Murphy Creek and Tributaries
Major Drainageway Plan

BASELINE HYDROLOGY REPORT

REVISED APRIL 2023

PREPARED FOR: MHFD, CITY OF AURORA, SEMSWA, & ARAPAHOE COUNTY

MILE HIGH FLOOD DISTRICT

AURORA

Southeast Metro Stormwater Authority

ARAPAHOE COUNTY
COLORADO'S FIRST

PREPARED BY:

MERRICK®

2480 W. 26TH AVENUE, B225
DENVER, CO 80211

April 19, 2023

Colin Haggerty, P.E., P.M.P.
Mile High Flood District
2480 West 26th Avenue, 156-B
Denver, CO 80211

RE: Murphy Creek and Tributaries Major Drainageway Plan
Baseline Hydrology Report

Dear Mr. Haggerty:

Merrick & Company is pleased to submit the Baseline Hydrology Report for the Murphy Creek and Tributaries Major Drainageway Plan (MDP). This hydrology study was conducted in accordance with the provisions of the Urban Storm Drainage Criteria Manual and Mile High Flood District (MHFD) Major Drainageway Planning Study guidelines to generate existing and future land use peak flow rates and total runoff volumes to be used in the Alternatives and Conceptual design phases of this MDP. The purpose of this project is to address potential drainage stability and water quality issues, and peak flow rate adjustments within the study area. The Murphy Creek watershed has been previously studied in *Murphy Creek and Tributaries Watersheds Outfall Systems Planning Phase B* (October 2008) by Moser & Associates. However, the 2008 OSP used previous versions of CUHP and SWMM, which no longer match the accepted rainfall within the District. This Baseline Hydrology Report is intended to update the rainfall and routing elements with more detailed topographic information.

This report provides a description of the study area and summarizes the existing and future conditions hydrology for the project study area. The hydrology presented herein reflects current land use and future land use/zoning for the City of Aurora and Arapahoe County. This hydrologic information provides Project Sponsors with updated modeling for better management of the watershed. This hydrology study will serve as a basis for evaluating the existing system capacity, development of alternatives, and whether a FHAD will be required along the tributaries.

Very truly yours,

Jaime Moreno
Project Manager

Clare Steninger, P.E.
Project Engineer

Jeanne M. Boyle, P.E., C.F.M.
Technical Manager

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1.0 INTRODUCTION

1.1 Authorization

On January 31, 2022, Mile High Flood District (MHFD) contracted with Merrick & Company (Merrick) to provide engineering services for a Major Drainageway Plan (MDP) for the Murphy Creek and Tributaries watershed (Agreement No. 22-01.35). This study was co-sponsored by MHFD, the City of Aurora (Aurora), and Southeast Metro Stormwater Authority (SEMSWA). Arapahoe County is included as a Project Stakeholder.

1.2 Purpose and Scope

The purpose of this study is to provide a master plan for the tributaries and main stem of Murphy Creek which will serve as a planning document for the Project Sponsors as the watershed is further developed. An up-to-date hydrologic analysis is provided. In addition, alternatives and recommendations for stormwater infrastructure improvements will be developed that will accommodate both existing and future development within the Murphy Creek and tributaries watershed.

Key project goals include:

- Clearly define intent of stormwater improvement goals and objectives for future implementation.
- Inform, guide, and provide expectations to manage development effects on stormwater quality, drainageway stabilization, and flood risk.
- Integrate proposed improvements with realistic location of future trails, open space, traffic master plans, and development planning.
- Develop guidance for future vegetation and provide reference for roughness coefficients for maintenance purposes.

The Major Drainageway Plan (MDP) scope includes three phases: 1) the Baseline Hydrology Phase, 2) the Alternatives Evaluation Phase, and 3) the Conceptual Design Phase. The Baseline Hydrology section summarizes the hydrology of the study area including subwatershed delineation, subwatershed characteristics, and flow routing. Prior to the Alternatives Analysis phase, an outreach workshop will be conducted to solicit input from developers within the watershed regarding drainage improvements. The Alternatives Analysis section will then summarize the alternatives development and analysis, and it will address potential drainage, stability, and ecological issues within the project site. The Conceptual Design section will include Conceptual Design for the selected alternatives for the reaches studied under the Alternatives Analysis, as agreed upon by the Project Sponsors.

The Baseline Hydrology was developed to update multiple previous studies (**see Table 1-1**) into one cohesive model and determine the peak flows for various return periods for the entire watershed. The peak flows will be used to determine deficiencies within the watershed and identify areas for potential improvements. Specific tasks required for the MDP include the following:

- Gather information on previous Major Drainageway Plans, Outfall Systems Plans, Flood Hazard Area Delineations, existing and proposed drainage features, existing and future land uses, soils, and topography for the study area.
- Complete existing and future land use hydrologic models for the 2-, 5-, 10-, 50-, 100-, and 500-year events for the study area using CUHP 2005 Version 2.0.1 and EPA SWMM 5.1.015.
- Reconcile the hydrology results with previous studies.

1.3 Planning Process

A kickoff meeting was held with Project Sponsors and other stakeholders on March 3, 2022, to establish initial project priorities, clarify project assumptions for hydrologic analysis, and discuss areas of difficulty or concern. A progress meeting was held on September 12, 2022, to review and discuss comments for the Draft Baseline Hydrology report. Summaries of these meetings can be found in Appendix A. The Baseline Hydrology was initially submitted in December 2022. However, this report was revised in April 2023 to account for different routing assumptions for Gun Club Creek that were part of the Final Drainage Plan for the Murphy Creek development (Peak Civil Consultants, 2005).

1.4 Mapping and Surveys

GIS basemaps, including the existing storm drainage infrastructure, roads, land use descriptions, zoning, jurisdictional boundaries, and horizontal and vertical controls were provided by the City of Aurora and Arapahoe County directly and through online download. MHFD supplied topographic mapping in the form of a digital elevation model (DEM) based on 2020 LiDAR information. Aerial imaging (dated March 16, 2022) was acquired from ESRI Online database through ArcGIS applications. Soils mapping was acquired from the Natural Resources Conservation Service (NRCS) Web Soil Survey on January 31, 2022.

The mapping is on the Colorado State Plane Central Zone projection, horizontal North American Datum of 1983 (NAD83 - 2011). The vertical datum is North American Vertical Datum of 1988 (NAVD88). Ground survey of crossing and drop structures was performed by Wilson & Company in November and December 2021 within the project area. See Section 4 – References for a complete list of digital and other data obtained for this study.

1.5 Data Collection

Existing drainage studies, master plans, and construction documents were collected from project stakeholders. Digital geographic information systems (GIS) data were downloaded from the Open Data websites for MHFD, City of Aurora, Arapahoe County, and the Natural Resources Conservation Service. The primary references used for this study are shown in **Table 1-1** below. A complete list of references can be found in Section 4 – References.

Table 1-1 Data Collected

Title	Author	Date
ArcGIS files: Basins, District Boundary, Murphy Creek Watershed and Subbasins	Mile High Flood District	January 13th, 2022
ArcGIS files: City Limits, Master Plans, Neighborhoods, Parcels, Parks Open Space, Storm Mains, Zoning	City of Aurora	February 10th, 2022
ArcGIS files: County Boundary, Parks Open Space, Zoning	Arapahoe County	November 8th, 2021
ArcGIS files: County Comprehensive Plan	Arapahoe County	September 13th, 2022
ArcGIS files: Soils	Natural Resources Conservation Service	January 31st, 2022
ArcGIS files: SEMSWA Service Area, BFE, Channels, Culvert Lines, Detention WQ, Drainage Subbasins Murphy Creek, Floodplains, Inlets, Manholes, Outfalls, Pipes	Southeast Metro Stormwater Authority	February 23rd, 2022
Flood Hazard Delineation (FHAD) for Piney Creek, Cottonwood Creek, Lone Tree Creek, and Murphy Creek	Gingery Associates	October 1975
Flood Hazard Delineation Murphy Creek	Moser & Associates	August 2006
Murphy Creek and Tributaries Watersheds Outfall Systems Planning (OSP) Phase A – Alternatives Analysis Report	Moser & Associates	March 2007
Murphy Creek and Tributaries Watersheds Outfall Systems Planning (OSP) Phase B – Planning Report and electronic modeling files used to prepare the report.	Moser & Associates	October 2008
Murphy Creek Fluvial Hazard Zone Mapping	Olsson	January 2021
Topographic Contours and Digital Elevation Model (DEM)	Mile High Flood District	2020
Upper Sand Creek Basin Outfall Planning Study	Kiowa Engineering Corporation	August 1990

1.6 Acknowledgements

This report was prepared with the cooperation of the Mile High Flood District, the City of Aurora, Southeast Metro Stormwater Authority, and Arapahoe County. The representatives who were involved with this study are listed in the following table:

Table 1-2 Project Participants

Participant Name	Organization	Title
Colin Haggerty	MHFD	Watershed Services
Derek Clark	MHFD	Project Manager – Watershed Services
Morgan Lynch	MHFD	Watershed Services
Mark Schutte	MHFD	Project Manager – Watershed Services
Janet Bender	City of Aurora	Supervisor Development Review
Curtis Bish	City of Aurora	Planning and Open Space Manager
Sam Miller	City of Aurora	Engineer
Craig Perl	City of Aurora	Floodplain Administrator
George Slovensky	City of Aurora	Public Works Project Manager
Tony Tran	City of Aurora	Capital Improvements Program Manager
Tiffany Clark	SEMSWA	Land Development Engineering Manager
Molly Trujillo	SEMSWA	Capital Improvements Program Manager
Cynthia Love	SEMSWA	Floodplain Manager
Jessica Traynor	SEMSWA	Floodplain/Master Planning Engineer
Sue Liu	Arapahoe County	Public Works and Development
Jaime Moreno	Merrick & Company	Project Manager
Jeanne Boyle	Merrick & Company	Technical Manager
Clare Steninger	Merrick & Company	Project Engineer
Theresa Ring	Merrick & Company	Project Engineer
Alex McPherson	Merrick & Company	Design Engineer
Cora Wiese Moore	Merrick & Company	Design Engineer

2.0 STUDY AREA

2.1 Project Area

The Murphy Creek watershed project area consists of approximately 12.7 square miles located in the City of Aurora and portions of unincorporated Arapahoe County. Murphy Creek is a south bank tributary of Sand Creek that generally flows north and northwest. The study area is roughly bounded by the confluence with Sand and Coal Creek to the north, East Smoky Hill Road to the south, E-470 to the west, and loosely by South Powhaton Road to the east as can be seen on the Watershed and Vicinity Map in **Figure 2-1** and the Study Area Map in **Figure B-1** in Appendix B. The historic surface drainage patterns have been influenced by farming and agricultural practices, residential developments, highways, embankments, and natural channels. Portions of the Denver Arapahoe Disposal Site (DADS) and the Arapahoe County Fairgrounds are within the Murphy Creek watershed. Major roadways and E-470 interrupt basin continuity, concentrate flow patterns and create, in some cases, inadvertent detention.

The Murphy Creek watershed includes several tributaries including: Richard Run, Rick's Run, Chicory Draw, Murphy Creek West, Murphy Creek East, Gun Club Creek, Harvest Gulch, Wagner Creek, Hinds Gully, Venezia Gulch, Brett Gulch, and Chelsea Draw. The overall Murphy Creek watershed generally slopes to the north and northwest with an average slope of approximately 3.3 percent. The highest and lowest estimated elevations in the study area are approximately 6,170 feet and 5,490 feet, respectively.

2.2 Land Use

The study area for the tributaries is approximately 51 percent developed. Most of the watershed is zoned for Mixed Use, Open Space, Medium Density Residential, and disposal utility (DADS) area. Much of the undeveloped areas are slated for development based on future zoning and master plans.

Land use categories were primarily determined using zoning and comprehensive plans from the currently available City of Aurora zoning and Arapahoe County Comprehensive Plan GIS shapefiles. See **Figures B-5A** and **B-5B** in Appendix B for the Zoning/Land Use Maps for Aurora and Arapahoe County. This zoning/land use data, in conjunction with Table 6-3 from the Urban Storm Drainage Criteria Manual (USDCM), was used to create compatible land use categories and corresponding percent imperviousness values. A summary table of land uses and percent imperviousness values is found in **Table 2-1** and in **Table B-2** in Appendix B. Only the land uses for this study's area of interest were included.

There were several unique zones that did not fall into typical land use categories. Through discussions with Project Sponsors, these areas were included as unique land use categories and assigned conservative impervious values. The area within the Buckley Air Force Base and the Accident Potential Zone Clear adjacent to the Base has limited potential for redevelopment due to federal and local clearances. Based on existing aerial imagery, the imperviousness values were determined to be 9% and 10% for the Buckley Air Force Base (BAFB) and Accident Potential Zone Clear (APZC), respectively. The Accident Potential Zone (APZ) has slightly more restrictive building requirements than the nearby Airport District zoning, so the percent impervious for the APZ was selected to be 80%.

The Denver Arapahoe Disposal Site (DADS) landfill is centrally located within the Murphy Creek watershed generally bounded by Gun Club Road, Yale Avenue, Powhaton Road, and Quincy Avenue. The 40% imperviousness assigned to this area is based on the value for packed gravel category from the USDCM Table 6-3. Additionally, this value was assumed for the Senac Creek MDP (by Matrix Design Group, Inc, dated December 18th, 2014), which is west of the Murphy Creek watershed.

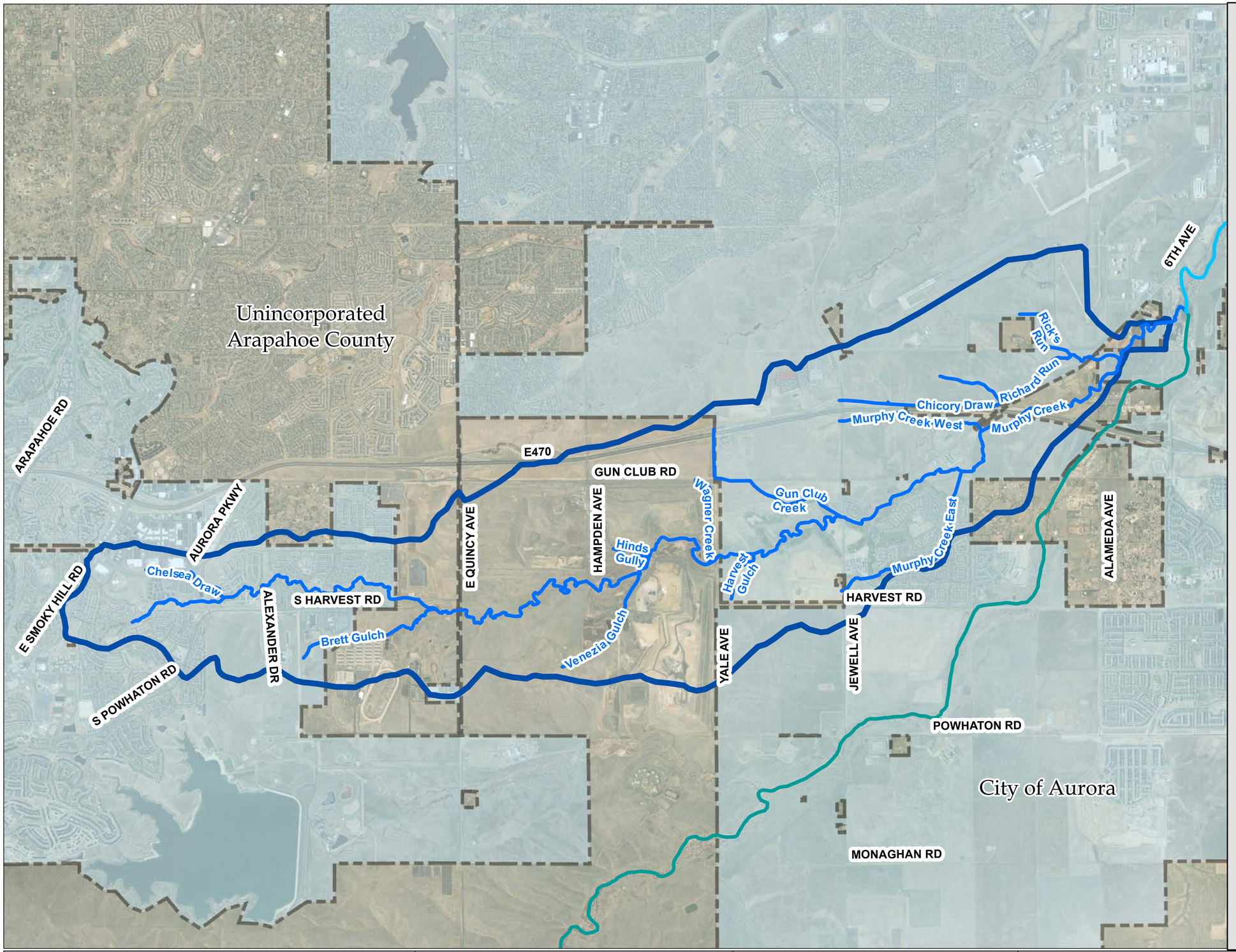
The City of Aurora zoning shows the Murphy Creek development as Planned Development. This neighborhood is the only area within the Murphy Creek Watershed to be designated as Planned Development. Since most of this neighborhood has already been built, the imperviousness of this area was assumed to be 60%. This value does not include the golf course and open space areas nearby as those zones are delineated separately. Though the proposed Villages at Murphy Creek development to the east of the Murphy Creek neighborhood (south of Jewell Ave and just west of Harvest Rd) is zoned as Medium Density Residential, it was assigned a 60% imperviousness to be consistent with the neighboring development. It is denoted as Medium Density Residential – MC (MDR-MC) on the Future Land Use Map within **Figure B-1**, the Interactive Hydrology Map.

From discussions with Project Sponsors, residential developments are trending towards higher densities than what current zoning regulations specify (and what has been observed in the past). More units are being installed on lots, so the imperviousness increases. Based on recent cases in Aurora and Arapahoe County, a conservative 70% imperviousness for Medium Density Residential was used instead of a typical value of 50%.

Table 2-1 Land Uses

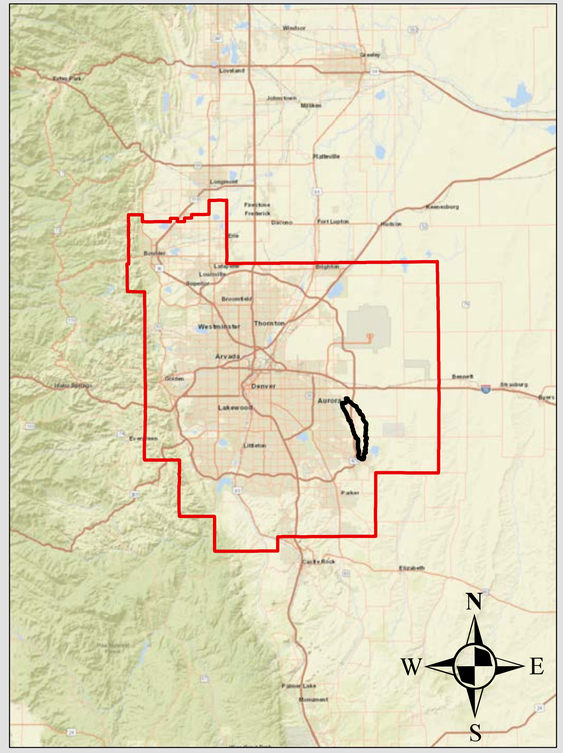
Land Use Code	Description	Percent Impervious	Aurora Zoning Code	Arapahoe County Zoning Code
AG	Agricultural and Agricultural Residential	2	-	A-1, A-E
OS	Open Space	2	POS	O, F, OS, RA
BAFB	Buckley Air Force Base	9	BAFB	-
APZC	Accident Potential Zone – Clear	10	APZ-C, BAFB APZ-C	-
RR	Rural Residential	10	R-R	R-A, RR-B, RR-C, SF D/LI
LDR	Low Density Residential (0.4 - 4 dwellings/acre)	30	R-1	-
FG	Fairgrounds	40	-	PF
DADS*	Denver Arapahoe Disposal Site Landfill, Extraction/Disposal Utilities	40	-	DADS, LSS
EXPD**	Existing Planned Development	60	PD	-
MDR	Medium Density Residential (4 - 11 dwellings/acre)	70	R-2	R-PM
HDR	High Density Residential (11+ dwellings/acre)	75	R-4	R-PH, UR
APZ	Accident Potential Zone	80	APZ	-
O	Office/Church	85	MU-OI, AD	EMP
I	Heavy Industrial	90	I-2	I-2, LTP
COM	Business/Commercial	95	I-1	B-4, B-5, RC
MU	Mixed Use	95	MU-R, MU-C	MU

* Determined through property limits and aerial investigation
** Murphy Creek Development



Legend

- Murphy Creek and Tributaries
- Murphy Creek Watershed
- City of Aurora
- Arapahoe County
- Sand Creek
- Coal Creek



VICINITY MAP

1 inch = 2,000 feet

0 2,000 4,000

Feet

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MURPHY CREEK
MAJOR DRAINAGEWAY PLAN

WATERSHED AND VICINTY MAP

APRIL 2023

FIGURE
2-1

Future land use was primarily assigned based on the zoning and comprehensive plan codes as explained above. Shapefiles of zoning were acquired from City of Aurora on February 10th, 2022, and from Arapahoe County on September 13th, 2022. Future land uses are shown on the Future Land Use Map within the Interactive Hydrology Map (**Figure B-1**) in Appendix B.

Existing land uses were assigned categories based on the aerial imaging and limits of existing developments. For areas with existing development, the land use category assigned for the future condition was maintained. Existing land uses are shown on the Existing Land Use Map within the Interactive Hydrology Map (**Figure B-1**) in Appendix B.

Additional information regarding subwatershed parameters is provided in detail in Section 3.0 of this report.

2.3 Reach Description

As a Major Drainageway Plan, the scope of this study focuses on the mainstem and major tributaries of Murphy Creek. Twelve (12) major tributaries were identified within the study area that are tributary to Murphy Creek. Eight (8) of these tributaries were previously identified and named in the *Murphy Creek and Tributaries Watersheds Outfall System Planning Phase B – Planning Report* (Moser, 2008):

- Tributary 2000 (Richard Run)
- Tributary 3000W (Murphy Creek West)
- Tributary 3000E (Murphy Creek East)
- Tributary 4000W (Gun Club Creek)
- Tributary 4000E (Harvest Gulch)
- Venezia Gulch (within the DADS area)
- Tributary 7000 (Brett Gulch)
- Tributary 1 (Southland Detention Basin/Chelsea Draw)

Although included in previous master plans, four (4) additional tributaries were identified/named as part of this Major Drainageway Plan:

- Rick's Run (tributary to Richard Run)
- Chicory Draw (tributary to Richard Run)
- Wagner Creek
- Hinds Gully

The tributary and mainstem watersheds were further divided into subbasins based on natural and constructed hydraulic breaks or features. The Study Area Map within the Interactive Hydrology Map (**Figure B-1**) shows the tributaries and 120 subbasins.

There are several existing culverts and storm sewer systems in the study area. Survey of major crossings was acquired by Wilson & Company in November and December 2021. While the crossing structure inventory helped inform the basin delineations, culverts and storm sewers were not included in the hydrology model. The capacities of these crossings will be investigated as part of the hydraulics analysis phase. **Table 2-2** summarizes the existing major road crossing structures inventory within the study area.

Table 2-2 Major Crossing Inventory

Crossing Number	Channel	Street/Location	Existing Structure
1	Murphy Creek	Pond Outlet near intersection of S. Ider Street and S. Harvest Street	42" RCP
2	Murphy Creek	280 ft upstream of E Orchard Road	Pedestrian Bridge
3	Murphy Creek	E. Orchard Road	(2) 6' x 6' RCB
4	Murphy Creek	Near intersection of E. Platte Avenue and S. Haleyville Street	Pedestrian Bridge
5	Murphy Creek	350 ft upstream of E. Alexander Drive	Pedestrian Bridge
6	Murphy Creek	E. Alexander Drive	(L) 10' x 14' RCB (R) 10' x 20' RCB
7	Murphy Creek	Near the intersection of E. Berry Pl and E. Haleyville Way	Low Flow Bridge Crossing
8	Murphy Creek	Belleview Avenue	(L) 8' x 12' RCB (R) 10' x 12' RCB
9	Murphy Creek	Near intersection of E. Whitaker Way and E Gold Bug Way	Low Flow Bridge Crossing
10	Murphy Creek	200 ft upstream of Harvest Trail Crossing	8'x8' RCB
11	Murphy Creek	Harvest Trail	Pedestrian Bridge
12	Brett Gulch	Near Entrance to Arapahoe County Fair Grounds Event Center	Low Flow Bridge Crossing
13	Murphy Creek	S. Harvest Road	(L) 8' x 10' RCB (R) 9' x 10' RCB
14	Murphy Creek	E. Quincy Avenue	10' x 14' RCB
15	Murphy Creek	DADS	60" CMP
16	Murphy Creek	Hampden Avenue and DADS	(3) 6' x 10' RCB
17	Murphy Creek	Private drive downstream of intersection of Hampden Avenue and S. Gun Club Road	(2) 78" CMP
18	Gun Club Creek	Private Drive downstream of intersection of Hampden Avenue and S. Gun Club Road	18" CMP
19	Murphy Creek	East of 5th Tee Box of Murphy Creek Golf Course	(1) 10' x 10' RCB (2) 8' x 10' RCB
20	Harvest Gulch	550 ft upstream of confluence with Murphy Creek	7' x 7' RCB
21	Gun Club Creek	290 ft upstream of confluence with Gun Club Creek	(2) 7' x 7' RCB
22	Murphy Creek	East of 4th Tee Box of Murphy Creek Golf Course	(4) 24" RCP
23	Murphy Creek	West of 3rd Hole Fairway	(3) 18" CPP
24	Murphy Creek	Northwest the 2nd Hole Green	(3) 24" CMP
25	Murphy Creek	350 ft Upstream of E. Jewell Avenue	(4) 24" RCP
26	Unnamed Tributary to Richard Run	West of intersection of E. Jewell Avenue and E-470	8' x 8' RCB

Crossing Number	Channel	Street/Location	Existing Structure
27	Unnamed Tributary to Murphy Creek West	East of intersection of E. Jewell Avenue and E-470	60" RCP
28	Murphy Creek	E. Jewell Avenue	(3) 10' x 10' RCB
29	Murphy Creek East	E. Jewell Avenue	(2) 5' x 5' RCB
30	Murphy Creek East	S. Flatrock Trail	(2) 5' x 5' RCB
31	Murphy Creek East	165 ft downstream of S. Flatrock Trail	24" RCP
32	Murphy Creek East	S. de Gaulle Way	(2) 5' x 5' RCB
33	Murphy Creek East	650 ft downstream of S. de Gaulle Way	24" RCP
34	Murphy Creek	S. Old Tom Morris Road	(3) 10' x 10' RCB
35	Gun Club Creek	Near intersection of S. Gun Club Road and E. Jewell Avenue	(2) 6' x 6' RCB
36	Murphy Creek	260 ft downstream of confluence with Gun Club Creek	(4) 24" RCP
37	Murphy Creek East	Near E. Mississippi Circle, 14th tee of Murphy Creek Golf Club	24" RCP
38	Murphy Creek East	Near intersection of S. Buchanan Way and E. Alabama Drive	36" CMP
39	Murphy Creek East	S. Gun Club Road	(2) 5' x 8' RCB
40	Murphy Creek	S. Gun Club Road	(3) 10' x 10' RCB
41	Murphy Creek	Near intersection of Mississippi Avenue and S. Gun Club Road	(2) 8' x 12' RCB
42	Murphy Creek West	400 ft upstream of E. 6th Avenue	42" RCP
43	Murphy Creek West	E. 6th Avenue	8' x 8' RCB
44	Richard Run	Highplains Trail	(2) 54" RCP
45	Murphy Creek	E-470	(6) 9' x 9' RCB
46	Murphy Creek	550 ft Downstream of E-470	(6) 4' x 8' RCB
47	Richard Run	E. 6th Avenue (State Route 30)	7' x 6' RCB
48	Richard Run	E. Alameda Avenue	24" CMP
49	Murphy Creek	E. Alameda Avenue	96" to 60" RCP
50	Murphy Creek	Private Drive 330' downstream of E. Alameda Avenue	(2) 60" RCP
51	Murphy Creek	S. Piccadilly Road	(2) 24" CMP

2.4 Flood History

The Flood Insurance Study (FIS) for Arapahoe County (FEMA, 2020) states that major flooding has occurred on the South Platte River and its tributaries since 1844. A Flood Hazard Area Delineation (FHAD) was published in August 2006 (Moser & Associates) and showed that there were no homes/buildings threatened by the 100-year event. However, there are several culvert crossings that overtopped in recent history that could be a concern for safety and welfare of the public. These issues will be investigated in future submittals of this report.

2.5 Environmental Assessment

To be completed in future submittals of this report.

3.0 HYDROLOGIC ANALYSIS

3.1 Overview

This Baseline Hydrology study was conducted in accordance with the provisions of the *City of Aurora Standards and Specifications*, the *Arapahoe County Stormwater Management Manual,* and the *Urban Storm Drainage Criteria Manual (USDCM)* to generate existing and future peak flows for the Murphy Creek and Tributaries Major Drainageway Plan (MDP).

Hydrologic data was collected from MHFD, City of Aurora, SEMSWA, and Arapahoe County. Once the hydrologic data was collected, the *Colorado Urban Hydrograph Procedure* (CUHP) 2005 Version 2.0.1 modeling software was used to generate subwatershed hydrographs for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year design storms for existing and future land uses. The Environmental Protection Agency's *Stormwater Management Model* (SWMM) 5.1.015 modeling software was used to combine and route individual subwatershed hydrographs through the storm drainage system.

3.2 Design Rainfall

Design point rainfall depths for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year return periods were determined from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14. Specifically, the one-hour and six-hour point rainfall depths were direct inputs into the CUHP rain gage data. The one-hour and six-hour point rainfall depths are included in **Table 3-1** below.

Table 3-1 Point Rainfall Depths (inches)

Return Period	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
1-Hour	0.859	1.14	1.40	1.79	2.12	2.47	3.38
6-Hour	1.35	1.76	2.13	2.70	3.18	3.70	5.06

Per District criteria, a 2-hour storm duration is recommended for watersheds less than 15 square miles. Since the overall Murphy Creek mainstem is approximately 13 square miles, a two-hour storm duration was used to analyze the runoff for the mainstem and the tributaries. The CUHP model uses the one-hour point rainfall depths to develop temporal distributions for a two-hour storm duration.

For watershed areas between 2 and 15 square miles, a depth reduction factor - DRF (or area reduction factor - ARF) was applied for the 2-, 5-, and 10-year return periods in accordance with District criteria. CUHP modifies the 2-hour rainfall distribution using an area adjustment procedure to account for the effects of a larger watershed size. The DRF is based on 13 square miles. Where the tributary area along the mainstem is more than 2 square miles, downstream of the Tollgate Crossing Detention Pond (Design Point 1530), peak flows reported for the 2-, 5-, and 10-year storm events are derived from the 2-hour storm event with the depth reduction factor. There was no area adjustment for the 25-, 50-, 100-, or 500-year storm events in accordance with District criteria. Rainfall distributions developed by CUHP are in **Table B-1** in Appendix B.

3.3 Subwatershed Characteristics

The Murphy Creek watershed was divided into subwatersheds based on natural and constructed hydraulic breaks or features, such as roadways or berms. Subwatershed characteristics used with CUHP were determined from topographic information, aerial imaging, reports, and data from MHFD, City of Aurora, and Arapahoe County. These characteristics are discussed further in the following sections. A summary of the CUHP characteristics can be found in **Table B-3** in Appendix B.

3.3.1 Subwatershed Delineation

The major design points from the 2008 OSP were used to set downstream limits of subwatersheds. Subwatersheds were then initially defined using automated techniques and the digital elevation model (DEM) provided by MHFD. Adjustments to delineations were verified using one-foot contours (2020 LiDAR), local drainage reports, major drainage plans, and aerial imaging. The study area was divided into 120 subwatersheds. Subwatersheds were generally delineated so that the subwatershed area was a maximum of 130 acres and the average area was no more than 100 acres (per standard guidance from MHFD). Three exceptions (Subbasins 131, 520, and 551) have an area larger than 130 acres to be consistent with previous modeling and to reflect the existing topography. The subwatershed delineation parameters are summarized in **Table 3-2** below. Subwatersheds can be seen on the Subbasin Boundaries Map within the Interactive Hydrology Map (**Figure B-1**) in Appendix B.

Table 3-2 Subwatershed Delineation Summary

Watershed	Total Area	Average Subwatershed Area	Minimum Subwatershed Area	Maximum Subwatershed Area	Total No. of Subwatersheds
	(Sq. Mi.)	(Acre)	(Acre)	(Acre)	(Unit)
Murphy Creek	12.7	67.6	8.3	162.6	120

The average slope of the study area is 3.3 percent. Elevations within the study area range between 6,170 feet at the upstream end near Smoky Hill Road and approximately 5,490 feet at the confluence with Sand Creek and Coal Creek.

3.3.2 Subwatershed Imperviousness

A GIS-based approach was used to determine the land use and percent imperviousness within each subwatershed. The existing and future land use data described in Section 2.2 were used to create percent imperviousness values for each land use type. **Table 2-1** and **Table B-2** in Appendix B describe the land use zoning categories and corresponding percent imperviousness. The existing and future land use categories and associated imperviousness values are shown on the Land Use Maps within the Interactive Hydrology Map (**Figure B-1**) in Appendix B.

GIS data representing existing and future land use were intersected with subwatershed polygons to calculate the area-weighted or composite percent imperviousness value for each subwatershed. Composite imperviousness values for each subwatershed, for both existing and future land uses, are shown on the Subbasin Boundaries Map within the Interactive Hydrology Map (**Figure B-1**) and the CUHP Input Parameters (**Table B-3**) in Appendix B.

3.3.3 Soil Classification

The soil classification and hydrologic soil group of each subwatershed influences the Horton's infiltration parameters that are inputs for CUHP. The hydrologic soil groups were found from the Natural Resources Conservation Service

Web Soil Survey (January 2022). The study area is primarily Type C and D soils, with select areas of Type B along the mainstem and the most upstream area in the watershed. The hydrologic soil groups are shown on the Soils Map within the Interactive Hydrology Map (**Figure B-1**) in Appendix B.

3.3.4 Infiltration and Depression Losses

The Horton's infiltration parameters were determined by weighted interpolation from Table 6-7 in the USDCM based on the percentage of each soil type within each subwatershed.

Depression losses are based on land cover. Referencing Table 6-6 in the USDCM, each subwatershed was given a pervious depression storage value of either 0.35 inches for subwatershed imperviousness values greater than 15%, or 0.4 inches for less than 15%.

3.4 Detention

Although there are several local or site-specific stormwater detention pond facilities present within the watershed, only two detention pond facilities were incorporated into the regional Baseline Hydrology model: Tollgate Crossing and Southlands Detention Ponds. These detention elements are considered regional facilities, so they are included in the Baseline Hydrology model. The Tollgate Crossing detention pond (Detention Element 20) is located north of Belleview Avenue on the main stem of Murphy Creek. The Southlands detention pond (Detention Element 10) is located on Chelsea Draw north of Orchard Road. The locations of these detention ponds are shown on the SWMM Routing Map within the Interactive Hydrology Map (**Figure B-1**). The storage volume and discharge characteristics of these detention elements were inherited from the 2008 OSP and are based on drainage studies and construction plans. Due to hydrologic changes, the storage volume and discharge curves were extended to contain the pond modeling results in the model. **Table B-4** in Appendix B lists the revised characteristics for each detention pond modeled.

No inadvertent detention has been considered, such as that caused by road embankments or low depression areas.

3.5 Hydrograph Routing

EPA SWMM 5.1.015 was used to route the individual subwatershed hydrographs through the storm drainage system. The system is represented by subwatersheds, design points, routing elements (open channels, pipes, and dummy links), and detention storage units. The SWMM Routing Map within the Interactive Hydrology Map (**Figure B-1**) shows the modeled elements graphically within the study area while the SWMM Routing Schematic (**Figure B-2**) shows the routing elements linearly. These figures illustrate how the system is connected and how runoff is routed. The kinematic wave routing method was used in the SWMM model.

The drainage network in the study area is generally comprised of open channels. Cross sections for each routing element were developed using the project mapping. The average cross section for each channel was determined to provide the most representative cross section along the entire channel reach. Other routing input information includes routing element geometry, length, slope, Manning's n roughness factor, design point inverts, and detention pond facility storage volume and discharge curves. Dummy links were used to model the connection between the subwatershed hydrograph input nodes and the routing elements.

For the channel routing elements, the Manning's n roughness values from the 2008 OSP were also applied to the corresponding elements in this study. The 2008 OSP Manning's n are based on Jarrett's equation to define the natural "n" value in drainageways. For channel routing elements that were not part of the 2008 OSP, a roughness value was assigned based on aerial imagery investigation of vegetation along the channel and comparison to nearby similar routing elements. While not used in the Baseline Hydrology model, typical Manning's n roughness values for pipes, culverts, and gutters will be increased by 25% in future submittal analyses as recommended in the USCDM. These would result in Manning's n values of: 0.016 for concrete pipes, culverts, and gutters, 0.03 for corrugated metal pipes, 0.014 for high-density polyethylene pipes, and 0.02 for street flow.

While the crossing structure inventory helped inform the basin delineations, culverts and storm sewers were not included in the hydrology model. This is because the effects of the crossings would have less of a significant impact to the peak flow timing than the open channel elements. Additionally, only modeling the open channels is consistent with the approach from the 2008 OSP. Capacities of the major crossings will be investigated as part of the hydraulics analysis.

Summarized EPA SWMM parameters and results for the 100-year storm event for the existing and future conditions are shown in **Tables B-6 and B-7**, respectively, in Appendix B. These tables contain the attributes assigned to each routing element used in the EPA SWMM model. Note that EPA SWMM refers to routing elements as "conduits."

