan2021	01:46	47.7	49.0
01Jan2021	01:48	45.4	46.6
01Jan2021	01:50	43.5	44.5
01Jan2021	01:52	41.8	42.7

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	01:54	40.3	41.1
01Jan2021	01:56	39.1	39.8
01Jan2021	01:58	38.0	38.6
01Jan2021	02:00	37.2	37.7
01Jan2021	02:02	36.4	36.8
01Jan2021	02:04	35.3	35.9
01Jan2021	02:06	33.8	34.7
01Jan2021	02:08	31.6	32.9
01Jan2021	02:10	29.2	30.6
01Jan2021	02:12	26.6	28.1
01Jan2021	02:14	24.2	25.6
01Jan2021	02:16	21.8	23.2
01Jan2021	02:18	19.7	21.0
01Jan2021	02:20	17.8	19.0
01Jan2021	02:22	16.0	17.2
01Jan2021	02:24	14.2	15.4
01Jan2021	02:26	12.5	13.6
01Jan2021	02:28	11.0	12.1
01Jan2021	02:30	9.6	10.6
01Jan2021	02:32	8.3	9.3
01Jan2021	02:34	7.2	8.1
01Jan2021	02:36	6.2	7.0
01Jan2021	02:38	5.4	6.1
01Jan2021	02:40	4.7	5.3
01Jan2021	02:42	4.0	4.6
01Jan2021	02:44	3.5	4.0
01Jan2021	02:46	3.0	3.4
01Jan2021	02:48	2.6	3.0
01Jan2021	02:50	2.3	2.6
01Jan2021	02:52	2.0	2.3
01Jan2021	02:54	1.7	2.0

Date	Time	Inflow (CFS)	Outflow (CFS)
01Jan2021	02:56	1.5	1.7
01Jan2021	02:58	1.3	1.5
01Jan2021	03:00	1.2	1.3

Project: CSU ATC Simulation Run: Proposed_100yr

Subbasin: P10

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	135.6 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Precipitation Volume:	9.0 (AC-FT)	Direct Runoff Volume:	5.9 (AC-FT)
Loss Volume:	3.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	5.9 (AC-FT)	Discharge Volume:	5.9 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P10

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.01	0.1	0.0	0.1
01Jan2021	00:04	0.01	0.01	0.01	0.3	0.0	0.3
01Jan2021	00:06	0.02	0.01	0.01	0.9	0.0	0.9
01Jan2021	00:08	0.03	0.02	0.01	1.9	0.0	1.9
01Jan2021	00:10	0.03	0.02	0.01	3.3	0.0	3.3
01Jan2021	00:12	0.03	0.02	0.01	5.1	0.0	5.1
01Jan2021	00:14	0.03	0.02	0.01	6.9	0.0	6.9
01Jan2021	00:16	0.04	0.02	0.01	8.7	0.0	8.7
01Jan2021	00:18	0.04	0.03	0.02	10.3	0.0	10.3
01Jan2021	00:20	0.04	0.03	0.02	11.8	0.0	11.8
01Jan2021	00:22	0.06	0.04	0.02	13.2	0.0	13.2
01Jan2021	00:24	0.06	0.03	0.03	14.8	0.0	14.8
01Jan2021	00:26	0.07	0.04	0.03	16.8	0.0	16.8
01Jan2021	00:28	0.08	0.04	0.04	19.3	0.0	19.3
01Jan2021	00:30	0.08	0.04	0.04	22.5	0.0	22.5
01Jan2021	00:32	0.16	0.07	0.09	26.9	0.0	26.9
01Jan2021	00:34	0.16	0.07	0.10	33.2	0.0	33.2
01Jan2021	00:36	0.23	0.08	0.14	42.9	0.0	42.9
01Jan2021	00:38	0.29	0.09	0.20	57.0	0.0	57.0
01Jan2021	00:40	0.29	0.08	0.21	76.3	0.0	76.3
01Jan2021	00:42	0.11	0.03	0.08	98.4	0.0	98.4
01Jan2021	00:44	0.11	0.03	0.09	119.1	0.0	119.1
01Jan2021	00:46	0.09	0.02	0.07	132.4	0.0	132.4
01Jan2021	00:48	0.07	0.01	0.05	135.6	0.0	135.6
01Jan2021	00:50	0.07	0.01	0.05	131.2	0.0	131.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.01	0.03	120.9	0.0	120.9
01Jan2021	00:54	0.04	0.01	0.03	107.8	0.0	107.8
01Jan2021	00:56	0.04	0.01	0.03	94.3	0.0	94.3
01Jan2021	00:58	0.04	0.01	0.03	82.5	0.0	82.5
01Jan2021	01:00	0.04	0.01	0.03	72.1	0.0	72.1
01Jan2021	01:02	0.03	0.01	0.03	63.3	0.0	63.3
01Jan2021	01:04	0.03	0.01	0.03	56.0	0.0	56.0
01Jan2021	01:06	0.02	0.00	0.02	50.0	0.0	50.0
01Jan2021	01:08	0.01	0.00	0.01	44.8	0.0	44.8
01Jan2021	01:10	0.01	0.00	0.01	40.0	0.0	40.0
01Jan2021	01:12	0.01	0.00	0.01	35.3	0.0	35.3
01Jan2021	01:14	0.01	0.00	0.01	30.7	0.0	30.7
01Jan2021	01:16	0.01	0.00	0.01	26.6	0.0	26.6
01Jan2021	01:18	0.01	0.00	0.01	22.9	0.0	22.9
01Jan2021	01:20	0.01	0.00	0.01	19.9	0.0	19.9
01Jan2021	01:22	0.01	0.00	0.01	17.5	0.0	17.5
01Jan2021	01:24	0.01	0.00	0.01	15.7	0.0	15.7
01Jan2021	01:26	0.01	0.00	0.01	14.3	0.0	14.3
01Jan2021	01:28	0.01	0.00	0.01	13.3	0.0	13.3
01Jan2021	01:30	0.01	0.00	0.01	12.5	0.0	12.5
01Jan2021	01:32	0.01	0.00	0.01	11.9	0.0	11.9
01Jan2021	01:34	0.01	0.00	0.01	11.5	0.0	11.5
01Jan2021	01:36	0.01	0.00	0.01	11.0	0.0	11.0
01Jan2021	01:38	0.01	0.00	0.01	10.6	0.0	10.6
01Jan2021	01:40	0.01	0.00	0.01	10.3	0.0	10.3
01Jan2021	01:42	0.01	0.00	0.01	10.0	0.0	10.0
01Jan2021	01:44	0.01	0.00	0.01	9.8	0.0	9.8
01Jan2021	01:46	0.01	0.00	0.01	9.6	0.0	9.6
01Jan2021	01:48	0.01	0.00	0.01	9.5	0.0	9.5
01Jan2021	01:50	0.01	0.00	0.01	9.3	0.0	9.3
01Jan2021	01:52	0.01	0.00	0.01	9.2	0.0	9.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	9.1	0.0	9.1
01Jan2021	01:56	0.01	0.00	0.01	9.0	0.0	9.0
01Jan2021	01:58	0.01	0.00	0.01	8.9	0.0	8.9
01Jan2021	02:00	0.01	0.00	0.01	9.0	0.0	9.0
01Jan2021	02:02	0.00	0.00	0.00	8.9	0.0	8.9
01Jan2021	02:04	0.00	0.00	0.00	8.6	0.0	8.6
01Jan2021	02:06	0.00	0.00	0.00	7.9	0.0	7.9
01Jan2021	02:08	0.00	0.00	0.00	6.8	0.0	6.8
01Jan2021	02:10	0.00	0.00	0.00	5.5	0.0	5.5
01Jan2021	02:12	0.00	0.00	0.00	4.3	0.0	4.3
01Jan2021	02:14	0.00	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:16	0.00	0.00	0.00	2.3	0.0	2.3
01Jan2021	02:18	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:20	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:22	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:24	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:26	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:28	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:30	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:32	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:34	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:36	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:38	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_100yr

Subbasin: P20

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	11Mar2021, 15:07:20	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	135.6 (CFS)	Date/Time of Peak Discharge	01Jan2021, 00:48
Precipitation Volume	9.0 (AC-FT)	Direct Runoff Volume:	5.9 (AC-FT)
Loss Volume:	3.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	5.9 (AC-FT)	Discharge Volume:	5.9 (AC-FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Subbasin: P20

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 11Mar2021, 15:07:20 Control Specifications: Control 1