3.6 Previous Studies

Murphy Creek has been studied several times for master planning purposes. The following is a summary of major studies in the Murphy Creek watershed:

Table 3-3 Previous Studies

Title	Author	Date
Flood Hazard Delineation (FHAD) for Piney Creek, Cottonwood Creek, Lone Tree Creek, and Murphy Creek	Gingery Associates	October 1975
Upper Sand Creek Basin Outfall Planning Study	Kiowa Engineering Corporation	August 1990
Flood Hazard Delineation (FHAD) Murphy Creek	Moser & Associates	August 2006
Murphy Creek and Tributaries Watersheds Outfall Systems Planning (OSP) Phase A – Alternatives Evaluation Report	Moser & Associates	March 2007
Murphy Creek and Tributaries Watersheds Outfall Systems Planning (OSP) Phase B – Planning Report	Moser & Associates	October 2008
Flood Insurance Study (FIS), Arapahoe County, Colorado, and Incorporated Areas	Federal Emergency Management Agency (FEMA)	September, 2020

CUHP version 1.0 and SWMM version 9 were used in the 2007 OSP Phase A and the 2006 FHAD. Per the 2006 FHAD, peak flows starting at Mississippi Avenue and downstream were obtained from the 1975 FHAD Study since these flows were more conservative. The 2006 FHAD became the basis for the FIS flows that became effective December 17, 2010, which was then revised September 4, 2020.

In October 2008, the hydrology was revised in the OSP Phase B report to use CUHP version 1.2.1c and SWMM version 13 to update to the latest available modeling software. However, the 2006 FHAD and 2010 FIS flows were *not* revised with this update.

3.7 Results of Analysis

The existing and future condition peak discharges and runoff volumes at each design point for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm events can be found in **Table B-5** in Appendix B. Hydrographs for the 2-, 10-, and 100-year storm events at key design points along the mainstem of Murphy Creek and the tributary outfall points can be found in **Figure B-3** in Appendix B. Peak flow profiles along the length of the mainstem and tributaries for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm events are presented in **Figure B-4** in Appendix B. The SWMM input and output results for both the 100-year existing and future conditions are provided in **Tables B-6 and B-7**, respectively, in Appendix B.

SWMM input parameters and 100-year outputs for existing (**Table B-6**) and future conditions (**Table B-7**) are included in Appendix B.

As expected, the future condition peak flows are typically greater than the peak flows for the existing condition. This increase is primarily due to land development and the increase in imperviousness across the study area without accounting for potential future local detention.

Table 3-4 below presents 100-year storm event peak flow values from previous and current studies. The table also contains a comparison of the peak flows from the 2008 OSP Phase B report and the current study. One significant difference between these two studies is that CUHP 2.0.1 was used for the current study which utilizes the NOAA Atlas 14 one-hour point rainfall depths for Colorado, instead of the NOAA Atlas 2 one-hour point rainfall depths. The point location used for this project is at 39.6718° Latitude, -104.7058° Longitude, which is approximately the middle of the Murphy Creek watershed. The NOAA Atlas 14 rainfall depths are typically lower than what was used in the previous studies. For areas with comparable imperviousness, runoff in this study was typically lower compared to previous studies. For instance, at Design Point 1640 at Orchard Road, the 2008 OSP determined a 100-year flow peak of 978 cfs for the future condition and the current study determined a 100-year flow peak of 718 cfs.

At other locations, however, changes in proposed land use and increases in imperviousness values resulted in overall increases to future condition peak flows along the Murphy Creek mainstem compared to the 2008 OSP (future condition). The further downstream in the watershed where development has not yet occurred, the more impactful the higher imperviousness becomes. For instance, a 40% imperviousness value is used at the Denver Arapahoe Disposal Site (DADS) in the current study. Previously, the site was considered to be open space with a 2% imperviousness. This and other higher imperviousness areas within the watershed results in a peak flow increase at Design Point 1300 at Yale Avenue. Additionally, the higher imperviousness values assumed for residential areas and mixed-use areas throughout the watershed resulted in increases in the peak runoff compared to the 2008 OSP, both on the mainstem and on the tributaries.

For the future condition, each major tributary that outfalls to Murphy Creek has a different situation when compared to the 2008 OSP (future condition). Tributaries with similar contributing area and routing compared to the 2008 OSP generally have higher future condition peak flows at the tributary outfalls. This is because the future condition imperviousness for this study is typically higher than from the 2008 OSP, causing higher peak flows. This is typically the case for the following tributaries: Chelsea Draw, Brett Gulch, Venezia Gulch, Hinds Gully, Wagner Creek, and Harvest Gulch. For tributaries with similar imperviousness and routing between the studies, the peak flows for this 2023 study are lower due to the lower rainfall. This is typically the case for the following tributaries: Murphy Creek East, Murphy Creek West, Chicory Draw, Rick's Run, and Richard Run. The peak flows for Gun Club Creek are higher at the outfall in this study because of different routing than the 2008 OSP along Gun Club Road and higher imperviousness within the tributary area.

Peak flows along the mainstem were also compared to the effective 2020 FIS flows, which were based on the 2006 FHAD flows. The comparisons to the FIS flows follow a similar pattern to the 2008 OSP that this study's flows are lower in the upper portions of the watershed and higher downstream along the mainstem. For the tributaries, peak flows are typically higher in currently undeveloped areas and lower in currently developed areas due to the increases in the future condition imperviousness. Comparisons of peak flows between the 2008 OSP Phase B, the effective 2020 FIS, and the current study can be seen in **Table 3-4** below**.**

Table 3-4 Peak Flow Comparison to Previous Master Plans

		1975 FHAD	2007 OSP (Phase A)		2006 FHAD	FIS 2020	2008 OSP (Phase B)		Merrick 2023		Merrick 2023 vs. 2008 OSP (Phase B) % Diff.		Merrick 2023 vs. 2006 FHAD/2020 FIS % Diff.
Roadway/ Tributary	**SWMM Design Point**	**FUT**	**EX**	**FUT**	**FUT**	**FUT**	**EX**	**FUT**	**EX**	**FUT**	**EX**	**FUT**	**FUT**
Mainstem													
Murphy Creek Trib.	**DP 1650**	N/A	704	704	704	704	668	684	551	551	-17.5%	-19.5%	-21.8%
	DP1630	650	1394	1425	1425	1425	1257	1351	988	1023	-21.4%	-24.3%	-28.2%
Belleview Ave.	**DP 1600**	1100	1684	1687	1687	N/A	1623	1680	1565	1633	-3.6%	-2.8%	-3.2%
Quincy Ave.	**DP 1500**	1600	2183	2204	2204	N/A	2043	2075	1816	1941	-11.1%	-6.5%	-11.9%
Hampden Ave.	**DP 1400**	2100	2327	2362	2362	N/A	2131	2182	1949	2174	-8.5%	-0.4%	-8.0%
Yale Ave./DADS	**DP 1300**	2700	2878	2951	2951	N/A	2655	2734	2548	3542	-4.0%	29.5%	20.0%
Jewell Ave.	**DP 1200**	3050	3605	3648	3648	N/A	3436	3516	2987	4412	-13.1%	25.5%	20.9%
Mississippi Ave.	**DP 1100**	3550	3434	3517	3550*	N/A	3342**	3535**	3258	4959	-2.5%	40.3%	39.7%
E-470	**DP 1040**	4000	3625	3689	4100*	N/A	3522**	3091**	3424	5120	-2.8%	65.6%	24.9%
Alameda Ave.	**DP 1020**	4250	3526	3632	4100*	N/A	3577**	3694**	3454	5149	-3.4%	39.4%	25.6%
6th Ave.	**DP 1000**	4450	3905	4088	4450*	4450*	3874**	3836**	4162	6073	7.4%	58.3%	36.5%
Tributaries													
Chelsea Draw	**DP 7510**	N/A	116	116	N/A	N/A	116	116	164	165	41.8%	42.0%	N/A
Brett Gulch (Trib. 7000)	**DP 7000**	N/A	477	607	511	N/A	457	552	674	725	47.5%	31.4%	42.0%
Venezia Gulch	**DP 6000**	N/A	329	329	N/A	N/A	321	347	275	419	-14.4%	20.9%	N/A
Hinds Gully	**DP 5500**	N/A	768	826	N/A	N/A	761	804	466	838	-38.8%	4.2%	N/A
Wagner Creek	**DP 5120**	N/A	407	446	N/A	N/A	396	398	330	641	-16.6%	60.9%	N/A
Harvest Gulch (Trib. 4000E)	**DP 4500**	N/A	523	563	557	N/A	155	492	194	535	25.3%	8.7%	-3.9%
Gun Club Creek	**DP 4400**	N/A	416	599	599	N/A	385	592	422	987	9.7%	66.7%	64.8%
Murphy Creek East (Trib. 3000E)	**DP 3500**	N/A	550	651	650	N/A	485	627	358	540	-26.3%	-13.9%	-17.0%
Murphy Creek West (Trib. 3000W)	**DP 3300**	N/A	423	792	789	N/A	397	853	291	745	-26.8%	-12.6%	-5.5%
Chicory Draw	**DP 2060**	N/A	555	1416	N/A	N/A	535	1433	547	672	2.2%	-53.1%	N/A
Rick's Run	**DP 2110**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	248	248	N/A	N/A	N/A
Richard Run (Trib. 2000)	**DP 2000**	N/A	1310	2887	2876	N/A	1237	2805	1093	1269	-11.6%	-54.8%	-55.9%

*Per the 2006 FHAD, peak flows at and downstream of Mississippi Avenue were obtained from the 1975 FHAD.
** For the 2008 OSP, peak flows at Design Point 1100 (Mississippi Avenue) and downstream were produced using a 3-hr storm with area correction factor.

4.0 REFERENCES

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APPENDIX A – PROJECT CORRESPONDENCE

SUMMARY

Merrick & Company
3480 W, 26th Avenue, Unit B225
Denver, CO 80211
Tel: 303-964-3333
www.merrick.com

PROJECT: Murphy Creek Master Drainageway Plan
MEETING DATE/TIME: March 3, 2022 9:00-10:00 am
LOCATION: Teleconference
PURPOSE: Project Kickoff

Name	Representing	Email
Morgan Lynch*	Mile High Flood District	mlynch@mhfd.org
Mark Schutte	Mile High Flood District	mschutte@mhfd.org
Janet Bender	City of Aurora – Supervisor Development Review	jbender@auroragov.org
Curtis Bish	City of Aurora – Planning and Open Space	cbish@auroragov.org
Craig Perl	City of Aurora – Floodplain Administrator	cperl@auroragov.org
George Slovensky	City of Aurora – Public Works	gslovens@auroragov.org
Tony Tran	City of Aurora - CIP	atran@auroragov.org
Sue Liu	Arapahoe County	sliu@arapahoegov.com
Tiffany Clark*	Southeast Metro Stormwater Authority	tclark@semswa.org
Molly Trujillo	Southeast Metro Stormwater Authority - CIP	mtrujillo@semswa.org
Jeanne Boyle	Merrick – Project Manager	jeanne.boyle@merrick.com
Clare Steninger	Merrick – Hydrology Lead	clare.steninger@merrick.com
Theresa Ring	Merrick – Hydraulics Lead	theresa.ring@merrick.com
Others Invited:		
Sam Miller*	City of Aurora	samiller@auroragov.org
Robert Victor	Arapahoe County	rvictor@arapahoegov.com

*Point of Contact

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered.

1. **Introductions**
    a. Introductions between the Merrick project team and the sponsors/stakeholders were made.
2. **Project Scope & Project Goals**
    a. Area of Interest: Murphy Creek and Tributaries
    b. The initial scope is to update the hydrology for the watershed.

SUMMARY

    c. The scope for subsequent hydraulics, alternatives analysis, and conceptual design phases will be evaluated after reviewing the updated hydrology.
    d. A Fluvial Hazard Zone Delineation study is a separate special project being done by Olsson. This information will be provided to Merrick to include in other phases of this MDP.
    e. Overall goals for this MDP are:
        i. To understand the hydrology for this rapidly developing area,
        ii. To clarify existing routing patterns within the watershed and evaluate drainage concerns,
        iii. To provide recommendations for improvements along Murphy Creek and tributaries including channel stabilization, culvert/crossing sizing, and regional detention sizing,
        iv. To provide guidance to the project sponsors and stakeholders for future construction projects,
        v. Potentially develop Flood Hazard Area Delineations (FHADs) for tributaries to Murphy Creek.

3. **Available Data**
    a. 2008 OSP & FHAD
        i. Linework and Background Information
        ii. CUHP/SWMM Model
    b. Topography – 2020 LiDAR Digital Terrain Model (DEM)
    c. GIS Data – NRCS soils, zoning, neighborhoods, subdivisions, Master Plan areas, City Limits, Right-of-Way limits, storm mains, culverts, detention/water quality, inlets, manholes, outfalls, channels, control structures, NFHL BFEs, NFHL cross sections, FHAD lines, Murphy Creek subbasins, Murphy Creek watershed, and others.
    d. Development Master Plans
        i. Merrick will compile a list of received Master Drainage Reports to be verified by Aurora that we have the best information available.
    e. Land Use/Zoning
        i. Arapahoe County and City of Aurora zoning shapefiles will be the basis for assigning imperviousness values
    f. Previous Master Plans
    g. Construction Plans
    h. Crossing Survey
    i. Transportation Master Plans
        i. Quincy Avenue expansion between Gun Club Rd and Harvest Rd
        ii. Aurora Northeast Area Transportation Study (NEATS) July 2007.

4. Project Discussion

a. Design Points and Basin Delineations
   i. Merrick is using the design points from the 2008 OSP with several additional points where it makes sense.
   ii. Basin delineations will be based on these design points and the 2020 LiDAR. Adjustments to the basin divides will be informed by information from drainage reports as necessary.
   iii. There appears to be conflicting information between the 2008 OSP and the Master Drainage Reports for subdivisions in this area. It was recommended to review routing in specific areas described below in more detail.
   iv. For the hydrology phase, the same routing will be used for both existing and future land use/imperviousness analyses.

b. Project Specifics (Known or Potential Problem Areas, Recent Construction or Approvals)
   i. Harvest Gulch (4000 East)
      1. The approved Murphy Creek East development should be included as existing for hydrology. Routing of the tributary will be closer to Yale compared to the historic tributary alignment.
   ii. Gun Club Creek (4000 West)
      1. The 2008 OSP has conflicting text/drawings for the recommended design versus the Master Drainage Reports for Murphy Creek, Aspen Business Park, Aspen Village, and other subdivisions in the area. There is confusion as to if Gun Club Creek is routed through the irrigation pond south of Jewell or if it bypasses the pond and continues north.
      2. There is a new development north of Jewell (Aspen Village) that does not appear to include a tributary for offsite runoff from the south. We should verify that Gun Club Creek is actually routed to Murphy Creek south of Jewell and is not intended to flow through Aspen Village.
      3. If clarification cannot be determined from the 2020 LiDAR, a site visit for this area should be considered to verify routing.
   iii. Alexandra Gulch (tributary to Gun Club Creek)
      1. Aspen Business Park MDR was recently approved but there is confusion of where the tributary crosses Gun Club Road. Could be a split flow condition for minor/major storm events. There are 3 culverts crossing Gun Club Road that are not in the City's GIS storm pipe layer. Additional field survey may be needed for these culverts.
   iv. There are potentially proposed improvements for Yale Ave. per the Murphy Creek subdivision plans and for Gun Club Road. If so, these plans need to be provided.

SUMMARY

c. Imperviousness
   i. Planned Development
      1. Recently, developments have proposed higher densities than previously planned. This trend (multi-units on a single lot, etc.) is likely to continue so a higher percent imperviousness should be considered in this MDP (i.e., using 70% instead of 45% for planned development). Merrick will make recommendations for the percentage based on current trends.
      2. Aurora has a recently completed Unified Density Ordinance (UDO) that may direct the imperviousness values needed.
      3. Specific imperviousness for each neighborhood/development is not required.
   ii. DADS – Merrick will look at the Senac Creek MDP for recent values used for this area.
   iii. Merrick will create a table of land uses and corresponding imperviousness values for sponsor approval.

5. Schedule

a. A general outline of the project progression was presented:
   i. Progress Meeting – Review of initial hydrology results
   ii. Draft Hydrology Report Submittal
   iii. Sponsor Review Period – 2 to 3 weeks following submittal
   iv. Review Meeting – Review of sponsor comments

SUMMARY

Merrick & Company
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Denver, CO 80211
Tel: 303-964-3333
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PROJECT: Murphy Creek Major Drainageway Plan
MEETING DATE/TIME: September 12, 2022 11:00 am -12:00 pm
LOCATION: Teleconference
PURPOSE: Baseline Hydrology Comment Response Meeting

Name	Representing	Email
Derek Clark*	Mile High Flood District	dclark@mhfd.org
Colin Haggerty	Mile High Flood District	chaggerty@mhfd.org
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Jessica Traynor	Southeast Metro Stormwater Authority	jtraynor@semswa.org
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Others Invited:		
George Slovensky	City of Aurora – Public Works	gslovens@auroragov.org
Tony Tran	City of Aurora - CIP	atran@auroragov.org
Janet Bender	City of Aurora – Supervisor Development Review	jbender@auroragov.org
Curtis Bish	City of Aurora – Planning and Open Space	cbish@auroragov.org
Robert Victor	Arapahoe County	rvictor@arapahoegov.com

*Point of Contact

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised.

1. **Land Use and Future Zoning**
   a. Future Land Use in Arapahoe County
      i. Imperviousness in the current SWMM model was developed based on the Arapahoe County zoning map GIS. The zoning GIS file does not include future land uses that were a part of the Arapahoe County Comprehensive Plan (2018).
      ii. It was decided to revise the model land uses and resulting imperviousness values based on the Arapahoe County Comprehensive Plan (2018) categories. Merrick will follow up with Arapahoe County to obtain the GIS data for the Comprehensive Plan.
      iii. Future land uses from the Comprehensive Plan will be incorporated into the project's land use schedule and incorporated into the CUHP imperviousness inputs.
      iv. It is assumed that the only land use change from the Comprehensive Plan is the Lowry Trust Property, as discussed below.
   b. Future Zoning Changes – Lowry Trust Property
      i. An application for rezoning has been submitted, but not yet approved. This parcel is proposed to be zoned Heavy Industrial (I-2) rather than current zoning of Agricultural (A-1).
      ii. There will be a detention pond onsite, but it will be offline and will not be regional. It will discharge to Murphy Creek.
      iii. Although not officially approved, Merrick will conservatively treat this area as Industrial zoning with a higher imperviousness (90%) for future conditions.
   c. Buckley Space Force Base
      i. No significant development is anticipated in open spaces on the Base. The imperviousness currently shown in the model is acceptable.

2. **Routing Updates**
   a. Gun Club Creek Area
      i. Merrick and MHFD have conferred on changes to the routing near Jewell Avenue. Gun Club Creek is now routed completely to the south of Jewell. This reflects development plans and previous master plans.
      ii. Per group discussions, changes will be made to the routing of basins west of Gun Club Road. There are several small culverts under the road that support routing to the east instead of to the north. During large storm events, the road will likely overtop to the east as well.
      iii. Existing basins to the west side of Gun Club Road (Basins 441 and new 442.5) will flow to Gun Club Creek using existing culverts.
      iv. These existing culverts are not reflected in SEMSWA, Aurora, or MHFD GIS and survey data. Additional survey will be discussed in the Hydraulics phase.

SUMMARY

b. Yale Area
    i. Grading for the new Yale Avenue was completed in 2005-2006. The routing in this area should follow the 2008 OSP.
    ii. The area between the new Yale Avenue and the old Yale Avenue east of Gun Club Road, including flows from the west (Basins 123, 470, and 471) will flow to Murphy Creek as shown. This is consistent with the 2008 OSP and it appears the Yale Avenue realignment also anticipated this routing.
    iii. The historic Gun Club Creek remnant will not be used to route flow north across the new Yale Avenue.
c. Basin 302
    i. Basin 302 was flagged for delineation and routing confirmation. It abuts one of the runways of the Buckley Space Force Base. It is oddly shaped but does flow north as shown and is acceptable as delineated.

3. Miscellaneous

a. Crossing discrepancies
    i. All crossing discrepancies between the survey data and SEMSWA GIS data have been verified except for crossing 49 (Murphy Creek and E. Alameda Avenue). Merrick will investigate to verify this crossing size.
b. Crossings Map
    i. No map of crossings is necessary at this time. This will be presented as part of the Hydraulics phase.
c. Previous flood pictures
    i. If any sponsors have pictures of previous flooding that they would like shown, they will provide them.
    ii. Field visits will be completed as part of the Hydraulics phase.

4. Conclusion

a. Next steps
    i. Merrick will review SWMM and CUHP modelling as discussed, repackage the report, and redistribute it to all sponsors within the next 2-3 weeks.
    ii. Following this, Merrick will schedule a discussion of next steps and plans for the Hydraulics and Alternatives Analysis phases.

TABLE A-1
Response to Draft Baseline Hydrology Report Comments

The following are responses to comments received from the project sponsors regarding the Baseline Hydrology Report for the Murphy Creek and Tributaries Major Drainageway Plan.

Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
1	1	tclark	Major	Agree	Changed all instances of Master to Major in text.	9/2/2022
2	2	jtraynor	References comment 1	Agree	See comment 1 response.	9/2/2022
3	4	jtraynor	Revise text: [Insert] ...and to accommodate development that has already occurred.	Agree	The suggested text has been added to the paragraph.	9/2/2022
4	4	jtraynor	[In response to "multiple studies"] Please say what this number is and why you are combining them. Something like (rewrite to have it be specific), "the baseline hydrology was developed using two previous models in adjacent areas to create a better representation of the watershed."	Agree	The previous master plans and models were updated to be a single cohesive model using the same rainfall and imperviousness assumptions. The text was changed to specify that the previous studies were updated and not compiled to create the baseline hydrology model.	9/19/2022
5	4	tclark	Will [the Alternatives Analysis section] include water quality improvements?	No action	The alternatives analysis will not include water quality improvements.	9/7/2022
6	4	chaggerty	[Remove "etc."]	Agree	"Etc." has been removed.	9/2/2022
7	4	chaggerty	Have basin delineations been compared?	No action	Yes, basin delineations were compared between the 2008 OSP and the 2022 MDP.	9/2/2022
8	4	dclark	Was 500-year not analyzed?	Agree	The 500-year storm was analyzed and has been added to the text.	9/2/2022
9	5	tclark	Molly Trujillo	Agree	Table 1-2 has been updated.	9/2/2022
10	5	tclark	Add: Cynthia Love - SEMSWA -Floodplain Manager Jessica Traynor - SEMSWA - Floodplain/Master Planning Engineer	Agree	Table 1-2 has been updated.	9/2/2022
11	5	tclark	Was the Stream Inventory data provided by SEMSWA used for this study? If so, please include in table 1-1.	No Action	The Stream Inventory is from survey collected in November and December of 2021.	9/2/2022
12	6	tclark	There is a ongoing zoning application in for Arapahoe County requesting Industrial zoning for a parcel within DADs. Please revise the discussion, calculations, etc... to incorporate this area. Current Zoning Plan attached for use.	Agree	The model and report have been revised to incorporate the future Industrial land use area at the Lowry Trust Properties site.	9/19/2022
13	6	tclark	Add an Industrial Zoning category.	Agree	Industrial Zoning has been added to Table 2-1.	9/2/2022
14	6	chaggerty	Is additional development not anticipated for the Base?	No action	No additional development is anticipated per discussions with project sponsors.	9/2/2022
15	6	HEDC62 - SPL	too low	No action	Land Use and imperviousness values have been revised based on the Comment Response Meeting (9/12/22). No change to agricultural imperviousness was made, but the Arapahoe County associated zoning has been updated based on the Comprehensive Plan and land use/imperviousness updated accordingly in the model.	9/19/2022
16	6	HEDC62 - SPL	R-PM	Agree	Updated in Table 2-1.	9/2/2022
17	6	HEDC62 - SPL	R-PH	Agree	Updated in Table 2-1.	9/2/2022
18	6	HEDC62 - SPL	There is a zoning application in for Arapahoe County for approval. The case is requesting Industrial zoning (Heavy Industrial (I-2)). for a parcel within DADs. Please revise the paragraph to incorporate this area. Current Zoning case (CZ22-001) is attached for use.	Agree	See comment 12 response.	9/2/2022
19	6	HEDC62 - SPL	Add land Use: Industrial, [Desc:] Heavy industrial, [Imp:] ?, [Arapahoe Co Zoning Code:] I-2	Agree	See comment 13 response.	9/2/2022
20	6	HEDC62 - SPL	and Agricultural Residential	Agree	Updated in Table 2-1.	9/2/2022
21	6	HEDC62 - SPL	A-E	Agree	Updated in Table 2-1.	9/2/2022
22	6	HEDC62 - SPL	A-E 35-ac min A-1 19-ac min	No action	Noted for land use.	9/2/2022
23	6	HEDC62 - SPL	RR-C	Agree	Updated in Table 2-1.	9/2/2022

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Response to Draft Baseline Hydrology Report Comments

Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
24	6	HEDC62 - SPL	RR-A 9-ac min RR-B 2.41-ac min RR-C 1.61-ac min	No action	Noted for land use.	9/2/2022
25	7	tclark	References comment 1	Agree	See comment 1 response.	9/8/2022
26	7	chaggerty	Clean up double text	Agree	The label has been revised.	9/8/2022
27	8	tclark	SEMSWAs GIS shows 9x8, this should be verified.	No action	This crossing (#10) was surveyed in November-December 2021. Per the survey, this crossing size is 8'x8'.	9/2/2022
28	8	tclark	SEMSWAs GIS shows 10x10, this should be verified	No action	This crossing (#13) was surveyed in November-December 2021. Per the survey, this crossing size is 9'x10'.	9/2/2022
29	8	tclark	SEMSWAs GIS shows this as a 9x14, this should be verified	No action	This crossing (#14) was surveyed in November-December 2021. Per the survey, this crossing size is 10'x14'.	9/2/2022
30	8	tclark	there appears to be another crossing on Brett Gulch 18" CMP, drive within the Racing parcel.	No action	This crossing is not a major crossing and was therefore excluded from the survey and crossing inventory for this phase of the project.	9/2/2022
31	8	tclark	This crossing [#12] may be upgraded by the County Maintenance department soon	No action	Noted.	9/2/2022
32	8	tclark	SEMSWAs GIS shows 54" CMP, this should be verified	No action	This crossing (#15) was surveyed in November-December 2021. Per the survey, this crossing size is 60".	9/2/2022
33	8	tclark	SEMSWAs GIS shows 2 78"x112" CMPs, this should be verified	No action	This crossing (#17) was surveyed in November-December 2021. Per the survey, this crossing size is (2) 78".	9/2/2022
34	8	tclark	provide a map showing the locations of each crossing	No action	Since the hydraulic analysis of these crossings are not included in the baseline hydrology scope, the locations of these crossings is not critical to the peak flow analysis. A map will be provided as part of the next phase of the project.	9/2/2022
35	8	tclark	SEMSWA will send someone out to verify the conflicting structures.	No action	Per an email from Jessica Traynor on September 6, 2022, SEMSWA field staff verified the crossing structure sizes shown in Table 2-2 were correct.	9/9/2022
36	8	dclark	Is there a cross culvert along Gun Club Road for Alexandra Gulch almost due west from the inlet of this culvert [Crossing 21 in Table 2-2]?	No action	This crossing was not surveyed, but appears in aerial imagery. It is not a major crossing, and will not be included in this phase of the project.	9/9/2022
37	9	jtraynor	Request for pictures to be included of past floods if available.	No action	Pictures of past floods have not been provided by the project sponsors. Pictures of the drainageways will be taken as part of the next phase of the project.	9/2/2022
38	9	tclark	60?	No action	This crossing (#49) was surveyed in November-December 2021. Per the survey, this crossing size is correct.	9/2/2022
39	10	jtraynor	based on what location?	Agree	Rainfall is based on NOAA Atlas 14 Point Precipitation Frequency Estimates for Colorado. The exact location is at 39.6718° Latitude, -104.7058° Longitude, which is approximately in the middle of the Murphy Creek drainage basin. This information has been added to the report.	9/2/2022
40	10	tclark	Was the Arapahoe County SMM utilized as well, please include if so.	Agree	The Arapahoe County Stormwater Management Manual was used as a reference and has been included in the text.	9/2/2022
41	10	dclark	Repeat statement from section 2.1	No action	This information is restated for reference in each section.	9/2/2022
42	10	HEDC62 - SPL	Include the Arapahoe County Stormwater Management Manual	Agree	See comment 40 response.	9/2/2022
43	11	jtraynor	Should the FIS from 2020 be on this list?	Agree	The 2020 FIS has been added and the text updated.	9/2/2022
44	11	chaggerty	How are manning's developed?	No action	In the aerial investigation, Manning's n was assigned based on areas with existing Manning's n that had similar vegetation.	9/2/2022
45	11	chaggerty	Should we?	No action	Revising the FHAD and resulting FIS flows were not revised as part of this scope. It will be determined in the next phases if this is something the sponsors would like to pursue.	9/2/2022
46	12	jtraynor	This paragraph is a bit repetitive. Consider removing text lined out. [Remove: "An example of this can be seen upstream…flows compared to the 2008 OSP", "This difference is due primarily…current study"]	Agree	The lined out text has been removed.	9/2/2022
47	12	jtraynor	What two studies are you comparing? 2008 Future to 2022 Future?	Agree	The text has been updated to clarify that future conditions are being compared between the 2008 OSP and the 2022 MDP.	9/2/2022
48	12	jtraynor	What happens at Chelsea Draw?	No action	The hydrograph for Chelsea Draw at Design Point 7510 can be found in Figure B-3.	9/2/2022

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Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
49	12	jtraynor	Again, what cases are you comparing. you use "changes in proposed land use" does that mean future conditions to future conditions?	Agree	The text has been updated to clarify that future conditions are being compared between the 2008 OSP and the 2022 MDP.	9/2/2022
50	12	jtraynor	This sentence doesn't agree with the statement above. what is the pattern?	No action	The 2022 MDP flows along the main channel are lower upstream and higher downstream compared to the FIS flows. Comparing the 2022 MDP and the 2008 OSP, the flows are also lower upstream and higher downstream. The results appear to be due to lower rainfall for areas with similar imperviousness (upstream) and higher imperviousness in the downstream regions.	9/2/2022
51	12	chaggerty	Gun Club will be routed south of Jewell	Agree	The routing has been updated at Jewell based on follow-up discussions. All flow from design point 4300 has been routed to design point 1200, following Jewell on the south side.	9/7/2022
52	12	dclark	I believe these statements are backwards? Didn't the 2008 OSP route flows from Gun Club to Murphy Creek north of Jewell? Currently, it seems as if golf course development routed it to south of Jewell and that is the future plan going forward	Agree	See comment 51 response.	9/7/2022
53	13	tclark	2020	Agree	The text has been updated.	9/2/2022
54	13	chaggerty	Why so high [difference between FIS and 2022 MDP flows at Brett Gulch]?	Agree	The imperviousness for the Brett Gulch area is much higher than what was assumed in the 2008 OSP or for the FIS, thus resulting in high peak flows comparatively.	
55	13	chaggerty	Why so high [difference between FIS and 2022 MDP flows at Gun Club Creek]?	Agree	Based on routing adjustments (see comment 51 response), the comparison at Design Pond 4400 is much closer to the 2008 OSP than what was seen in the draft report.	9/7/2022
56	14	tclark	Revise reference: "Arapahoe County" instead of "SEMSWA"	Agree	See comment 57 response.	9/2/2022
57	14	HEDC62 - SPL	Arapahoe County	Agree	The reference has been removed. See reference #3.	9/2/2022
58	14	HEDC62 - SPL	adopted January 30, 2007, revised July 1, 2019	Agree	Reference #3 has been updated.	9/2/2022
59	19	jtraynor	This is great looking in a PDF, but how would one print this report with all the different maps?	No action	As this report is a digital master plan, the PDF is not meant to be printed. However, if printing is desired, the user can click on the visible map and print individual views.	9/2/2022
60	19	jtraynor	Can you add one overview map with the whole basin showing and the subbasins? or show the overall basin and the three page splits on it.	Agree	A key map with viewport extents has been added to the Interactive map.	9/16/2022
61	19	jtraynor	Could you use a stronger variation in color choices? It's had to tell which is which on the map. Or add a labels to the map?	Agree	The soil group colors have been enhanced to provide additional definition.	9/12/2022
62	19	tclark	References comment 1.	Agree	See comment response 1.	9/8/2022
63	19	tclark	identify or label the remainder area as Unincorporated Arapahoe County (update on all maps)	Agree	Arapahoe County has been added to the legend.	9/8/2022
64	19	tclark	see comment on next sheet and revise accordingly	Agree	See comment 12 response.	9/19/2022
65	19	chaggerty	Why so small [Subcatchment 150.1]?	Agree	Subcatchment 150.1 has been included as part of subcatchments 700 and 153.	9/8/2022
66	19	chaggerty	Crossing Culvert [at Quincy Ave - Subcatchment 650]?	No action	This crossing was not surveyed, but aerial imagery suggests a culvert at this location and routing matches the 2008 OSP.	9/7/2022
67	19	dclark	Label Southlands Detention	Agree	Southlands Detention Basin has been labeled.	9/12/2022
68	19	dclark	Label tollgate crossing detention		Tolgate Crossing Detention Basin has been labeled.	9/12/2022
69	19	HEDC62 - SPL	Include the legend for Unincorporated Arapahoe County	Agree	See comment 63 response.	9/12/2022
70	20	tclark	References comment 1.	Agree	See comment response 1.	9/8/2022
71	20	tclark	Arapahoe County is processing a rezoning application for this parcel to Industrial. Please revise the future land use for this parcel accordingly.	Agree	See comment 12 response.	9/19/2022
72	20	chaggerty	Check routing	Agree	The routing has been updated at Gun Club Rd. Flow has been routed through two culverts and subcatchment 442 has been split into two subcatchments, which route to design point 4405 and design point 4400 towards the east instead of flowing north.	9/14/2022
73	20	chaggerty	Clean up so whole area can be seen	Agree	The legend location has been shifted and a key map with extents has been added to provide a clearer viewport delineation.	9/16/2022

TABLE A-1
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Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
74	20	chaggerty	Basin shape seems odd	No action	Subcatchment 351 includes both channel and local detention. Delineation matches the 2008 OSP.	9/19/2022
75	20	HEDC62 - SPL	What is this basin #?	Agree	See comment 73 response.	9/16/2022
76	20	HEDC62 - SPL	Include the legend for Unincorporated Arapahoe Count	Agree	See comment response 69.	9/8/2022
77	21	jtraynor	The subbasins in here imply that the %impervious decreases in the future. The table B-3 1. These do not match these numbers for Future % impervious in table B-3 2. It's very unlikely that an area will become less impervious. the existing and future conditions do not imply this would happen 3. I suspect that there is something wrong with the %future numbers or the display of the labels. 4. These are spot checked please update all numbers to match table B-3 and the actual model inputs (and please round to the same digit in both places	Agree	Map label source has been remedied accordingly as part of imperviousness updates.	9/19/2022
78	21	tclark	References comment 1.	Agree	See comment response 1.	9/8/2022
79	21	chaggerty	confirm	Agree	Subcatchment 210 has been simplified and the southern delineated area has been combined with subcatchment 209.	9/8/2022
80	21	chaggerty	confirm	Agree	The delineation and routing of Basin 302 has been confirmed and accepted in the Comment Response Meeting.	9/12/2022
81	21	dclark	Should this extend this far?	Agree	See comment 72 response.	9/12/2022
82	21	dclark	Is there existing culvert in this area? Maybe split flow	Agree	See comment 72 response.	9/12/2022
83	21	HEDC62 - SPL	Include the legend for Unincorporated Arapahoe Count	Agree	See comment 63 response.	9/12/2022
84	22	jtraynor	Major	Agree	See comment 1 response.	9/12/2022
85	23	tclark	7020	Agree	The schematic has been updated.	9/12/2022
86	23	tclark	References comment 1.	Agree	See comment 1 response.	9/7/2022
87	25	tclark	Add an Industrial Zoning category.	Agree	See comment 93 response	9/7/2022
88	25	HEDC62 - SPL	R-PM	Agree	Table B-2 has been updated.	9/7/2022
89	25	HEDC62 - SPL	Residential PUD – Moderate Density	Agree	Table B-2 has been updated.	9/7/2022
90	25	HEDC62 - SPL	R-PH	Agree	Table B-2 has been updated.	9/7/2022
91	25	HEDC62 - SPL	Residential PUD – High Density	Agree	Table B-2 has been updated.	9/7/2022
92	25	HEDC62 - SPL	and Agricultural Residential	Agree	Table B-2 has been updated.	9/7/2022
93	25	HEDC62 - SPL	Add land Use Industrial ? I-2 I-2, Heavy Industrial	Agree	Table B-2 has been updated.	9/7/2022
94	25	HEDC62 - SPL	A-E	Agree	Table B-2 has been updated, and land use in the model has been updated.	9/19/2022
95	25	HEDC62 - SPL	A-E, Agricultural Estate	Agree	Table B-2 has been updated.	9/7/2022
96	25	HEDC62 - SPL	RR-A 9-ac min RR-B 2.41-ac min RR-C 1.61-ac min	Agree	Table B-2 has been updated.	9/7/2022
97	25	HEDC62 - SPL	A-E 35-ac min A-1 19-ac min	Agree	Table B-2 has been updated.	9/7/2022
98	25	HEDC62 - SPL	RR-C	Agree	Table B-2 has been updated.	9/7/2022

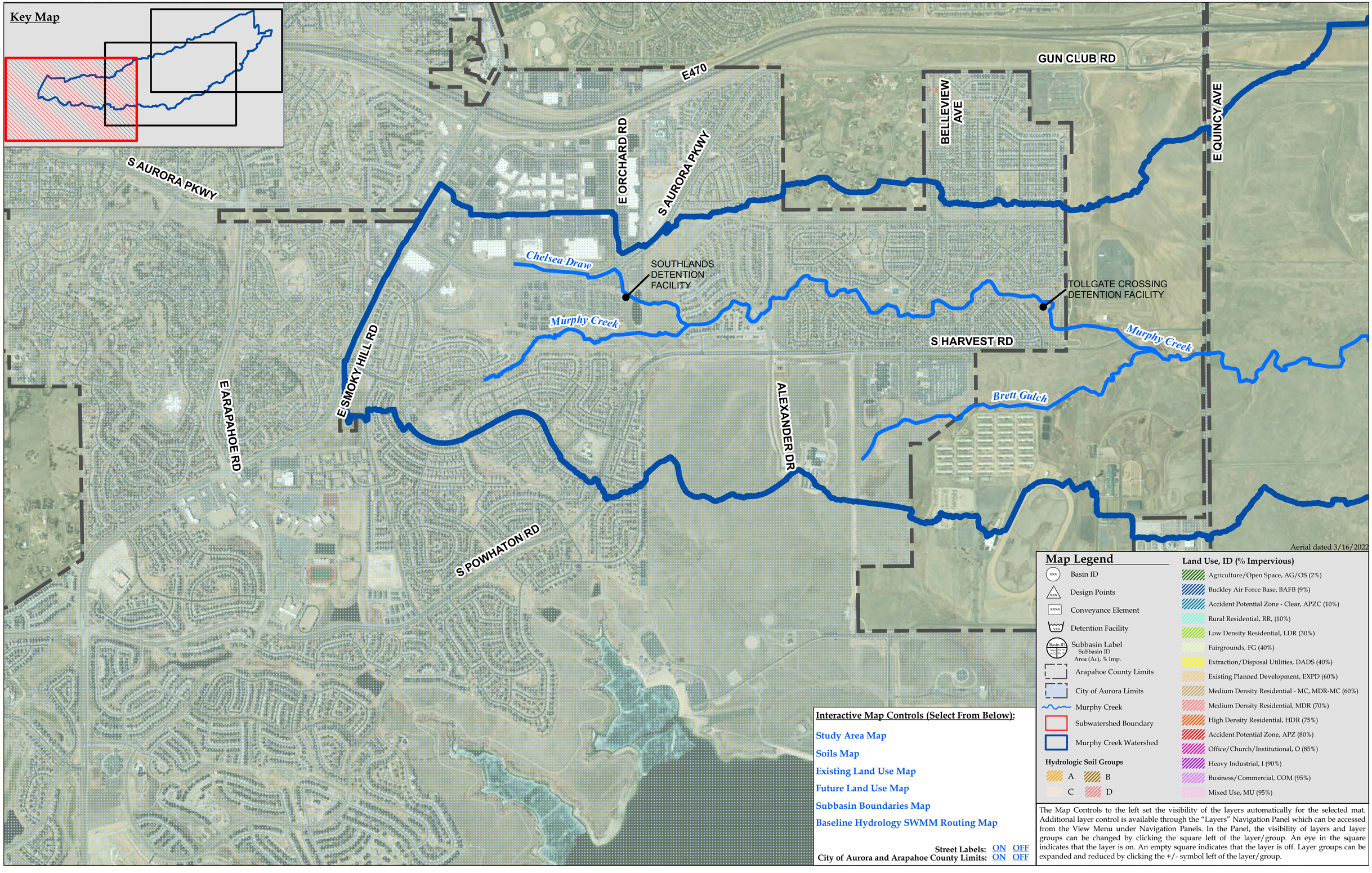
TABLE A-1
Response to Draft Baseline Hydrology Report Comments

Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
99	25	HEDC62 - SPL	RR-C, Rural Residential C	Agree	Table B-2 has been updated.	9/7/2022
100	26	jtraynor	These should match Figure B-1	Agree	Map label source has been remedied accordingly as part of imperviousness updates. Additional significant figures are provided in the table where there is additional space.	9/19/2022
101	26	tclark	evaluate basins to meet ongoing Arapahoe County rezoning application. Update all other calculations, text, etc... accordingly.	Agree	See comment 12 response.	9/12/2022
102	26	HEDC62 - SPL	What does this mean - lowest area in the basin?	No action	Depression losses are based on land cover. Referencing Table 6-6 in the USDCM, each subwatershed was given a pervious depression storage value of either 0.35 inches for subwatershed imperviousness values greater than 15%, or 0.4 inches for less than 15%.	9/19/2022
103	26	HEDC62 - SPL	the area in County is Regional Commercial - I% seems low	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
104	26	HEDC62 - SPL	See AC's 2018 Comprehensive Plan for future use - I% is low	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
105	26	HEDC62 - SPL	Please reevaluate the I% value for the proposed future use.	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
106	27	jtraynor	This is far steeper than other parts of the watershed. Confirm this is accurate	Agree	The magnitude error of this slope has been addressed and the slope value updated.	9/7/2022
107	27	HEDC62 - SPL	See AC's 2018 Comprehensive Plan for future use - I% is low	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
108	27	HEDC62 - SPL	Please reevaluate the I% value for the proposed future use in AC.	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
109	28	HEDC62 - SPL	Please reevaluate the I% value for the proposed future use in AC.	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
110	29	tclark	evaluate basins to meet ongoing Arapahoe County rezoning application.	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
111	29	HEDC62 - SPL	Please reevaluate the I% value for the proposed future use in AC.	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022
112	30	jtraynor	Indicate at what stage, the basin has overtopped	Agree	The overtopping stage has been added to Table B-4.	9/7/2022
113	30	jtraynor	Indicate at what stage, the basin has overtopped	Agree	The overtopping stage has been added to Table B-4.	9/7/2022
114	30	jtraynor	Doesn't match 1386.28 CFS from storage unit 20 outflow future conditions or existing conditions; I also get 50.8 Ac-ft not 50.5 ac-ft when looking at max volume (future conditions)	Agree	The results summary has been updated (an older version had been included in the draft report).	9/7/2022
115	30	chaggerty	Issue?	Agree	The results summary has been updated (an older version had been included in the draft report).	9/7/2022
116	38	jtraynor	Remove extra empty page	Agree	The empty page has been removed.	9/7/2022
117	41	chaggerty	How so flat?	Agree	The hydrographs have been updated following imperviousness and routing updates.	9/19/2022
118	44	dclark	Label Tollgate Crossing?	Agree	Tollgate Crossing has been labeled in Figure B-4.	9/7/2022
119	60	chaggerty	Why so high [Final Stored Volume SWMM Output]?	No action	Because the Murphy Creek watershed is very large, the entire watershed does not completely drain during the time period the model was run. Therefore, there is still water "stored" at the end of the simulation.	9/19/2022
120	67	chaggerty	Doesn't seem possible [no surcharged pipes]? Unless because no storm?	No action	There are no storm pipes in the SWMM model. All channels have been confirmed to contain flows.	9/7/2022
121	82	tclark	References comment 1.	Agree	See comment 1 response	9/12/2022
122	83	tclark	References comment 1.	Agree	See comment 1 response	9/12/2022
123	83	HEDC62 - SPL	LTP – is Lowry Trust Properties. No residential uses, daycare centers, or hospitals are permitted. There are covenants that run with the land that restrict these uses (due to previous landfill uses on site). Commercial and industrial uses would be permitted - can be used for industry and commercial zoning LSS – is the Lowry Superfund Site. No uses can be approved	Agree	Land Use and imperviousness values have been updated based on the Arapahoe County Comprehensive Plan (2018) GIS	9/19/2022

TABLE A-1
Response to Draft Baseline Hydrology Report Comments

Comment Number	Page Label	Author	Comments	Merrick Action	Merrick Response	Response Date
			due to the toxic nature of the site. RC – is Regional Commercial. This is our commercial district for uses of regional significance, including malls, "big box" centers, retail outlets, and auto dealerships. No residential is permitted. UR – is Urban Residential / Single-Family Detached and Attached. This land use category permits a variety of housing forms, including detached, townhomes, and multiplex units (small buildings with up to 12 dwelling units). Density range is 8 to 16 du/ac. Secondary uses include retail. EMP – is Employment. Primary uses are offices, warehousing, light industrial, and major educational uses. Secondary uses include retail, hotels, daycare centers, and residential. PF – is Public Facilities (e.g., schools, libraries, recreation centers) MF – is Multifamily. This includes townhomes and stacked multi-story buildings. Density range is 13 du/ac and up. OS – is Open Space.			
124	83	HEDC62 - SPL	Current Zoning - RRB	Agree	See comment 123 response.	9/19/2022
125	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
126	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
127	83	HEDC62 - SPL	MU	Agree	See comment 123 response.	9/19/2022
128	83	HEDC62 - SPL	A-E	Agree	See comment 123 response.	9/19/2022
129	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
130	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
131	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
132	83	HEDC62 - SPL	RRB	Agree	See comment 123 response.	9/19/2022
133	83	HEDC62 - SPL	RRB	Agree	See comment 123 response.	9/19/2022
134	83	HEDC62 - SPL	RRB	Agree	See comment 123 response.	9/19/2022
135	83	HEDC62 - SPL	A-1	Agree	See comment 123 response.	9/19/2022
136	83	HEDC62 - SPL	O	Agree	See comment 123 response.	9/19/2022
137	83	HEDC62 - SPL	RRB	Agree	See comment 123 response.	9/19/2022
138	83	HEDC62 - SPL	O	Agree	See comment 123 response.	9/19/2022
139	83	HEDC62 - SPL	See the 2018 Comprehensive Plan attached - future zoning	Agree	See comment 123 response.	9/19/2022
140	83	HEDC62 - SPL	I-2 Zone per AC Case CZ22-001	Agree	See comment 12 response.	9/19/2022

APPENDIX B – HYDROLOGIC ANALYSIS



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Phone: 303-964-3333

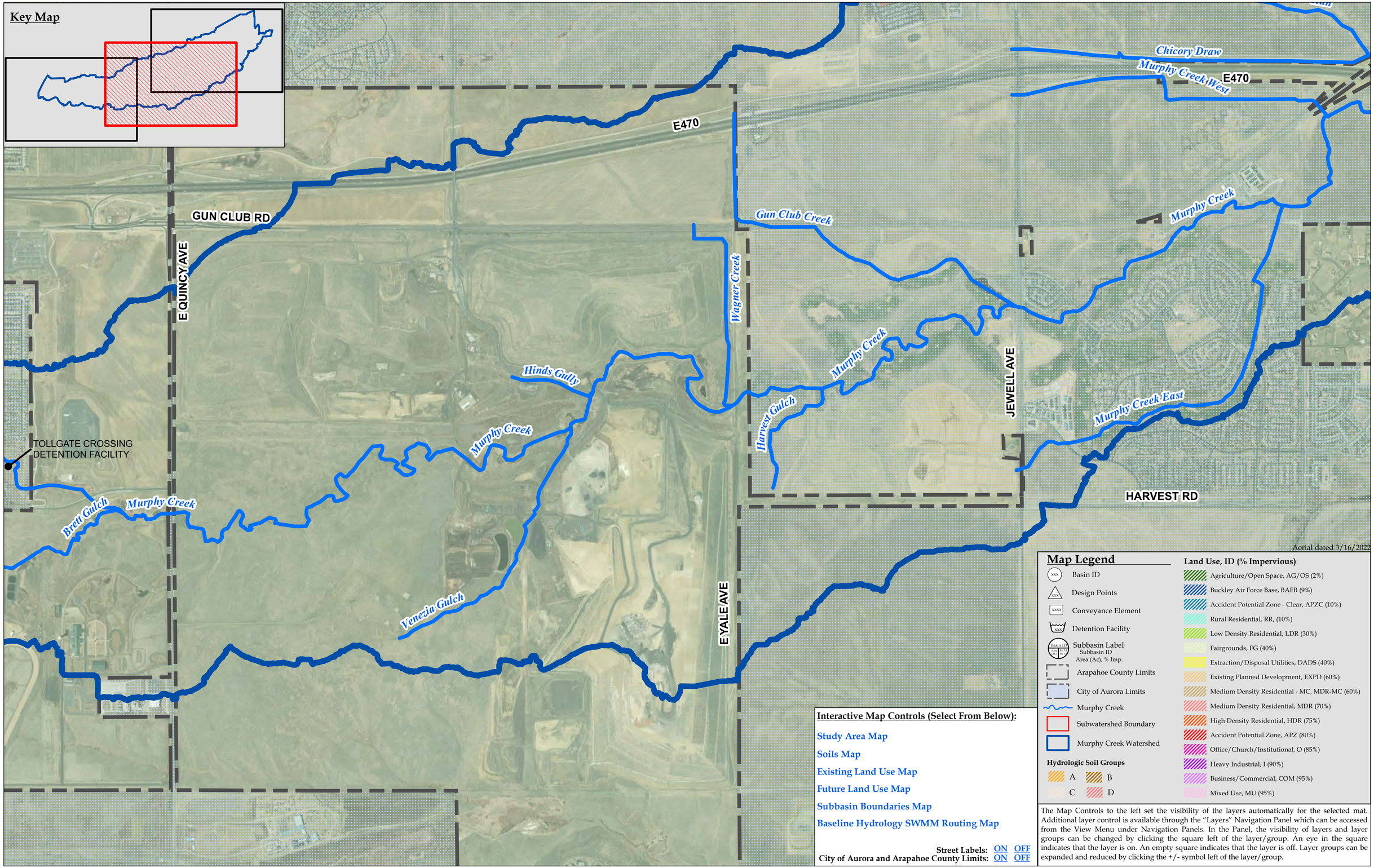
MURPHY CREEK AND TRIBUTARIES
MAJOR DRAINAGEWAY PLAN

HYDROLOGY MAP

APRIL 2023

1 inch = 800 feet
0 400 800
Feet

FIGURE
B-1



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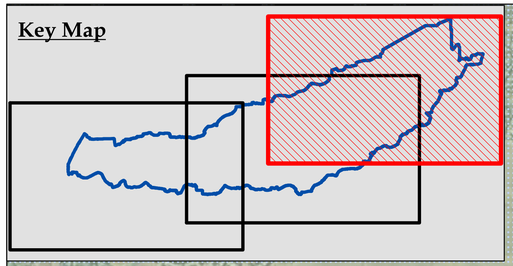

JEWELL AVE

6TH AVE

PICADILLY RD

Rick's Run

Murphy Creek

Richard Run

Chicory Draw

Murphy Creek West

E470

E470

Murphy Creek

Gun Club Creek

GUN CLUB RD

Wagner Creek

Murphy Creek

Hinds Gully

Murphy Creek

Harvest Gulch

Venezia Gulch

Murphy Creek East

EXPOSITION AVE

HARVEST RD

Aerial dated 3/16/2022

Interactive Map Controls (Select From Below):

- Study Area Map
- Soils Map
- Existing Land Use Map
- Future Land Use Map
- Subbasin Boundaries Map
- Baseline Hydrology SWMM Routing Map

Street Labels: ON OFF
City of Aurora and Arapahoe County Limits: ON OFF

Map Legend

- Basin ID
- Design Points
- Conveyance Element
- Detention Facility
- Subbasin Label (Subbasin ID, Area (Ac), % Imp.)
- Arapahoe County Limits
- City of Aurora Limits
- Murphy Creek
- Subwatershed Boundary
- Murphy Creek Watershed

Hydrologic Soil Groups

A B C D

Land Use, ID (% Impervious)

- Agriculture/Open Space, AG/OS (2%)
- Buckley Air Force Base, BAFB (9%)
- Accident Potential Zone - Clear, APZC (10%)
- Rural Residential, RR, (10%)
- Low Density Residential, LDR (30%)
- Fairgrounds, FG (40%)
- Extraction/Disposal Utilities, DADS (40%)
- Existing Planned Development, EXPD (60%)
- Medium Density Residential - MC, MDR-MC (60%)
- Medium Density Residential, MDR (70%)
- High Density Residential, HDR (75%)
- Accident Potential Zone, APZ (80%)
- Office/Church/Institutional, O (85%)
- Heavy Industrial, I (90%)
- Business/Commercial, COM (95%)
- Mixed Use, MU (95%)

The Map Controls to the left set the visibility of the layers automatically for the selected mat. Additional layer control is available through the "Layers" Navigation Panel which can be accessed from the View Menu under Navigation Panels. In the Panel, the visibility of layers and layer groups can be changed by clicking the square left of the layer/group. An eye in the square indicates that the layer is on. An empty square indicates that the layer is off. Layer groups can be expanded and reduced by clicking the +/- symbol left of the layer/group.

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MURPHY CREEK AND TRIBUTARIES
MAJOR DRAINAGEWAY PLAN

HYDROLOGY MAP

APRIL 2023

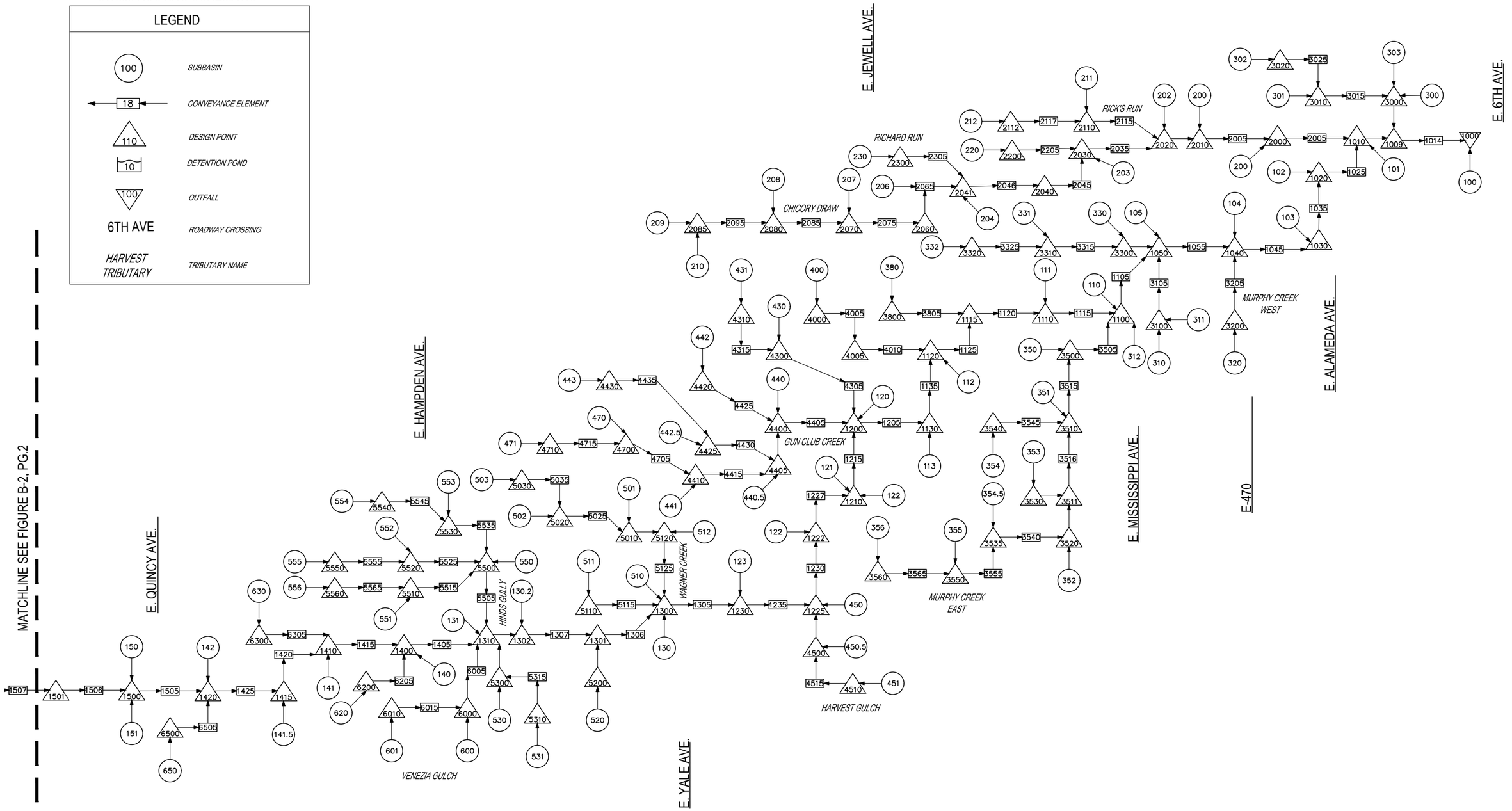
1 inch = 800 feet
0 400 800
Feet

FIGURE
B-1

SWMM ROUTING SCHEMATIC

LEGEND

100	SUBBASIN
18	CONVEYANCE ELEMENT
110	DESIGN POINT
10	DETENTION POND
100	OUTFALL
6TH AVE	ROADWAY CROSSING
HARVEST TRIBUTARY	TRIBUTARY NAME



Number	Revision Description	By	Date

MHFD, CITY OF AURORA, SEMSWA, ARAPAHOE COUNTY

MURPHY CREEK AND TRIBUTARIES MAJOR DRAINAGEWAY PLAN

SWMM ROUTING SCHEMATIC

MERRICK
2480 W. 26th Ave
Suite B225
Denver, CO 80211
T303.964.3333
F303.964.3355

DESIGN:
DETAIL:
CHECK:
DATE: APRIL 2023

PROJECT NUMBER
65421167

Figure Number:
B-2
Pg. 1 of 2

SWMM ROUTING SCHEMATIC

LEGEND

- 100 — *SUBBASIN*
- 18 — *CONVEYANCE ELEMENT*
- 110 — *DESIGN POINT*
- 10 — *DETENTION POND*
- 100 — *OUTFALL*
- 6TH AVE — *ROADWAY CROSSING*
- *HARVEST TRIBUTARY* — *TRIBUTARY NAME*

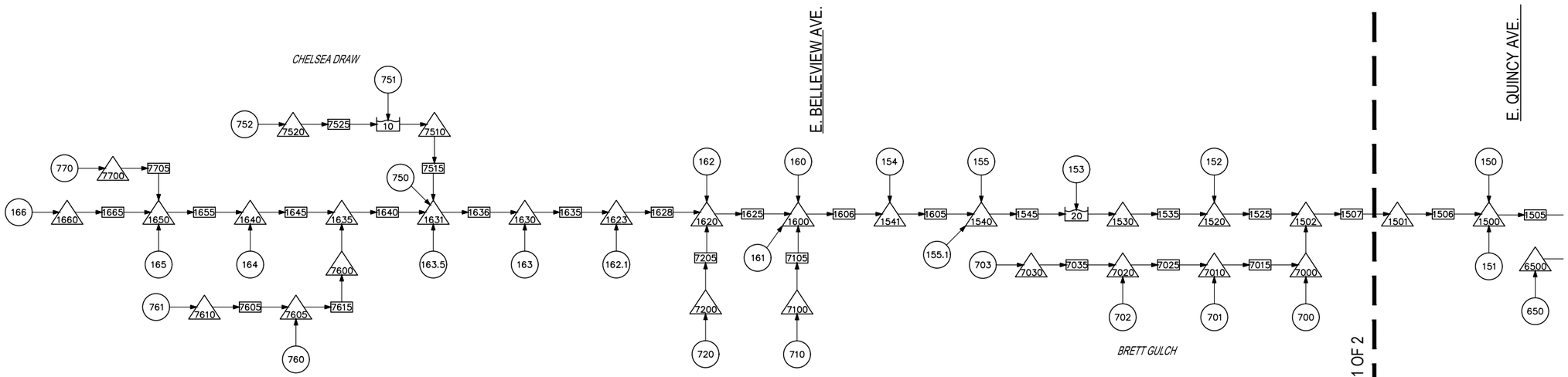


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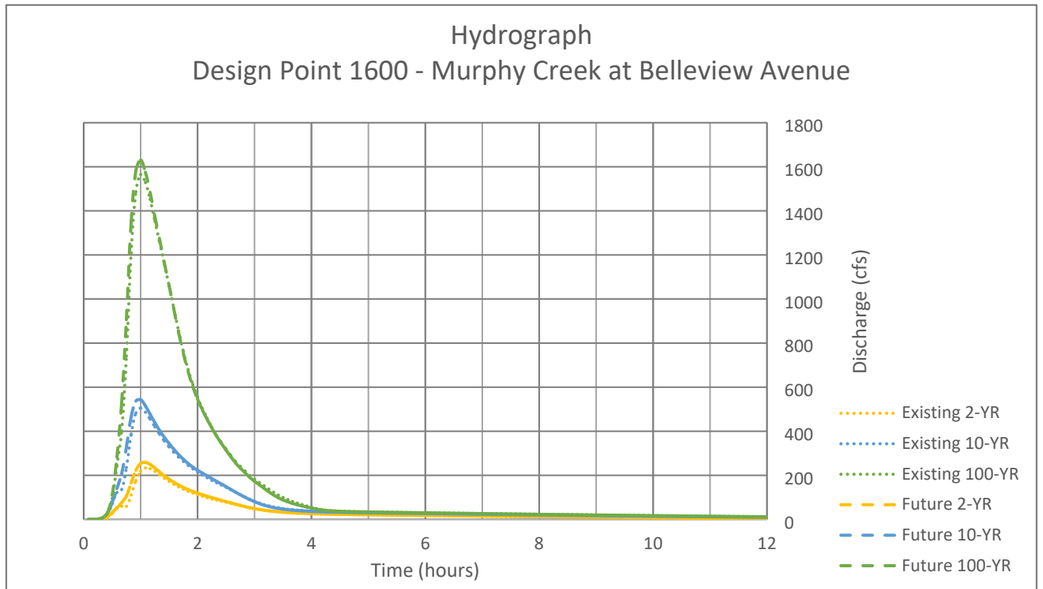
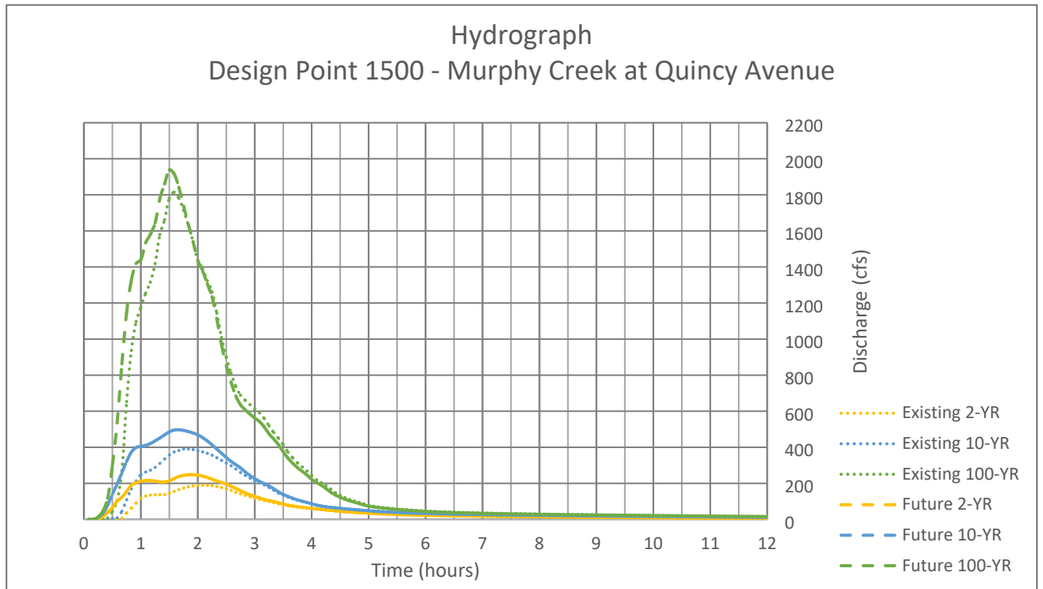
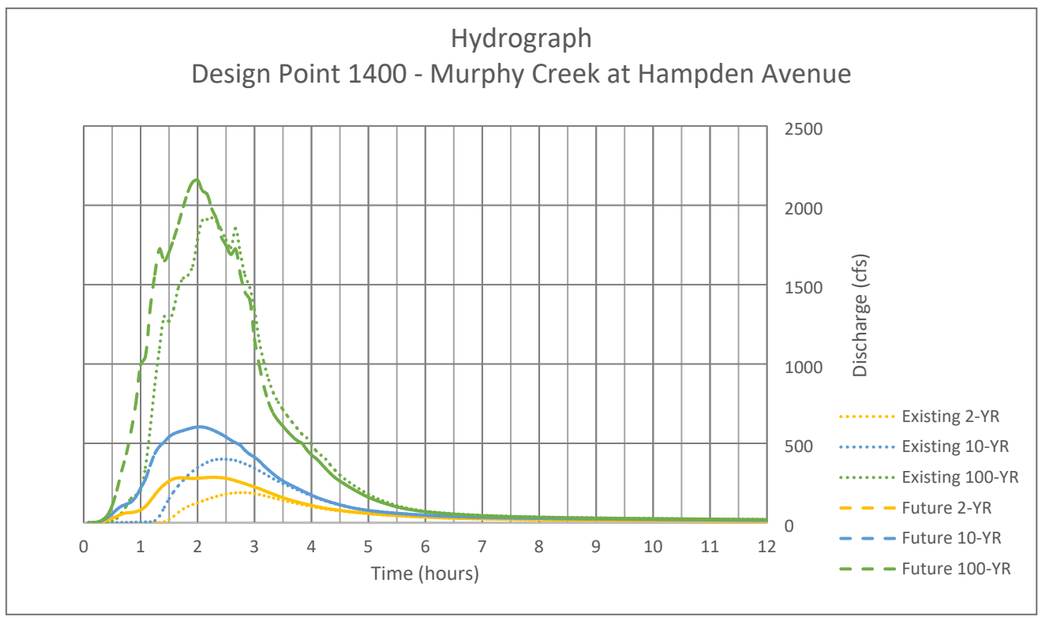
Figure Number:
B-2
Pg. 2 of 2

FIGURE B-3
2-, 10-, and 100-Year Hydrographs at Key Locations







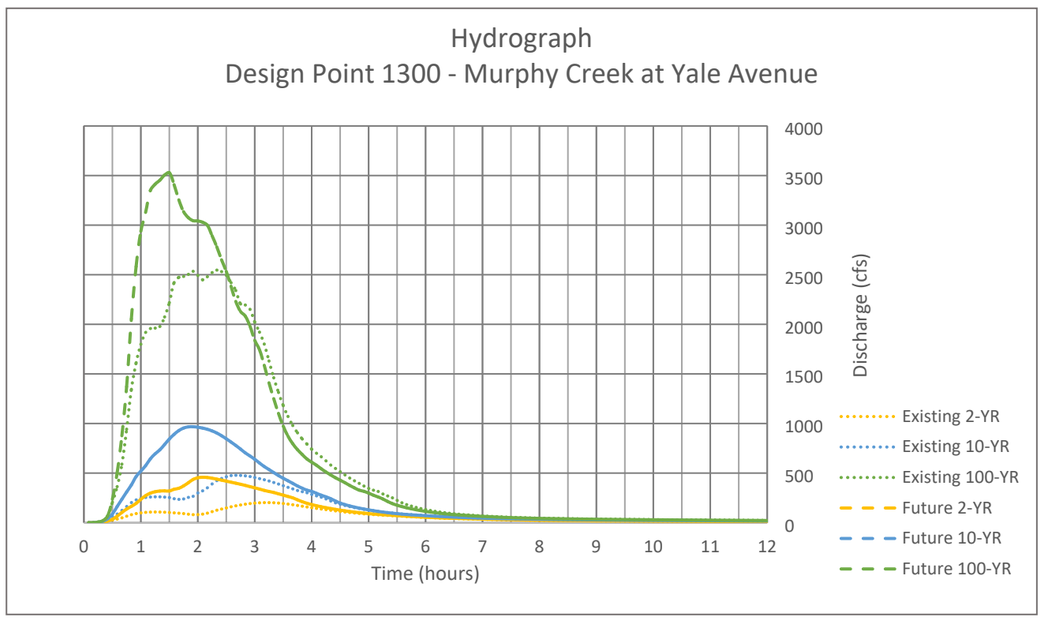
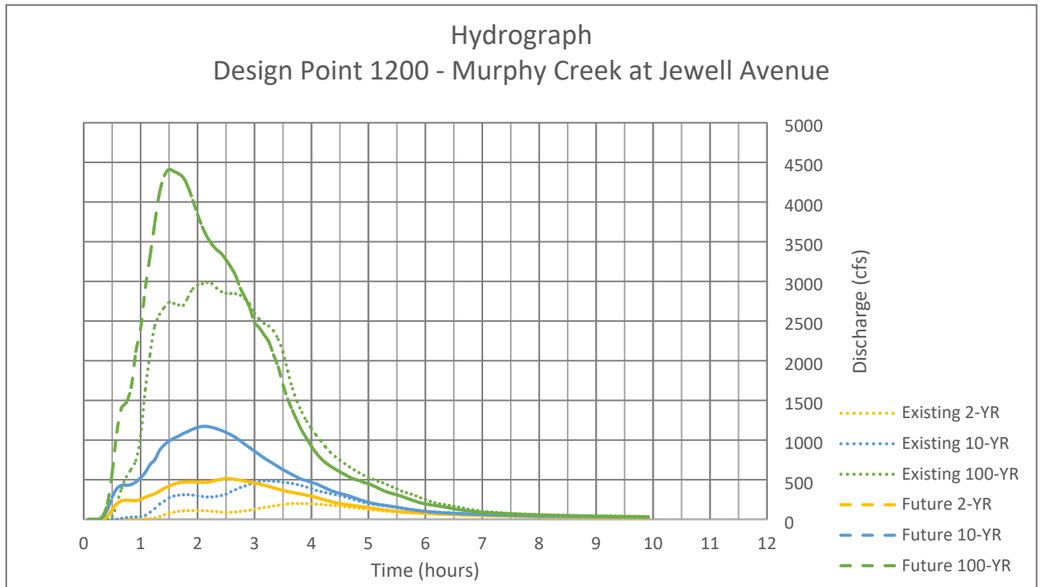
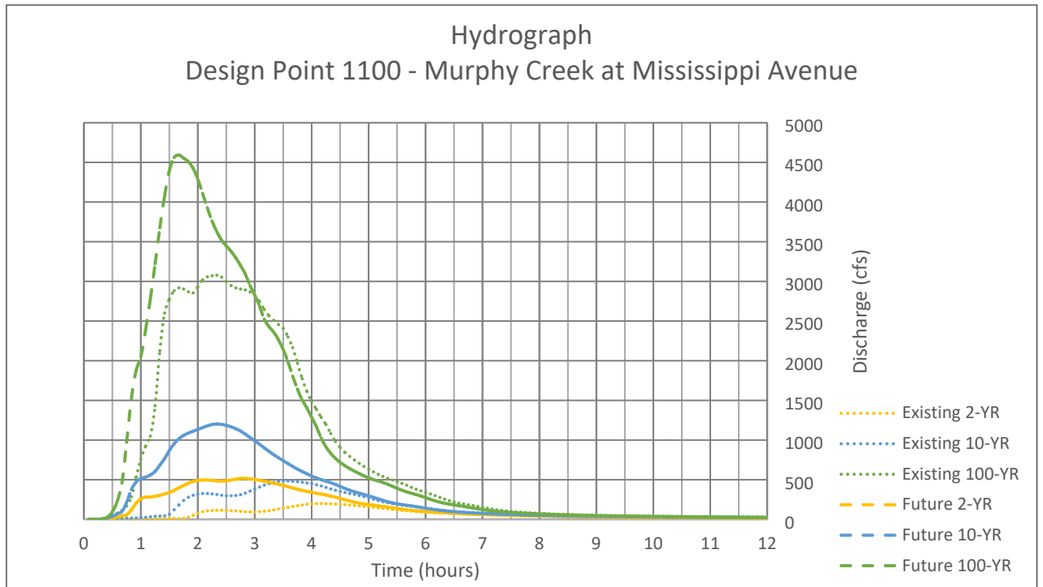
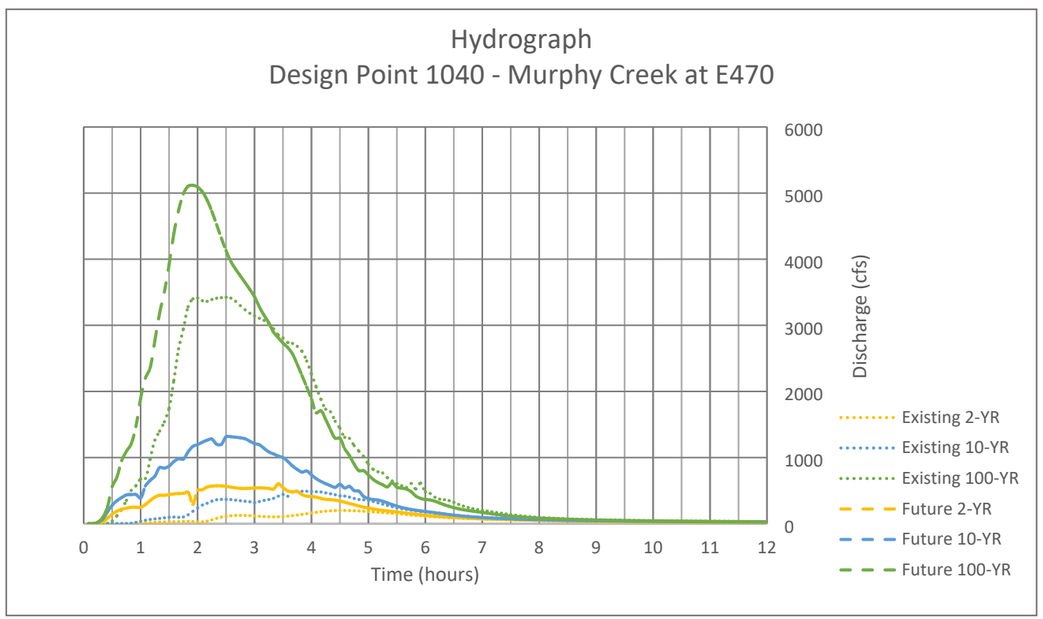
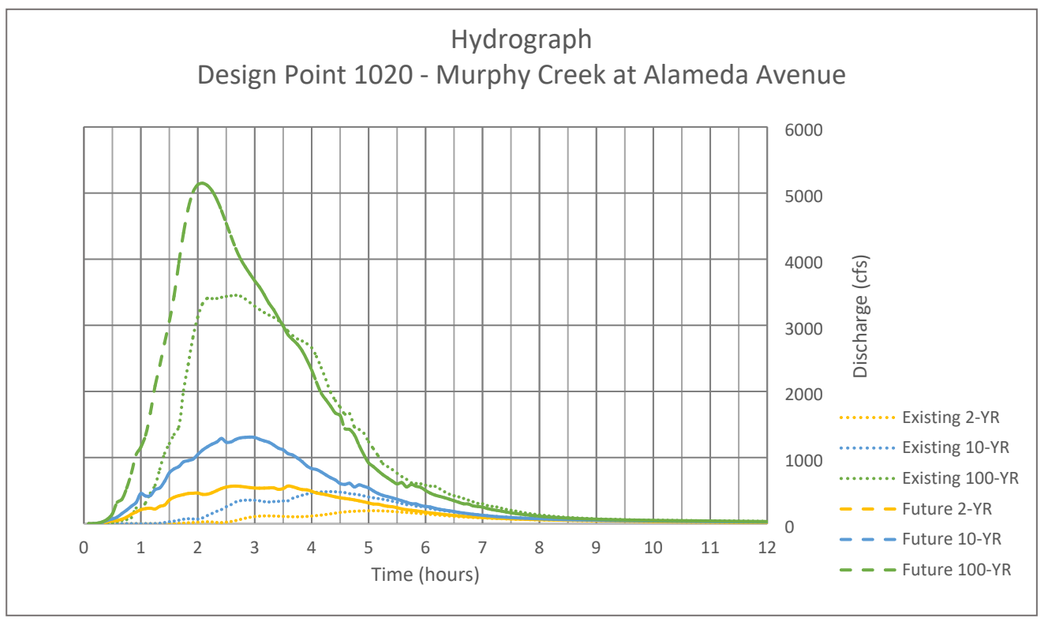