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:00				0.0	0.0	0.0
01Jan2021	00:02	0.01	0.01	0.01	0.1	0.0	0.1
01Jan2021	00:04	0.01	0.01	0.01	0.3	0.0	0.3
01Jan2021	00:06	0.02	0.01	0.01	0.9	0.0	0.9
01Jan2021	00:08	0.03	0.02	0.01	1.9	0.0	1.9
01Jan2021	00:10	0.03	0.02	0.01	3.3	0.0	3.3
01Jan2021	00:12	0.03	0.02	0.01	5.1	0.0	5.1
01Jan2021	00:14	0.03	0.02	0.01	6.9	0.0	6.9
01Jan2021	00:16	0.04	0.02	0.01	8.7	0.0	8.7
01Jan2021	00:18	0.04	0.03	0.02	10.3	0.0	10.3
01Jan2021	00:20	0.04	0.03	0.02	11.8	0.0	11.8
01Jan2021	00:22	0.06	0.04	0.02	13.2	0.0	13.2
01Jan2021	00:24	0.06	0.03	0.03	14.8	0.0	14.8
01Jan2021	00:26	0.07	0.04	0.03	16.8	0.0	16.8
01Jan2021	00:28	0.08	0.04	0.04	19.3	0.0	19.3
01Jan2021	00:30	0.08	0.04	0.04	22.5	0.0	22.5
01Jan2021	00:32	0.16	0.07	0.09	26.9	0.0	26.9
01Jan2021	00:34	0.16	0.07	0.10	33.2	0.0	33.2
01Jan2021	00:36	0.23	0.08	0.14	42.9	0.0	42.9
01Jan2021	00:38	0.29	0.09	0.20	57.0	0.0	57.0
01Jan2021	00:40	0.29	0.08	0.21	76.3	0.0	76.3
01Jan2021	00:42	0.11	0.03	0.08	98.4	0.0	98.4
01Jan2021	00:44	0.11	0.03	0.09	119.1	0.0	119.1
01Jan2021	00:46	0.09	0.02	0.07	132.4	0.0	132.4
01Jan2021	00:48	0.07	0.01	0.05	135.6	0.0	135.6
01Jan2021	00:50	0.07	0.01	0.05	131.2	0.0	131.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	00:52	0.04	0.01	0.03	120.9	0.0	120.9
01Jan2021	00:54	0.04	0.01	0.03	107.8	0.0	107.8
01Jan2021	00:56	0.04	0.01	0.03	94.3	0.0	94.3
01Jan2021	00:58	0.04	0.01	0.03	82.5	0.0	82.5
01Jan2021	01:00	0.04	0.01	0.03	72.1	0.0	72.1
01Jan2021	01:02	0.03	0.01	0.03	63.3	0.0	63.3
01Jan2021	01:04	0.03	0.01	0.03	56.0	0.0	56.0
01Jan2021	01:06	0.02	0.00	0.02	50.0	0.0	50.0
01Jan2021	01:08	0.01	0.00	0.01	44.8	0.0	44.8
01Jan2021	01:10	0.01	0.00	0.01	40.0	0.0	40.0
01Jan2021	01:12	0.01	0.00	0.01	35.3	0.0	35.3
01Jan2021	01:14	0.01	0.00	0.01	30.7	0.0	30.7
01Jan2021	01:16	0.01	0.00	0.01	26.6	0.0	26.6
01Jan2021	01:18	0.01	0.00	0.01	22.9	0.0	22.9
01Jan2021	01:20	0.01	0.00	0.01	19.9	0.0	19.9
01Jan2021	01:22	0.01	0.00	0.01	17.5	0.0	17.5
01Jan2021	01:24	0.01	0.00	0.01	15.7	0.0	15.7
01Jan2021	01:26	0.01	0.00	0.01	14.3	0.0	14.3
01Jan2021	01:28	0.01	0.00	0.01	13.3	0.0	13.3
01Jan2021	01:30	0.01	0.00	0.01	12.5	0.0	12.5
01Jan2021	01:32	0.01	0.00	0.01	11.9	0.0	11.9
01Jan2021	01:34	0.01	0.00	0.01	11.5	0.0	11.5
01Jan2021	01:36	0.01	0.00	0.01	11.0	0.0	11.0
01Jan2021	01:38	0.01	0.00	0.01	10.6	0.0	10.6
01Jan2021	01:40	0.01	0.00	0.01	10.3	0.0	10.3
01Jan2021	01:42	0.01	0.00	0.01	10.0	0.0	10.0
01Jan2021	01:44	0.01	0.00	0.01	9.8	0.0	9.8
01Jan2021	01:46	0.01	0.00	0.01	9.6	0.0	9.6
01Jan2021	01:48	0.01	0.00	0.01	9.5	0.0	9.5
01Jan2021	01:50	0.01	0.00	0.01	9.3	0.0	9.3
01Jan2021	01:52	0.01	0.00	0.01	9.2	0.0	9.2

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	01:54	0.01	0.00	0.01	9.1	0.0	9.1
01Jan2021	01:56	0.01	0.00	0.01	9.0	0.0	9.0
01Jan2021	01:58	0.01	0.00	0.01	8.9	0.0	8.9
01Jan2021	02:00	0.01	0.00	0.01	9.0	0.0	9.0
01Jan2021	02:02	0.00	0.00	0.00	8.9	0.0	8.9
01Jan2021	02:04	0.00	0.00	0.00	8.6	0.0	8.6
01Jan2021	02:06	0.00	0.00	0.00	7.9	0.0	7.9
01Jan2021	02:08	0.00	0.00	0.00	6.8	0.0	6.8
01Jan2021	02:10	0.00	0.00	0.00	5.5	0.0	5.5
01Jan2021	02:12	0.00	0.00	0.00	4.3	0.0	4.3
01Jan2021	02:14	0.00	0.00	0.00	3.1	0.0	3.1
01Jan2021	02:16	0.00	0.00	0.00	2.3	0.0	2.3
01Jan2021	02:18	0.00	0.00	0.00	1.7	0.0	1.7
01Jan2021	02:20	0.00	0.00	0.00	1.2	0.0	1.2
01Jan2021	02:22	0.00	0.00	0.00	0.9	0.0	0.9
01Jan2021	02:24	0.00	0.00	0.00	0.7	0.0	0.7
01Jan2021	02:26	0.00	0.00	0.00	0.5	0.0	0.5
01Jan2021	02:28	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:30	0.00	0.00	0.00	0.3	0.0	0.3
01Jan2021	02:32	0.00	0.00	0.00	0.2	0.0	0.2
01Jan2021	02:34	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:36	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:38	0.00	0.00	0.00	0.1	0.0	0.1
01Jan2021	02:40	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:42	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:44	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:46	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:48	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:50	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:52	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:54	0.00	0.00	0.00	0.0	0.0	0.0

Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Direct Flow (CFS)	Baseflow (CFS)	Total Flow (CFS)
01Jan2021	02:56	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	02:58	0.00	0.00	0.00	0.0	0.0	0.0
01Jan2021	03:00	0.00	0.00	0.00	0.0	0.0	0.0

Project: CSU ATC Simulation Run: Proposed_100yr

Reservoir: Pond A

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	31Mar2021, 13:56:37	Control Specifications:	Control 1

Volume Units: IN

Computed Results

Peak Inflow:	623.4 (CFS)	Date/Time of Peak Inflow:	01Jan2021, 00:50
Peak Discharge:	104.9 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:32
Inflow Volume:	1.89 (IN)	Peak Storage:	25.3 (AC-FT)
Discharge Volume	0.91 (IN)	Peak Elevation:	5867.9 (FT)

Project: CSU ATC Simulation Run: Proposed_100yr
Reservoir: Pond A

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 31Mar2021, 13:56:37 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0	5859.0	0.0
01Jan2021	00:02	0.2	0.0	5859.0	0.0
01Jan2021	00:04	0.7	0.0	5859.0	0.0
01Jan2021	00:06	2.0	0.0	5859.0	0.0
01Jan2021	00:08	4.8	0.0	5859.0	0.0
01Jan2021	00:10	9.0	0.0	5859.0	0.0
01Jan2021	00:12	14.4	0.1	5859.0	0.1
01Jan2021	00:14	20.5	0.1	5859.0	0.1
01Jan2021	00:16	26.6	0.2	5859.1	0.2
01Jan2021	00:18	32.5	0.3	5859.1	0.3
01Jan2021	00:20	38.1	0.4	5859.2	0.4
01Jan2021	00:22	44.2	0.5	5859.2	0.5
01Jan2021	00:24	51.4	0.6	5859.3	0.7
01Jan2021	00:26	60.7	0.7	5859.3	0.8
01Jan2021	00:28	72.8	0.9	5859.4	0.8
01Jan2021	00:30	87.5	1.1	5859.5	0.9
01Jan2021	00:32	106.6	1.4	5859.6	1.0
01Jan2021	00:34	132.0	1.7	5859.7	1.2
01Jan2021	00:36	168.2	2.1	5859.9	1.3
01Jan2021	00:38	220.0	2.7	5860.1	1.4
01Jan2021	00:40	290.9	3.4	5860.4	1.6
01Jan2021	00:42	376.5	4.3	5860.8	1.8
01Jan2021	00:44	465.1	5.4	5861.2	2.0
01Jan2021	00:46	539.4	6.8	5861.8	3.0
01Jan2021	00:48	588.8	8.4	5862.4	3.8
01Jan2021	00:50	616.1	10.0	5863.0	4.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	00:52	623.4	11.7	5863.6	6.3
01Jan2021	00:54	614.1	13.4	5864.2	7.3
01Jan2021	00:56	591.0	15.0	5864.7	12.9
01Jan2021	00:58	560.1	16.5	5865.2	37.4
01Jan2021	01:00	523.5	17.9	5865.6	68.3
01Jan2021	01:02	484.1	19.1	5866.0	91.2
01Jan2021	01:04	444.4	20.1	5866.3	93.6
01Jan2021	01:06	406.2	21.0	5866.6	95.8
01Jan2021	01:08	370.0	21.8	5866.9	97.6
01Jan2021	01:10	335.3	22.5	5867.1	99.2
01Jan2021	01:12	301.6	23.1	5867.3	100.5
01Jan2021	01:14	269.7	23.6	5867.4	101.6
01Jan2021	01:16	240.3	24.0	5867.5	102.4
01Jan2021	01:18	213.8	24.4	5867.6	103.1
01Jan2021	01:20	190.5	24.6	5867.7	103.7
01Jan2021	01:22	170.4	24.9	5867.8	104.1
01Jan2021	01:24	153.1	25.0	5867.8	104.5
01Jan2021	01:26	138.3	25.1	5867.9	104.7
01Jan2021	01:28	125.6	25.2	5867.9	104.8
01Jan2021	01:30	114.8	25.2	5867.9	104.9
01Jan2021	01:32	105.7	25.3	5867.9	104.9
01Jan2021	01:34	97.8	25.2	5867.9	104.9
01Jan2021	01:36	90.9	25.2	5867.9	104.9
01Jan2021	01:38	84.8	25.2	5867.9	104.8
01Jan2021	01:40	79.5	25.1	5867.9	104.7
01Jan2021	01:42	75.1	25.0	5867.8	104.5
01Jan2021	01:44	71.4	25.0	5867.8	104.3
01Jan2021	01:46	68.2	24.9	5867.8	104.1
01Jan2021	01:48	65.5	24.8	5867.8	103.9
01Jan2021	01:50	63.1	24.6	5867.7	103.7
01Jan2021	01:52	61.0	24.5	5867.7	103.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	01:54	59.2	24.4	5867.6	103.2
01Jan2021	01:56	57.7	24.3	5867.6	103.0
01Jan2021	01:58	56.5	24.2	5867.6	102.7
01Jan2021	02:00	55.6	24.0	5867.5	102.4
01Jan2021	02:02	54.6	23.9	5867.5	102.2
01Jan2021	02:04	53.2	23.8	5867.5	101.9
01Jan2021	02:06	50.5	23.6	5867.4	101.6
01Jan2021	02:08	46.5	23.5	5867.4	101.3
01Jan2021	02:10	41.7	23.3	5867.3	101.0
01Jan2021	02:12	36.6	23.2	5867.3	100.6
01Jan2021	02:14	31.9	23.0	5867.2	100.2
01Jan2021	02:16	27.8	22.8	5867.2	99.8
01Jan2021	02:18	24.4	22.6	5867.1	99.4
01Jan2021	02:20	21.5	22.4	5867.0	98.9
01Jan2021	02:22	18.9	22.2	5867.0	98.4
01Jan2021	02:24	16.7	21.9	5866.9	97.9
01Jan2021	02:26	14.6	21.7	5866.8	97.4
01Jan2021	02:28	12.7	21.5	5866.8	96.9
01Jan2021	02:30	11.1	21.2	5866.7	96.4
01Jan2021	02:32	9.6	21.0	5866.6	95.8
01Jan2021	02:34	8.3	20.8	5866.5	95.3
01Jan2021	02:36	7.2	20.5	5866.5	94.7
01Jan2021	02:38	6.2	20.3	5866.4	94.1
01Jan2021	02:40	5.4	20.0	5866.3	93.6
01Jan2021	02:42	4.6	19.8	5866.2	93.0
01Jan2021	02:44	4.0	19.6	5866.2	92.4
01Jan2021	02:46	3.5	19.3	5866.1	91.8
01Jan2021	02:48	3.0	19.1	5866.0	91.2
01Jan2021	02:50	2.6	18.8	5865.9	87.8
01Jan2021	02:52	2.3	18.6	5865.9	83.6
01Jan2021	02:54	2.0	18.4	5865.8	79.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2021	02:56	1.7	18.2	5865.7	75.5
01Jan2021	02:58	1.5	18.0	5865.7	70.6
01Jan2021	03:00	1.3	17.8	5865.6	66.0

Project: CSU ATC Simulation Run: Proposed_100yr

Junction: J-OF1

Start of Run:	01Jan2021, 00:00	Basin Model:	Proposed Base Model
End of Run:	01Jan2021, 03:00	Meteorologic Model:	100yr_2-Hr
Compute Time:	31Mar2021, 13:56:37	Control Specifications:	Control 1

Volume Units: IN

Computed Results

Peak Discharge:	104.9 (CFS)	Date/Time of Peak Discharge	01Jan2021, 01:32
Volume:	0.91 (IN)		

Project: CSU ATC Simulation Run: Proposed_100yr
Junction: J-OF1

Start of Run: 01Jan2021, 00:00 Basin Model: Proposed Base Mo
End of Run: 01Jan2021, 03:00 Meteorologic Model: 100yr_2-Hr
Compute Time: 31Mar2021, 13:56:37 Control Specifications: Control 1

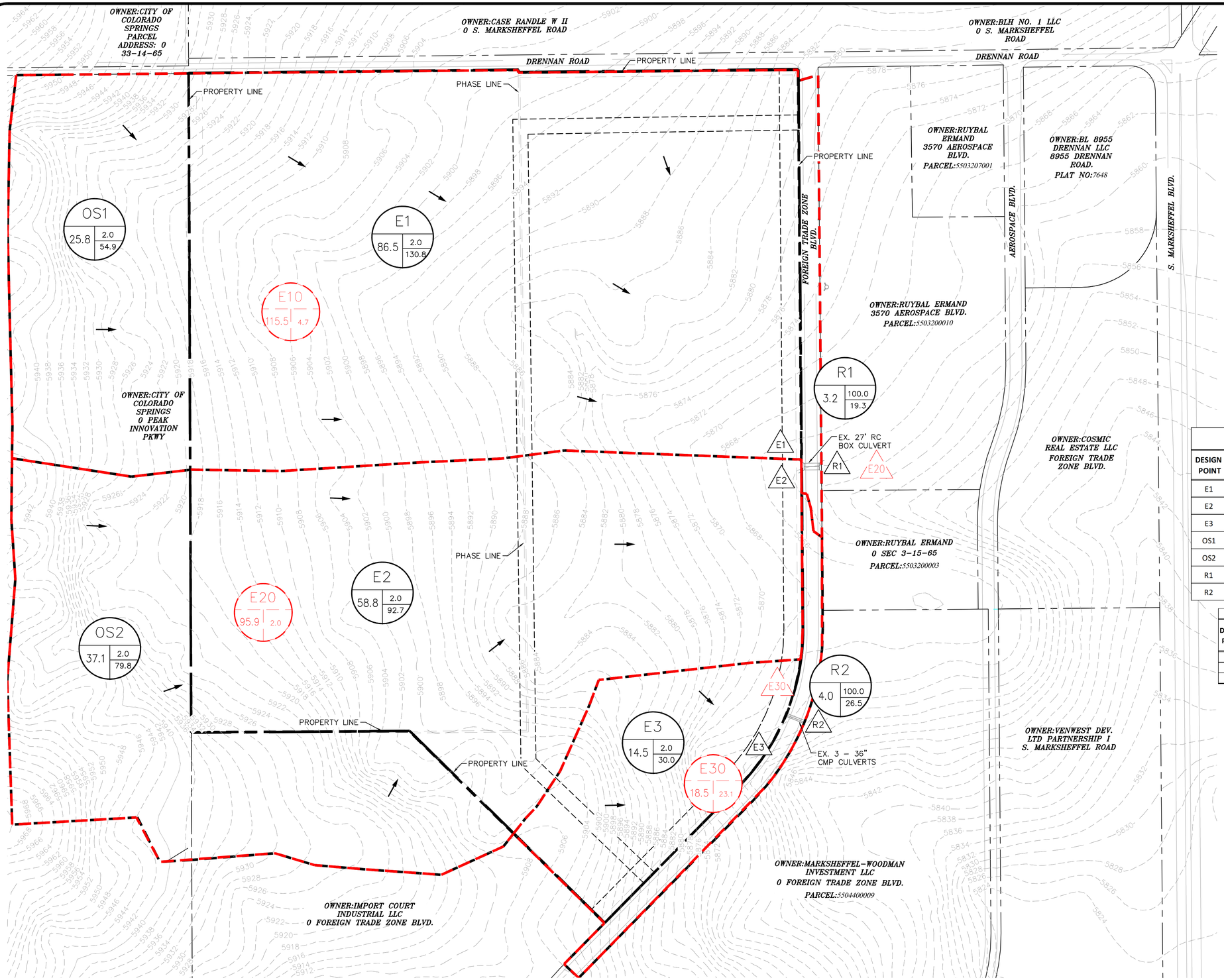
Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	00:00	0.0	0.0
01Jan2021	00:02	0.0	0.0
01Jan2021	00:04	0.0	0.0
01Jan2021	00:06	0.0	0.0
01Jan2021	00:08	0.0	0.0
01Jan2021	00:10	0.0	0.0
01Jan2021	00:12	0.1	0.1
01Jan2021	00:14	0.1	0.1
01Jan2021	00:16	0.2	0.2
01Jan2021	00:18	0.3	0.3
01Jan2021	00:20	0.4	0.4
01Jan2021	00:22	0.5	0.5
01Jan2021	00:24	0.7	0.7
01Jan2021	00:26	0.8	0.8
01Jan2021	00:28	0.8	0.8
01Jan2021	00:30	0.9	0.9
01Jan2021	00:32	1.0	1.0
01Jan2021	00:34	1.2	1.2
01Jan2021	00:36	1.3	1.3
01Jan2021	00:38	1.4	1.4
01Jan2021	00:40	1.6	1.6
01Jan2021	00:42	1.8	1.8
01Jan2021	00:44	2.0	2.0
01Jan2021	00:46	3.0	3.0
01Jan2021	00:48	3.8	3.8
01Jan2021	00:50	4.5	4.5