FIGURE B-3
2-, 10-, and 100-Year Hydrographs at Key Locations









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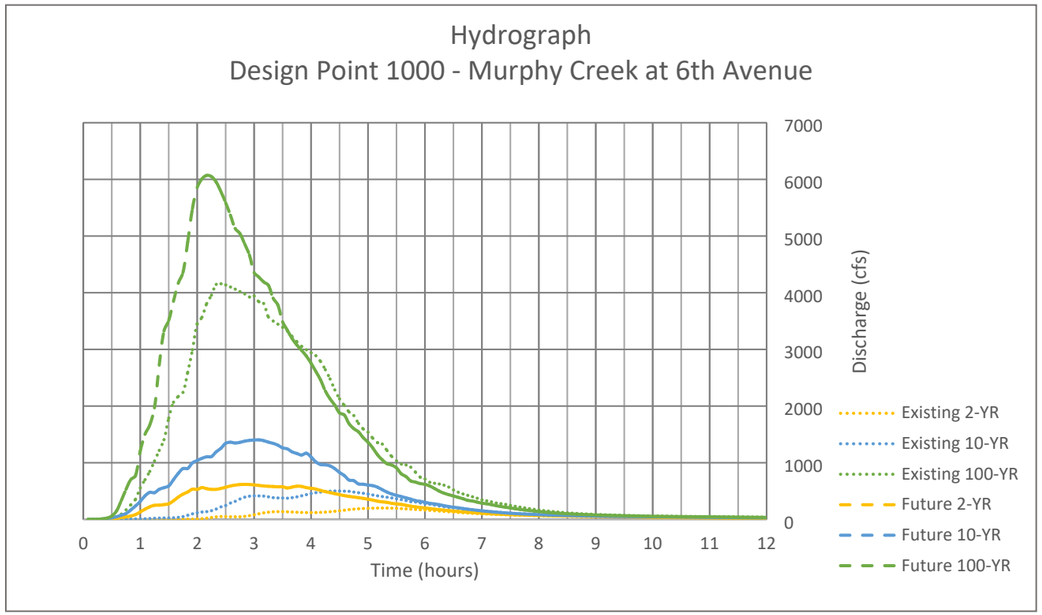

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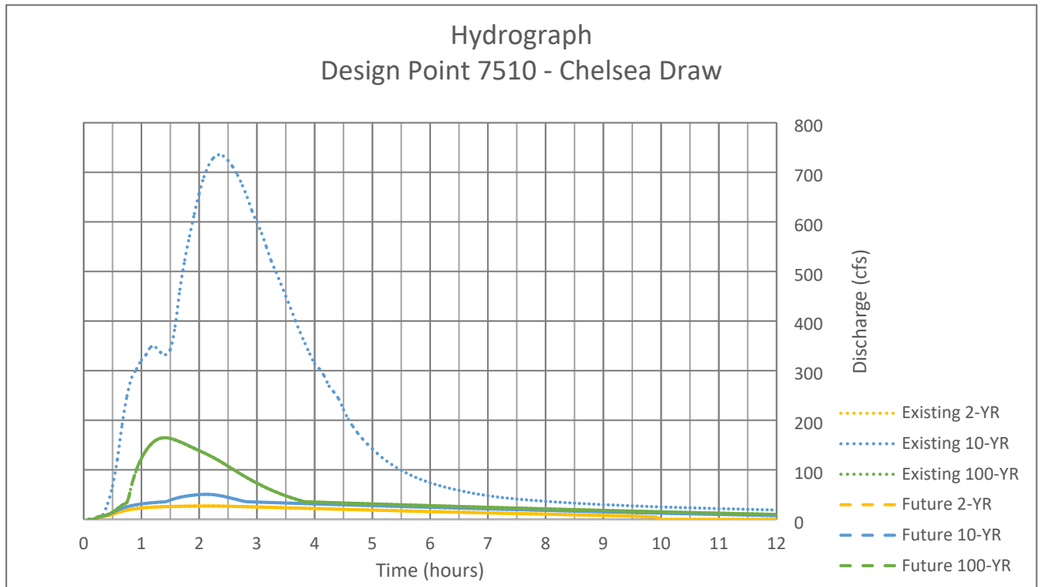

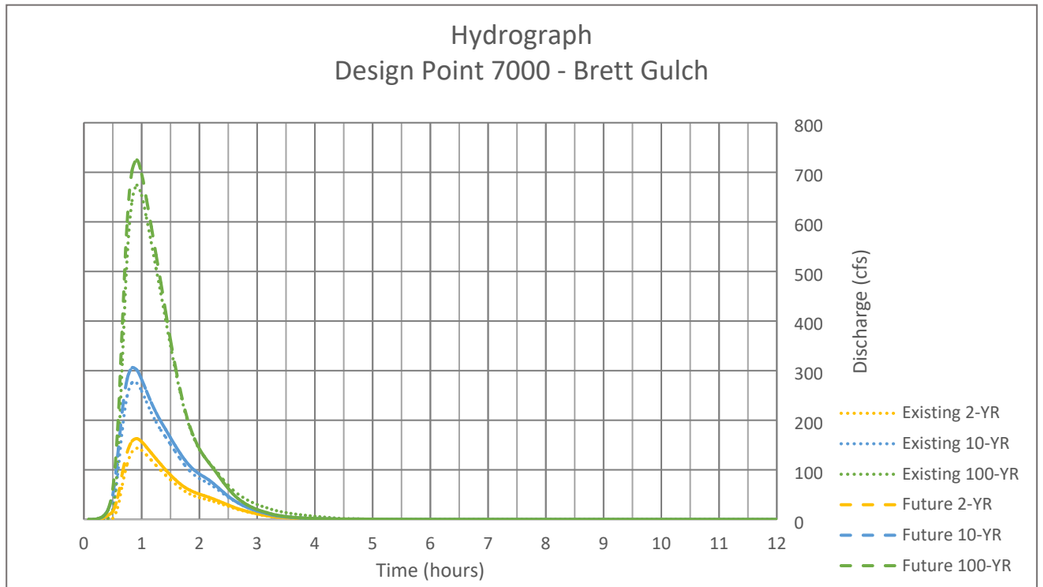

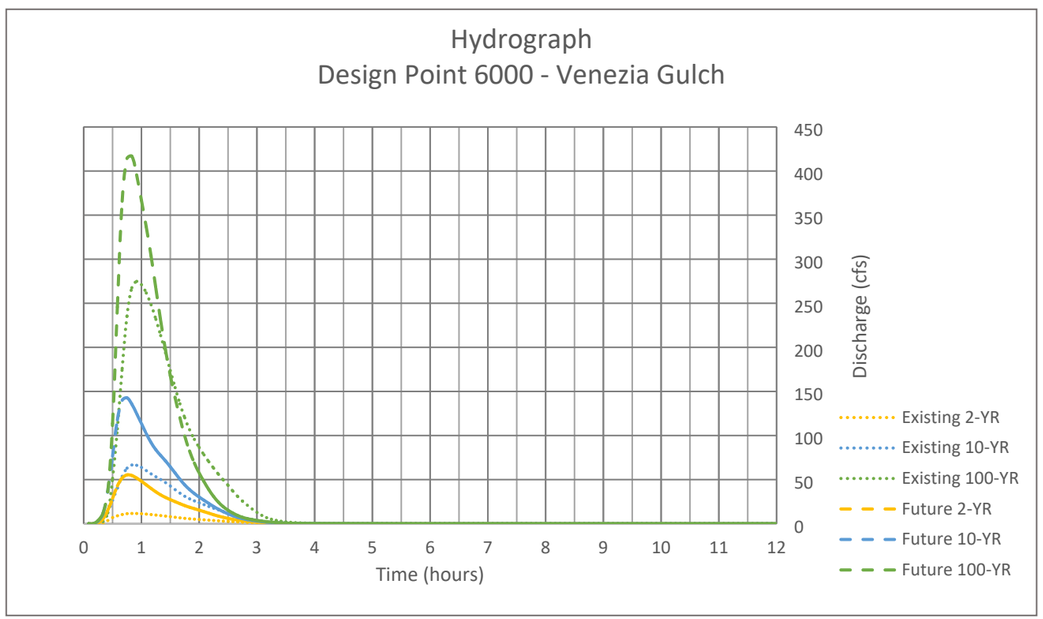

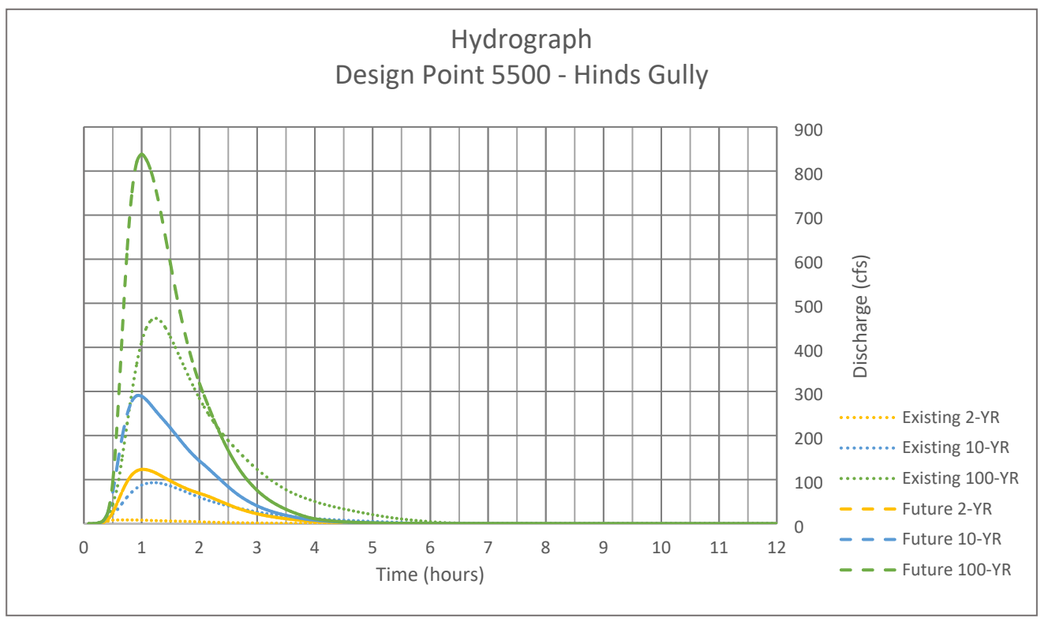

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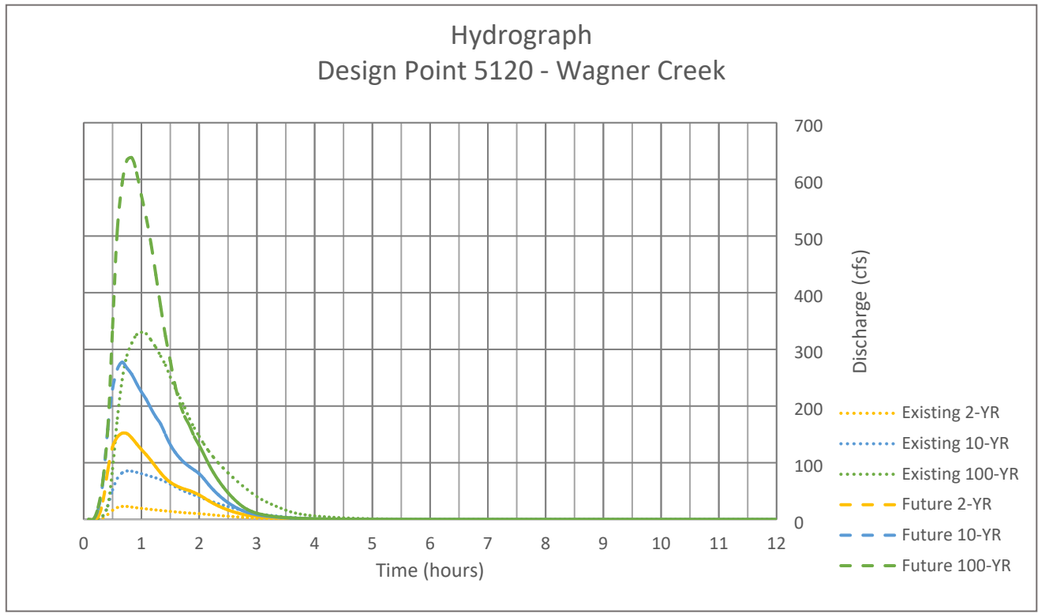

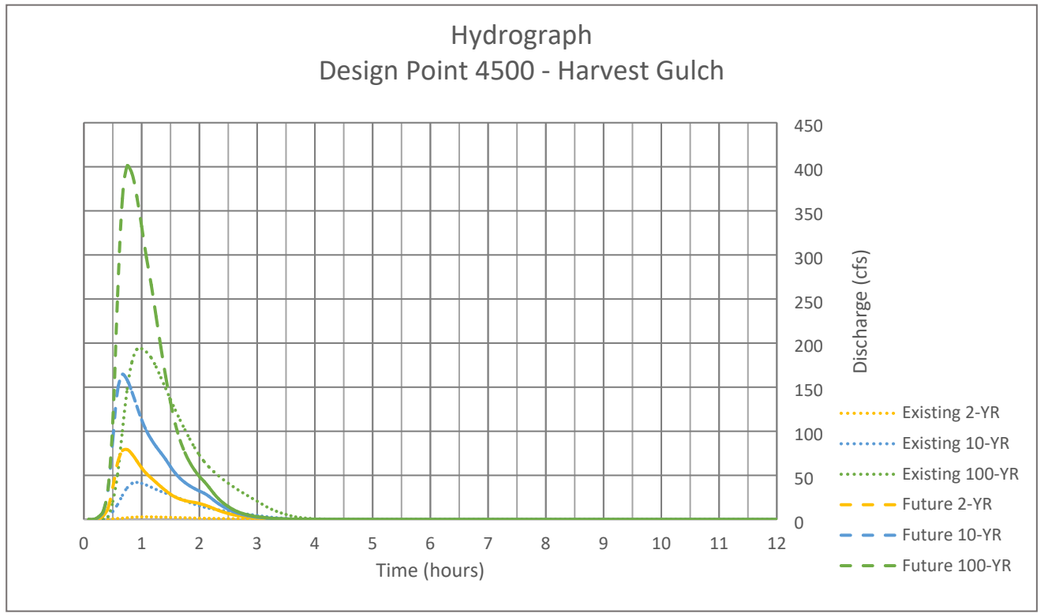

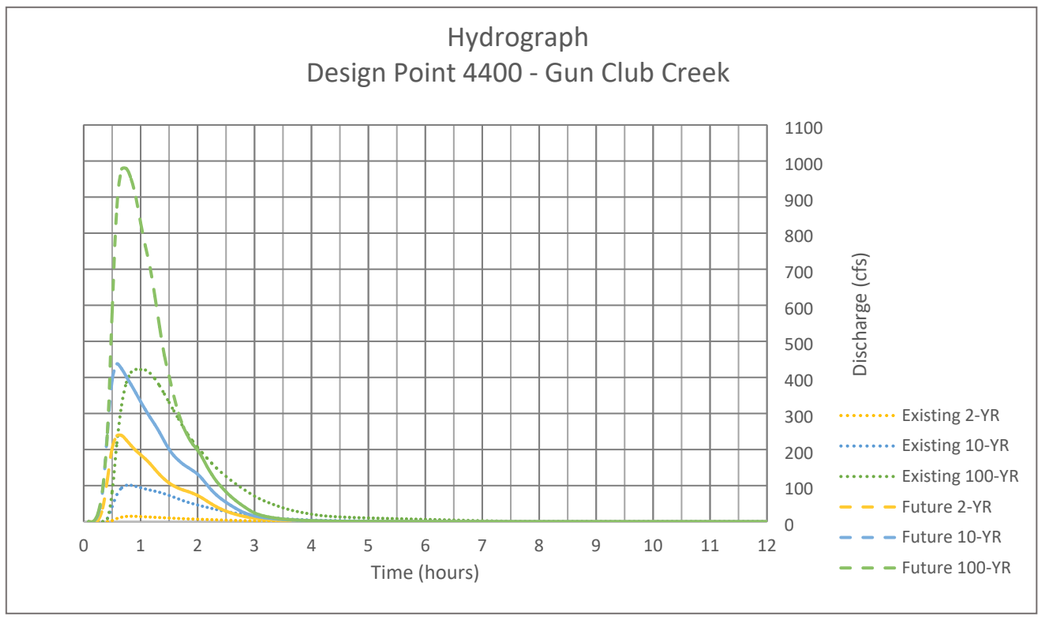

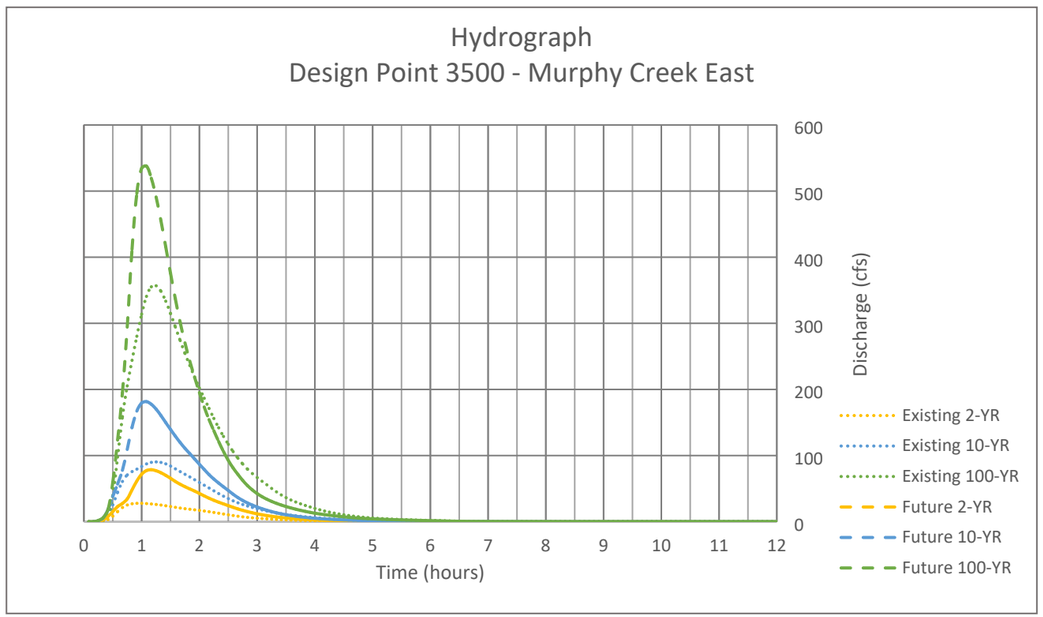

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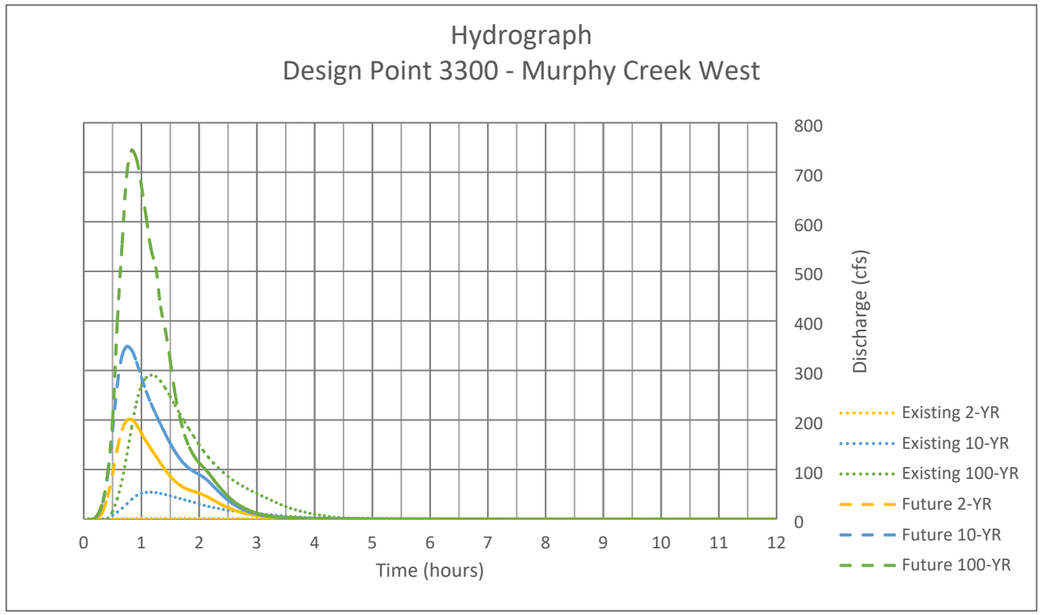
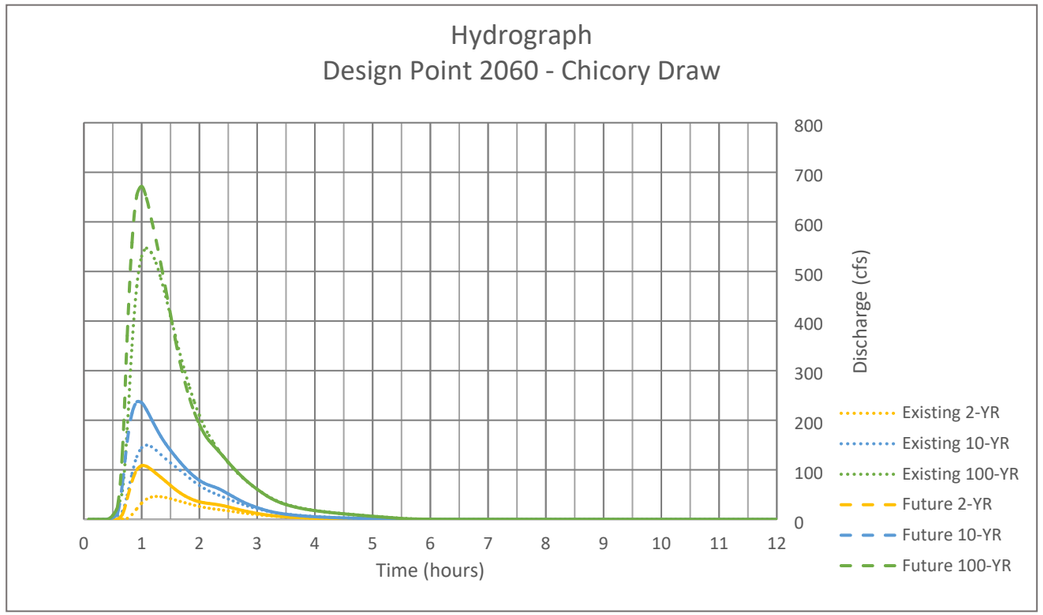
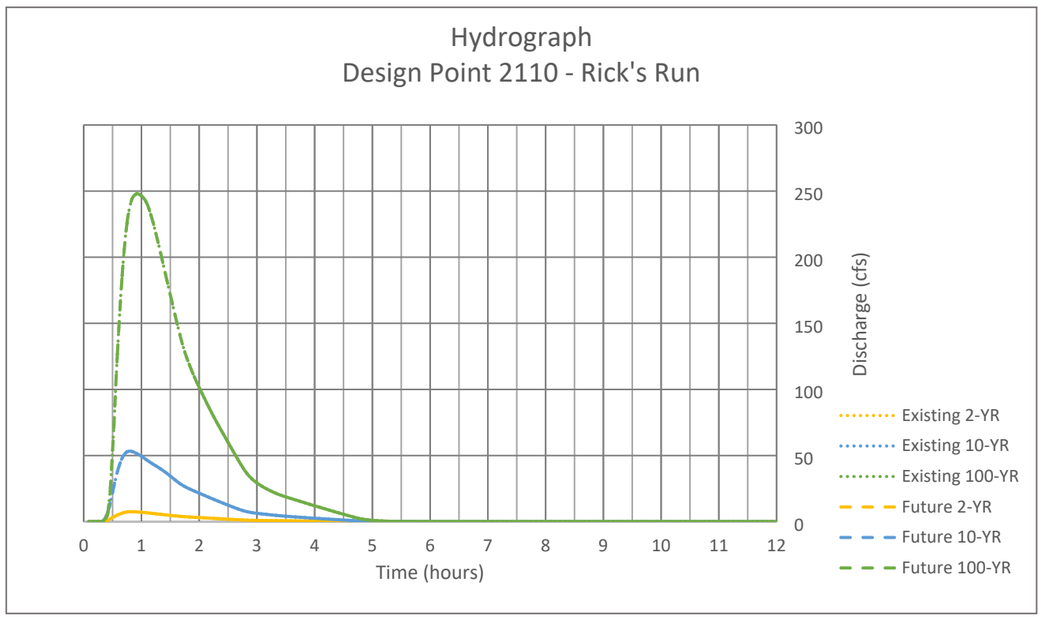






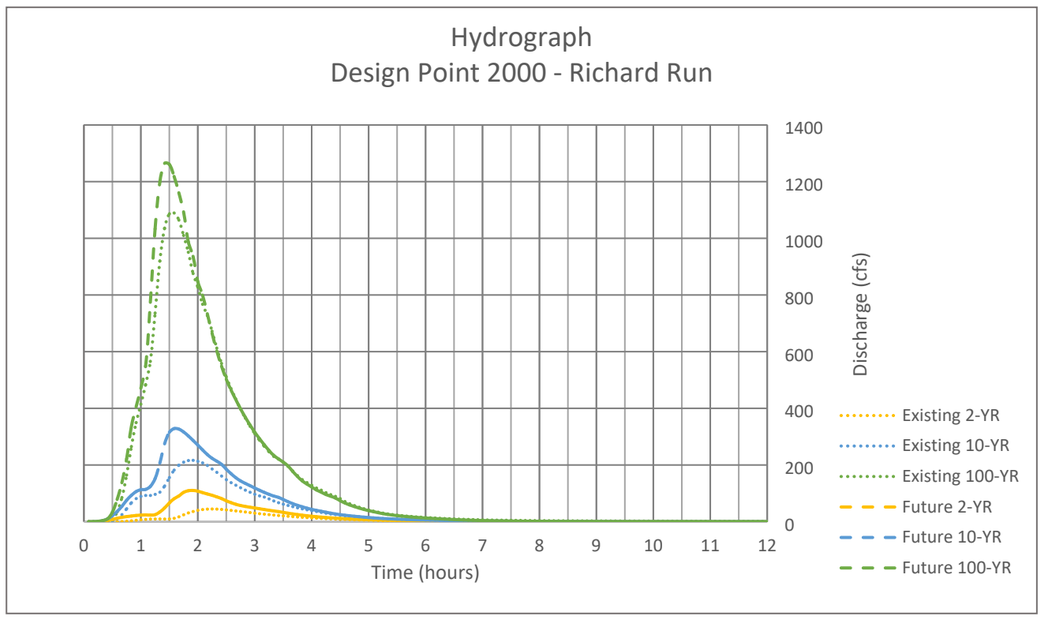
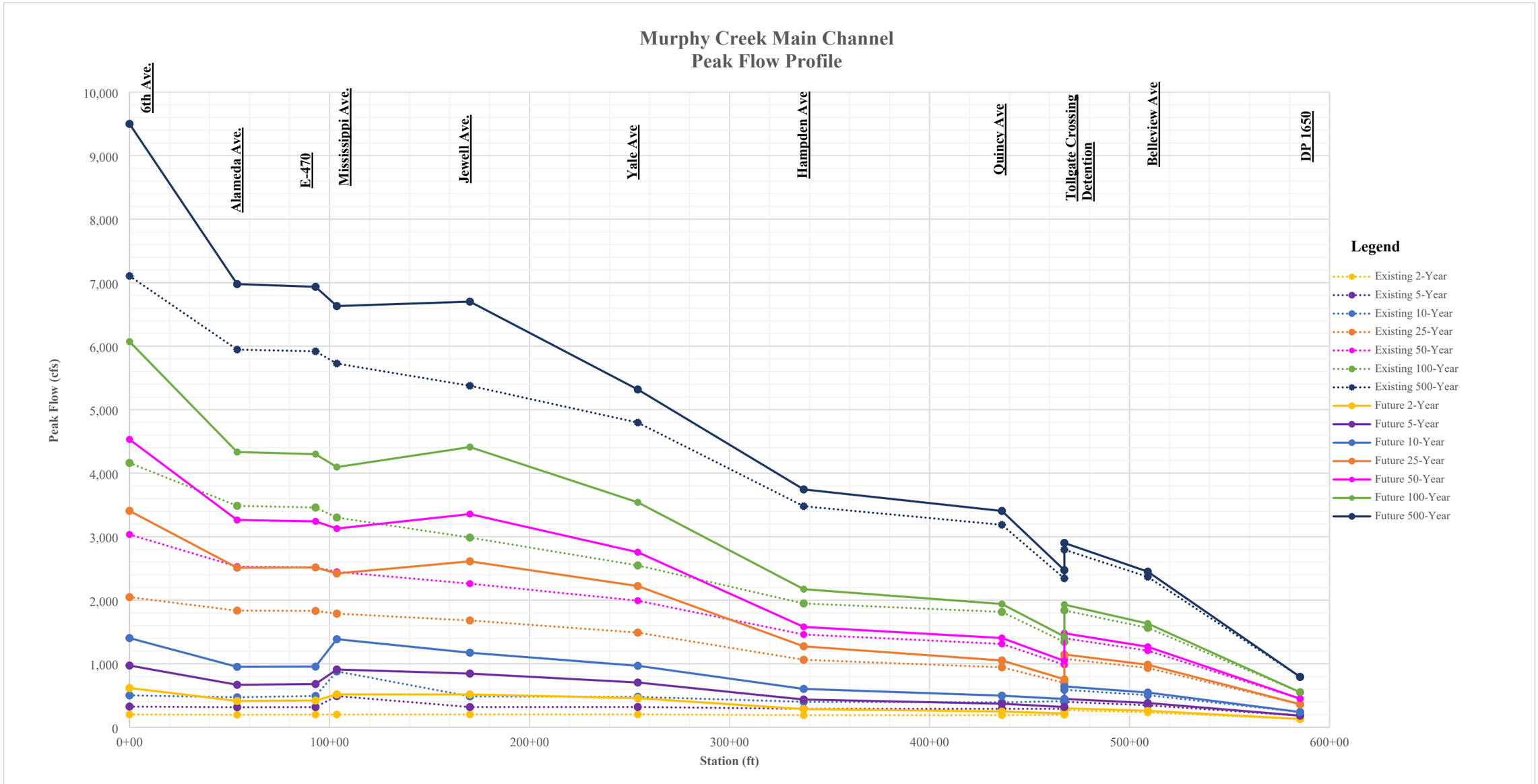
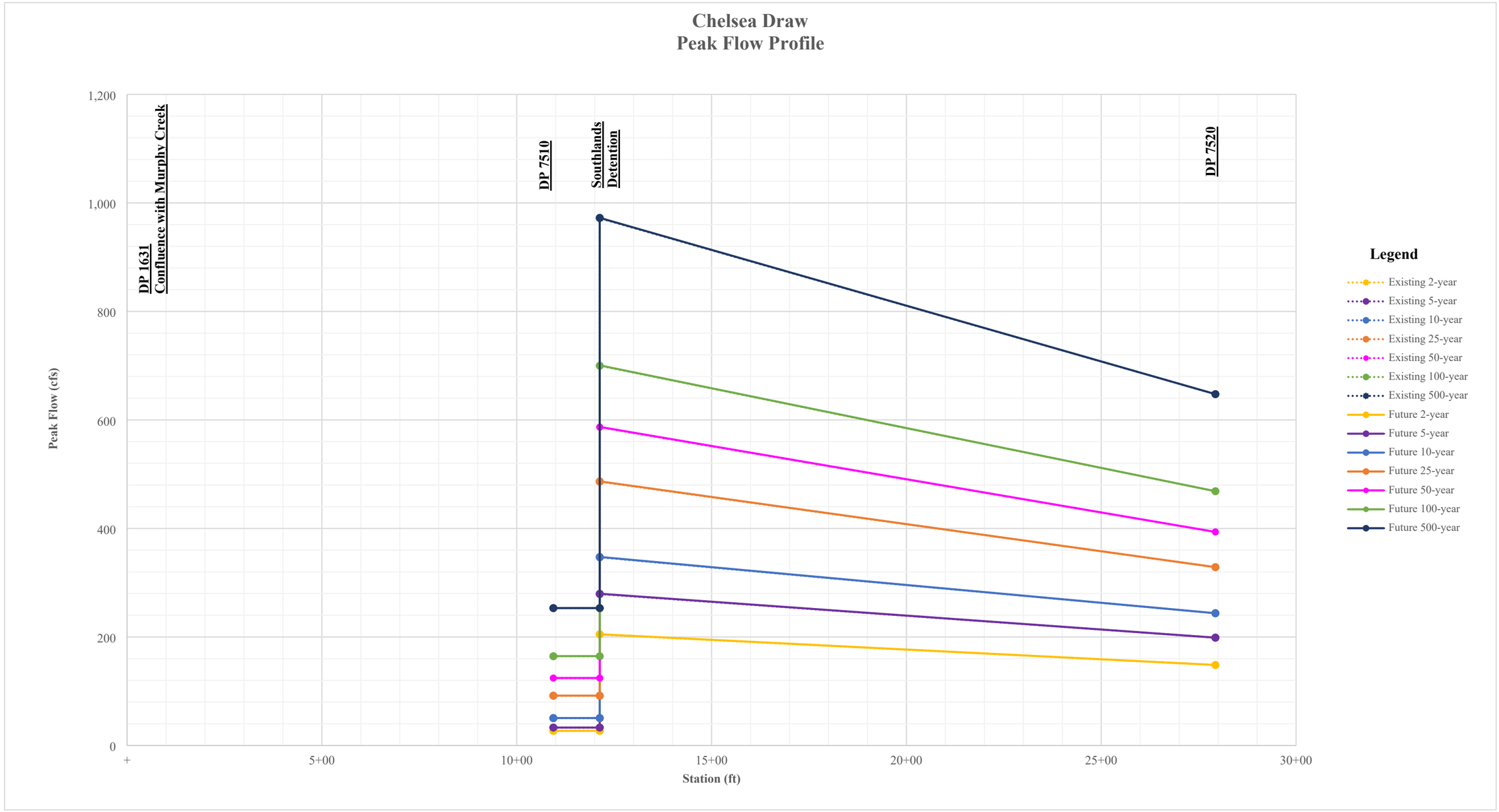


FIGURE B-4
Peak Flow Profiles



*For the 2-, 5-, and 10-year storm events, flows at design point 1530 (Tollgate Crossing) and downstream were produced using a 2-hr storm with area correction factor.

FIGURE B-4
Peak Flow Profiles



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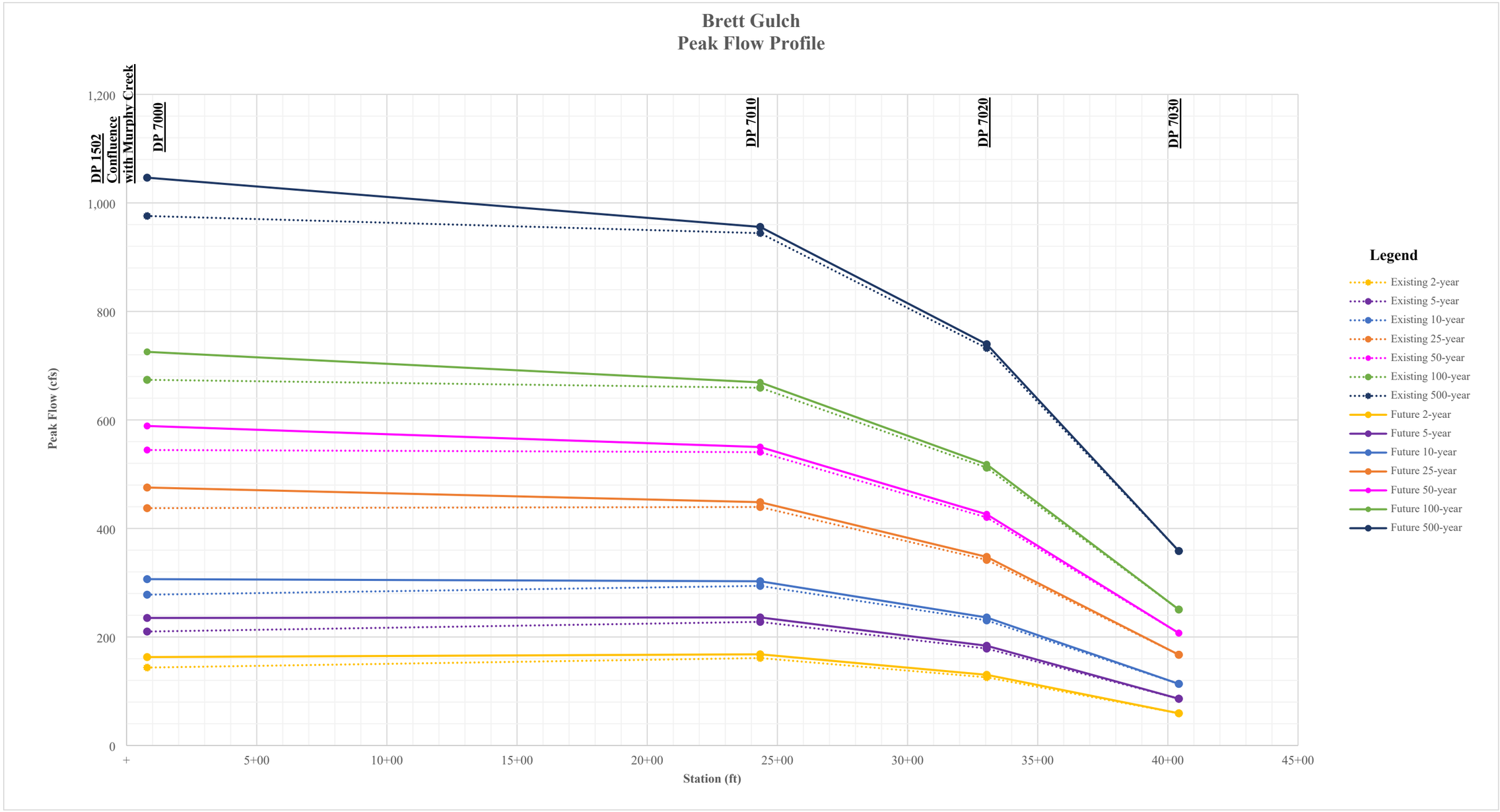

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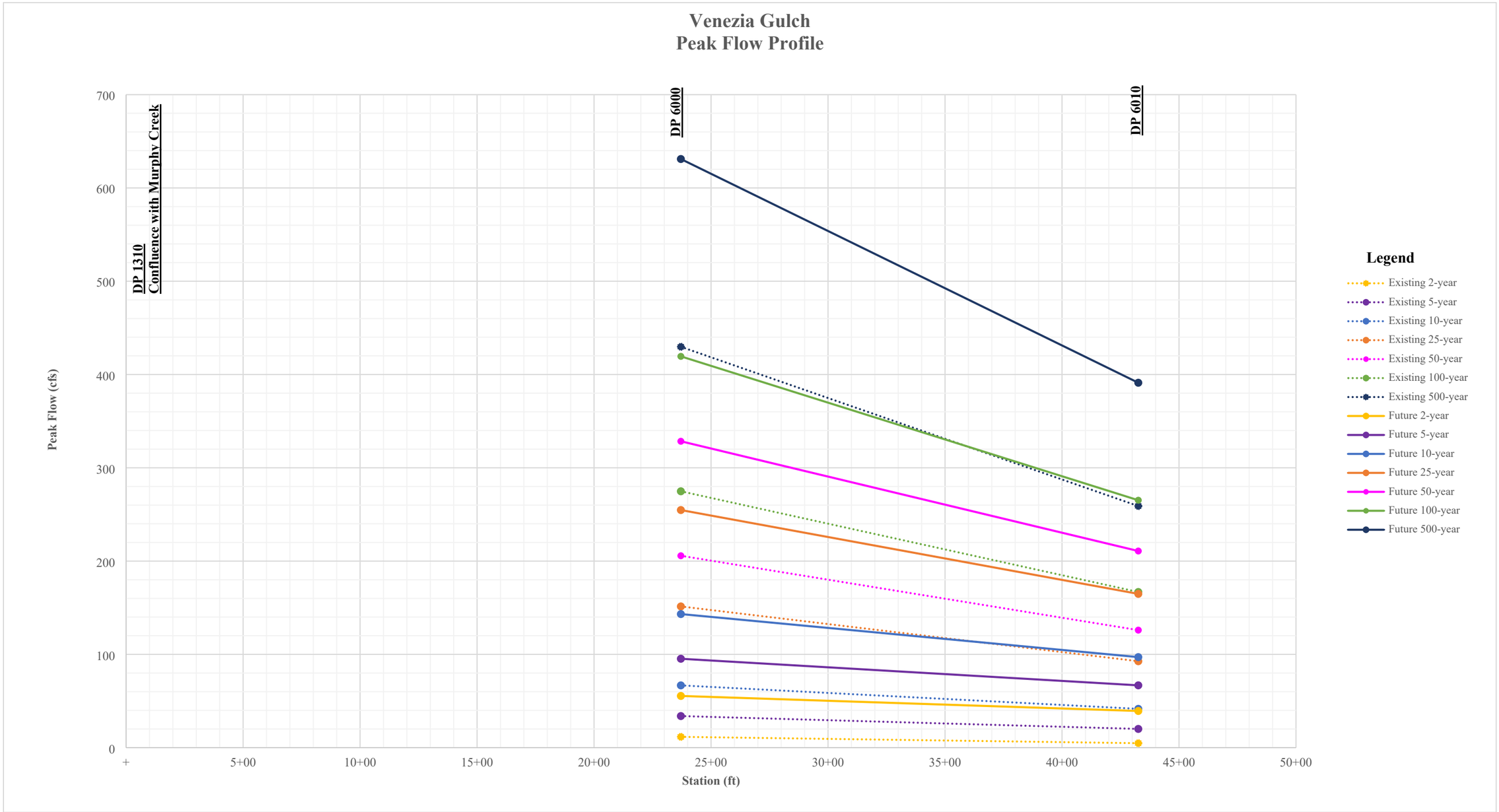

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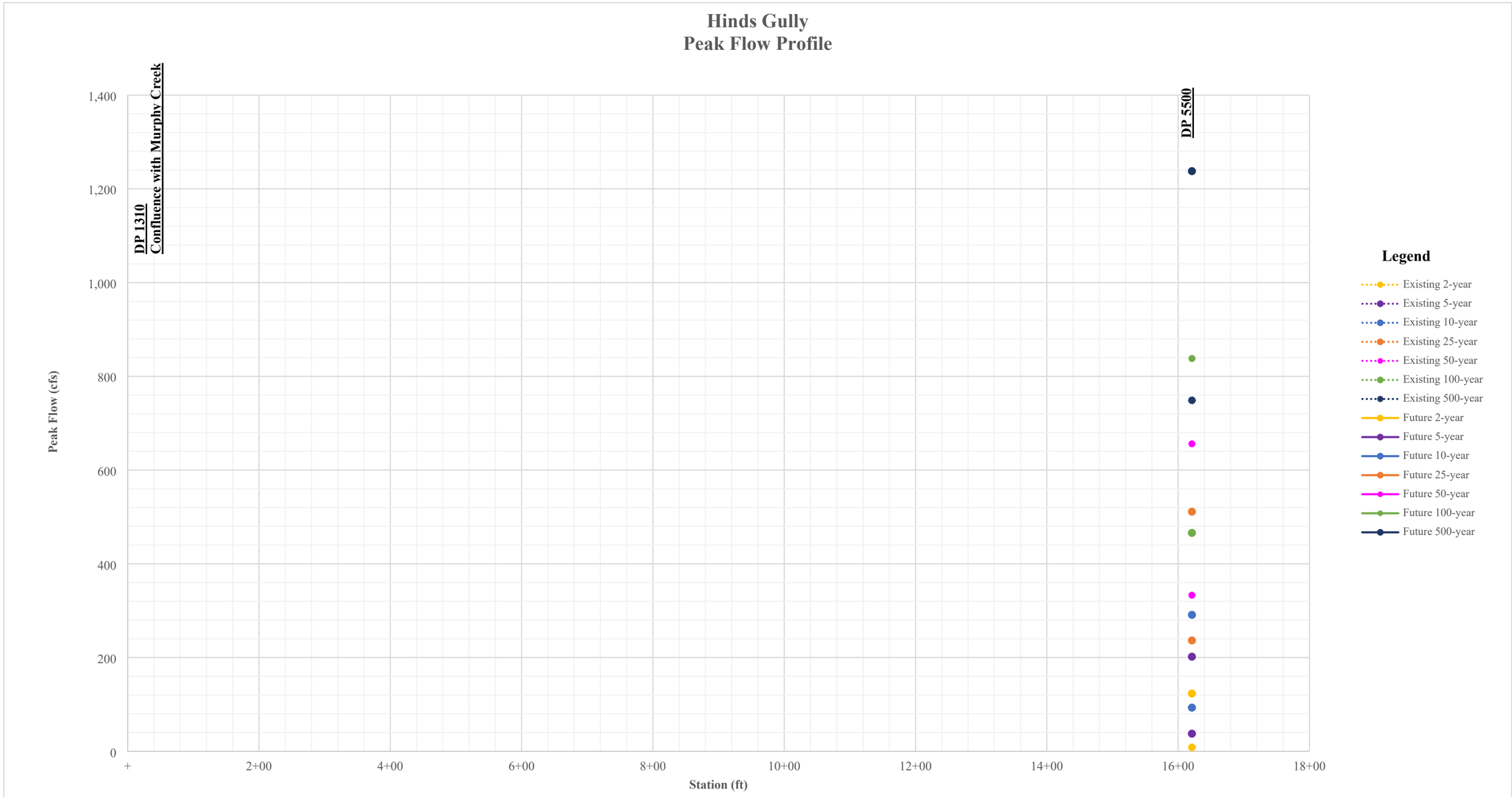

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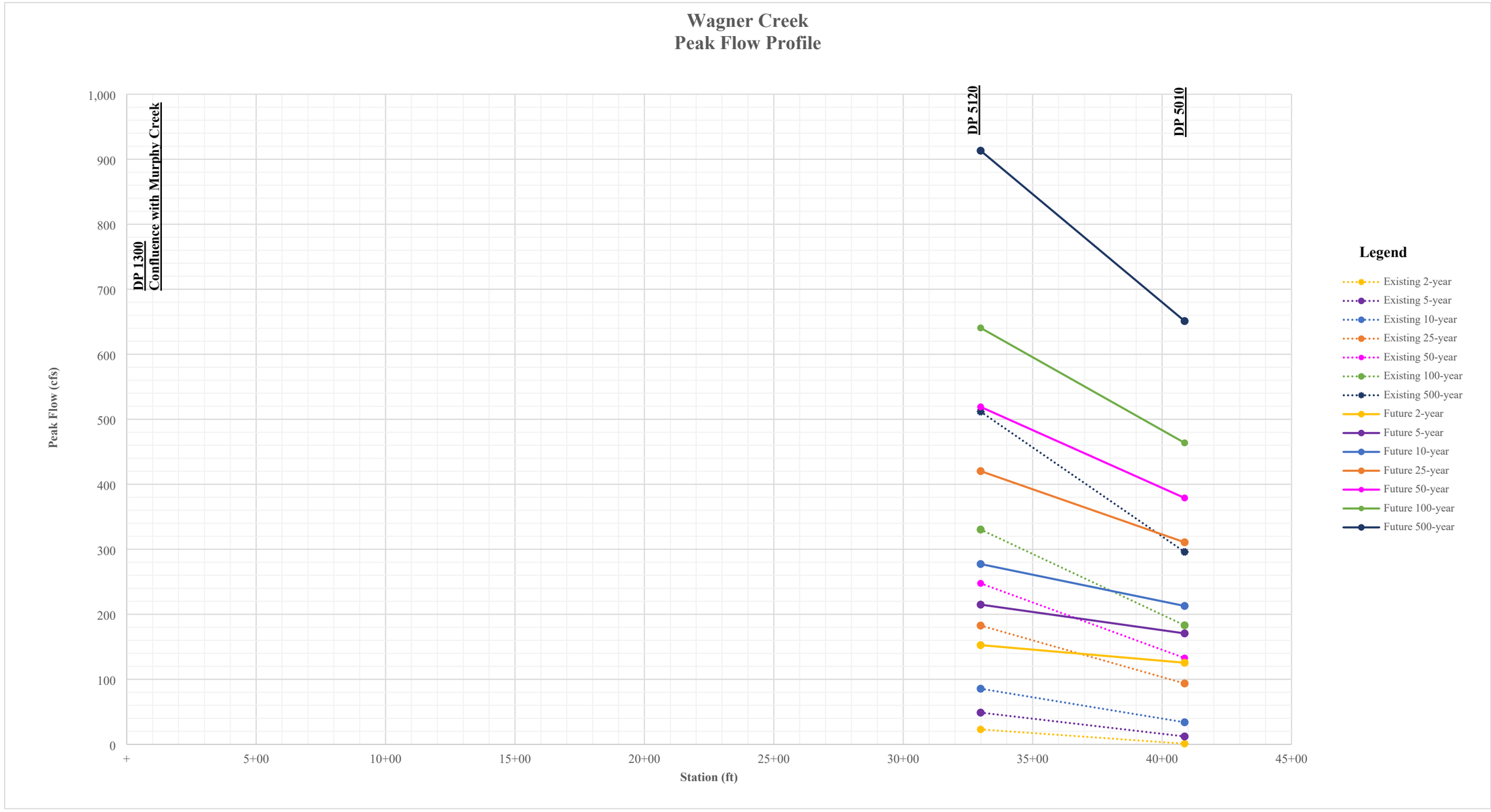

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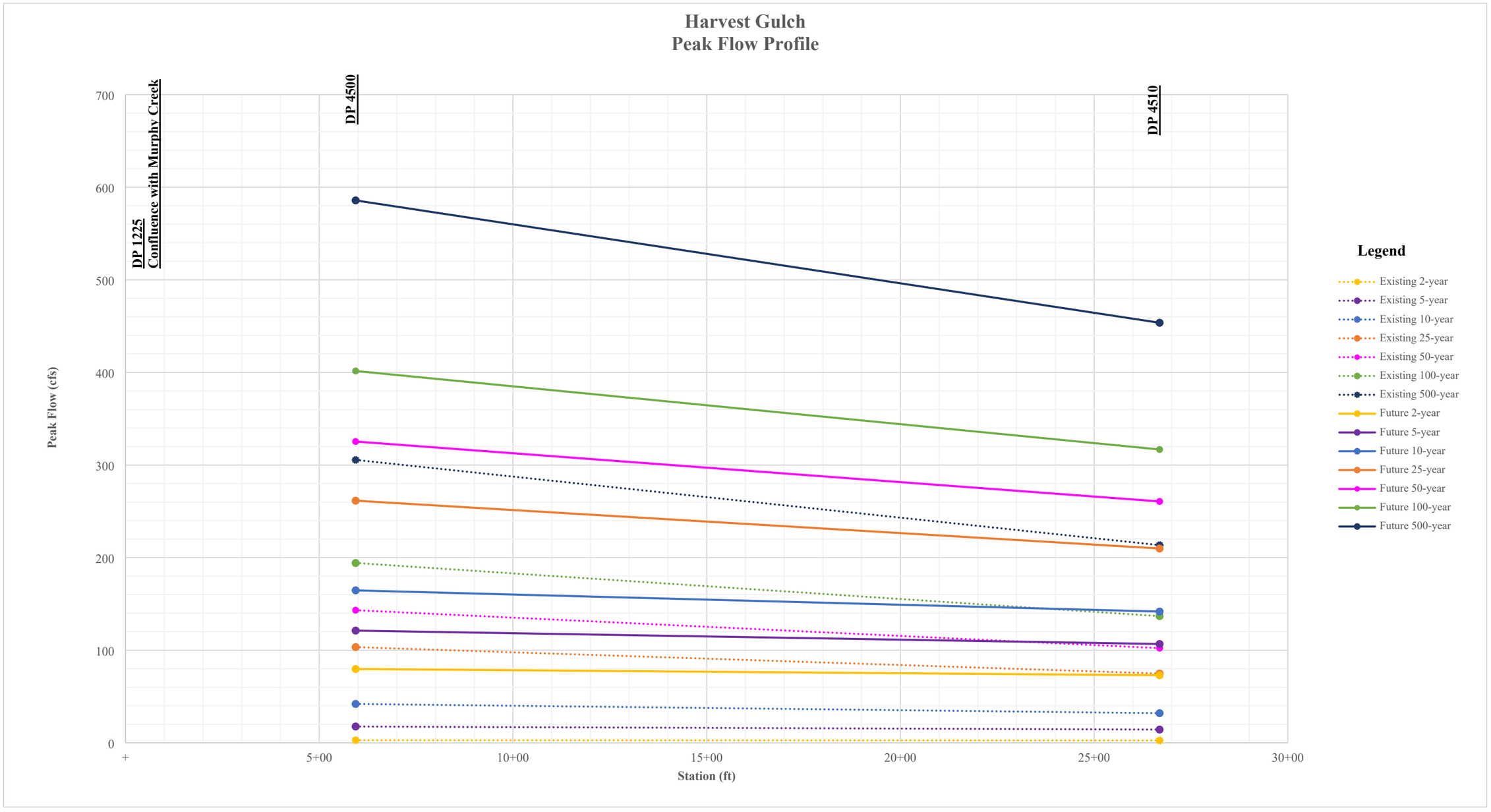

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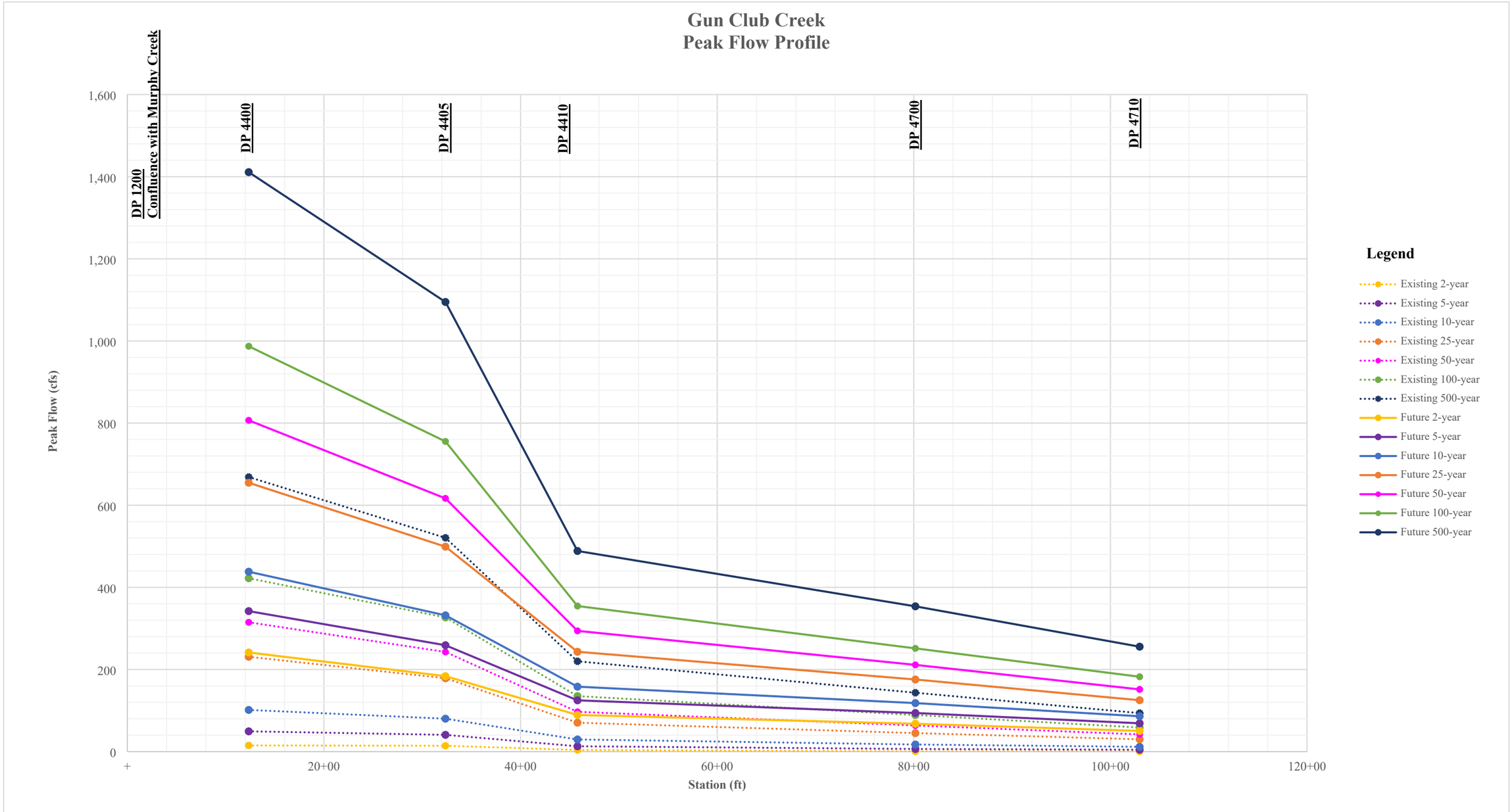

FIGURE B-4
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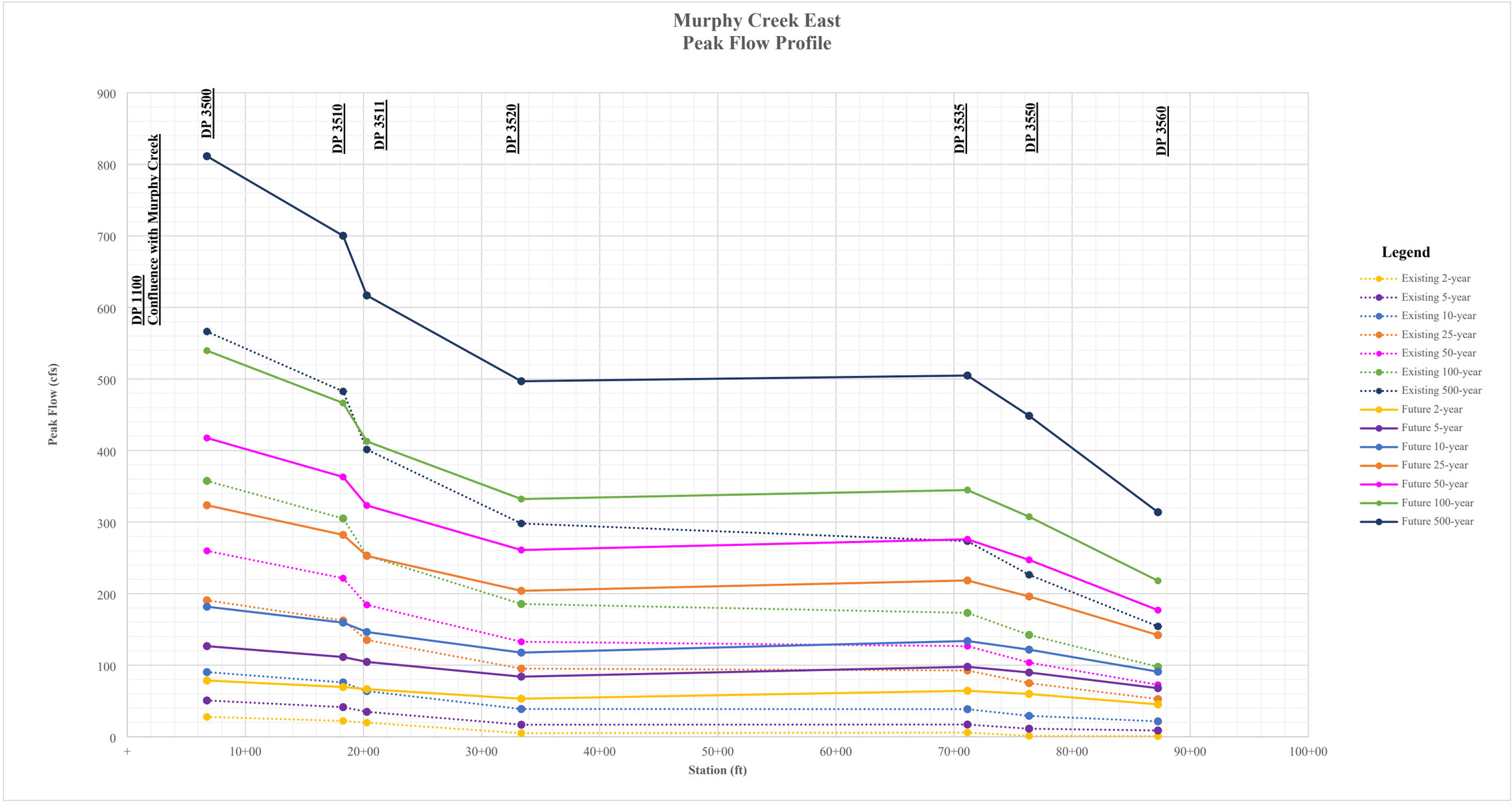

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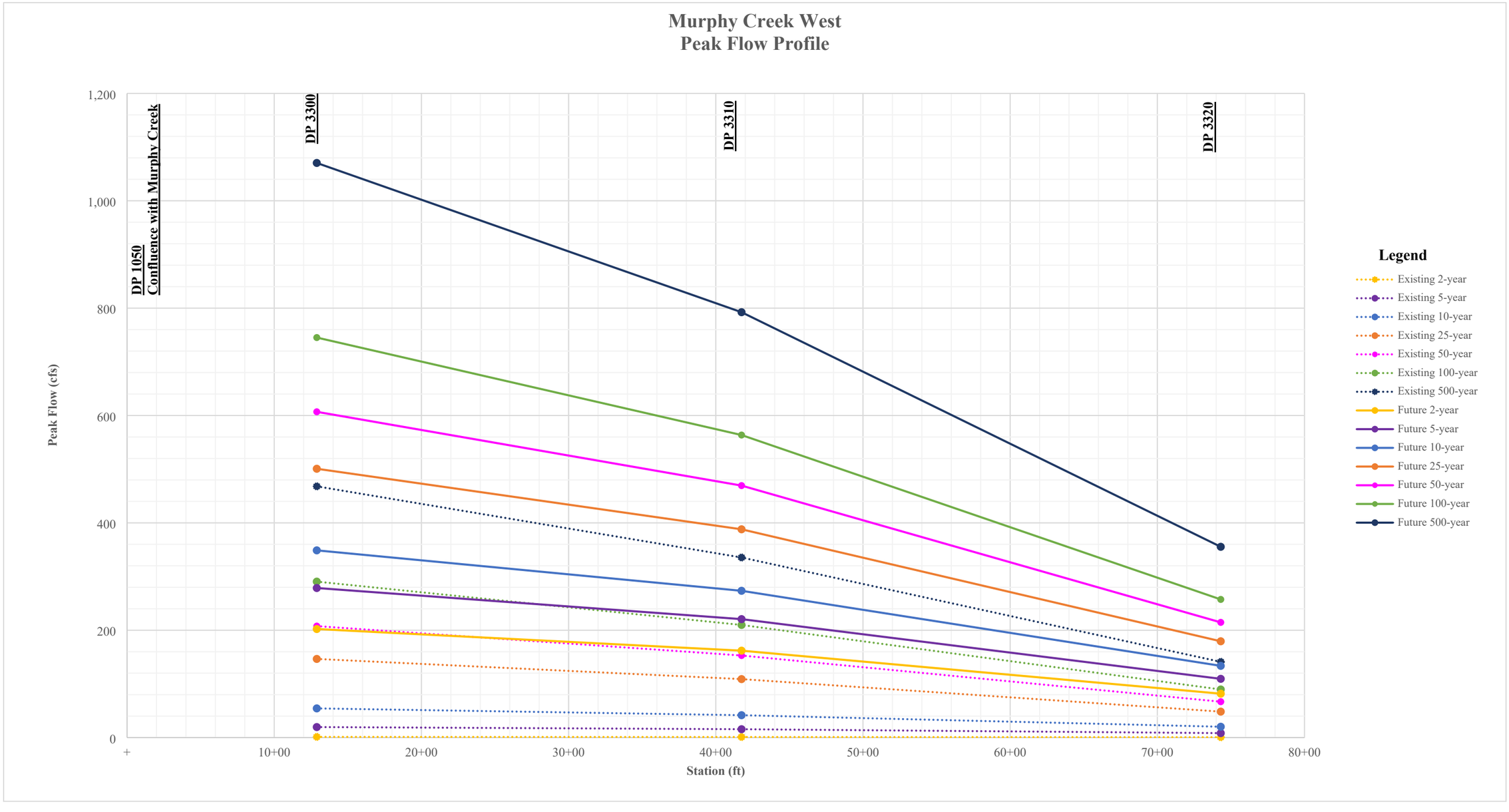

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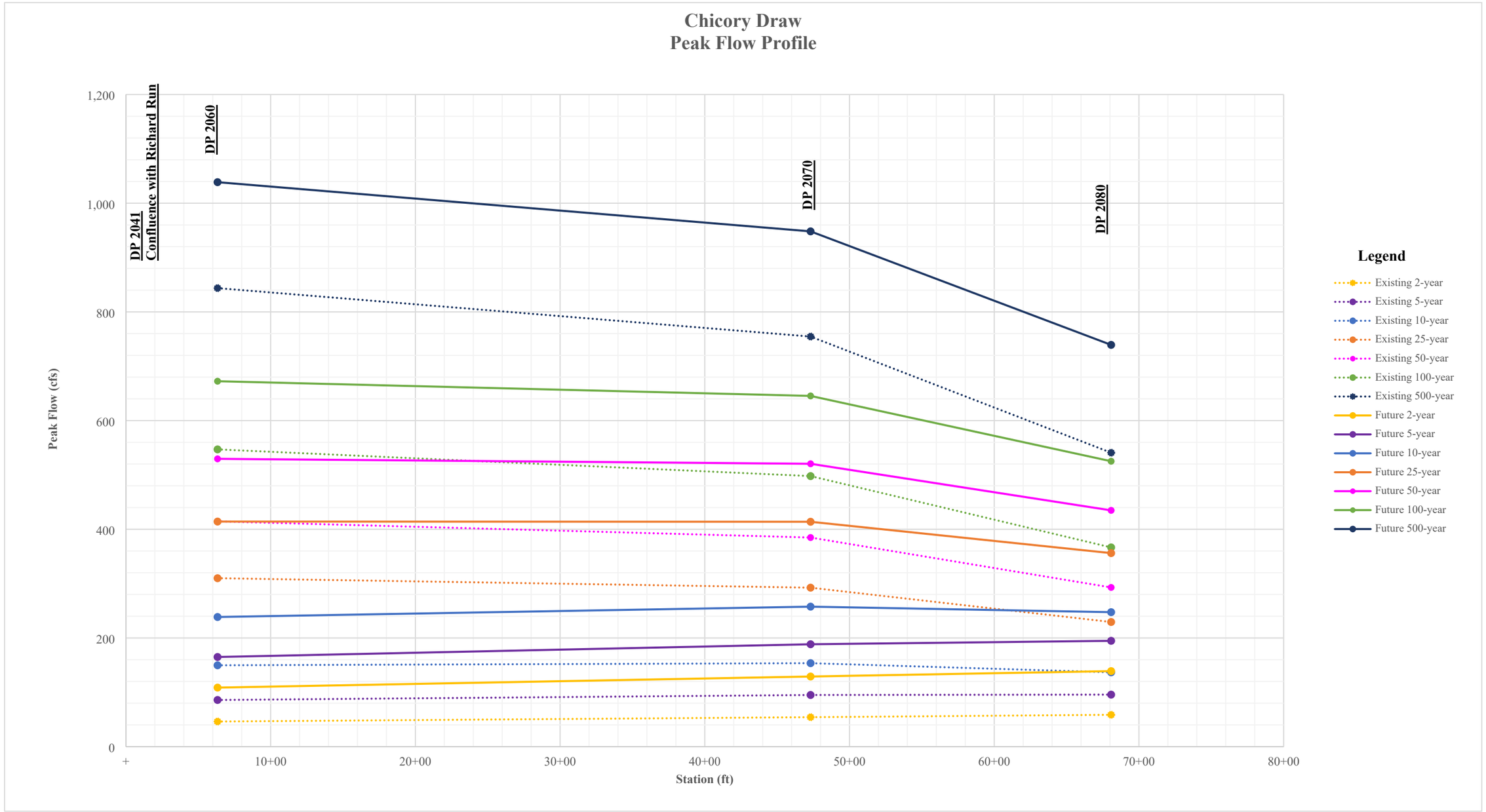

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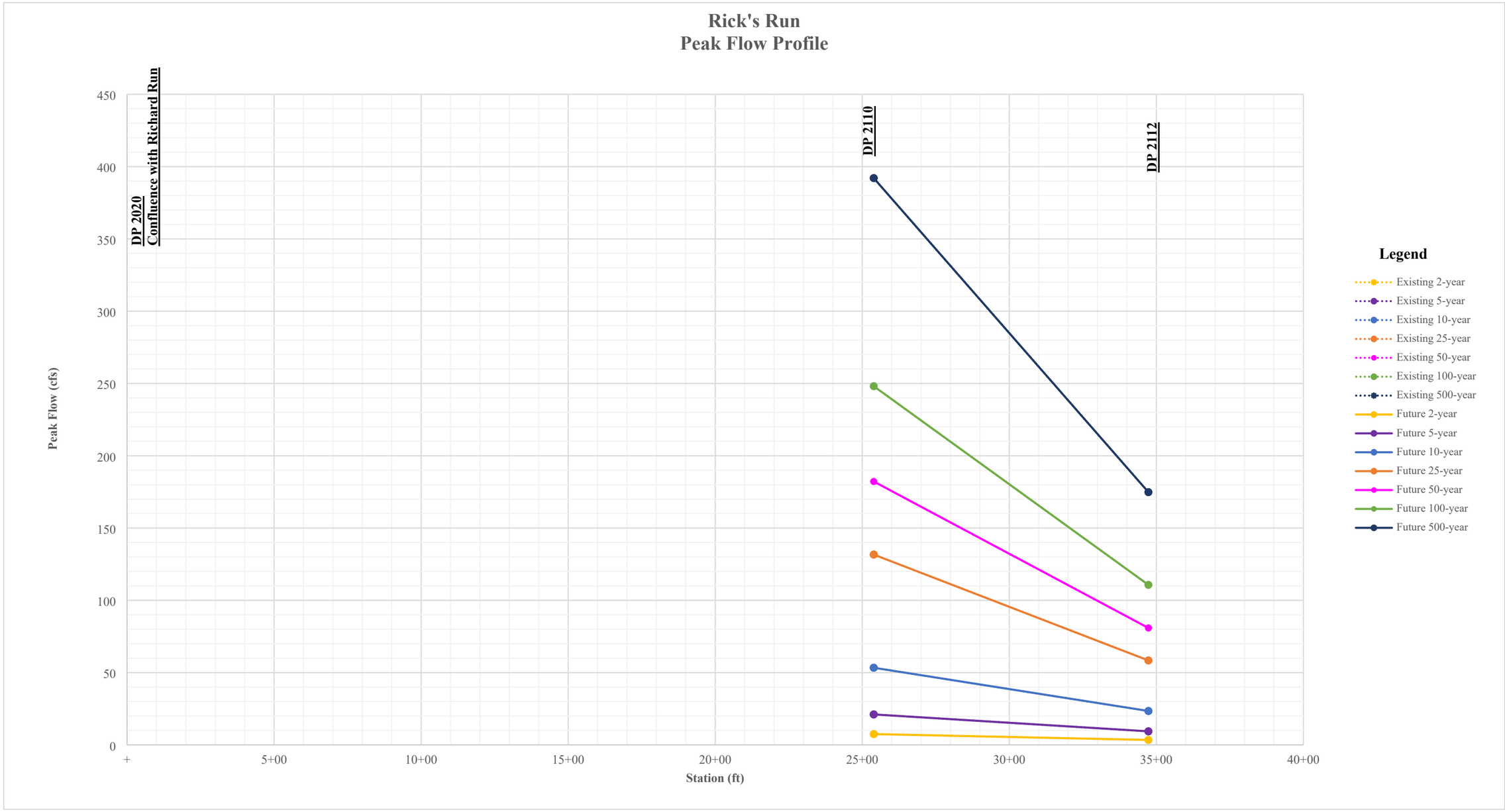

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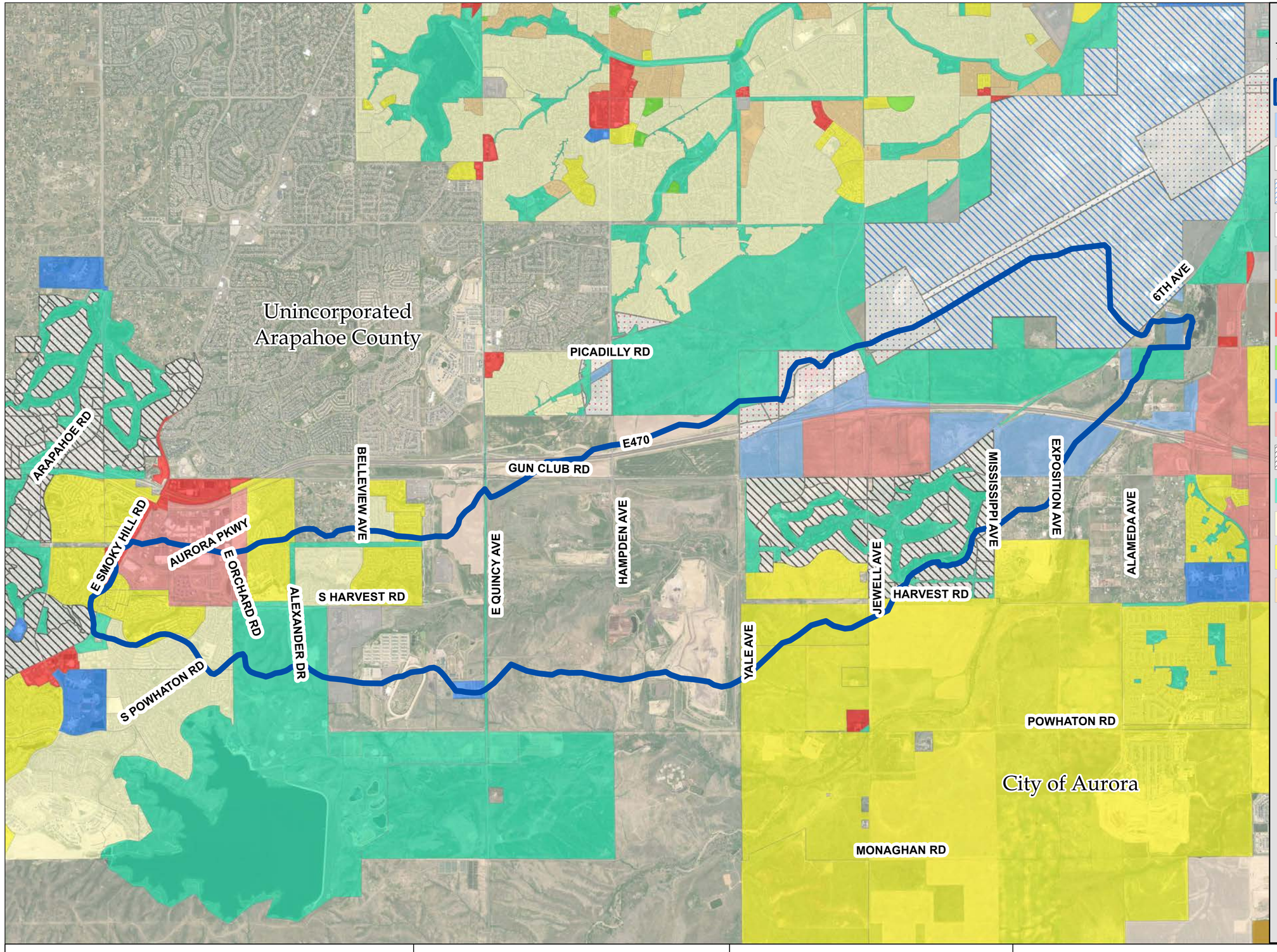
Peak Flow Profiles