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	00:52	6.3	6.3
01Jan2021	00:54	7.3	7.3
01Jan2021	00:56	12.9	12.9
01Jan2021	00:58	37.4	37.4
01Jan2021	01:00	68.3	68.3
01Jan2021	01:02	91.2	91.2
01Jan2021	01:04	93.6	93.6
01Jan2021	01:06	95.8	95.8
01Jan2021	01:08	97.6	97.6
01Jan2021	01:10	99.2	99.2
01Jan2021	01:12	100.5	100.5
01Jan2021	01:14	101.6	101.6
01Jan2021	01:16	102.4	102.4
01Jan2021	01:18	103.1	103.1
01Jan2021	01:20	103.7	103.7
01Jan2021	01:22	104.1	104.1
01Jan2021	01:24	104.5	104.5
01Jan2021	01:26	104.7	104.7
01Jan2021	01:28	104.8	104.8
01Jan2021	01:30	104.9	104.9
01Jan2021	01:32	104.9	104.9
01Jan2021	01:34	104.9	104.9
01Jan2021	01:36	104.9	104.9
01Jan2021	01:38	104.8	104.8
01Jan2021	01:40	104.7	104.7
01Jan2021	01:42	104.5	104.5
01Jan2021	01:44	104.3	104.3
01Jan2021	01:46	104.1	104.1
01Jan2021	01:48	103.9	103.9
01Jan2021	01:50	103.7	103.7
01Jan2021	01:52	103.5	103.5

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	01:54	103.2	103.2
01Jan2021	01:56	103.0	103.0
01Jan2021	01:58	102.7	102.7
01Jan2021	02:00	102.4	102.4
01Jan2021	02:02	102.2	102.2
01Jan2021	02:04	101.9	101.9
01Jan2021	02:06	101.6	101.6
01Jan2021	02:08	101.3	101.3
01Jan2021	02:10	101.0	101.0
01Jan2021	02:12	100.6	100.6
01Jan2021	02:14	100.2	100.2
01Jan2021	02:16	99.8	99.8
01Jan2021	02:18	99.4	99.4
01Jan2021	02:20	98.9	98.9
01Jan2021	02:22	98.4	98.4
01Jan2021	02:24	97.9	97.9
01Jan2021	02:26	97.4	97.4
01Jan2021	02:28	96.9	96.9
01Jan2021	02:30	96.4	96.4
01Jan2021	02:32	95.8	95.8
01Jan2021	02:34	95.3	95.3
01Jan2021	02:36	94.7	94.7
01Jan2021	02:38	94.1	94.1
01Jan2021	02:40	93.6	93.6
01Jan2021	02:42	93.0	93.0
01Jan2021	02:44	92.4	92.4
01Jan2021	02:46	91.8	91.8
01Jan2021	02:48	91.2	91.2
01Jan2021	02:50	87.8	87.8
01Jan2021	02:52	83.6	83.6
01Jan2021	02:54	79.7	79.7

Date	Time	Inflow from Pond A (CFS)	Outflow (CFS)
01Jan2021	02:56	75.5	75.5
01Jan2021	02:58	70.6	70.6
01Jan2021	03:00	66.0	66.0

APPENDIX D – DRAINAGE EXHIBITS



LEGEND

- A = BASIN DESIGNATION
- B = AREA (ACRES)
- C = BASIN IMPERVIOUSNESS
- D = 100YR DESIGN STORM RUNOFF (CFS)
- # = DESIGN POINT
- FLOW DIRECTION
- PROPERTY BOUNDARY
- PARCEL LINE
- DRAINAGE BASIN BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- A = HEC-HMS BASIN DESIGNATION
- B = HEC-HMS AREA (ACRES)
- C = HEC-HMS BASIN IMPERVIOUSNESS
- # = HEC-HMS DESIGN POINT
- HEC-HMS DRAINAGE BASIN BOUNDARY

SUMMARY - EXISTING RUNOFF TABLE

DESIGN POINT	BASIN DESIGNATION	BASIN AREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)	CUMULATIVE 5-YR RUNOFF (CFS)	CUMULATIVE 100-YR RUNOFF (CFS)
E1	E1	86.49	17.81	130.77	17.81	130.77
E2	E2	58.79	12.62	92.70	12.62	92.70
E3	E3	14.54	4.03	29.57	4.03	29.57
OS1	OS1	25.79	7.48	54.91	7.48	54.91
OS2	OS2	37.07	10.87	79.82	10.87	79.82
R1	R1	3.22	10.78	19.31	10.78	19.31
R2	R2	3.98	14.81	26.53	14.81	26.53

HEC-HMS SUMMARY - EXISTING RUNOFF TABLE

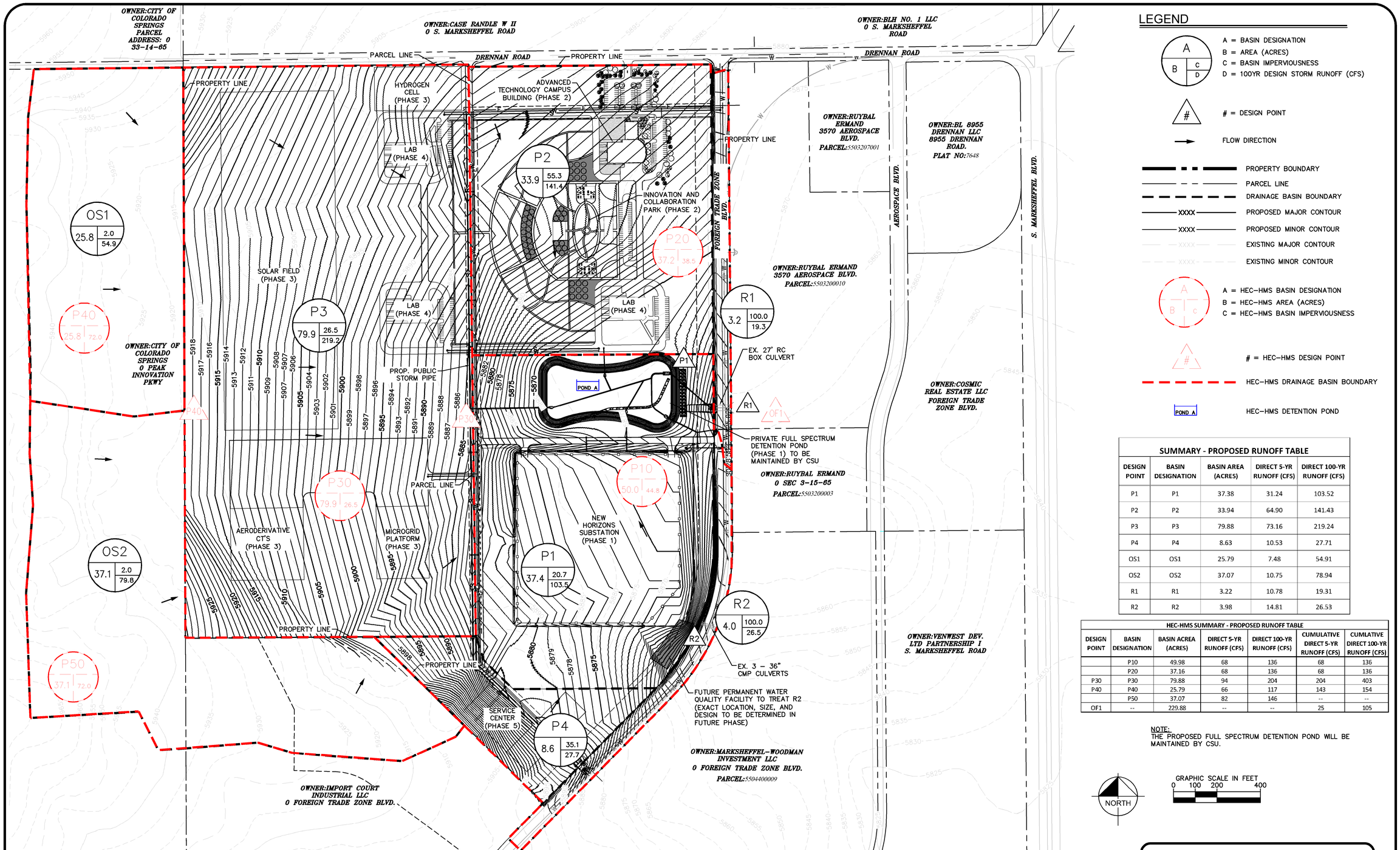
DESIGN POINT	BASIN DESIGNATION	BASIN ACREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)	CUMULATIVE DIRECT 5-YR RUNOFF (CFS)	CUMLATIVE DIRECT 100-YR RUNOFF (CFS)
	E10	115.47	16	58		
E20	E20	95.87	12	55	27	112
E30	E30	18.52	17	37	17	37

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

EXISTING DRAINAGE EXHIBIT – CSU ATC, COLORADO SPRINGS, CO

Kimley»Horn



LEGEND

- A = BASIN DESIGNATION
- B = AREA (ACRES)
- C = BASIN IMPERVIOUSNESS
- D = 100YR DESIGN STORM RUNOFF (CFS)
- # = DESIGN POINT
- FLOW DIRECTION
- PROPERTY BOUNDARY
- PARCEL LINE
- DRAINAGE BASIN BOUNDARY
- XXXX PROPOSED MAJOR CONTOUR
- XXXX PROPOSED MINOR CONTOUR
- XXXX EXISTING MAJOR CONTOUR
- XXXX EXISTING MINOR CONTOUR
- A = HEC-HMS BASIN DESIGNATION
- B = HEC-HMS AREA (ACRES)
- C = HEC-HMS BASIN IMPERVIOUSNESS
- # = HEC-HMS DESIGN POINT
- HEC-HMS DRAINAGE BASIN BOUNDARY
- POND A HEC-HMS DETENTION POND

SUMMARY - PROPOSED RUNOFF TABLE

DESIGN POINT	BASIN DESIGNATION	BASIN AREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)
P1	P1	37.38	31.24	103.52
P2	P2	33.94	64.90	141.43
P3	P3	79.88	73.16	219.24
P4	P4	8.63	10.53	27.71
OS1	OS1	25.79	7.48	54.91
OS2	OS2	37.07	10.75	78.94
R1	R1	3.22	10.78	19.31
R2	R2	3.98	14.81	26.53

HEC-HMS SUMMARY - PROPOSED RUNOFF TABLE

DESIGN POINT	BASIN DESIGNATION	BASIN ACREA (ACRES)	DIRECT 5-YR RUNOFF (CFS)	DIRECT 100-YR RUNOFF (CFS)	CUMULATIVE DIRECT 5-YR RUNOFF (CFS)	CUMLATIVE DIRECT 100-YR RUNOFF (CFS)
	P10	49.98	68	136	68	136
	P20	37.16	68	136	68	136
P30	P30	79.88	94	204	204	403
P40	P40	25.79	66	117	143	154
	P50	37.07	82	146	--	--
OF1	--	229.88	--	--	25	105

NOTE:-
THE PROPOSED FULL SPECTRUM DETENTION POND WILL BE MAINTAINED BY CSU.

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

PROPOSED DRAINAGE EXHIBIT – CSU ATC, COLORADO SPRINGS, CO

Kimley»Horn

APPENDIX E – HYDRAULIC CALCULATIONS

Kimley»Horn

Project:	Adavnced Technology Center	Prepared By:	HMO
Project Number:	196030003	Checked By:	EAM
Date:	3/31/2021		

Water Quality Capture Volume - Extended Detention Basin

Contributing Basin Characteristics

Basin ID	Area (AC)	Impervious (%)
P10*	46	45%
P20	37.2	39%
P30	79.9	27%
P40	25.8	72%
P50	37.1	72%
Total Treated for WQ (Not Including OS1 and OS2)	226.00	45%

*Rational Method Sub-Basin R2 was removed from HEC-HMS Sub-Basin P10. R2 will have separate WQCV treatment from the proposed EDB.

Water Quality Capture Volume

DCM Vol. 2 Equation: WQ Watershed Inches = $a*(0.91i^3-1.19i^2+.78i)$

a_{12} = 0.8 (12-Hr Drain Time)

a_{24} = 0.9 (24-Hr Drain Time)

a_{40} = 1.0 (40-Hr Drain Time)

DCM Vol. 2 Equati: Adjusted WQ Watershed Inches = $d_6(WQCV/0.43)$

d_6 = 0.41 Figure 3-1

DCM Vol. 2 Equation: WQCV = (WQCV/12)*(Area)

WQCV Impervious =	45%			
a =	1.0			
WQ Watershed Inches =	0.19			
Adjusted WQ Watershed Inches =	0.18			
Area =	226.00	AC		
WQ Capture Volume =	3.46	AC-FT		
	150,649	FT^3		
			Watershed Inches	
% Hydrologic Soil Group A =	40%	$EURV_A$ (DCM 13-5) =	0.35	
% Hydrologic Soil Group B =	50.2%	$EURV_B$ (DCM 13-6) =	0.29	
% Hydrologic Soil Group C/D =	9.8%	$EURV_{C/D}$ (DCM 13-7) =	0.05	
		Total Watershed Inches =	0.70	
		EURV =	13.10	AC-FT

	Site WQ Volume	
WQCV	3.46	AC-FT
EURV	13.10	AC-FT

Kimley»Horn

Project:	Adavnced Technology Center	Prepared By:	HMO
Project Number:	196030003	Checked By:	EAM
Date:	3/31/2021		

Water Quality Capture Volume - Permanent Water Quality Treatment for South Foreign Trade Blvd

Water Quality Capture Volume

DCM Vol. 2 Equation: WQ Watershed Inches = $a*(0.91i^3-1.19i^2+.78i)$

a_{12} = 0.8 (12-Hr Drain Time)

a_{24} = 0.9 (24-Hr Drain Time)

a_{40} = 1.0 (40-Hr Drain Time)

DCM Vol. 2 Equati: Adjusted WQ Watershed Inches = $d_6(WQCV/0.43)$

d_6 = 0.41 Figure 3-1

DCM Vol. 2 Equation: WQCV = (WQCV/12)*(Area)

WQCV Impervious =	100%	
a =	0.8	
WQ Watershed Inches =	0.40	
Adjusted WQ Watershed Inches =	0.38	
Area =	4.00	AC
WQ Capture Volume =	0.13	AC-FT
	5,538	FT^3

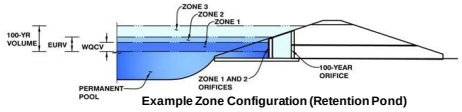
	Site WQ Volume	
WQCV	0.13	AC-FT

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.04 (February 2021)

Project: CSU ATC Pond Design

Basin ID: Entire Site (Offsite and Onsite)



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	EDB	
Watershed Area =	230.00	acres
Watershed Length =	3,200	ft
Watershed Length to Centroid =	1,000	ft
Watershed Slope =	0.050	ft/ft
Watershed Imperviousness =	45.00%	percent
Percentage Hydrologic Soil Group A =	50.0%	percent
Percentage Hydrologic Soil Group B =	50.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	1.510	acre-feet	1.510	acre-feet
Excess Urban Runoff Volume (EURV) =	4.150	acre-feet	4.150	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	9.257	acre-feet	1.19	inches
5-yr Runoff Volume (P1 = 1.5 in.) =	12.771	acre-feet	1.50	inches
10-yr Runoff Volume (P1 = 1.75 in.) =	16.428	acre-feet	1.75	inches
25-yr Runoff Volume (P1 = 2 in.) =	22.078	acre-feet	2.00	inches
50-yr Runoff Volume (P1 = 2.25 in.) =	26.455	acre-feet	2.25	inches
100-yr Runoff Volume (P1 = 2.52 in.) =	32.647	acre-feet	2.52	inches
500-yr Runoff Volume (P1 = 3.14 in.) =	44.329	acre-feet		inches
Approximate 2-yr Detention Volume =	7.802	acre-feet		
Approximate 5-yr Detention Volume =	10.557	acre-feet		
Approximate 10-yr Detention Volume =	13.634	acre-feet		
Approximate 25-yr Detention Volume =	15.823	acre-feet		
Approximate 50-yr Detention Volume =	17.129	acre-feet		
Approximate 100-yr Detention Volume =	19.457	acre-feet		

Define Zones and Basin Geometry

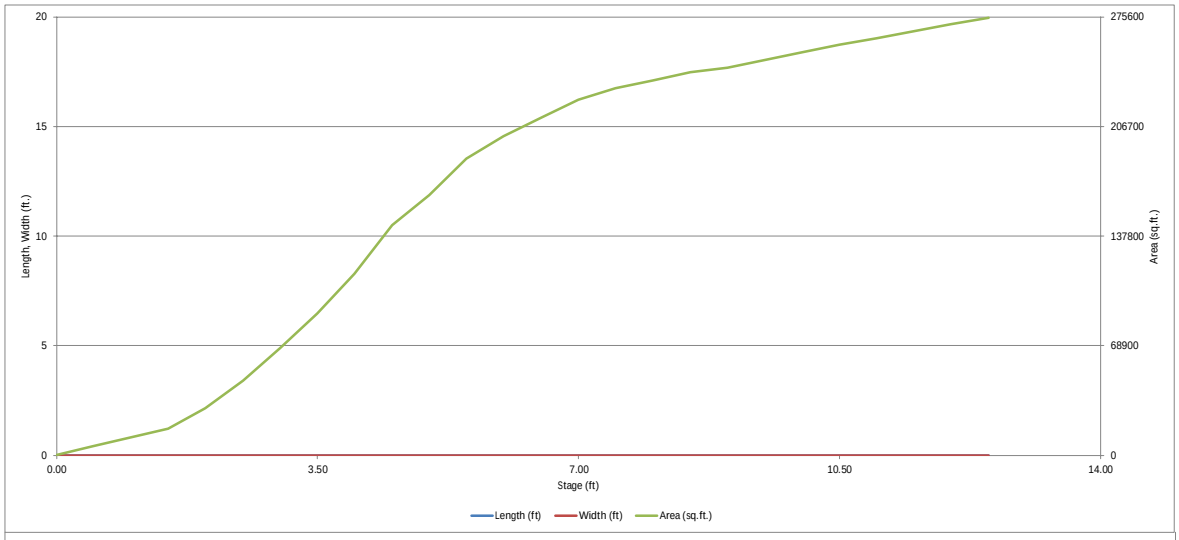
Zone 1 Volume (WQCV) =	1.510	acre-feet
Zone 2 Volume (EURV - Zone 1) =	2.640	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	15.307	acre-feet
Total Detention Basin Volume =	19.457	acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio (R_{LW}) =	user	
Initial Surcharge Area (A_{ISV}) =	user	ft^2
Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft
Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft
Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft^2
Volume of Basin Floor (V_{FLOOR}) =	user	ft^3
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	ft^2
Volume of Main Basin (V_{MAIN}) =	user	ft^3
Calculated Total Basin Volume (V_{total}) =	user	acre-feet