Legend

- Murphy Creek Watershed
- Airport District, AD
- Accident Potential Zone, APZ
- Buckley Air Force Base, BAFB
- Buckley AFB Accident Potential Zone, BAFB APZ
- Business/Tech District, I-1
- Mixed Use - Airport, MU-A
- Mixed Use - Corridor District, MU-C
- Mixed Use - Neighborhood, MU-N
- Mixed Use - Office/Institutional, MU-OI
- Mixed Use - Regional District, MU-R
- Planned Development, PD
- Parks and Open Space, POS
- Low Density Single-Family Residential, R-1
- Medium Density Residential, R-2
- Medium Density Multifamily Residential, R-3

W S N E

1 inch = 4,000 feet

0 2,000 4,000

Feet

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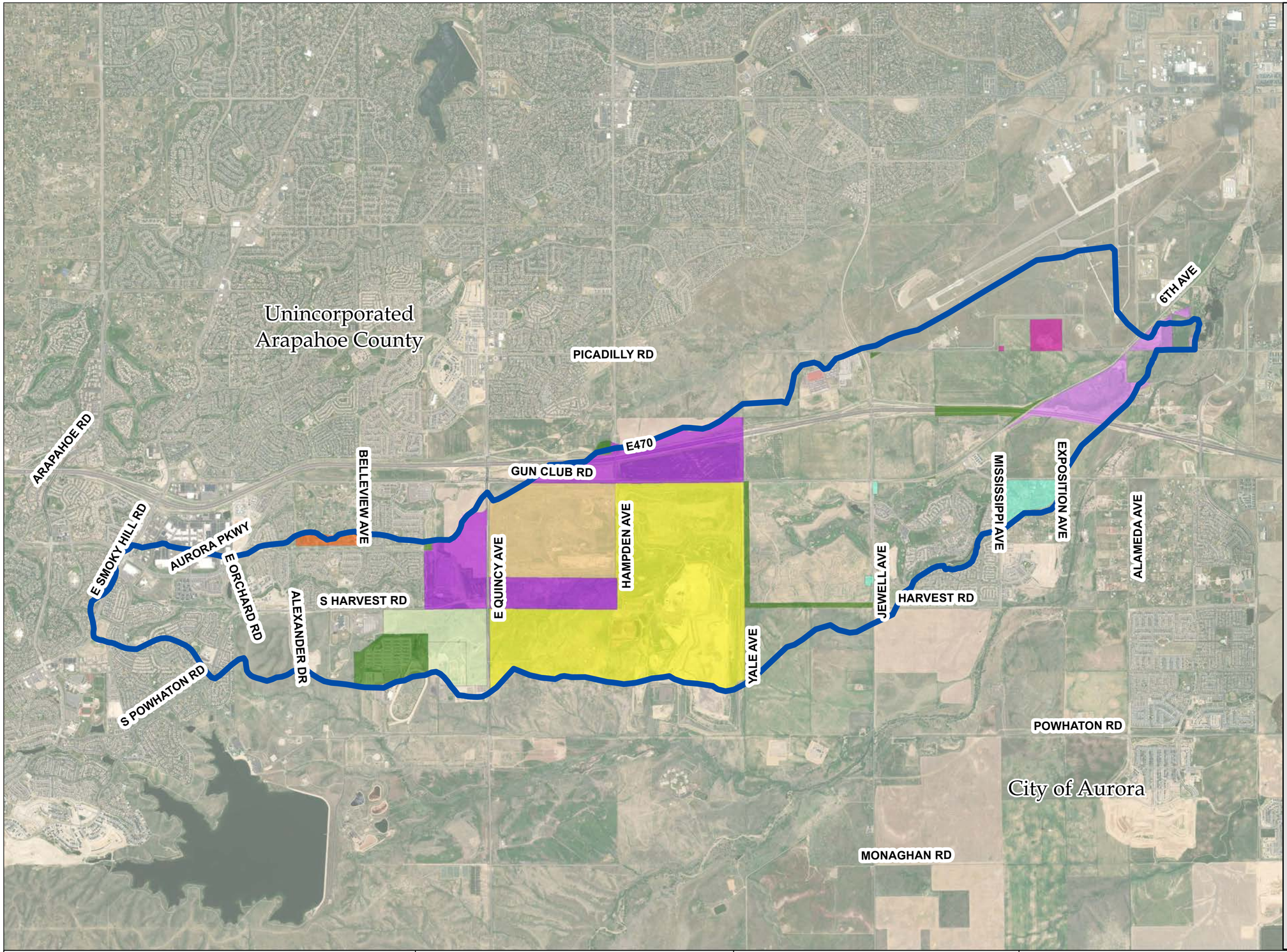
MHFD MILE HIGH FLOOD DISTRICT | AURORA | Southeast Metro Stormwater Authority | ARAPAHOE COUNTY COLORADO'S FIRST

MURPHY CREEK
MAJOR DRAINAGEWAY PLAN

CITY OF AURORA ZONING MAP

NOVEMBER 2022

FIGURE
B-5A



Legend

- Murphy Creek Watershed
- Open Space, OS
- Single-Family Detached / Light Intensity, SF
- Fairgrounds, PF
- Denver Arapahoe Disposal Site (Industrial) DADs
- Lowry Superfund Site (Industrial), LSS
- Urban Residential, UR
- Employment, EMP
- Regional Commercial, RC
- Lowry Trust Properties (Industrial), LTP

W S N E

1 inch = 4,000 feet

0 2,000 4,000

Feet

MERRICK®
Merrick and Company
2480 W 26th Ave, Unit B225
Denver, CO 80211
Phone: 303-964-3333

MHFD MILE HIGH FLOOD DISTRICT | AURORA | Southeast Metro Stormwater Authority | ARAPAHOE COUNTY COLORADO'S FIRST

MURPHY CREEK
MAJOR DRAINAGEWAY PLAN

ARAPAHOE COUNTY LAND USE MAP
2018 COMPREHENSIVE PLAN

NOVEMBER 2022

FIGURE
B-5B

TABLE B-1
Design Rainfall Distributions

Return Period	2-Year	
1-hr Point Rainfall Depth (in)	0.859	
6-hr Point Rainfall Depth (in)	1.35	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0172	0.0172
0:10	0.0344	0.0344
0:15	0.0665	0.0722
0:20	0.0973	0.1374
0:25	0.1520	0.2148
0:30	0.0851	0.1203
0:35	0.0499	0.0541
0:40	0.0396	0.0430
0:45	0.0261	0.0258
0:50	0.0261	0.0258
0:55	0.0261	0.0258
1:00	0.0261	0.0258
1:05	0.0261	0.0258
1:10	0.0174	0.0172
1:15	0.0174	0.0172
1:20	0.0174	0.0172
1:25	0.0174	0.0172
1:30	0.0174	0.0172
1:35	0.0174	0.0172
1:40	0.0174	0.0172
1:45	0.0174	0.0172
1:50	0.0174	0.0172
1:55	0.0087	0.0086
2:00	0.0087	0.0086
Total Depth (in)	**0.8463**	**0.9939**

Return Period	5-Year	
1-hr Point Rainfall Depth (in)	1.14	
6-hr Point Rainfall Depth (in)	1.76	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0228	0.0228
0:10	0.0422	0.0422
0:15	0.0914	0.0992
0:20	0.1235	0.1744
0:25	0.2018	0.2850
0:30	0.1049	0.1482
0:35	0.0610	0.0661
0:40	0.0462	0.0502
0:45	0.0415	0.0410
0:50	0.0415	0.0410
0:55	0.0346	0.0342
1:00	0.0346	0.0342
1:05	0.0346	0.0342
1:10	0.0346	0.0342
1:15	0.0288	0.0285
1:20	0.0254	0.0251
1:25	0.0254	0.0251
1:30	0.0254	0.0251
1:35	0.0254	0.0251
1:40	0.0173	0.0171
1:45	0.0173	0.0171
1:50	0.0173	0.0171
1:55	0.0173	0.0171
2:00	0.0150	0.0148
Total Depth (in)	**1.1299**	**1.3190**

Return Period	10-Year	
1-hr Point Rainfall Depth (in)	1.4	
6-hr Point Rainfall Depth (in)	2.13	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0280	0.0280
0:10	0.0518	0.0518
0:15	0.1058	0.1148
0:20	0.1487	0.2100
0:25	0.2478	0.3500
0:30	0.1189	0.1680
0:35	0.0723	0.0784
0:40	0.0555	0.0602
0:45	0.0538	0.0532
0:50	0.0453	0.0448
0:55	0.0453	0.0448
1:00	0.0453	0.0448
1:05	0.0453	0.0448
1:10	0.0453	0.0448
1:15	0.0453	0.0448
1:20	0.0354	0.0350
1:25	0.0269	0.0266
1:30	0.0269	0.0266
1:35	0.0269	0.0266
1:40	0.0269	0.0266
1:45	0.0269	0.0266
1:50	0.0269	0.0266
1:55	0.0241	0.0238
2:00	0.0184	0.0182
Total Depth (in)	**1.3942**	**1.6198**

Return Period	25-Year	
1-hr Point Rainfall Depth (in)	1.79	
6-hr Point Rainfall Depth (in)	2.7	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0233	0.0233
0:10	0.0626	0.0626
0:15	0.0895	0.0895
0:20	0.1432	0.1432
0:25	0.2685	0.2685
0:30	0.4475	0.4475
0:35	0.2148	0.2148
0:40	0.1432	0.1432
0:45	0.0895	0.0895
0:50	0.0895	0.0895
0:55	0.0573	0.0573
1:00	0.0573	0.0573
1:05	0.0573	0.0573
1:10	0.0430	0.0430
1:15	0.0430	0.0430
1:20	0.0322	0.0322
1:25	0.0322	0.0322
1:30	0.0251	0.0251
1:35	0.0251	0.0251
1:40	0.0251	0.0251
1:45	0.0251	0.0251
1:50	0.0251	0.0251
1:55	0.0251	0.0251
2:00	0.0251	0.0251
Total Depth (in)	**2.0692**	**2.0692**

Return Period	50-Year	
1-hr Point Rainfall Depth (in)	2.12	
6-hr Point Rainfall Depth (in)	3.18	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0276	0.0276
0:10	0.0742	0.0742
0:15	0.1060	0.1060
0:20	0.1696	0.1696
0:25	0.3180	0.3180
0:30	0.5300	0.5300
0:35	0.2544	0.2544
0:40	0.1696	0.1696
0:45	0.1060	0.1060
0:50	0.1060	0.1060
0:55	0.0678	0.0678
1:00	0.0678	0.0678
1:05	0.0678	0.0678
1:10	0.0509	0.0509
1:15	0.0509	0.0509
1:20	0.0382	0.0382
1:25	0.0382	0.0382
1:30	0.0297	0.0297
1:35	0.0297	0.0297
1:40	0.0297	0.0297
1:45	0.0297	0.0297
1:50	0.0297	0.0297
1:55	0.0297	0.0297
2:00	0.0297	0.0297
Total Depth (in)	**2.4507**	**2.4507**

Return Period	100-Year	
1-hr Point Rainfall Depth (in)	2.47	
6-hr Point Rainfall Depth (in)	3.7	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0247	0.0247
0:10	0.0741	0.0741
0:15	0.1136	0.1136
0:20	0.1976	0.1976
0:25	0.3458	0.3458
0:30	0.6175	0.6175
0:35	0.3458	0.3458
0:40	0.1976	0.1976
0:45	0.1531	0.1531
0:50	0.1235	0.1235
0:55	0.0988	0.0988
1:00	0.0988	0.0988
1:05	0.0988	0.0988
1:10	0.0494	0.0494
1:15	0.0494	0.0494
1:20	0.0296	0.0296
1:25	0.0296	0.0296
1:30	0.0296	0.0296
1:35	0.0296	0.0296
1:40	0.0296	0.0296
1:45	0.0296	0.0296
1:50	0.0296	0.0296
1:55	0.0296	0.0296
2:00	0.0296	0.0296
Total Depth (in)	**2.8553**	**2.8553**

Return Period	500-Year	
1-hr Point Rainfall Depth (in)	3.38	
6-hr Point Rainfall Depth (in)	5.06	
Time	**Adjusted Depth**	**Unadjusted Depth**
0:05	0.0338	0.0338
0:10	0.1014	0.1014
0:15	0.1555	0.1555
0:20	0.2704	0.2704
0:25	0.4732	0.4732
0:30	0.8450	0.8450
0:35	0.4732	0.4732
0:40	0.2704	0.2704
0:45	0.2096	0.2096
0:50	0.1690	0.1690
0:55	0.1352	0.1352
1:00	0.1352	0.1352
1:05	0.1352	0.1352
1:10	0.0676	0.0676
1:15	0.0676	0.0676
1:20	0.0406	0.0406
1:25	0.0406	0.0406
1:30	0.0406	0.0406
1:35	0.0406	0.0406
1:40	0.0406	0.0406
1:45	0.0406	0.0406
1:50	0.0406	0.0406
1:55	0.0406	0.0406
2:00	0.0406	0.0406
Total Depth (in)	**3.9073**	**3.9073**

TABLE B-2
Land Use, Zoning, and Imperviousness

Combined Land Use Code	Description	% Impervious	Arapahoe Zoning Code	Arapahoe Zoning Code Descriptions	Aurora Zoning Code	Aurora Zoning Code Descriptions	Notes
AG	Agricultural and Agricultural Residential (19+ acre lot size)	2	A-1, A-E	A-1 - Agricultural 1 A-E - Agricultural Estate			From Arapahoe County: A-E: 35 acre lost size minimum. A-1: 19 acre lot size minimum.
OS	Open Space	2	O, F, OS, RA	O - Open F – Floodplain OS – Open Space RA – Riparian Area	POS	POS - Parks & Open Space	
BAFB	Buckley Airforce Base	9			BAFB	BAFB - Buckley Air Force Base	Per 2008 OSP Existing Conditions.
APZC	Accident Potential Zone - Clear	10			APZ, BAFB APZ	APZ - Accident Potential Zone BAFB APZ - Buckley Air Force Base Accident Potential Zone	Per Aurora Code 2.5.1 "all land uses shall be prohibited, except those necessary for continued operation of airports and aircraft."
RR	Rural Residential (1.61+ acre lot size)	10	RR-A, RR-B, RR-C, SF D/LI	RR-A - Rural Residential A RR-B - Rural Residential B RR-C - Rural Residential C SF D/LI - Single Family Detached/Light Intensity	R-R	R-R - Rural Residential	From Arapahoe County: RR-A: 9 acre lot size minimum. RR-B: 2.41 acre lot size minimum. RR-C: 1.61 acre lot size minimum.
LDR	Low Density Residential (0.4 - 4 dwellings/acre)	30			R-1	R-1 - Low Density Single-Family Residential	
FG	Fairgrounds	40	PF	PF – Public Facility			From Arapahoe County Comprehensive Plan: Schools, libraries, recreation.
DADS	Denver Arapahoe Disposal Site Landfill (DADS)	40	DADS, LSS	DADS - Denver Arapahoe Disposal Site LSS – Lowry Superfund Site			Per Senec Creek MDP 40% to match packed gravel category from MHFD criteria (Table 6-3). From Arapahoe County: LSS – no land uses approved because of site's toxic nature.
EXPD	Existing Planned Development	60			PD	PD - Planned Development	Murphy Creek neighborhood near golf course - Only PD area zoned.
MDR	Medium Density Residential (4 - 11 dwellings/acre)	70	R-PM,	R-PM - Residential PUD – Moderate Density	R-2	R-2 - Medium Density Residential PD Planned Development	Originally 50%. Increased to 70% for future development (based on trends from Arapahoe County and Aurora per sponsors). From Arapahoe County: Detached, townhomes, and multiplex units (small buildings with up to 12 dwelling units). Density range is 8 to 16 du/ac. Secondary use includes retail.
HDR	High Density Residential (11+ dwellings/acre)	75	R-PH, UR	R-PH - Residential PUD – High Density UR - Urban Residential	R-4	R-4 - High Density Residential	
APZ	Accident Potential Zone	80			APZ	APZ - Accident Potential Zone	From Aurora Planning Department: treat similar to I-1. Only forbids dense residential and gas stations.
O	Office/Church/Institutional	85	EMP	EMP - Employment	MU-OI, AD	MU-OI - Mixed-Use/InstitutionalAD Airport District	From Zoning description, Airport District (AD) "Industry hubs and a variety of commercial, light manufacturing, distribution uses, and research and development campuses are anticipated in this classification." From Arapahoe County: Primary uses are offices, warehousing, light industrial, and major educational uses. Secondary uses include retail, hotels, daycare centers, and residential.

TABLE B-2
Land Use, Zoning, and Imperviousness

I	Heavy Industrial	90	I-2, LTP	I-2 - Heavy Industrial LTP – Lowry Trust Properties	I-2	I-2 - Industrial	From Arapahoe County: LTP: Only commercial and industrial uses permitted.
COM	Business/Commercial	95	B-4, B-5, RC	B-4 - Specialty Commercial B-5 - Regional Commercial RC - Regional Commercial	I-1	I-1 - Business/Tech District	From Arapahoe County: Commercial district for uses of regional significance, including malls, “big box” centers, retail outlets, and auto dealerships. No residential is permitted.
MU	Mixed Use	95	MU	MU - Mixed Use	MU-R, MU-C	MU-R - Mixed-Use Regional Activity Center MU-C - Mixed-Use Corridor	

TABLE B-3
CUHP Input Parameters

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness		Depression Storage			Horton's Infiltration Parameters		
					Existing Land Use	Future Land Use	Existing Pervious	Future Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
100	50	2366	4702	0.0090	5.8	79.0	0.4	0.35	0.1	4.62	0.0014	0.73
101	32	1308	3080	0.0098	2.0	46.3	0.4	0.35	0.1	4.18	0.0017	0.62
102	64	1426	3905	0.0097	2.0	92.1	0.4	0.35	0.1	3.42	0.0018	0.53
103	53	1942	4224	0.0079	2.0	91.0	0.4	0.35	0.1	3.75	0.0018	0.55
104	102	1538	3197	0.0173	2.0	84.8	0.4	0.35	0.1	3.25	0.0018	0.52
105	85	1630	3887	0.0141	2.0	84.7	0.4	0.35	0.1	3.58	0.0018	0.54
110	35	1110	1930	0.0190	2.0	60.2	0.4	0.35	0.1	3.00	0.0018	0.50
111	87	1961	3632	0.0110	28.4	43.0	0.35	0.35	0.1	3.40	0.0018	0.53
112	67	1430	3621	0.0129	4.9	33.3	0.4	0.35	0.1	3.06	0.0018	0.50
113	61	854	3976	0.0147	26.0	35.4	0.35	0.35	0.1	3.00	0.0018	0.50
120	42	868	2180	0.0086	2.1	36.7	0.4	0.35	0.1	3.00	0.0018	0.50
121	89	2803	6674	0.0094	2.0	29.6	0.4	0.35	0.1	3.00	0.0018	0.50
122	92	2175	4489	0.0192	2.0	46.1	0.4	0.35	0.1	3.00	0.0018	0.50
123	67	1630	4138	0.0111	6.1	17.6	0.4	0.35	0.1	3.00	0.0018	0.50
124	88	2416	4498	0.0216	2.3	52.0	0.4	0.35	0.1	3.00	0.0018	0.50
130	30	1989	3933	0.0066	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
130.2	8	938	2153	0.0128	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
131	157	2370	6591	0.0190	35.1	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
140	105	3070	5837	0.0137	2.8	70.3	0.4	0.35	0.1	3.16	0.0018	0.51
141	91	2401	5134	0.0187	2.0	75.2	0.4	0.35	0.1	3.01	0.0018	0.50
141.5	79	1777	3932	0.0226	2.0	50.0	0.4	0.35	0.1	3.00	0.0018	0.50
142	79	1200	3323	0.0137	2.0	41.7	0.4	0.35	0.1	3.00	0.0018	0.50
150	80	2175	4308	0.0250	2.0	86.9	0.4	0.35	0.1	3.00	0.0018	0.50
151	97	2854	4560	0.0234	16.3	41.7	0.35	0.35	0.1	3.00	0.0018	0.50
152	83	1805	3802	0.0255	5.6	86.5	0.4	0.35	0.1	3.00	0.0018	0.50
153	87	1574	4373	0.0199	63.1	64.8	0.35	0.35	0.1	3.00	0.0018	0.50
154	18	909	2352	0.0213	69.9	69.9	0.35	0.35	0.1	3.54	0.0018	0.54
155	84	1193	3506	0.0294	67.9	67.9	0.35	0.35	0.1	3.19	0.0018	0.51
155.1	23	2210	8850	0.0311	10.7	47.7	0.4	0.35	0.1	3.22	0.0018	0.51
160	47	1499	3120	0.0114	27.8	27.8	0.35	0.35	0.1	3.49	0.0018	0.53

TABLE B-3
CUHP Input Parameters

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness		Depression Storage			Horton's Infiltration Parameters		
					Existing Land Use	Future Land Use	Existing Pervious	Future Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
161	126	2968	6445	0.0252	26.7	34.5	0.35	0.35	0.1	4.30	0.0018	0.59
162	79	1769	3715	0.0390	62.1	63.4	0.35	0.35	0.1	4.26	0.0018	0.58
162.1	14	647	2692	0.0242	49.6	49.6	0.35	0.35	0.1	3.37	0.0018	0.52
163	24	948	2154	0.0575	29.0	29.0	0.35	0.35	0.1	4.47	0.0018	0.60
163.5	15	524	1289	0.0277	19.7	55.5	0.35	0.35	0.1	4.50	0.0018	0.60
164	77	2108	4769	0.0286	69.6	69.6	0.35	0.35	0.1	4.49	0.0018	0.60
165	24	719	1624	0.0431	82.4	82.4	0.35	0.35	0.1	4.26	0.0018	0.58
166	51	1551	3667	0.0421	50.5	50.5	0.35	0.35	0.1	4.43	0.0018	0.60
200	10	902	1704	0.0179	2.0	75.4	0.4	0.35	0.1	3.22	0.0018	0.51
201	99	1860	6709	0.0122	5.8	29.1	0.4	0.35	0.1	3.08	0.0018	0.51
202	18	547	1602	0.0160	2.3	2.3	0.4	0.4	0.1	3.41	0.0018	0.53
203	62	1882	3586	0.0134	2.0	10.6	0.4	0.4	0.1	3.17	0.0018	0.51
204	86	2142	3804	0.0158	2.0	2.1	0.4	0.4	0.1	3.03	0.0018	0.50
205	39	4604	8447	0.0130	2.0	54.7	0.4	0.35	0.1	3.00	0.0018	0.50
206	116	3321	6577	0.0160	3.0	3.3	0.4	0.4	0.1	3.00	0.0018	0.50
207	122	1957	3807	0.0255	4.3	7.2	0.4	0.4	0.1	3.00	0.0018	0.50
208	84	1585	3619	0.0246	37.5	82.6	0.35	0.35	0.1	3.00	0.0018	0.50
209	52	1264	2713	0.0256	59.4	79.2	0.35	0.35	0.1	3.00	0.0018	0.50
210	27	679	1682	0.0295	41.8	82.5	0.35	0.35	0.1	3.00	0.0018	0.50
211	112	1363	3782	0.0200	9.0	9.0	0.4	0.4	0.1	3.00	0.0018	0.50
212	125	2804	5699	0.0162	9.0	9.0	0.4	0.4	0.1	3.00	0.0018	0.50
220	115	2736	6403	0.0203	5.6	10.4	0.4	0.4	0.1	3.00	0.0018	0.50
230	92	1595	5028	0.0207	3.3	3.3	0.4	0.4	0.1	3.00	0.0018	0.50
300	36	950	2772	0.0194	9.0	9.0	0.4	0.4	0.1	3.20	0.0018	0.51
301	76	2122	5106	0.0141	9.0	9.0	0.4	0.4	0.1	3.00	0.0018	0.50
302	47	3243	7567	0.0090	9.0	9.0	0.4	0.4	0.1	3.00	0.0018	0.50
303	62	2273	5549	0.0052	9.0	9.0	0.4	0.4	0.1	3.00	0.0018	0.50
310	43	1189	2575	0.0157	9.7	12.5	0.4	0.4	0.1	3.02	0.0018	0.50
311	41	1222	2871	0.0147	10.7	12.7	0.4	0.4	0.1	3.00	0.0018	0.50
312	30	1642	3587	0.0116	36.1	51.4	0.35	0.35	0.1	3.00	0.0018	0.50

TABLE B-3
CUHP Input Parameters

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness		Depression Storage			Horton's Infiltration Parameters		
					Existing Land Use	Future Land Use	Existing Pervious	Future Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
320	20	1567	3737	0.0092	2.0	14.0	0.4	0.4	0.1	3.00	0.0018	0.50
330	98	1924	4522	0.0106	2.0	83.0	0.4	0.35	0.1	3.00	0.0018	0.50
331	114	2182	3480	0.0216	2.0	94.3	0.4	0.35	0.1	3.00	0.0018	0.50
332	69	1250	3161	0.0263	2.0	94.9	0.4	0.35	0.1	3.00	0.0018	0.50
350	51	1505	2851	0.0088	29.5	44.2	0.35	0.35	0.1	3.35	0.0018	0.52
351	14	840	1710	0.0166	12.5	12.5	0.4	0.4	0.1	3.00	0.0018	0.50
352	37	1897	4255	0.0111	6.0	6.0	0.4	0.4	0.1	3.00	0.0018	0.50
353	51	1893	4404	0.0125	56.5	56.5	0.35	0.35	0.1	3.00	0.0018	0.50
354	41	1471	3658	0.0174	17.3	17.3	0.35	0.35	0.1	3.25	0.0018	0.52
354.5	20	730	1713	0.0228	38.1	38.1	0.35	0.35	0.1	3.00	0.0018	0.50
355	40	935	2304	0.0179	4.3	61.5	0.4	0.35	0.1	3.00	0.0018	0.50
356	86	1691	3890	0.0227	2.0	58.6	0.4	0.35	0.1	3.00	0.0018	0.50
380	32	1439	2239	0.0063	2.0	92.7	0.4	0.35	0.1	3.00	0.0018	0.50
400	44	801.1	2240	0.0223	2.0	95.0	0.4	0.35	0.1	3.00	0.0018	0.50
430	26	1082	2613	0.0125	2.0	60.2	0.4	0.35	0.1	3.00	0.0018	0.50
431	50	860	2271	0.0218	2.0	95.0	0.4	0.35	0.1	3.00	0.0018	0.50
440	46	1232	2944	0.0095	2.0	45.9	0.4	0.35	0.1	3.00	0.0018	0.50
440.5	56	1109	2586	0.0191	2.0	60.0	0.4	0.35	0.1	3.00	0.0018	0.50
441	50	1429	2833	0.0215	16.8	84.4	0.35	0.35	0.1	3.00	0.0018	0.50
442	48	1297	2932.896	0.0203	2.0	91.8	0.4	0.35	0.1	3.00	0.0018	0.50
442.5	57	1355	2566	0.0209	5.5	85.0	0.4	0.35	0.1	3.00	0.0018	0.50
443	59	1344	3141	0.0177	28.4	71.4	0.35	0.35	0.1	3.00	0.0018	0.50
450	80	2943	6272	0.0186	2.0	56.9	0.4	0.35	0.1	3.00	0.0018	0.50
450.5	59	1506	3447	0.0227	4.6	43.6	0.4	0.35	0.1	3.00	0.0018	0.50
451	105	1471	4005	0.0234	4.8	65.5	0.4	0.35	0.1	3.00	0.0018	0.50
470	38	1407	2486	0.0196	2.1	88.8	0.4	0.35	0.1	3.00	0.0018	0.50
471	92	2884	8108	0.0114	2.1	85.1	0.4	0.35	0.1	3.00	0.0018	0.50
501	108	1777	4416	0.0169	2.0	90.0	0.4	0.35	0.1	3.00	0.0018	0.50
502	40	1179	2418	0.0199	2.0	90.0	0.4	0.35	0.1	3.00	0.0018	0.50
503	41	1150	2968	0.0127	2.0	90.0	0.4	0.35	0.1	3.00	0.0018	0.50

TABLE B-3
CUHP Input Parameters

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness		Depression Storage			Horton's Infiltration Parameters		
					Existing Land Use	Future Land Use	Existing Pervious	Future Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
510	95	1899	2945	0.0615	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
511	91	1984	4929	0.0196	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
512	108	2787	6146	0.0252	37.9	42.7	0.35	0.35	0.1	3.00	0.0018	0.50
520	163	3486	7296	0.0352	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
530	119	3443	7116	0.0375	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
531	53	309	3414	0.0557	40.0	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
550	27	680	2247	0.0209	39.8	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
551	137	3527	8780	0.0167	2.0	39.2	0.4	0.35	0.1	3.00	0.0018	0.50
552	87	2047	4568	0.0227	3.9	40.0	0.4	0.35	0.1	3.00	0.0018	0.50
553	68	1515	2977	0.0184	4.1	40.0	0.4	0.35	0.1	3.00	0.0018	0.50
554	103	2275	6100	0.0160	2.0	51.6	0.4	0.35	0.1	3.00	0.0018	0.50
555	85	2713	4522	0.0241	2.0	40.0	0.4	0.35	0.1	3.00	0.0018	0.50
556	34	802	1799	0.0280	2.0	87.3	0.4	0.35	0.1	3.00	0.0018	0.50
600	93	1355	4278	0.0170	19.7	40.0	0.35	0.35	0.1	3.00	0.0018	0.50
601	109	1211	3284	0.0235	7.2	40.0	0.4	0.35	0.1	3.00	0.0018	0.50
620	87	1546	3929	0.0250	2.0	40.0	0.4	0.35	0.1	3.00	0.0018	0.50
630	17	1142	2428	0.0294	2.0	66.8	0.4	0.35	0.1	3.00	0.0018	0.50
650	45	1651	2600	0.0165	31.5	50.6	0.35	0.35	0.1	3.00	0.0018	0.50
700	65	2194	4456	0.0247	6.7	43.2	0.4	0.35	0.1	3.00	0.0018	0.50
701	55	1341	3489	0.0279	79.0	83.0	0.35	0.35	0.1	3.00	0.0018	0.50
702	97	2006	4439	0.0228	84.7	88.9	0.35	0.35	0.1	3.00	0.0018	0.50
703	90	1929	3927	0.0296	68.1	68.1	0.35	0.35	0.1	3.00	0.0018	0.50
710	61	1442	3526	0.0277	40.1	40.1	0.35	0.35	0.1	3.96	0.0018	0.56
720	123	1822	3545	0.0367	2.0	2.0	0.4	0.4	0.1	4.28	0.0018	0.59
750	29	682	1947	0.0556	21.5	88.1	0.35	0.35	0.1	4.37	0.0018	0.59
751	77	1179	4091	0.0224	94.4	95.0	0.35	0.35	0.1	4.10	0.0018	0.57
752	127	2084	3958	0.0323	95.0	95.0	0.35	0.35	0.1	4.21	0.0018	0.58
760	20	363	1136	0.0792	7.6	7.6	0.4	0.4	0.1	4.50	0.0018	0.60
761	69	1208	3354	0.0288	24.3	24.3	0.35	0.35	0.1	4.50	0.0018	0.60
770	120	1669	4312	0.0272	73.5	73.5	0.35	0.35	0.1	4.42	0.0018	0.59

TABLE B-4
Existing Detention Stage-Storage-Discharge Curves

Tollgate Crossing Master Drainage Plan (2001)			
Stage-Storage-Discharge Curve			
Stage (ft)	**Surface Area (ft^2)**	**Storage Volume (ac-ft)**	**Discharge (cfs)**
0	78,734	0	0
2	97,322	4.5	70
4	117,800	10.8	200
6	139,657	19.2	340
8	163,154	30.0	505
10	187,683	43.1	580
12	218,671	60.2	920
14	250,495	80.5	1340
15	266,741	91.9	1675
17*	266,741	104.1	2517

Tollgate Crossing Detention Pond 100-Year Future Condition Results			
	Stage (ft)	**Storage Volume (ac-ft)**	**Discharge (cfs)**
Tollgate As-built Plans	15.0	55.0	1675
2008 OSP Model Results	15.0	60.1	1675
2023 MDP Model Results	14.3	51.5	1429

Southlands Development Drainage Plan (2003)			
Stage-Storage-Discharge Curve			
Stage (ft)	**Surface Area (ft^2)**	**Storage Volume (ac-ft)**	**Discharge (cfs)**
0	0	0	0
1	0	0	
2.3	55,878	2.95	
3	67,428	4.64	
4	81,711	7.50	
5	94,188	10.81	
6	107,908	14.86	
7	118,015	18.96	
8	125,608	23.07	
9	133,022	27.48	35.7
10	140,712	32.30	
11	148,408	37.48	
12	157,670	43.44	132
16*	157,670	57.91	271

Southlands Detention Pond 100-Year Future Condition Results			
	Stage (ft)	**Storage Volume (ac-ft)**	**Discharge (cfs)**
Southlands Construction Plans	12.0	25.4	132
2008 OSP Model Results	11.5	23.8	116
2023 MDP Model Results	12.9	29.0	165

*Stage added in 2023 model to allow hydrology to contain 500-year future condition.

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)												
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
1000dp*	**8110**	201	326	502	2,049	3,035	4,162	7,106	618	972	1,404	3,407	4,532	6,073	9,501	72.7	113.9	170.3	620.0	840.9	1120.2	1755.5	216.7	316.1	417.4	859.3	1089.5	1362.7	2013.3
1009dp*	**8060**	201	326	502	2,045	3,028	4,179	7,088	616	971	1,402	3,394	4,522	6,058	9,470	73.0	113.9	170.6	620.0	837.9	1117.2	1746.3	214.5	313.0	414.3	853.2	1083.4	1353.5	2001.1
100in	**50**	0	1	2	11	17	26	45	24	32	40	61	75	92	131	0.1	0.2	0.4	2.0	3.2	4.9	8.5	2.6	3.7	4.7	6.4	7.9	9.5	13.5
1010dp*	**7839**	201	325	500	2,020	2,970	4,095	6,937	615	969	1,399	3,352	4,462	5,966	9,312	72.7	112.9	168.8	604.6	816.4	1089.5	1700.3	214.2	310.0	411.3	840.9	1061.9	1325.8	1955.0
101in	**32**	0	0	3	11	17	24	39	8	12	17	30	39	49	73	0.0	0.1	0.4	1.6	2.4	3.5	5.9	0.9	1.4	1.9	3.1	3.9	5.0	7.5
1020dp*	**6648**	196	316	492	1,840	2,530	3,454	5,922	570	926	1,309	2,956	3,910	5,149	8,007	67.8	104.3	155.6	524.8	705.9	936.1	1454.8	201.3	291.6	383.6	745.8	936.1	1157.0	1694.1
102in	**64**	0	4	11	30	42	58	93	54	72	90	125	150	180	249	0.1	0.5	1.3	3.8	5.4	7.6	12.6	4.1	5.6	7.1	9.4	11.3	13.4	18.7
1030dp*	**6584**	196	316	523	1,835	2,522	3,440	5,904	683	948	1,309	2,948	3,900	5,132	7,972	68.1	104.7	155.9	521.7	699.8	926.9	1442.5	198.3	287.0	380.6	736.6	923.8	1144.8	1675.7
103in	**53**	0	2	6	18	26	37	60	36	48	59	84	102	121	169	0.0	0.3	1.0	3.0	4.4	6.2	10.3	3.4	4.6	5.9	7.8	9.4	11.1	15.5
1040dp*	**6531**	199	319	491	1,835	2,514	3,424	5,893	617	926	1,373	2,952	3,893	5,120	8,000	69.1	105.6	156.5	518.7	696.7	920.7	1433.3	195.5	283.0	374.4	727.4	914.6	1132.5	1660.4
104in	**102**	1	10	27	69	95	129	203	103	142	178	246	298	358	500	0.1	0.8	2.3	6.1	8.8	12.4	20.2	6.0	8.3	10.6	14.3	17.3	20.6	29.0
1050dp*	**6409**	199	319	491	1,829	2,502	3,399	5,867	571	965	1,329	2,929	3,866	5,084	7,948	69.1	105.6	156.5	509.5	684.4	905.4	1408.7	190.6	276.2	365.2	712.0	896.2	1111.0	1626.6
105in	**85**	1	6	16	45	63	86	138	71	97	123	172	209	249	349	0.1	0.6	1.6	4.9	7.1	10.0	16.5	4.9	6.9	8.8	11.8	14.3	17.1	24.0
1100dp*	**5960**	201	320	492	1,792	2,453	3,258	5,704	537	904	1,262	2,862	3,720	4,959	8,393	69.4	105.3	154.7	481.8	644.5	850.1	1316.6	171.6	249.5	331.5	653.7	822.5	1022.0	1500.8
110in	**35**	0	4	9	22	31	42	65	20	30	41	61	77	94	136	0.0	0.3	0.9	2.2	3.1	4.3	7.0	1.4	2.1	2.8	4.1	5.0	6.2	9.0
1110dp*	**5555**	200	317	485	1,717	2,315	3,078	5,488	517	862	1,202	2,677	3,481	4,596	7,039	66.0	99.7	146.1	451.2	601.5	794.9	1227.6	162.4	235.4	313.0	610.8	770.3	954.5	1402.6
1115dp*	**5467**	200	317	484	1,704	2,297	3,050	5,451	516	857	1,195	2,658	3,443	4,538	6,938	65.1	98.2	143.9	445.0	592.3	782.6	1209.2	160.5	232.9	310.0	604.6	758.1	942.2	1381.1
111in	**87**	11	20	33	65	85	111	169	24	38	55	96	122	155	229	1.4	2.6	4.1	7.3	9.7	12.7	19.6	2.4	3.7	5.3	8.6	11.0	14.0	21.0
1120dp*	**5436**	200	317	483	1,700	2,290	3,038	5,437	517	854	1,191	2,650	3,427	4,515	6,897	65.4	98.5	143.9	441.9	592.3	779.6	1203.1	159.3	230.8	306.0	598.5	755.0	936.1	1371.9
112in	**67**	1	7	16	38	52	70	110	13	22	34	62	81	104	156	0.1	0.7	1.8	4.3	6.1	8.5	13.7	1.4	2.4	3.6	6.1	8.0	10.3	15.6
1130dp*	**5324**	201	318	487	1,689	2,272	3,006	5,398	517	848	1,178	2,624	3,382	4,451	6,776	65.7	98.8	143.9	435.8	583.1	764.2	1181.6	155.9	225.9	299.5	586.2	739.7	914.6	1344.3
113in	**61**	9	17	28	53	69	89	136	15	26	39	69	89	113	169	0.9	1.8	2.9	5.2	6.8	8.9	13.8	1.3	2.3	3.4	5.7	7.4	9.5	14.3
1200dp*	**5263**	202	318	487	1,682	2,261	2,987	5,377	517	845	1,173	2,612	3,357	4,412	6,702	65.4	97.9	142.4	432.7	573.9	755.0	1169.3	155.0	224.4	297.4	580.1	730.4	905.4	1328.9
120in	**42**	0	4	11	26	36	48	76	10	18	27	47	61	77	115	0.0	0.4	1.0	2.6	3.7	5.2	8.3	1.0	1.6	2.4	3.9	5.1	6.5	9.8
1210dp*	**4699**	201	317	482	1,590	2,143	2,773	5,093	486	762	1,053	2,421	3,065	3,984	5,934	64.1	95.8	137.2	395.9	521.7	684.4	1052.7	131.7	191.2	254.4	509.5	641.4	798.0	1175.5
121in	**89**	0	5	12	30	42	59	95	8	16	25	48	63	83	126	0.1	0.8	2.2	5.6	7.9	11.0	17.9	1.6	2.9	4.5	7.8	10.3	13.3	20.4
1222dp*	**4522**	202	318	481	1,564	2,102	2,715	5,025	482	751	1,038	2,387	2,995	3,866	5,750	64.5	96.1	136.6	383.6	506.4	662.9	1018.9	128.3	186.3	247.4	491.1	620.0	770.3	1132.5
1225dp*	**4430**	203	320	483	1,551	2,085	2,677	4,992	482	744	1,026	2,360	2,956	3,794	5,654	64.8	96.4	136.6	377.5	500.3	650.6	1000.5	126.4	183.5	243.4	481.8	607.7	755.0	1111.0
122in	**92**	1	8	19	48	67	90	143	29	46	66	109	139	175	256	0.1	0.9	2.3	5.7	8.1	11.4	18.4	2.8	4.3	6.1	9.5	12.1	15.2	22.6
1230dp*	**4186**	202	319	479	1,504	2,013	2,568	4,837	459	707	973	2,246	2,790	3,585	5,388	64.8	95.8	134.7	362.2	478.8	620.0	951.4	119.1	172.5	229.0	454.2	573.9	712.0	1049.6
123in	**67**	1	7	14	34	46	63	98	5	11	19	39	52	69	106	0.2	0.8	1.9	4.4	6.2	8.6	13.8	0.6	1.5	2.6	5.1	7.0	9.3	14.5
124in	**88**	1	7	18	44	61	83	131	32	50	69	111	141	175	254	0.1	0.8	2.2	5.5	7.8	10.9	17.6	3.0	4.6	6.4	9.5	12.0	15.0	22.0
130.2in	**8**	1	2	4	6	8	10	15	1	2	4	6	8	10	15	0.2	0.3	0.5	0.8	1.0	1.3	2.0	0.2	0.3	0.5	0.8	1.0	1.3	2.0
1300dp*	**4119**	203	319	478	1,490	1,993	2,548	4,797	458	704	968	2,223	2,756	3,542	5,319	64.8	95.8	134.4	359.1	472.6	613.8	936.1	118.8	171.9	227.7	448.1	567.8	702.8	1034.3

*For the 2-, 5-, and 10-year storm events, flows at design point 1530 (Tollgate Crossing) and downstream were produced using a 2-hr storm with area correction factor.

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
1301dp*	**3606**	196	307	449	1,356	1,825	2,374	4,427	396	609	836	1,921	2,407	2,983	4,815	58.3	85.9	119.7	316.1	414.3	537.1	819.4	102.2	147.9	195.8	389.8	491.1	610.8	902.3
1302dp*	**3443**	195	305	442	1,317	1,781	2,334	4,327	386	591	809	1,858	2,323	2,859	4,700	55.6	81.3	112.9	299.9	392.8	512.5	782.6	99.1	143.0	189.4	374.4	472.6	586.2	862.4
130in	**30**	4	7	10	19	24	31	46	4	7	10	19	24	31	46	0.8	1.2	1.8	2.9	3.7	4.7	7.1	0.8	1.2	1.8	2.9	3.7	4.7	7.1
1310dp*	**3435**	195	305	441	1,314	1,778	2,330	4,320	386	590	807	1,853	2,318	2,851	4,692	55.2	81.0	112.6	298.9	392.8	509.5	779.6	98.8	143.0	189.1	374.4	469.6	586.2	859.3
131in	**157**	30	52	79	143	184	236	353	38	64	93	161	207	262	389	3.4	5.8	8.7	14.5	18.9	24.2	36.5	4.0	6.5	9.5	15.2	19.6	25.0	37.4
1400dp*	**2365**	189	290	400	1,062	1,461	1,949	3,480	286	437	604	1,274	1,580	2,174	3,745	47.6	68.4	91.8	217.6	282.4	362.2	549.4	75.5	107.7	140.0	264.9	331.5	411.3	598.5
140in	**105**	1	6	16	42	58	81	129	52	73	95	144	177	217	309	0.1	1.0	2.5	6.5	9.2	12.9	21.0	5.0	7.2	9.5	13.3	16.3	19.8	28.4
141.5in	**79**	1	8	19	46	63	86	135	31	49	69	112	141	175	255	0.1	0.7	2.0	4.9	7.0	9.8	15.9	2.6	4.0	5.6	8.5	10.7	13.4	19.8
1410dp*	**2173**	191	293	401	1,026	1,416	1,918	3,407	273	416	565	1,195	1,515	2,093	3,624	47.6	68.1	90.8	205.9	265.8	337.6	509.5	70.0	99.4	128.9	243.4	304.5	377.5	549.4
1415dp*	**2064**	192	294	401	1,002	1,383	1,885	3,341	264	397	538	1,140	1,505	2,045	3,555	47.6	68.1	90.2	199.5	256.3	325.3	488.0	65.7	93.3	121.2	229.6	287.6	356.0	521.7
141in	**91**	1	7	17	43	60	82	129	57	80	103	151	185	223	316	0.1	0.8	2.3	5.6	8.0	11.3	18.3	4.7	6.7	8.7	12.0	14.6	17.6	25.1
1420dp*	**1985**	192	294	401	984	1,363	1,894	3,311	259	389	525	1,113	1,472	2,025	3,532	47.6	68.1	90.2	194.9	249.8	316.1	472.6	63.5	90.5	117.2	221.3	277.1	343.7	500.3
142in	**79**	1	9	21	52	71	96	151	26	43	62	106	135	169	250	0.1	0.7	2.0	4.9	7.0	9.8	15.9	2.1	3.4	4.9	7.8	10.1	12.7	19.1
1500dp*	**1861**	190	289	391	944	1,312	1,816	3,188	248	370	497	1,052	1,405	1,941	3,406	47.0	67.2	88.4	186.3	237.5	299.5	448.1	60.8	86.2	111.4	208.7	261.2	322.3	469.6
1501dp*	**1684**	188	284	380	887	1,232	1,696	2,975	227	337	450	975	1,295	1,803	3,155	46.3	66.0	85.9	174.0	220.7	276.5	411.3	54.9	78.0	100.4	188.1	235.1	290.6	423.5
1502dp*	**1684**	188	285	381	887	1,233	1,696	2,977	227	337	450	975	1,295	1,804	3,157	46.3	66.3	86.2	174.3	220.7	276.8	411.3	54.9	78.0	100.4	188.1	235.4	290.6	426.6
150in	**80**	1	7	17	42	58	79	125	65	89	112	157	189	227	317	0.1	0.7	2.0	4.9	7.1	9.9	16.0	4.8	6.7	8.5	11.3	13.7	16.3	22.8
151in	**97**	6	15	27	57	76	101	155	25	41	59	101	129	163	242	0.8	2.0	3.7	7.3	9.9	13.3	20.8	2.6	4.2	6.0	9.6	12.3	15.6	23.4
1520dp*	**1376**	146	220	290	721	1,014	1,393	2,434	175	259	339	781	1,065	1,465	2,554	35.6	50.9	66.0	137.5	175.2	220.7	328.4	42.4	60.2	77.3	148.2	186.6	231.7	340.7
152in	**83**	2	10	22	52	72	96	150	77	106	133	184	222	265	370	0.2	1.0	2.3	5.4	7.6	10.5	16.9	4.9	6.9	8.8	11.7	14.2	16.8	23.7
1530dp*	**1294**	146	219	287	699	983	1,342	2,344	163	242	316	756	1,044	1,429	2,474	35.6	50.6	65.7	132.3	167.9	210.5	313.0	38.4	54.6	70.3	136.9	172.8	215.5	319.2
153in	**87**	50	73	96	148	183	224	321	51	75	98	150	186	227	325	3.7	5.4	7.2	10.3	12.9	15.7	22.8	3.8	5.6	7.4	10.5	13.0	15.9	22.9
1540dp	**1207**	248	370	546	1,005	1,306	1,709	2,596	279	413	596	1,070	1,380	1,795	2,700	40.8	58.3	79.5	122.8	155.9	195.8	291.3	44.2	62.6	84.1	127.4	160.5	200.4	296.2
1541dp	**1100**	235	345	507	941	1,218	1,584	2,402	260	381	549	994	1,280	1,653	2,487	36.8	52.5	71.5	111.1	141.2	177.7	264.2	39.6	55.9	75.5	114.8	144.9	181.4	268.2
154in	**18**	10	15	19	29	35	43	61	10	15	19	29	35	43	61	0.8	1.2	1.5	2.2	2.7	3.3	4.7	0.8	1.2	1.5	2.2	2.7	3.3	4.7
155.1in	**23**	0	1	3	6	9	12	19	4	6	9	15	19	24	36	0.1	0.3	0.7	1.6	2.2	3.0	4.8	0.7	1.1	1.6	2.4	3.1	3.9	5.7
155in	**84**	66	96	126	184	227	277	395	66	96	126	184	227	277	395	3.8	5.5	7.3	10.3	12.7	15.5	22.3	3.8	5.5	7.3	10.3	12.7	15.5	22.3
1600dp	**1082**	234	345	505	934	1,207	1,565	2,368	259	382	546	984	1,267	1,633	2,450	36.2	51.6	70.3	109.0	138.7	174.6	260.0	38.7	54.9	74.0	112.6	142.4	178.3	263.6
160in	**47**	6	10	16	33	43	56	86	6	10	16	33	43	56	86	0.8	1.4	2.1	3.9	5.2	6.8	10.6	0.8	1.4	2.1	3.9	5.2	6.8	10.6
161in	**126**	13	21	35	75	100	132	205	20	32	50	97	128	166	252	1.8	3.0	5.0	9.6	13.0	17.2	27.0	2.6	4.0	6.0	10.6	14.0	18.3	28.1
162.1in	**14**	5	8	11	18	23	28	41	5	8	11	18	23	28	41	0.5	0.7	1.0	1.5	1.9	2.4	3.5	0.5	0.7	1.0	1.5	1.9	2.4	3.5
1620dp	**848**	223	321	456	806	1,040	1,318	1,968	241	345	483	836	1,075	1,356	2,001	31.9	44.8	59.8	90.2	113.6	141.5	208.4	33.8	47.3	62.6	92.7	116.3	143.9	211.2
1623dp	**647**	197	280	384	639	809	1,011	1,502	213	302	408	668	840	1,044	1,534	28.6	40.2	52.5	75.2	93.3	114.5	166.0	30.4	42.7	54.9	78.0	96.1	116.9	168.5
162in	**79**	47	67	90	138	173	213	308	48	69	92	141	176	216	312	3.3	4.6	6.2	9.0	11.2	13.8	20.1	3.3	4.7	6.3	9.1	11.3	13.9	20.3

*For the 2-, 5-, and 10-year storm events, flows at design point 1530 (Tollgate Crossing) and downstream were produced using a 2-hr storm with area correction factor.

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
163.5in	**15**	2	3	6	13	18	23	36	9	12	17	27	34	43	63	0.1	0.3	0.5	1.0	1.4	1.9	3.1	0.5	0.8	1.0	1.6	2.0	2.4	3.6
1630dp	**633**	195	276	378	628	793	988	1,467	211	298	403	656	824	1,023	1,501	28.1	39.6	51.6	74.0	91.5	112.3	162.7	30.0	41.7	54.3	76.4	94.2	114.8	165.1
1631dp	**609**	192	270	369	607	765	951	1,416	208	293	393	635	796	986	1,449	27.7	39.0	50.6	72.1	89.3	109.0	157.4	29.6	41.1	53.4	74.6	91.8	111.4	160.2
1635dp	**361**	170	243	331	542	684	852	1,240	170	243	331	542	684	852	1,240	13.6	19.3	26.1	39.0	49.1	61.1	89.9	13.6	19.3	26.1	39.0	49.1	61.1	89.9
163in	**24**	4	7	11	23	30	39	60	4	7	11	23	30	39	60	0.4	0.6	1.0	1.9	2.5	3.3	5.2	0.4	0.6	1.0	1.9	2.5	3.3	5.2
1640dp	**272**	162	229	303	470	584	718	1,030	162	229	303	470	584	718	1,030	12.6	17.8	23.3	33.1	40.8	49.7	71.5	12.6	17.8	23.3	33.1	40.8	49.7	71.5
164in	**77**	45	63	82	125	155	189	271	45	63	82	125	155	189	271	3.6	5.0	6.6	9.4	11.6	14.1	20.3	3.6	5.0	6.6	9.4	11.6	14.1	20.3
1650dp	**195**	130	182	239	362	450	551	793	130	182	239	362	450	551	793	9.0	12.6	16.6	23.5	29.1	35.6	51.3	9.0	12.6	16.6	23.5	29.1	35.6	51.3
165in	**24**	26	35	44	61	75	90	126	26	35	44	61	75	90	126	1.3	1.8	2.4	3.2	3.9	4.7	6.6	1.3	1.8	2.4	3.2	3.9	4.7	6.6
1660dp	**51**	20	29	42	70	89	112	164	20	29	42	70	89	112	164	1.7	2.4	3.3	5.2	6.6	8.3	12.3	1.7	2.4	3.3	5.2	6.6	8.3	12.3
166in	**51**	20	29	42	70	89	112	164	20	29	42	70	89	112	164	1.7	2.4	3.3	5.2	6.6	8.3	12.3	1.7	2.4	3.3	5.2	6.6	8.3	12.3
2000dp	**1158**	45	99	217	556	790	1,093	1,787	110	190	329	688	947	1,269	2,040	7.8	16.7	35.9	79.8	111.1	151.6	241.5	16.8	28.3	48.8	92.4	124.0	164.2	255.0
200in	**10**	0	1	2	5	6	9	14	6	9	11	16	20	24	34	0.0	0.1	0.2	0.6	0.9	1.2	2.0	0.5	0.7	1.0	1.3	1.6	2.0	2.8
2010dp	**1148**	45	99	217	555	792	1,089	1,778	109	188	326	688	935	1,261	2,027	7.8	16.6	35.6	79.2	110.2	150.4	239.7	16.3	27.6	47.9	90.8	122.5	162.4	252.3
201in	**99**	2	8	19	46	63	86	135	12	22	35	67	88	114	174	0.3	1.2	2.7	6.4	9.1	12.6	20.2	1.7	3.1	4.9	8.6	11.3	14.7	22.6
2020dp	**1148**	44	94	206	524	745	1,021	1,661	102	174	301	643	870	1,173	1,883	7.5	15.5	32.8	72.7	101.0	137.8	219.4	14.6	24.5	43.0	82.3	111.1	147.6	229.9
202in	**18**	0	1	4	11	16	21	35	0	1	4	11	16	21	35	0.0	0.1	0.3	1.0	1.4	2.1	3.4	0.0	0.1	0.3	1.0	1.4	2.1	3.4
2030dp	**794**	41	85	176	432	628	810	1,303	99	162	264	553	724	947	1,510	6.5	12.8	26.1	56.5	78.0	105.6	167.6	13.6	21.8	35.9	66.0	87.8	115.4	177.7
203in	**62**	0	2	9	27	38	54	86	2	5	12	30	42	57	90	0.0	0.3	1.2	3.5	5.1	7.3	12.0	0.3	0.7	1.7	4.0	5.6	7.8	12.6
2040dp	**617**	44	87	167	404	513	704	1,112	106	166	256	484	645	844	1,331	6.0	11.3	21.9	45.1	61.7	83.5	131.7	12.3	19.1	30.4	53.4	70.6	92.1	140.6
2041dp	**531**	47	91	168	413	491	650	1,010	116	178	266	494	618	794	1,235	5.8	10.7	19.9	39.6	54.0	72.7	114.2	12.0	18.4	28.3	47.9	62.6	81.0	122.8
204in	**86**	1	4	15	42	59	82	131	1	4	15	42	59	82	131	0.1	0.4	1.8	5.0	7.2	10.3	16.8	0.1	0.4	1.8	5.0	7.2	10.3	16.8
2050dp	**39**	0	1	3	7	10	14	23	7	10	14	23	29	36	53	0.0	0.4	1.0	2.4	3.4	4.8	7.8	1.4	2.1	2.9	4.3	5.5	6.8	9.9
205in	**39**	0	1	3	7	10	14	23	7	10	14	23	29	36	53	0.0	0.4	1.0	2.4	3.4	4.8	7.8	1.4	2.1	2.9	4.3	5.5	6.8	9.9
2060dp	**401**	46	86	150	310	415	547	844	109	165	239	414	530	672	1,039	5.6	9.7	16.8	31.6	42.7	56.5	88.1	10.5	15.7	23.2	38.1	49.1	62.9	94.5
206in	**116**	1	4	16	43	61	87	139	1	5	16	44	62	87	139	0.1	0.7	2.5	6.8	9.9	13.9	22.8	0.2	0.7	2.5	6.8	9.9	14.0	22.9
2070dp	**285**	54	95	154	293	385	498	755	129	188	258	414	521	645	948	5.2	8.6	13.7	24.2	31.9	41.7	64.1	9.8	14.2	19.9	30.1	38.4	47.9	70.6
207in	**122**	2	9	30	78	109	149	235	4	12	32	81	112	151	238	0.2	0.9	2.8	7.3	10.5	14.8	24.2	0.4	1.1	3.1	7.6	10.9	15.1	24.5
2080dp	**163**	59	96	137	229	293	367	541	139	195	248	356	435	525	739	4.8	7.6	10.8	16.7	21.3	26.8	39.9	9.2	12.9	16.6	22.3	27.2	32.5	45.7
2085dp	**79**	41	63	87	135	171	211	307	75	105	132	184	224	272	381	2.8	4.2	5.8	8.7	10.9	13.5	19.9	4.3	6.1	7.8	10.6	13.0	15.5	21.9
208in	**84**	23	39	59	102	131	165	246	78	109	137	192	233	279	391	2.0	3.3	4.9	8.0	10.3	13.2	19.9	4.8	6.8	8.7	11.7	14.1	16.9	23.8
2090dp	**52**	30	45	61	92	115	141	204	46	65	82	116	141	171	240	2.1	3.1	4.1	6.0	7.5	9.2	13.4	2.8	4.0	5.1	7.0	8.5	10.2	14.5
209in	**52**	30	45	61	92	115	141	204	46	65	82	116	141	171	240	2.1	3.1	4.1	6.0	7.5	9.2	13.4	2.8	4.0	5.1	7.0	8.5	10.2	14.5
2100dp	**27**	11	18	26	43	55	70	103	29	40	50	68	83	101	141	0.7	1.2	1.7	2.7	3.4	4.3	6.5	1.5	2.1	2.7	3.7	4.4	5.3	7.5
210in	**27**	11	18	26	43	55	70	103	29	40	50	68	83	101	141	0.7	1.2	1.7	2.7	3.4	4.3	6.5	1.5	2.1	2.7	3.7	4.4	5.3	7.5
2110dp	**237**	8	21	53	132	182	248	392	8	21	53	132	182	248	392	0.9	2.6	6.4	15.2	21.6	29.9	48.2	0.9	2.6	6.4	15.2	21.6	29.9	48.2

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
2112dp	**125**	3	9	23	58	81	111	175	3	9	23	58	81	111	175	0.5	1.3	3.4	8.0	11.4	15.7	25.4	0.5	1.3	3.4	8.0	11.4	15.7	25.4
211in	**112**	5	13	34	80	111	149	235	5	13	34	80	111	149	235	0.4	1.2	3.0	7.2	10.2	14.1	22.7	0.4	1.2	3.0	7.2	10.2	14.1	22.7
212in	**125**	3	9	23	58	81	111	175	3	9	23	58	81	111	175	0.5	1.3	3.4	8.0	11.4	15.7	25.4	0.5	1.3	3.4	8.0	11.4	15.7	25.4
2200dp	**115**	2	7	19	51	72	99	157	4	9	22	54	75	102	161	0.3	0.9	2.8	7.1	10.1	14.2	23.0	0.5	1.4	3.3	7.5	10.6	14.7	23.6
220in	**115**	2	7	19	51	72	99	157	4	9	22	54	75	102	161	0.3	0.9	2.8	7.1	10.1	14.2	23.0	0.5	1.4	3.3	7.5	10.6	14.7	23.6
2300dp	**92**	1	5	18	50	70	96	152	1	5	18	50	70	96	152	0.1	0.6	2.0	5.4	7.9	11.1	18.1	0.1	0.6	2.0	5.4	7.9	11.1	18.1
230in	**92**	1	5	18	50	70	96	152	1	5	18	50	70	96	152	0.1	0.6	2.0	5.4	7.9	11.1	18.1	0.1	0.6	2.0	5.4	7.9	11.1	18.1
3000dp	**221**	4	11	29	75	104	146	233	4	11	29	75	104	146	233	0.9	2.4	6.0	14.2	20.2	28.0	45.1	0.9	2.4	6.0	14.2	20.2	28.0	45.1
300in	**36**	1	3	9	22	30	41	64	1	3	9	22	30	41	64	0.1	0.3	0.9	2.2	3.2	4.5	7.2	0.1	0.3	0.9	2.2	3.2	4.5	7.2
3010dp	**123**	2	6	14	37	52	74	118	2	6	14	37	52	74	118	0.5	1.4	3.4	8.0	11.3	15.7	25.3	0.5	1.4	3.4	8.0	11.3	15.7	25.3
301in	**76**	2	5	13	34	47	64	101	2	5	13	34	47	64	101	0.3	0.8	2.1	4.9	6.9	9.5	15.4	0.3	0.8	2.1	4.9	6.9	9.5	15.4
3020dp	**47**	1	2	5	11	16	22	35	1	2	5	11	16	22	35	0.2	0.5	1.3	3.1	4.3	6.0	9.7	0.2	0.5	1.3	3.1	4.3	6.0	9.7
302in	**47**	1	2	5	11	16	22	35	1	2	5	11	16	22	35	0.2	0.5	1.3	3.1	4.3	6.0	9.7	0.2	0.5	1.3	3.1	4.3	6.0	9.7
303in	**62**	1	3	8	19	27	38	60	1	3	8	19	27	38	60	0.2	0.7	1.7	4.0	5.6	7.8	12.6	0.2	0.7	1.7	4.0	5.6	7.8	12.6
3100dp	**83**	3	8	20	49	67	90	141	4	10	22	50	69	92	144	0.4	1.0	2.4	5.5	7.7	10.6	17.1	0.5	1.1	2.6	5.6	7.9	10.8	17.3
310in	**43**	2	4	11	26	35	48	75	2	5	11	27	36	49	76	0.2	0.5	1.2	2.8	3.9	5.4	8.7	0.2	0.6	1.3	2.9	4.0	5.5	8.8
311in	**41**	2	4	10	23	31	42	66	2	5	10	24	32	43	67	0.2	0.5	1.2	2.7	3.8	5.2	8.3	0.2	0.6	1.3	2.8	3.9	5.3	8.4
312in	**30**	5	8	12	21	28	36	53	8	13	18	30	37	47	68	0.7	1.1	1.7	2.8	3.7	4.7	7.1	1.0	1.6	2.2	3.3	4.1	5.2	7.6
3200dp	**20**	0	0	2	5	8	11	18	1	1	3	6	9	12	19	0.0	0.1	0.4	1.1	1.6	2.3	3.8	0.1	0.3	0.6	1.3	1.9	2.6	4.1
320in	**20**	0	0	2	5	8	11	18	1	1	3	6	9	12	19	0.0	0.1	0.4	1.1	1.6	2.3	3.8	0.1	0.3	0.6	1.3	1.9	2.6	4.1
3300dp	**281**	1	20	54	147	208	291	468	202	279	349	501	607	745	1,070	0.3	2.8	7.3	18.0	25.4	35.3	57.1	18.4	25.3	31.9	41.7	50.0	59.2	82.6
330in	**98**	1	8	20	49	67	92	146	74	101	127	182	221	266	372	0.1	0.9	2.4	6.1	8.7	12.1	19.6	5.6	7.9	10.1	13.6	16.5	19.7	27.8
3310dp	**183**	1	16	42	109	153	210	336	162	221	273	388	469	564	792	0.2	1.8	4.7	11.6	16.5	23.0	37.1	12.4	17.0	21.3	27.8	33.1	39.3	54.3
331in	**114**	1	12	30	73	101	136	214	125	168	207	280	336	399	552	0.1	1.1	2.8	7.1	10.1	14.1	22.9	7.5	10.4	13.1	17.1	20.6	24.2	33.8
3320dp	**69**	1	8	20	48	67	90	141	82	109	134	179	215	257	355	0.1	0.6	1.7	4.3	6.1	8.6	13.9	4.6	6.3	7.9	10.3	12.4	14.6	20.3
332in	**69**	1	8	20	48	67	90	141	82	109	134	179	215	257	355	0.1	0.6	1.7	4.3	6.1	8.6	13.9	4.6	6.3	7.9	10.3	12.4	14.6	20.3
3500dp	**340**	28	51	90	191	260	358	566	79	127	182	324	418	540	811	4.1	8.0	13.8	26.5	35.9	47.6	74.3	9.8	15.2	21.8	34.4	43.9	55.6	82.9
350in	**51**	7	12	19	38	49	64	98	14	22	32	55	70	88	131	0.9	1.6	2.4	4.4	5.7	7.5	11.5	1.5	2.3	3.2	5.1	6.5	8.3	12.3
3510dp	**289**	22	41	76	162	222	305	483	70	111	159	282	363	466	700	3.2	6.4	11.4	22.2	30.0	40.2	62.9	8.3	12.9	18.5	29.2	37.4	47.3	70.3
3511dp	**234**	20	35	64	135	184	253	401	67	105	146	253	323	413	617	2.7	5.4	9.4	18.2	24.6	32.8	51.3	7.9	11.9	16.6	25.2	31.9	39.9	58.6
351in	**14**	1	2	3	8	11	14	23	1	2	3	8	11	14	23	0.1	0.2	0.4	0.9	1.3	1.8	2.9	0.1	0.2	0.4	0.9	1.3	1.8	2.9
3520dp	**183**	5	17	39	95	133	186	298	53	84	118	204	261	332	497	0.8	2.5	5.5	12.4	17.3	23.8	38.1	6.0	9.0	12.6	19.4	24.6	31.0	45.7
352in	**37**	1	2	5	13	18	25	40	1	2	5	13	18	25	40	0.1	0.3	0.9	2.3	3.3	4.5	7.4	0.1	0.3	0.9	2.3	3.3	4.5	7.4
3530dp	**51**	18	27	37	59	74	92	133	18	27	37	59	74	92	133	1.9	2.9	4.0	5.8	7.3	9.0	13.1	1.9	2.9	4.0	5.8	7.3	9.0	13.1
3535dp	**146**	6	17	39	93	127	173	273	64	98	134	218	276	345	505	0.6	2.1	4.5	9.9	13.8	18.9	30.2	5.6	8.3	11.3	16.6	20.7	25.6	37.4
353in	**51**	18	27	37	59	74	92	133	18	27	37	59	74	92	133	1.9	2.9	4.0	5.8	7.3	9.0	13.1	1.9	2.9	4.0	5.8	7.3	9.0	13.1

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
354.5in	**20**	6	10	14	25	32	40	59	6	10	14	25	32	40	59	0.5	0.8	1.2	1.9	2.4	3.1	4.7	0.5	0.8	1.2	1.9	2.4	3.1	4.7
3540dp	**41**	3	6	11	23	30	40	62	3	6	11	23	30	40	62	0.4	0.8	1.5	3.0	4.1	5.5	8.7	0.4	0.8	1.5	3.0	4.1	5.5	8.7
354in	**41**	3	6	11	23	30	40	62	3	6	11	23	30	40	62	0.4	0.8	1.5	3.0	4.1	5.5	8.7	0.4	0.8	1.5	3.0	4.1	5.5	8.7
3550dp	**126**	1	11	29	75	104	142	226	60	90	122	196	247	307	449	0.2	1.3	3.3	8.0	11.4	15.8	25.5	5.1	7.5	10.1	14.7	18.3	22.5	32.8
355in	**40**	1	5	12	28	38	51	80	25	38	50	75	94	115	166	0.1	0.4	1.1	2.6	3.7	5.1	8.2	1.7	2.4	3.3	4.7	5.9	7.2	10.5
3560dp	**86**	1	9	22	53	73	98	154	45	68	91	142	177	218	314	0.1	0.8	2.1	5.3	7.6	10.6	17.2	3.4	5.0	6.8	9.9	12.3	15.2	22.1
356in	**86**	1	9	22	53	73	98	154	45	68	91	142	177	218	314	0.1	0.8	2.1	5.3	7.6	10.6	17.2	3.4	5.0	6.8	9.9	12.3	15.2	22.1
3800dp	**32**	0	2	5	14	19	26	41	24	33	40	56	68	81	112	0.0	0.3	0.8	2.0	2.8	3.9	6.4	2.1	2.8	3.6	4.7	5.6	6.7	9.3
380in	**32**	0	2	5	14	19	26	41	24	33	40	56	68	81	112	0.0	0.3	0.8	2.0	2.8	3.9	6.4	2.1	2.8	3.6	4.7	5.6	6.7	9.3
4000dp	**44**	1	6	14	34	46	62	98	54	72	88	118	141	169	233	0.0	0.4	1.1	2.7	3.9	5.4	8.8	2.9	3.9	4.9	6.4	7.7	9.1	12.7
4005dp	**44**	1	6	14	34	46	62	98	54	72	88	118	141	169	233	0.0	0.4	1.1	2.7	3.9	5.4	8.8	2.9	3.9	4.9	6.4	7.7	9.1	12.7
400in	**44**	1	6	14	34	46	62	98	54	72	88	118	141	169	233	0.0	0.4	1.1	2.7	3.9	5.4	8.8	2.9	3.9	4.9	6.4	7.7	9.1	12.7
4300dp	**76**	1	8	20	50	69	93	147	68	95	119	166	201	242	338	0.1	0.7	1.9	4.7	6.7	9.4	15.2	4.3	6.0	7.7	10.4	12.6	15.0	21.1
430in	**26**	0	2	5	13	17	24	37	12	17	23	36	45	55	80	0.0	0.2	0.6	1.6	2.3	3.2	5.2	1.0	1.5	2.1	3.0	3.8	4.6	6.7
4310dp	**50**	1	7	16	39	53	71	112	62	82	100	134	161	193	266	0.0	0.5	1.2	3.1	4.4	6.1	9.9	3.2	4.5	5.6	7.3	8.8	10.3	14.4
431in	**50**	1	7	16	39	53	71	112	62	82	100	134	161	193	266	0.0	0.5	1.2	3.1	4.4	6.1	9.9	3.2	4.5	5.6	7.3	8.8	10.3	14.4
440.5in	**56**	1	7	16	38	53	71	112	34	51	69	104	130	160	230	0.0	0.5	1.4	3.5	4.9	6.9	11.2	2.2	3.3	4.5	6.5	8.1	9.9	14.5
4400dp	**447**	15	49	102	231	315	422	669	241	342	438	655	807	987	1,411	1.9	6.2	13.5	30.1	42.0	57.7	92.1	23.7	33.8	43.6	59.5	72.4	87.2	123.7
4405dp	**352**	14	41	80	179	243	327	521	184	259	332	499	617	755	1,095	1.8	5.4	11.1	24.2	33.8	46.0	73.4	19.2	27.2	35.0	47.6	58.0	69.4	98.2
440in	**46**	0	4	10	24	33	45	71	14	23	33	54	69	86	127	0.0	0.4	1.2	2.9	4.1	5.7	9.3	1.4	2.2	3.1	4.8	6.1	7.6	11.4
4410dp	**180**	4	13	30	70	97	135	220	89	125	158	243	294	355	489	0.6	2.3	5.2	11.9	16.7	23.0	36.8	10.8	15.0	19.1	25.5	31.0	36.8	51.6
441in	**50**	4	10	17	36	47	62	95	45	62	78	108	131	157	220	0.4	1.1	1.9	3.8	5.2	6.9	10.8	2.9	4.1	5.2	7.0	8.5	10.1	14.2
442.5in	**57**	2	8	17	38	52	70	110	56	76	95	132	160	192	268	0.1	0.7	1.6	3.7	5.2	7.2	11.6	3.3	4.7	6.0	7.9	9.6	11.5	16.1
4420dp	**48**	0	5	12	29	40	53	84	48	65	80	110	132	157	219	0.0	0.4	1.2	3.0	4.3	6.0	9.7	3.1	4.3	5.4	7.1	8.5	10.1	14.1
4425dp	**116**	10	25	44	90	120	157	242	91	128	164	236	289	347	484	1.1	2.5	4.5	8.8	12.0	16.0	25.0	6.2	8.8	11.4	15.5	18.9	22.7	32.2
442in	**48**	0	5	12	29	40	53	84	48	65	80	110	132	157	219	0.0	0.4	1.2	3.0	4.3	6.0	9.7	3.1	4.3	5.4	7.1	8.5	10.1	14.1
4430dp	**59**	9	17	28	52	68	88	133	42	60	78	113	139	168	239	1.0	1.8	2.9	5.1	6.8	8.8	13.5	2.9	4.1	5.4	7.5	9.3	11.2	16.1
443in	**59**	9	17	28	52	68	88	133	42	60	78	113	139	168	239	1.0	1.8	2.9	5.1	6.8	8.8	13.5	2.9	4.1	5.4	7.5	9.3	11.2	16.1
450.5in	**59**	1	7	15	35	48	65	102	19	31	44	74	94	117	173	0.1	0.7	1.6	3.8	5.3	7.4	12.0	1.7	2.6	3.8	5.9	7.6	9.6	14.3
4500dp	**164**	3	18	42	103	143	194	306	80	121	165	261	325	402	586	0.4	1.9	4.6	10.7	15.1	20.9	33.5	6.4	9.5	12.9	18.8	23.5	29.0	42.4
450in	**80**	0	5	12	30	42	58	93	27	40	54	87	109	135	196	0.1	0.7	2.0	4.9	7.1	9.9	16.0	3.0	4.5	6.2	9.1	11.3	14.0	20.4
4510dp	**105**	3	14	32	75	102	137	214	73	107	142	210	261	317	454	0.2	1.2	2.9	6.8	9.6	13.3	21.4	4.6	6.8	9.0	12.8	15.8	19.3	27.8
451in	**105**	3	14	32	75	102	137	214	73	107	142	210	261	317	454	0.2	1.2	2.9	6.8	9.6	13.3	21.4	4.6	6.8	9.0	12.8	15.8	19.3	27.8
4700dp	**130**	1	6	17	45	64	89	143	68	94	118	176	211	251	354	0.1	1.2	3.3	8.1	11.6	16.1	26.1	7.8	10.9	13.9	18.5	22.4	26.6	37.4
470in	**38**	0	4	9	21	30	40	63	34	47	58	81	97	116	162	0.0	0.4	1.0	2.4	3.4	4.7	7.6	2.3	3.3	4.1	5.5	6.6	7.9	11.0
4710dp	**92**	0	5	12	30	42	59	94	50	69	86	125	152	182	256	0.1	0.9	2.3	5.7	8.1	11.4	18.4	5.4	7.6	9.7	13.0	15.7	18.7	26.2