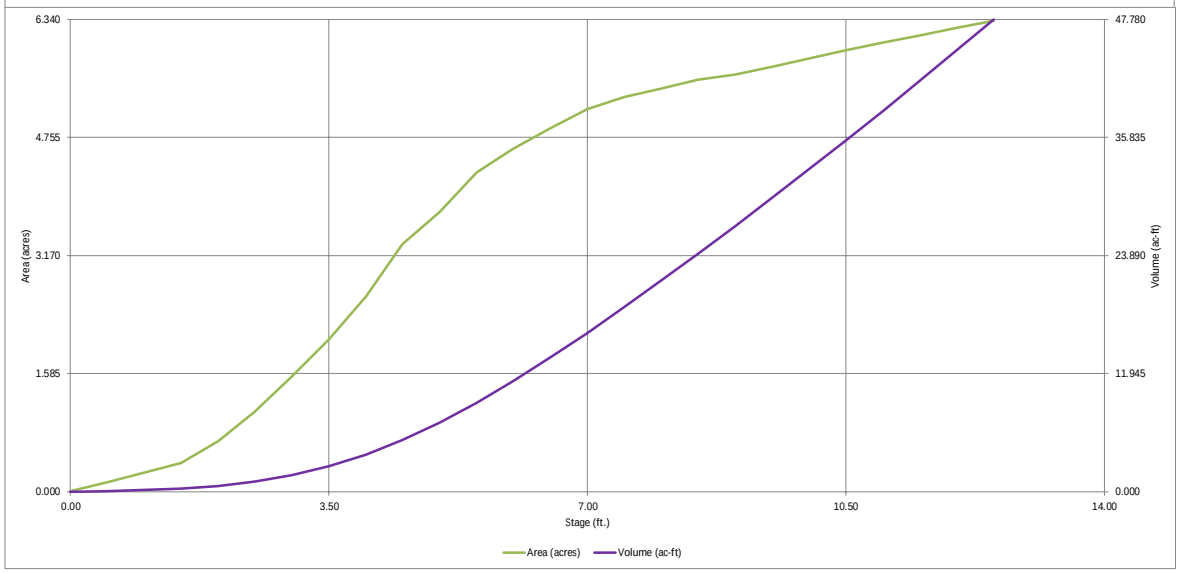
Depth Increment = ft

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	323	0.007		
5859	--	0.50	--	--	--	5,700	0.131	1,506	0.035
5859.5	--	1.50	--	--	--	16,820	0.386	12,766	0.293
5860	--	2.00	--	--	--	29,568	0.679	24,363	0.559
5860.5	--	2.50	--	--	--	46,826	1.075	43,461	0.998
5861	--	3.00	--	--	--	67,481	1.549	72,038	1.654
5861.5	--	3.50	--	--	--	88,950	2.042	111,145	2.552
5862	--	4.00	--	--	--	114,169	2.621	161,925	3.717
5862.5	--	4.50	--	--	--	144,708	3.322	226,644	5.203
5863	--	5.00	--	--	--	163,477	3.753	303,690	6.972
5863.5	--	5.50	--	--	--	186,507	4.282	391,186	8.980
5864	--	6.00	--	--	--	200,653	4.606	487,976	11.202
5864.5	--	6.50	--	--	--	212,469	4.878	591,257	13.573
5865	--	7.00	--	--	--	223,550	5.132	700,262	16.076
5865.5	--	7.50	--	--	--	230,854	5.300	813,863	18.684
5866	--	8.00	--	--	--	235,844	5.414	930,537	21.362
5866.5	--	8.50	--	--	--	240,781	5.528	1,049,693	24.098
5867	--	9.00	--	--	--	243,796	5.597	1,170,838	26.879
5867.5	--	9.50	--	--	--	248,569	5.706	1,293,929	29.705
5868	--	10.00	--	--	--	253,332	5.816	1,419,404	32.585
5868.5	--	10.50	--	--	--	258,085	5.925	1,547,258	35.520
5869	--	11.00	--	--	--	262,432	6.025	1,677,388	38.508
5869.5	--	11.50	--	--	--	266,753	6.124	1,809,684	41.545
5870	--	12.00	--	--	--	271,072	6.223	1,944,140	44.631
5870.5	--	12.50	--	--	--	275,398	6.322	2,080,758	47.768

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.04 (February 2021)



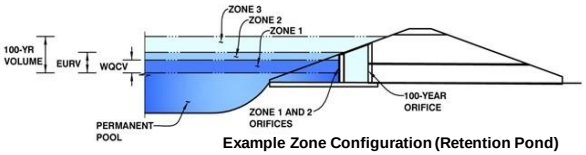


DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.04 (February 2021)

Project: CSU ATC Pond Design

Basin ID: Entire Site (Offsite and Onsite)



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.91	1.510	Orifice Plate
Zone 2 (EURV)	4.16	2.640	Orifice Plate
Zone 3 (100-year)	7.65	15.307	Weir&Pipe (Restrict)
Total (all zones)		19.457	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft²
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

Calculated Parameters for Underdrain

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	N/A	ft²
Depth at top of Zone using Orifice Plate =	5.80	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	N/A	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	N/A	inches	Elliptical Slot Area =	N/A	ft²

Calculated Parameters for Plate

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	2.50	4.00					
Orifice Area (sq. inches)	8.00	20.00	120.00					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected			Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	N/A	N/A	ft²
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	N/A	N/A	feet
Vertical Orifice Diameter =	N/A	N/A	inches				

Calculated Parameters for Vertical Orifice

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe)

	Zone 3 Weir	Not Selected			Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	5.80	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	5.80	N/A	feet
Overflow Weir Front Edge Length =	10.00	N/A	feet	Overflow Weir Slope Length =	5.00	N/A	feet
Overflow Weir Grate Slope =	0.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	4.92	N/A	
Horiz. Length of Weir Sides =	5.00	N/A	feet	Overflow Grate Open Area w/o Debris =	34.80	N/A	ft²
Overflow Grate Type =	Type C Grate	Type C Grate		Overflow Grate Open Area w/ Debris =	17.40	N/A	ft²
Debris Clogging % =	50%	N/A	%				

Calculated Parameters for Overflow Weir

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected			Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.25	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	7.07	N/A	ft²
Outlet Pipe Diameter =	36.00	N/A	inches	Outlet Orifice Centroid =	1.50	N/A	feet
Restrictor Plate Height Above Pipe Invert =	36.00		inches	Half-Central Angle of Restrictor Plate on Pipe =	3.14	N/A	radians

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	10.00	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	1.15	feet
Spillway Crest Length =	195.00	feet	Stage at Top of Freeboard =	11.40	feet
Spillway End Slopes =	4.00	H:V	Basin Area at Top of Freeboard =	6.10	acres
Freeboard above Max Water Surface =	0.25	feet	Basin Volume at Top of Freeboard =	40.93	acre-ft

Calculated Parameters for Spillway

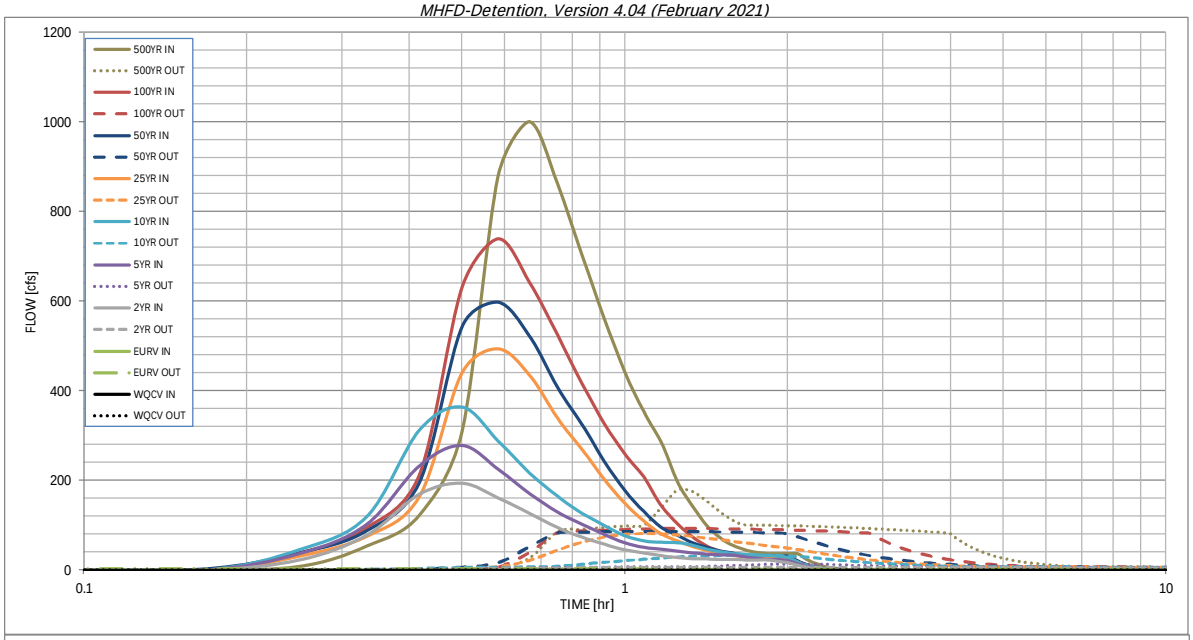
Routed Hydrograph Results

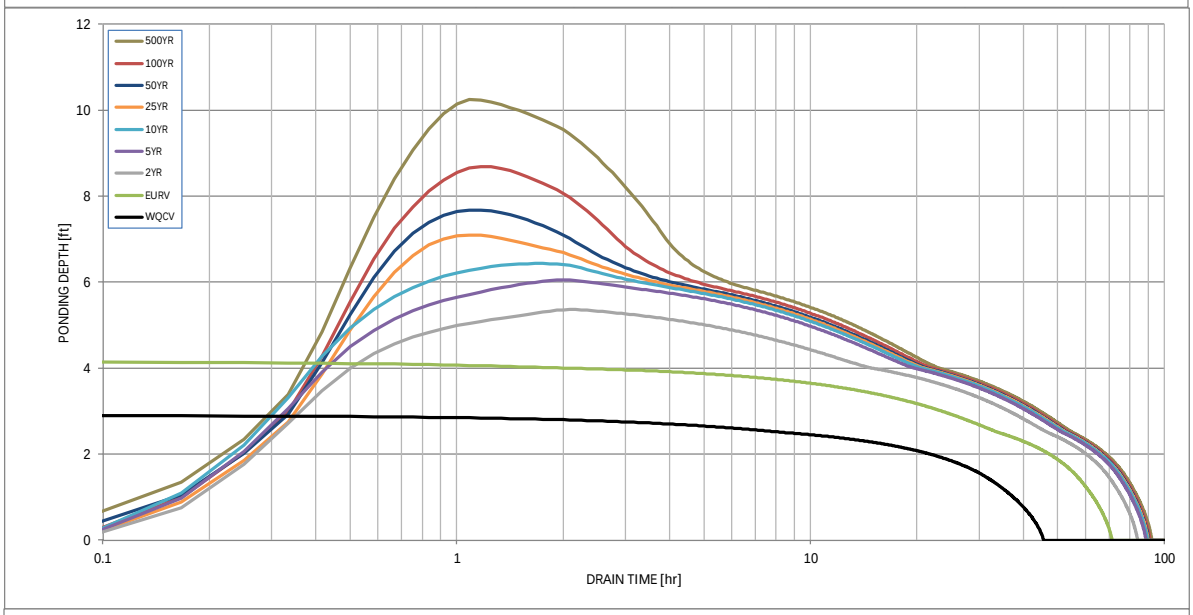
The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

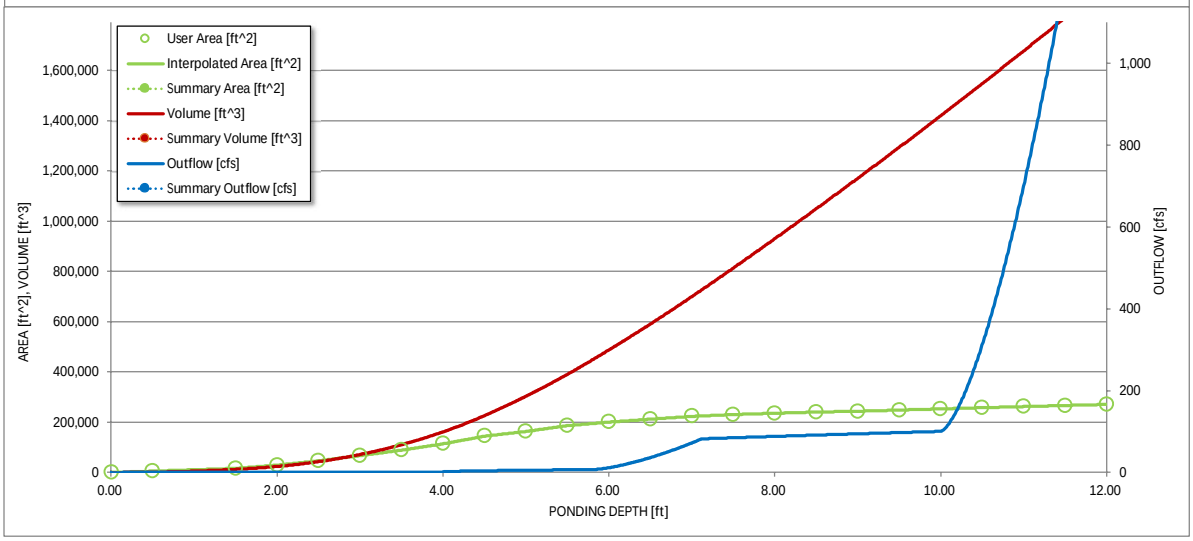
Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
CUHP Runoff Volume (acre-ft) =	1.510	4.150	9.257	12.771	16.428	22.078	26.455	32.647	44.329
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	9.257	12.771	16.428	22.078	26.455	32.647	44.329
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	5.5	36.7	90.2	205.2	280.7	378.3	564.0
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.02	0.16	0.39	0.89	1.22	1.64	2.45
Peak Inflow Q (cfs) =	N/A	N/A	194.3	277.7	363.5	493.7	597.5	739.2	1000.2
Peak Outflow Q (cfs) =	0.9	3.0	6.4	13.9	32.9	81.3	86.3	92.9	178.5
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.4	0.4	0.4	0.3	0.2	0.3
Structure Controlling Flow =	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	0.2	0.7	2.1	2.2	2.3	2.6
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	42	63	70	71	68	63	59	55	49
Time to Drain 99% of Inflow Volume (hours) =	44	68	78	81	80	78	77	75	72
Maximum Ponding Depth (ft) =	2.91	4.16	5.37	6.06	6.44	7.11	7.69	8.70	10.26
Area at Maximum Ponding Depth (acres) =	1.46	2.85	4.13	4.63	4.84	5.17	5.34	5.55	5.87
Maximum Volume Stored (acre-ft) =	1.518	4.155	8.391	11.433	13.233	16.591	19.641	25.150	34.046

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.04 (February 2021)







S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename:

Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
Time Interval	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	0.26	8.29
	0:15:00	0.00	0.00	22.38	36.80	45.70	30.75	38.19	37.57	53.30
	0:20:00	0.00	0.00	77.51	101.94	119.86	75.52	87.61	94.52	122.18
	0:25:00	0.00	0.00	168.95	232.92	311.73	164.14	195.25	212.45	311.32
	0:30:00	0.00	0.00	194.30	277.72	363.52	441.21	543.52	632.03	879.77
	0:35:00	0.00	0.00	160.68	224.53	288.53	493.73	597.49	739.18	1000.16
	0:40:00	0.00	0.00	126.46	170.90	216.89	435.42	522.53	642.34	862.34
	0:45:00	0.00	0.00	94.67	129.50	164.86	339.15	407.60	524.76	703.19
	0:50:00	0.00	0.00	73.04	102.60	126.89	269.87	325.20	416.72	560.95
	0:55:00	0.00	0.00	57.47	79.32	99.16	201.73	242.24	326.50	442.88
	1:00:00	0.00	0.00	45.27	60.75	77.04	149.01	177.68	259.53	353.30
	1:05:00	0.00	0.00	38.16	50.31	65.45	109.99	130.40	207.81	284.75
	1:10:00	0.00	0.00	31.66	46.61	62.17	80.63	95.69	143.90	198.02
	1:15:00	0.00	0.00	27.84	42.65	61.44	65.21	77.36	103.99	142.93
	1:20:00	0.00	0.00	25.76	38.46	55.27	52.45	61.43	73.21	99.31
	1:25:00	0.00	0.00	24.54	35.69	46.85	44.23	51.07	53.77	71.59
	1:30:00	0.00	0.00	23.80	34.03	41.00	37.41	42.85	42.71	55.65
	1:35:00	0.00	0.00	23.28	33.04	37.28	32.82	37.32	35.42	45.16
	1:40:00	0.00	0.00	22.98	29.06	34.95	30.05	33.98	31.28	39.27
	1:45:00	0.00	0.00	22.89	26.00	33.43	28.48	32.10	29.83	37.28
	1:50:00	0.00	0.00	22.89	24.19	32.48	27.63	31.08	29.26	36.47
	1:55:00	0.00	0.00	19.16	23.09	30.99	27.22	30.62	29.17	36.36
	2:00:00	0.00	0.00	16.19	21.49	27.81	27.03	30.42	29.17	36.36
	2:05:00	0.00	0.00	10.59	14.10	18.24	18.03	20.25	19.42	24.16
	2:10:00	0.00	0.00	6.39	8.47	11.04	10.95	12.28	11.75	14.57
	2:15:00	0.00	0.00	3.79	5.03	6.52	6.52	7.29	6.96	8.59
	2:20:00	0.00	0.00	2.04	2.85	3.63	3.68	4.11	3.91	4.81
	2:25:00	0.00	0.00	1.01	1.52	1.85	1.97	2.18	2.07	2.51
	2:30:00	0.00	0.00	0.40	0.61	0.70	0.78	0.85	0.80	0.94
	2:35:00	0.00	0.00	0.09	0.12	0.12	0.13	0.13	0.11	0.11
	2:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.04 (February 2021)

Summary Stage-Area-Volume-Discharge Relationships

The user can create a summary S-A-V-D by entering the desired stage increments and the remainder of the table will populate automatically.

The user should graphically compare the summary S-A-V-D table to the full S-A-V-D table in the chart to confirm it captures all key transition points.

Stage - Storage Description	Stage [ft]	Area [ft^2]	Area [acres]	Volume [ft^3]	Volume [ac-ft]	Total Outflow [cfs]

For best results, include the stages of all grade slope changes (e.g. ISV and Floor) from the S-A-V table on Sheet 'Basin'.

Also include the inverts of all outlets (e.g. vertical orifice, overflow grate, and spillway, where applicable).

CSU ATC
Pond Outlet Overview

CSU ATC

FlexTable: Catch Basin Table

Active Scenario: 5-Year

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Method	Headloss Coefficient (Standard)	Headloss (ft)	Flow (Total Out) (cfs)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)
Pond Outlet Structure	5,861.13	5,858.34	Standard	0.050	0.01	6.50	5,858.93	5,858.94

CSU ATC

FlexTable: Conduit Table

Active Scenario: 5-Year

Label	Diameter (in)	Start Node	Invert (Start) (ft)	Manning's n	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
Outlet Pipe	30.0	Pond Outlet Structure	5,858.34	0.013	Flared End Section	5,854.83	243.0	0.014	6.50	98.59	5.68	5,858.93	5,855.26

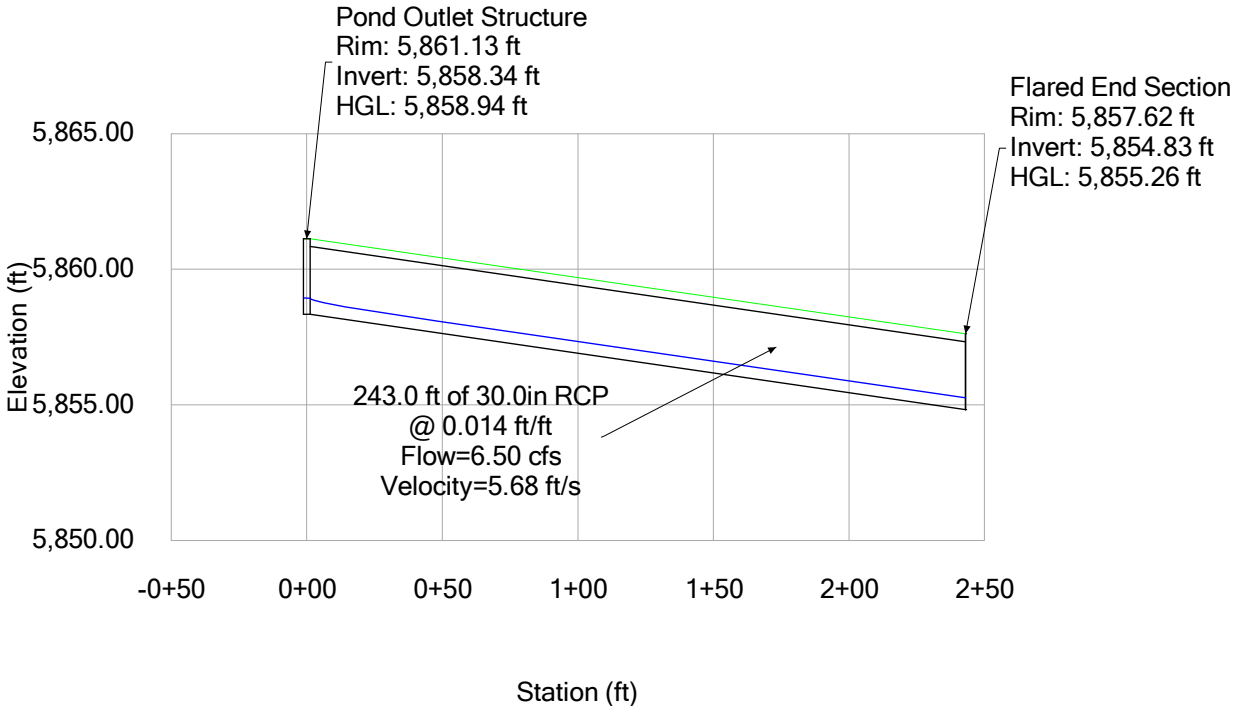
CSU ATC

FlexTable: Outfall Table

Active Scenario: 5-Year

Label	Elevation (Invert) (ft)	Boundary Condition Type	Flow (Total Out) (cfs)	Hydraulic Grade (ft)
Flared End Section	5,854.83	Free Outfall	6.50	5,855.26

CSU ATC
Profile Report
Engineering Profile - Outlet Pipe (CSU ATC_StormCAD.stsw)
Active Scenario: 5-Year



CSU ATC

FlexTable: Catch Basin Table

Active Scenario: 100-Year

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Headloss Method	Headloss Coefficient (Standard)	Headloss (ft)	Flow (Total Out) (cfs)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)
Pond Outlet Structure	5,861.13	5,858.34	Standard	0.050	0.09	104.80	5,860.67	5,860.76

CSU ATC

FlexTable: Conduit Table

Active Scenario: 100-Year

Label	Diameter (in)	Start Node	Invert (Start) (ft)	Manning's n	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
Outlet Pipe	30.0	Pond Outlet Structure	5,858.34	0.013	Flared End Section	5,854.83	243.0	0.014	104.80	98.59	11.31	5,860.67	5,857.07

CSU ATC

FlexTable: Outfall Table

Active Scenario: 100-Year

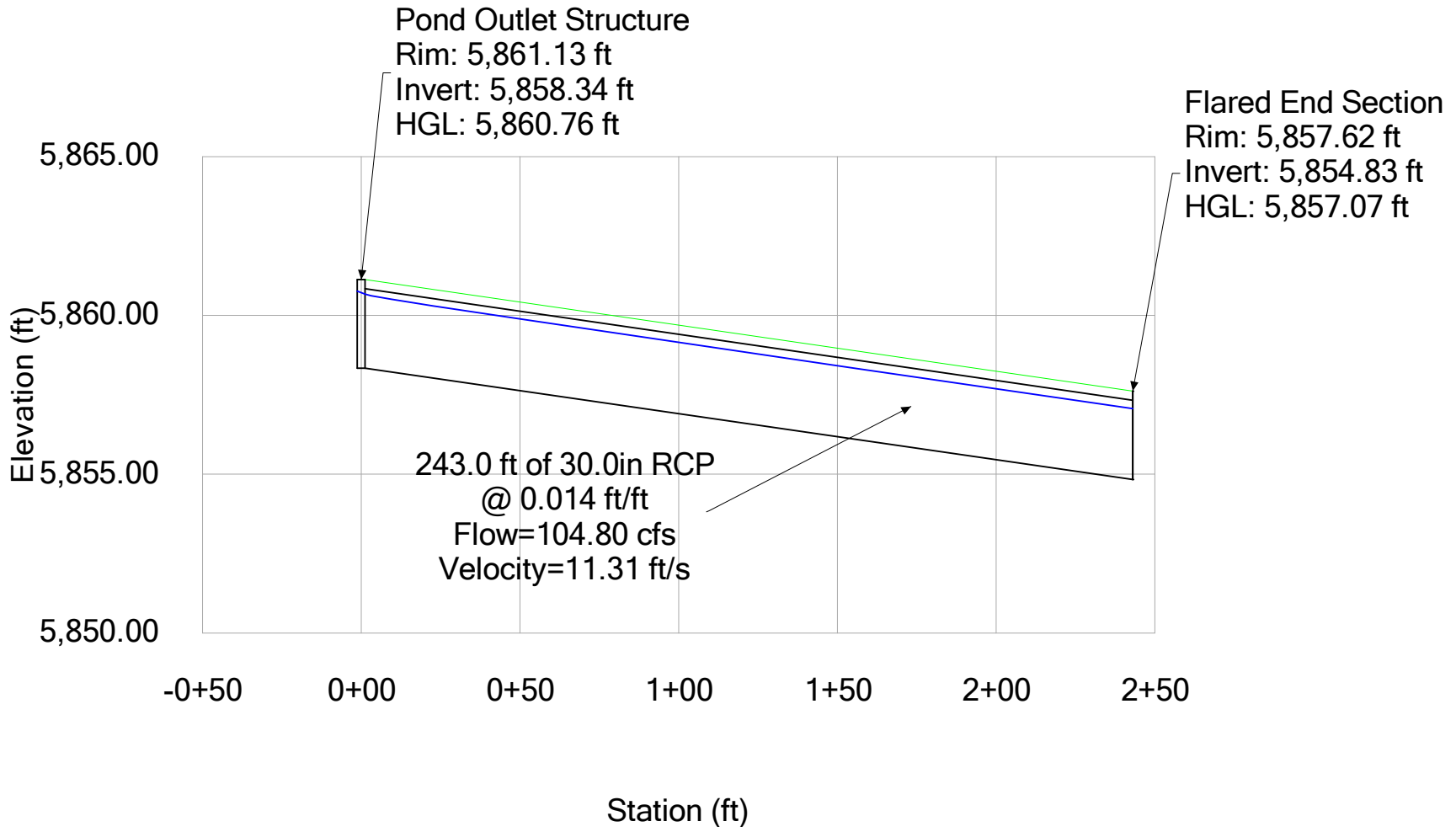
Label	Elevation (Invert) (ft)	Boundary Condition Type	Flow (Total Out) (cfs)	Hydraulic Grade (ft)
Flared End Section	5,854.83	Free Outfall	104.80	5,857.07

CSU ATC

Profile Report

Engineering Profile - Outlet Pipe (CSU ATC_StormCAD.stsw)

Active Scenario: 100-Year

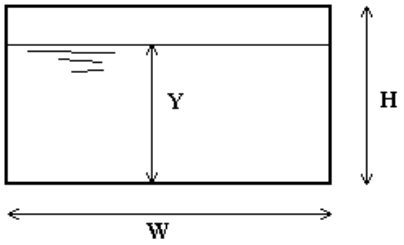


BOX CONDUIT FLOW (Normal & Critical Depth Computation)

MHFD-Culvert, Version 4.00 (May 2020)

Project: CSU ATC

Box ID: Existing Box Culvert - Foreign Trade Zone Blvd



Design Information (Input)			
Box conduit invert slope	So =	0.0160	ft/ft
Box Manning's n-value	n =	0.0130	
Box Width	W =	27.00	ft
Box Height	H =	6.50	ft
Design discharge	Q =	673.70	cfs

Full-flow capacity (Calculated)			
Full-flow area	Af =	175.50	sq ft
Full-flow wetted perimeter	Pf =	67.00	ft
Full-flow capacity	Qf =	4834.83	cfs

Calculations of Normal Flow Condition			
Normal flow depth (<H)	Yn =	1.44	ft
Flow area	An =	38.95	sq ft
Wetted perimeter	Pn =	29.88	ft
Flow velocity	Vn =	17.30	fps
Discharge	Qn =	673.70	cfs
Percent of Full Flow	Flow =	13.9%	of full flow
Normal Depth Froude Number	Fr_n =	2.54	supercritical

Calculation of Critical Flow Condition			
Critical flow depth	Yc =	2.68	ft
Critical flow area	Ac =	72.47	sq ft
Critical flow velocity	Vc =	9.30	fps
Critical Depth Froude Number	Fr_c =	1.00	