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
471in	**92**	0	5	12	30	42	59	94	50	69	86	125	152	182	256	0.1	0.9	2.3	5.7	8.1	11.4	18.4	5.4	7.6	9.7	13.0	15.7	18.7	26.2
5010dp	**190**	1	12	34	94	133	183	296	126	171	213	311	379	464	651	0.2	1.8	4.8	12.0	17.0	23.7	38.4	12.1	16.7	21.1	27.8	33.5	39.6	55.2
501in	**108**	1	11	26	64	88	119	187	102	140	174	239	288	342	476	0.1	1.0	2.7	6.7	9.6	13.4	21.7	6.8	9.4	11.9	15.7	18.9	22.4	31.3
5020dp	**81**	0	6	16	42	59	82	132	61	84	106	154	187	226	315	0.1	0.8	2.1	5.1	7.3	10.2	16.5	5.2	7.2	9.0	11.9	14.3	17.0	23.7
502in	**40**	0	4	10	25	35	47	73	41	55	68	94	113	135	188	0.0	0.4	1.0	2.5	3.6	5.0	8.1	2.5	3.5	4.4	5.9	7.1	8.4	11.7
5030dp	**41**	0	4	9	22	30	41	65	36	49	61	84	101	121	168	0.0	0.4	1.0	2.6	3.6	5.1	8.2	2.6	3.6	4.5	6.0	7.2	8.5	11.9
503in	**41**	0	4	9	22	30	41	65	36	49	61	84	101	121	168	0.0	0.4	1.0	2.6	3.6	5.1	8.2	2.6	3.6	4.5	6.0	7.2	8.5	11.9
510in	**95**	34	58	85	144	184	231	342	34	58	85	144	184	231	342	2.4	3.9	5.7	9.1	11.8	15.0	22.5	2.4	3.9	5.7	9.1	11.8	15.0	22.5
5110dp	**91**	22	38	55	95	122	155	230	22	38	55	95	122	155	230	2.3	3.8	5.5	8.8	11.4	14.5	21.7	2.3	3.8	5.5	8.8	11.4	14.5	21.7
511in	**91**	22	38	55	95	122	155	230	22	38	55	95	122	155	230	2.3	3.8	5.5	8.8	11.4	14.5	21.7	2.3	3.8	5.5	8.8	11.4	14.5	21.7
5120dp	**298**	23	49	86	183	248	330	512	153	215	277	420	519	641	913	2.8	6.1	11.2	22.3	30.4	40.8	64.1	15.1	21.5	27.9	38.7	47.3	57.1	81.3
512in	**108**	22	38	56	99	127	162	241	27	45	65	110	141	177	263	2.6	4.3	6.4	10.3	13.4	17.0	25.7	3.0	4.8	6.9	10.8	13.9	17.6	26.2
5200dp	**163**	37	62	91	158	203	258	382	37	62	91	158	203	258	382	4.2	6.8	9.9	15.8	20.4	25.9	39.0	4.2	6.8	9.9	15.8	20.4	25.9	39.0
520in	**163**	37	62	91	158	203	258	382	37	62	91	158	203	258	382	4.2	6.8	9.9	15.8	20.4	25.9	39.0	4.2	6.8	9.9	15.8	20.4	25.9	39.0
5300dp	**171**	47	81	119	205	263	331	488	47	81	119	205	263	331	488	4.4	7.1	10.4	16.5	21.3	27.1	40.8	4.4	7.1	10.4	16.5	21.3	27.1	40.8
530in	**119**	26	43	63	111	142	181	268	26	43	63	111	142	181	268	3.0	4.9	7.2	11.5	14.9	18.9	28.4	3.0	4.9	7.2	11.5	14.9	18.9	28.4
5310dp	**53**	27	46	67	107	137	174	255	27	46	67	107	137	174	255	1.3	2.1	3.1	5.0	6.4	8.2	12.2	1.3	2.1	3.1	5.0	6.4	8.2	12.2
531in	**53**	27	46	67	107	137	174	255	27	46	67	107	137	174	255	1.3	2.1	3.1	5.0	6.4	8.2	12.2	1.3	2.1	3.1	5.0	6.4	8.2	12.2
5500dp	**540**	8	38	93	237	333	466	749	123	202	291	511	656	838	1,238	1.3	6.4	15.2	35.6	50.3	69.4	111.1	16.8	26.1	36.8	56.8	72.1	90.5	134.1
550in	**27**	8	14	20	35	45	56	83	8	14	20	35	45	57	84	0.7	1.1	1.6	2.6	3.3	4.2	6.3	0.7	1.1	1.6	2.6	3.3	4.2	6.3
5510dp	**171**	1	10	25	66	94	132	213	45	69	96	160	203	254	372	0.2	1.8	4.5	11.2	15.8	21.9	35.3	6.2	9.3	12.8	19.1	24.2	30.0	44.2
551in	**137**	1	8	19	49	69	96	153	23	39	58	103	133	169	252	0.1	1.3	3.4	8.5	12.1	17.0	27.5	3.4	5.6	8.2	13.2	17.1	21.7	32.5
5520dp	**171**	1	11	29	76	108	152	244	32	55	82	151	196	254	383	0.2	1.8	4.5	11.0	15.6	21.6	35.0	4.5	7.3	10.6	16.9	21.8	27.7	41.4
552in	**87**	1	8	20	47	65	88	139	22	37	54	93	120	152	224	0.2	0.9	2.3	5.5	7.8	10.9	17.5	2.2	3.6	5.3	8.4	10.9	13.8	20.7
5530dp	**171**	1	11	30	79	111	155	250	45	73	104	182	233	295	431	0.2	1.8	4.5	10.9	15.4	21.5	34.7	5.4	8.3	11.7	17.9	22.8	28.5	42.4
553in	**68**	1	8	18	43	59	80	125	20	33	49	84	107	134	199	0.1	0.7	1.8	4.4	6.1	8.5	13.7	1.7	2.8	4.1	6.6	8.5	10.8	16.2
5540dp	**103**	1	7	19	47	65	90	142	35	54	74	121	153	190	278	0.1	1.0	2.6	6.4	9.1	12.7	20.7	3.5	5.3	7.4	11.1	14.1	17.6	25.8
554in	**103**	1	7	19	47	65	90	142	35	54	74	121	153	190	278	0.1	1.0	2.6	6.4	9.1	12.7	20.7	3.5	5.3	7.4	11.1	14.1	17.6	25.8
5550dp	**85**	1	7	16	41	57	77	123	20	33	48	83	107	135	201	0.1	0.8	2.1	5.3	7.5	10.5	17.0	2.2	3.5	5.2	8.3	10.6	13.5	20.3
555in	**85**	1	7	16	41	57	77	123	20	33	48	83	107	135	201	0.1	0.8	2.1	5.3	7.5	10.5	17.0	2.2	3.5	5.2	8.3	10.6	13.5	20.3
5560dp	**34**	0	5	11	27	37	49	77	38	52	64	88	106	128	177	0.0	0.3	0.8	2.1	3.0	4.2	6.8	2.0	2.8	3.5	4.7	5.7	6.8	9.5
556in	**34**	0	5	11	27	37	49	77	38	52	64	88	106	128	177	0.0	0.3	0.8	2.1	3.0	4.2	6.8	2.0	2.8	3.5	4.7	5.7	6.8	9.5
6000dp	**202**	12	34	67	151	206	275	430	55	95	143	255	328	419	631	1.4	3.7	7.2	14.8	20.3	27.3	43.0	5.3	8.5	12.4	19.7	25.4	32.2	48.2
600in	**93**	9	21	36	71	94	124	188	27	46	67	114	147	184	274	1.0	2.2	3.8	7.2	9.8	13.0	20.3	2.4	3.9	5.6	9.0	11.6	14.8	22.2
6010dp	**109**	5	20	42	93	126	167	259	39	67	97	165	211	265	391	0.4	1.4	3.2	7.2	10.2	14.0	22.4	2.8	4.5	6.6	10.5	13.6	17.2	25.9
601in	**109**	5	20	42	93	126	167	259	39	67	97	165	211	265	391	0.4	1.4	3.2	7.2	10.2	14.0	22.4	2.8	4.5	6.6	10.5	13.6	17.2	25.9

TABLE B-5
Peak Discharge and Total Inflow Volume at Design Points

Design Point	Contributing Area (ac)	Peak Inflow Discharges (cfs)														Peak Inflow Volume (ac-ft)													
		Existing Conditions (CFS)							Future Conditions (CFS)							Existing Conditions (CFS)							Future Conditions (CFS)						
		Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}	V_2	V_5	V_{10}	V_{25}	V_{50}	V_{100}	V_{500}
6200dp	**87**	1	9	23	57	78	105	165	26	44	65	111	142	179	265	0.1	0.8	2.2	5.4	7.7	10.8	17.5	2.2	3.6	5.3	8.5	10.9	13.9	20.8
620in	**87**	1	9	23	57	78	105	165	26	44	65	111	142	179	265	0.1	0.8	2.2	5.4	7.7	10.8	17.5	2.2	3.6	5.3	8.5	10.9	13.9	20.8
6300dp	**17**	0	1	3	9	12	16	25	9	13	17	27	33	40	57	0.0	0.2	0.4	1.1	1.5	2.1	3.5	0.8	1.1	1.5	2.1	2.6	3.2	4.6
630in	**17**	0	1	3	9	12	16	25	9	13	17	27	33	40	57	0.0	0.2	0.4	1.1	1.5	2.1	3.5	0.8	1.1	1.5	2.1	2.6	3.2	4.6
6500dp	**45**	7	13	21	38	50	64	96	17	26	36	58	74	91	133	0.9	1.5	2.3	4.0	5.2	6.8	10.3	1.5	2.3	3.2	4.8	6.0	7.5	11.1
650in	**45**	7	13	21	38	50	64	96	17	26	36	58	74	91	133	0.9	1.5	2.3	4.0	5.2	6.8	10.3	1.5	2.3	3.2	4.8	6.0	7.5	11.1
7000dp	**308**	144	210	278	437	545	674	976	163	235	307	475	589	725	1,047	13.4	19.5	26.0	37.1	45.7	56.2	81.0	15.6	22.2	28.9	39.9	48.8	58.9	84.1
700in	**65**	2	6	14	33	45	60	94	17	28	40	68	86	109	161	0.2	0.8	1.9	4.3	6.0	8.3	13.3	1.8	2.9	4.1	6.5	8.3	10.5	15.7
7010dp	**243**	161	228	294	440	541	659	944	168	236	303	448	550	669	956	12.9	18.3	23.6	32.2	39.3	47.3	67.2	13.4	18.9	24.3	32.8	40.2	47.9	67.8
701in	**55**	46	65	82	116	141	170	240	49	69	86	120	146	176	246	3.0	4.2	5.4	7.4	9.1	10.8	15.3	3.2	4.4	5.7	7.6	9.3	11.1	15.6
7020dp	**187**	126	179	231	342	420	512	732	130	184	236	348	426	518	740	9.9	14.0	18.1	24.8	30.3	36.5	51.6	10.2	14.4	18.6	25.2	30.7	36.8	52.2
702in	**97**	82	113	142	199	242	287	403	88	120	150	207	250	297	414	5.6	7.9	10.1	13.6	16.5	19.6	27.6	6.0	8.3	10.5	14.0	16.9	20.0	28.0
7030dp	**90**	59	86	114	167	207	251	358	59	86	114	167	207	251	358	4.1	6.0	7.9	11.2	13.8	16.7	24.1	4.1	6.0	7.9	11.2	13.8	16.7	24.1
703in	**90**	59	86	114	167	207	251	358	59	86	114	167	207	251	358	4.1	6.0	7.9	11.2	13.8	16.7	24.1	4.1	6.0	7.9	11.2	13.8	16.7	24.1
7100dp	**61**	17	26	40	71	91	115	172	17	26	40	71	91	115	172	1.5	2.3	3.4	5.6	7.2	9.3	14.1	1.5	2.3	3.4	5.6	7.2	9.3	14.1
710in	**61**	17	26	40	71	91	115	172	17	26	40	71	91	115	172	1.5	2.3	3.4	5.6	7.2	9.3	14.1	1.5	2.3	3.4	5.6	7.2	9.3	14.1
7200dp	**123**	1	2	19	75	109	152	248	1	2	19	75	109	152	248	0.1	0.2	1.4	6.0	9.0	13.3	22.5	0.1	0.2	1.4	6.0	9.0	13.3	22.5
720in	**123**	1	2	19	75	109	152	248	1	2	19	75	109	152	248	0.1	0.2	1.4	6.0	9.0	13.3	22.5	0.1	0.2	1.4	6.0	9.0	13.3	22.5
750in	**29**	4	7	14	29	39	51	79	35	47	59	82	100	115	160	0.3	0.6	1.0	2.1	2.8	3.8	6.0	1.7	2.4	3.0	4.0	4.8	5.7	8.1
7510dp	**204**	27	33	50	92	124	164	253	27	33	51	92	124	165	253	13.7	18.7	23.1	30.0	35.9	42.4	58.6	13.7	18.8	23.2	30.1	35.9	42.4	58.6
751in	**77**	87	116	142	192	230	275	380	87	117	143	193	231	276	381	5.1	6.9	8.7	11.4	13.7	16.2	22.6	5.1	7.0	8.8	11.5	13.8	16.3	22.6
7520dp	**127**	148	199	244	329	394	469	648	148	199	244	329	394	469	648	8.4	11.6	14.5	19.1	22.9	27.0	37.4	8.4	11.6	14.5	19.1	22.9	27.0	37.4
752in	**127**	148	199	244	329	394	469	648	148	199	244	329	394	469	648	8.4	11.6	14.5	19.1	22.9	27.0	37.4	8.4	11.6	14.5	19.1	22.9	27.0	37.4
7600dp	**89**	10	16	32	75	102	137	213	10	16	32	75	102	137	213	0.9	1.6	2.8	6.0	8.3	11.4	18.2	0.9	1.6	2.8	6.0	8.3	11.4	18.2
7605dp	**89**	10	17	33	76	103	137	214	10	17	33	76	103	137	214	0.9	1.6	2.8	6.0	8.3	11.4	18.1	0.9	1.6	2.8	6.0	8.3	11.4	18.1
760in	**20**	1	2	7	21	29	40	65	1	2	7	21	29	40	65	0.0	0.1	0.3	1.0	1.5	2.2	3.7	0.0	0.1	0.3	1.0	1.5	2.2	3.7
7610dp	**69**	9	15	27	57	77	101	156	9	15	27	57	77	101	156	0.9	1.5	2.5	5.0	6.8	9.2	14.5	0.9	1.5	2.5	5.0	6.8	9.2	14.5
761in	**69**	9	15	27	57	77	101	156	9	15	27	57	77	101	156	0.9	1.5	2.5	5.0	6.8	9.2	14.5	0.9	1.5	2.5	5.0	6.8	9.2	14.5
7700dp	**120**	96	134	174	253	312	379	539	96	134	174	253	312	379	539	6.0	8.3	10.8	15.1	18.6	22.5	32.2	6.0	8.3	10.8	15.1	18.6	22.5	32.2
770in	**120**	96	134	174	253	312	379	539	96	134	174	253	312	379	539	6.0	8.3	10.8	15.1	18.6	22.5	32.2	6.0	8.3	10.8	15.1	18.6	22.5	32.2
Storage 10 IN	**204**	204	279	347	486	586	700	972	205	280	348	487	587	701	972	13.7	18.7	23.5	30.7	36.8	43.3	60.2	13.7	18.8	23.5	30.7	36.8	43.6	60.2
Storage 20 IN	**1294**	267	401	590	1,078	1,402	1,840	2,796	299	446	642	1,146	1,480	1,931	2,902	44.5	63.5	86.5	132.9	168.5	211.5	313.0	47.9	67.8	91.5	137.8	173.4	216.1	319.2

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)
--------------------------------------------------------------


*************
Element Count
*************
Number of rain gages ...... 1
Number of subcatchments ... 120
Number of nodes ........... 245
Number of links ........... 244
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                                  Data       Recording
Name                Data Source                   Type       Interval
----------------------------------------------------------------------
Raingage1           Timeseries1                   INTENSITY    6 min.


*******************
Subcatchment Summary
*******************
Name                            Area     Width   %Imperv    %Slope Rain Gage           Outlet
-------------------------------------------------------------------------------------------
100                            49.84   1018.76     79.00    8.3000 Raingage1           1000dp
101                            32.06   1330.46     46.33    6.1680 Raingage1           1010dp
102                            64.00   1592.22     92.06    6.1330 Raingage1           1020dp
103                            53.16    583.48     90.99    7.9600 Raingage1           1030dp
104                           102.16   2161.91     84.80    5.3250 Raingage1           1040dp
105                            85.02   1532.09     84.75    5.7710 Raingage1           1050dp
110                            34.73   1629.47     60.20    7.0040 Raingage1           1100dp
111                            87.33   1572.70     42.99    8.3370 Raingage1           1110dp
112                            67.35   1772.16     33.28    8.8050 Raingage1           1120dp
113                            61.41   1772.16     35.36    8.8050 Raingage1           1130dp
120                            41.55   2113.57     36.70    5.4650 Raingage1           1200dp
121                            89.18   1371.74     29.55    6.0780 Raingage1           1210dp
122                            92.07   1137.67     46.11    6.8480 Raingage1           1222dp
123                            67.36   1635.12     17.64    9.2190 Raingage1           1230dp
124                            87.55   1876.27     52.03    6.3210 Raingage1           1210dp
130                            29.54   1047.98     40.00   12.7280 Raingage1           1300dp
130.2                           8.29    932.64     40.00   10.2480 Raingage1           1302dp
131                           156.68   2499.37     40.01    9.3190 Raingage1           1310dp
140                           105.22   1360.79     70.27    6.2370 Raingage1           1400dp
141                            91.20    769.16     75.18    4.9520 Raingage1           1410dp
141.5                          79.40   1418.78     50.02    5.7010 Raingage1           1415dp
142                            79.28   1638.06     41.66    6.8310 Raingage1           1420dp
150                            79.71   1474.76     86.90    5.7630 Raingage1           1500dp
151                            97.03   2610.28     41.71    7.8810 Raingage1           1500dp
152                            82.89    746.50     86.54    7.8000 Raingage1           1520dp
153                            86.77   1595.23     64.79    8.7730 Raingage1           20
154                            17.65   1060.36     69.91   10.8200 Raingage1           1541dp
155                            83.71   1322.58     67.86    9.9460 Raingage1           1540dp
155.1                          23.29   2153.85     47.70    8.9040 Raingage1           1540dp
160                            47.46   1768.82     27.81   10.0820 Raingage1           1600dp
161                            125.58  1768.82     34.50   10.0820 Raingage1           1600dp
162                             78.85  1469.89     63.41   10.9470 Raingage1           1620dp
162.1                           14.24  2227.41     49.55   11.5430 Raingage1           1623dp
163                             23.89  2056.65     28.95   10.4500 Raingage1           1630dp
163.5                           14.98  1554.86     55.53   12.5420 Raingage1           1631dp
164                             76.79  2608.60     69.59   10.3640 Raingage1           1640dp
165                             24.29  1932.95     82.39   12.3020 Raingage1           1650dp
166                             51.05  1123.09     50.48   14.5790 Raingage1           1660dp
200                             10.22  2020.46     75.41    5.3800 Raingage1           2000dp
201                             99.48   780.67     29.14    4.6770 Raingage1           2020dp
202                             17.95   856.57      2.29    4.2780 Raingage1           2020dp
203                             61.62  1473.79     10.61    4.3660 Raingage1           2030dp
204                             86.02  1607.36      2.07    3.9570 Raingage1           2040dp
205                             38.90   583.48     54.69    7.9600 Raingage1           205in
206                            115.64  1017.41      3.33    4.3440 Raingage1           2060dp
207                            121.68  1594.62      7.17    4.9780 Raingage1           2070dp
208                             84.39  1245.97     82.56    6.4960 Raingage1           2080dp
209                             51.85  1230.11     79.20    6.6900 Raingage1           2090dp
210                             27.16  1287.03     82.45    5.9950 Raingage1           2100dp
211                            111.70   904.42      9.00    5.1470 Raingage1           2110dp
212                            124.97   957.18      9.03    3.5010 Raingage1           2112dp
220                            115.15  1473.79     10.39    4.3660 Raingage1           2200dp
230                             91.72  1025.62      3.29    4.2960 Raingage1           2300dp
300                             35.87  1236.93      9.00    6.2460 Raingage1           3000dp
301                             75.76   742.01      9.00    4.4000 Raingage1           3010dp
302                             47.42   742.01      9.00    4.4000 Raingage1           3020dp
303                             62.04   736.74      9.00    3.4500 Raingage1           3000dp
310                             42.73  2157.32     12.49    4.7720 Raingage1           3100dp
311                             40.68  2050.34     12.67    6.3730 Raingage1           3100dp
312                             30.20  1949.68     51.41    7.8790 Raingage1           1100dp
320                             19.51  1205.87     14.00    6.6860 Raingage1           3200dp
330                             97.98  1390.47     83.00    8.3230 Raingage1           3300dp
331                            114.24  1172.80     94.29    5.3070 Raingage1           3310dp
332                             69.26  1506.15     94.90    5.9460 Raingage1           3320dp
350                             51.12  1820.63     44.24    7.7780 Raingage1           3500dp
351                             14.05  1904.92     12.49    7.8250 Raingage1           3510dp
352                             36.75  1880.37      6.04    6.7960 Raingage1           3520dp
353                             51.32  1783.15     56.49    6.7650 Raingage1           3530dp
354                             40.56   731.21     17.30    6.4200 Raingage1           3540dp
354.5                           19.79  1886.07     38.09    6.7980 Raingage1           3535dp
355                             40.38  1886.07     61.45    6.7980 Raingage1           3550dp
356                             85.88  1886.07     58.62    6.7980 Raingage1           3560dp
380                             31.76   764.21     92.73    5.6340 Raingage1           3800dp
400                             43.83   764.21     95.00    5.6340 Raingage1           4000dp
430                             25.97  2191.64     60.20    5.1830 Raingage1           4300dp
431                             49.63   898.59     95.00    3.9030 Raingage1           4310dp
440                             46.46  2193.62     45.94    5.1760 Raingage1           4400dp
440.5                           55.92  2193.62     59.96    5.1760 Raingage1           4405dp
441                             50.29   877.70     84.40    5.5280 Raingage1           4410dp
442                             48.19  1019.92     91.78    4.5420 Raingage1           4420dp
442.5                           56.65  1019.92     85.02    4.5420 Raingage1           4425dp
443                             59.47   949.43     71.44    5.7440 Raingage1           4430dp
450                             79.66  1222.30     56.90    5.3640 Raingage1           1225dp
450.5                           58.96  2079.56     43.65    7.6280 Raingage1           4500dp
451                            105.35  2105.26     65.55    7.6250 Raingage1           4510dp
470                             38.13   824.67     88.81    5.3470 Raingage1           4700dp
471                             91.81   738.57     85.08    8.5380 Raingage1           4710dp
501                            108.23  1032.83     90.00    4.4680 Raingage1           5010dp
502                             40.41   811.44     90.00    5.1720 Raingage1           5020dp
503                             41.04   778.19     90.00    6.0530 Raingage1           5030dp
510                             94.82  1171.60     40.00   15.3860 Raingage1           1300dp
```

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

511	90.80	832.30	40.00	13.5410	Raingage1	5110dp	1210dp	JUNCTION	5618.99	14.72	0.0
512	108.41	908.90	42.69	12.4590	Raingage1	5120dp	121in	JUNCTION	5642.61	0.00	0.0
520	162.56	814.36	40.00	16.4830	Raingage1	5200dp	1222dp	JUNCTION	5633.87	12.56	0.0
530	118.59	1587.31	40.00	12.8470	Raingage1	5300dp	1225dp	JUNCTION	5644.94	9.38	0.0
531	52.90	1089.74	40.00	14.2280	Raingage1	5310dp	122in	JUNCTION	5677.49	0.00	0.0
550	26.62	2751.20	40.00	8.3450	Raingage1	5500dp	1230dp	JUNCTION	5645.43	12.45	0.0
551	137.07	675.61	39.24	8.3890	Raingage1	5510dp	123in	JUNCTION	5671.27	0.00	0.0
552	86.63	1971.98	40.00	7.0020	Raingage1	5520dp	124in	JUNCTION	5658.35	0.00	0.0
553	67.98	1925.29	40.03	6.8300	Raingage1	5530dp	130.2in	JUNCTION	5692.73	0.00	0.0
554	102.97	1925.29	51.62	6.8300	Raingage1	5540dp	1300dp	JUNCTION	5655.93	27.04	0.0
555	84.71	1977.70	40.00	7.0230	Raingage1	5550dp	1301dp	JUNCTION	5668.53	13.34	0.0
556	33.76	1468.53	87.26	5.7520	Raingage1	5560dp	1302dp	JUNCTION	5681.38	11.88	0.0
600	92.87	1601.95	40.00	11.0830	Raingage1	6000dp	130in	JUNCTION	5666.02	0.00	0.0
601	109.01	1561.70	40.00	6.8270	Raingage1	6010dp	1310dp	JUNCTION	5684.93	16.21	0.0
620	87.23	1597.56	40.00	5.8520	Raingage1	6200dp	131in	JUNCTION	5698.42	0.00	0.0
630	17.28	883.76	66.78	5.6640	Raingage1	6300dp	1400dp	JUNCTION	5708.91	16.58	0.0
650	44.63	772.28	50.59	5.4630	Raingage1	6500dp	140in	JUNCTION	5750.79	0.00	0.0
700	64.85	2726.57	43.19	7.4050	Raingage1	7000dp	141.5in	JUNCTION	5777.56	0.00	0.0
701	55.34	2730.49	82.98	7.4040	Raingage1	7010dp	1410dp	JUNCTION	5732.54	10.66	0.0
702	97.14	2476.83	88.90	7.8810	Raingage1	7020dp	1415dp	JUNCTION	5747.03	10.72	0.0
703	90.24	1678.19	68.09	9.3840	Raingage1	7030dp	141in	JUNCTION	5752.31	0.00	0.0
710	60.66	1248.89	40.05	9.2150	Raingage1	7100dp	1420dp	JUNCTION	5756.86	17.51	0.0
720	122.55	1080.44	2.00	7.3720	Raingage1	7200dp	142in	JUNCTION	5826.43	0.00	0.0
750	29.09	1554.86	88.11	12.5420	Raingage1	1631dp	1500dp	JUNCTION	5767.99	14.42	0.0
751	76.91	1170.63	95.00	11.4810	Raingage1	10	1501dp	JUNCTION	5776.35	13.46	0.0
752	126.91	1215.76	95.00	8.1730	Raingage1	7520dp	1502dp	JUNCTION	5782.94	9.34	0.0
760	20.04	2331.40	7.56	9.4370	Raingage1	7605dp	150in	JUNCTION	5848.57	0.00	0.0
761	68.86	2370.64	24.32	9.5680	Raingage1	7610dp	151in	JUNCTION	5826.83	0.00	0.0
770	120.01	1658.52	73.51	11.2140	Raingage1	7700dp	1520dp	JUNCTION	5786.69	28.21	0.0
							152in	JUNCTION	5848.05	0.00	0.0
							1530dp	JUNCTION	5796.00	23.33	0.0
							153in	JUNCTION	5852.92	0.00	0.0
							1540dp	JUNCTION	5816.11	21.02	0.0
							1541dp	JUNCTION	5823.68	29.36	0.0
							154in	JUNCTION	5864.13	0.00	0.0
							155.1in	JUNCTION	5929.91	0.00	0.0
							155in	JUNCTION	5901.31	0.00	0.0
							1600dp	JUNCTION	5837.00	29.36	0.0
							160in	JUNCTION	5910.97	0.00	0.0
							161in	JUNCTION	5899.38	0.00	0.0
							162.1in	JUNCTION	5914.64	0.00	0.0
							1620dp	JUNCTION	5873.22	28.48	0.0
							1623dp	JUNCTION	5881.24	25.14	0.0
							162in	JUNCTION	5961.02	0.00	0.0
							163.5in	JUNCTION	5923.41	0.00	0.0
							1630dp	JUNCTION	5896.71	25.14	0.0
							1631dp	JUNCTION	5909.31	26.34	0.0
							1635dp	JUNCTION	5913.54	26.34	0.0
							163in	JUNCTION	5963.26	0.00	0.0
							1640dp	JUNCTION	5927.68	25.25	0.0
							164in	JUNCTION	5999.02	0.00	0.0
							1650dp	JUNCTION	5974.72	33.70	0.0
							165in	JUNCTION	6063.66	0.00	0.0
							1660dp	JUNCTION	6012.22	33.70	0.0
							166in	JUNCTION	6075.56	0.00	0.0
							2000dp	JUNCTION	5517.35	11.42	0.0
							200in	JUNCTION	5543.93	0.00	0.0
							2010dp	JUNCTION	5518.04	11.42	0.0
							201in	JUNCTION	5545.66	0.00	0.0
							2020dp	JUNCTION	5526.27	11.90	0.0
							202in	JUNCTION	5582.85	0.00	0.0

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
1000dp	JUNCTION	5490.34	9.74	0.0	
1009dp	JUNCTION	5507.88	9.74	0.0	
100in	JUNCTION	5507.51	0.00	0.0	
1010dp	JUNCTION	5511.17	10.24	0.0	
101in	JUNCTION	5521.43	0.00	0.0	
1020dp	JUNCTION	5519.21	10.36	0.0	
102in	JUNCTION	5539.70	0.00	0.0	
1030dp	JUNCTION	5529.28	10.36	0.0	
103in	JUNCTION	5538.27	0.00	0.0	
1040dp	JUNCTION	5541.16	10.45	0.0	
104in	JUNCTION	5572.85	0.00	0.0	
1050dp	JUNCTION	5549.69	10.68	0.0	
105in	JUNCTION	5571.68	0.00	0.0	
1100dp	JUNCTION	5566.38	14.64	0.0	
110in	JUNCTION	5591.70	0.00	0.0	
1110dp	JUNCTION	5569.09	16.53	0.0	
1115dp	JUNCTION	5577.99	18.83	0.0	
111in	JUNCTION	5601.67	0.00	0.0	
1120dp	JUNCTION	5588.11	18.83	0.0	
112in	JUNCTION	5609.03	0.00	0.0	
1130dp	JUNCTION	5598.03	21.20	0.0	
113in	JUNCTION	5645.09	0.00	0.0	
1200dp	JUNCTION	5608.30	21.20	0.0	
120in	JUNCTION	5617.85	0.00	0.0	

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

2030dp	JUNCTION	5534.68	8.20	0.0
203in	JUNCTION	5556.25	0.00	0.0
2040dp	JUNCTION	5542.97	12.97	0.0
2041dp	JUNCTION	5555.71	12.97	0.0
204in	JUNCTION	5570.84	0.00	0.0
2050dp	JUNCTION	5560.37	0.00	0.0
205in	JUNCTION	5567.45	0.00	0.0
2060dp	JUNCTION	5560.22	9.93	0.0
206in	JUNCTION	5635.01	0.00	0.0
2070dp	JUNCTION	5609.35	16.28	0.0
207in	JUNCTION	5661.00	0.00	0.0
2080dp	JUNCTION	5638.71	16.28	0.0
2085dp	JUNCTION	5658.88	8.81	0.0
208in	JUNCTION	5682.95	0.00	0.0
2090dp	JUNCTION	5669.27	0.00	0.0
209in	JUNCTION	5708.01	0.00	0.0
2100dp	JUNCTION	5666.79	0.00	0.0
210in	JUNCTION	5698.44	0.00	0.0
2110dp	JUNCTION	5557.32	11.90	0.0
2112dp	JUNCTION	5574.53	6.31	0.0
211in	JUNCTION	5599.18	0.00	0.0
212in	JUNCTION	5624.02	0.00	0.0
2200dp	JUNCTION	5554.02	3.71	0.0
220in	JUNCTION	5625.88	0.00	0.0
2300dp	JUNCTION	5581.90	10.55	0.0
230in	JUNCTION	5611.63	0.00	0.0
3000dp	JUNCTION	5525.78	6.16	0.0
300in	JUNCTION	5545.72	0.00	0.0
3010dp	JUNCTION	5533.38	6.16	0.0
301in	JUNCTION	5569.11	0.00	0.0
3020dp	JUNCTION	5605.90	0.83	0.0
302in	JUNCTION	5619.72	0.00	0.0
303in	JUNCTION	5584.59	0.00	0.0
3100dp	JUNCTION	5574.17	2.91	0.0
310in	JUNCTION	5596.89	0.00	0.0
311in	JUNCTION	5602.54	0.00	0.0
312in	JUNCTION	5605.09	0.00	0.0
3200dp	JUNCTION	5563.32	4.60	0.0
320in	JUNCTION	5589.23	0.00	0.0
3300dp	JUNCTION	5566.64	4.78	0.0
330in	JUNCTION	5596.99	0.00	0.0
3310dp	JUNCTION	5592.88	7.92	0.0
331in	JUNCTION	5637.97	0.00	0.0
3320dp	JUNCTION	5635.42	7.92	0.0
332in	JUNCTION	5676.94	0.00	0.0
3500dp	JUNCTION	5570.54	11.48	0.0
350in	JUNCTION	5598.53	0.00	0.0
3510dp	JUNCTION	5588.27	11.01	0.0
3511dp	JUNCTION	5594.92	0.00	0.0
351in	JUNCTION	5605.36	0.00	0.0
3520dp	JUNCTION	5603.54	15.36	0.0
352in	JUNCTION	5603.64	0.00	0.0
3530dp	JUNCTION	5602.44	0.00	0.0
3535dp	JUNCTION	5640.92	15.36	0.0
353in	JUNCTION	5641.46	0.00	0.0
354.5in	JUNCTION	5649.07	0.00	0.0
3540dp	JUNCTION	5601.64	9.87	0.0
354in	JUNCTION	5622.11	0.00	0.0
3550dp	JUNCTION	5645.68	10.55	0.0
355in	JUNCTION	5660.13	0.00	0.0
3560dp	JUNCTION	5661.39	7.34	0.0
356in	JUNCTION	5701.41	0.00	0.0
3800dp	JUNCTION	5605.26	3.28	0.0
380in	JUNCTION	5619.30	0.00	0.0
4000dp	JUNCTION	5620.92	6.14	0.0
4005dp	JUNCTION	5602.11	15.82	0.0
400in	JUNCTION	5647.19	0.00	0.0
4300dp	JUNCTION	5618.85	4.63	0.0
430in	JUNCTION	5637.85	0.00	0.0
4310dp	JUNCTION	5637.17	4.63	0.0
431in	JUNCTION	5669.13	0.00	0.0
440.5in	JUNCTION	5662.25	0.00	0.0
4400dp	JUNCTION	5624.50	9.54	0.0
4405dp	JUNCTION	5636.61	5.74	0.0
440in	JUNCTION	5643.78	0.00	0.0
4410dp	JUNCTION	5668.43	5.67	0.0
441in	JUNCTION	5709.11	0.00	0.0
442.5in	JUNCTION	5687.97	0.00	0.0
4420dp	JUNCTION	5654.36	4.33	0.0
4425dp	JUNCTION	5658.26	5.74	0.0
442in	JUNCTION	5673.85	0.00	0.0
4430dp	JUNCTION	5707.78	4.54	0.0
443in	JUNCTION	5748.32	0.00	0.0
450.5in	JUNCTION	5671.25	0.00	0.0
4500dp	JUNCTION	5648.90	16.46	0.0
450in	JUNCTION	5691.71	0.00	0.0
4510dp	JUNCTION	5684.66	16.46	0.0
451in	JUNCTION	5725.07	0.00	0.0
4700dp	JUNCTION	5694.82	4.35	0.0
470in	JUNCTION	5727.92	0.00	0.0
4710dp	JUNCTION	5735.17	3.58	0.0
471in	JUNCTION	5775.00	0.00	0.0
5010dp	JUNCTION	5705.55	3.35	0.0
501in	JUNCTION	5761.05	0.00	0.0
5020dp	JUNCTION	5753.51	6.14	0.0
502in	JUNCTION	5790.91	0.00	0.0
5030dp	JUNCTION	5786.96	6.14	0.0
503in	JUNCTION	5822.73	0.00	0.0
510in	JUNCTION	5772.68	0.00	0.0
5110dp	JUNCTION	5683.95	27.04	0.0
511in	JUNCTION	5849.54	0.00	0.0
5120dp	JUNCTION	5691.90	7.23	0.0
512in	JUNCTION	5791.26	0.00	0.0
5200dp	JUNCTION	5717.77	0.00	0.0
520in	JUNCTION	5820.53	0.00	0.0
5300dp	JUNCTION	5694.27	9.14	0.0
530in	JUNCTION	5720.98	0.00	0.0
5310dp	JUNCTION	5728.70	9.14	0.0
531in	JUNCTION	5822.45	0.00	0.0
5500dp	JUNCTION	5703.65	10.65	0.0
550in	JUNCTION	5727.19	0.00	0.0
5510dp	JUNCTION	5728.63	13.31	0.0
551in	JUNCTION	5789.66	0.00	0.0
5520dp	JUNCTION	5715.86	8.87	0.0
552in	JUNCTION	5763.95	0.00	0.0
5530dp	JUNCTION	5722.52	10.65	0.0
553in	JUNCTION	5770.97	0.00	0.0
5540dp	JUNCTION	5769.85	6.68	0.0
554in	JUNCTION	5817.12	0.00	0.0
5550dp	JUNCTION	5755.85	8.25	0.0
555in	JUNCTION	5859.22	0.00	0.0
5560dp	JUNCTION	5832.07	13.31	0.0

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

556in	JUNCTION	5867.29	0.00	0.0
6000dp	JUNCTION	5716.55	15.63	0.0
600in	JUNCTION	5767.50	0.00	0.0
6010dp	JUNCTION	5741.09	15.63	0.0
601in	JUNCTION	5809.96	0.00	0.0
6200dp	JUNCTION	5755.00	16.58	0.0
620in	JUNCTION	5793.32	0.00	0.0
6300dp	JUNCTION	5764.36	8.90	0.0
630in	JUNCTION	5792.16	0.00	0.0
6500dp	JUNCTION	5814.28	17.51	0.0
650in	JUNCTION	5847.75	0.00	0.0
7000dp	JUNCTION	5784.37	9.14	0.0
700in	JUNCTION	5849.63	0.00	0.0
7010dp	JUNCTION	5817.61	23.77	0.0
701in	JUNCTION	5894.38	0.00	0.0
7020dp	JUNCTION	5835.85	23.77	0.0
702in	JUNCTION	5878.99	0.00	0.0
7030dp	JUNCTION	5864.60	21.57	0.0
703in	JUNCTION	5895.32	0.00	0.0
7100dp	JUNCTION	5865.23	5.46	0.0
710in	JUNCTION	5925.96	0.00	0.0
7200dp	JUNCTION	5900.08	23.11	0.0
720in	JUNCTION	5946.35	0.00	0.0
750in	JUNCTION	5952.83	0.00	0.0
7510dp	JUNCTION	5919.38	21.68	0.0
751in	JUNCTION	6020.55	0.00	0.0
7520dp	JUNCTION	5991.81	6.28	0.0
752in	JUNCTION	6054.02	0.00	0.0
7600dp	JUNCTION	5920.81	7.14	0.0
7605dp	JUNCTION	5932.73	25.46	0.0
760in	JUNCTION	5979.64	0.00	0.0
7610dp	JUNCTION	5954.71	25.46	0.0
761in	JUNCTION	6011.89	0.00	0.0
7700dp	JUNCTION	6007.85	27.44	0.0
770in	JUNCTION	6099.86	0.00	0.0
1000outfall	OUTFALL	5490.00	0.00	0.0
10	STORAGE	5936.00	20.00	0.0
20	STORAGE	5796.00	17.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
1	442.5in	4425dp	CONDUIT	1431.1	2.0765	0.0100
10	162.1in	1623dp	CONDUIT	440.5	7.6027	0.0100
100	555in	5550dp	CONDUIT	1411.8	7.3412	0.0100
1000out	1000dp	1000outfall	CONDUIT	15.2	2.2255	0.0100
1014re	1009dp	1000dp	CONDUIT	3095.5	0.5665	0.0100
1015re	1010dp	1009dp	CONDUIT	116.2	2.8369	0.0100
102	556in	5560dp	CONDUIT	737.1	4.7834	0.0100
1025re	1020dp	1010dp	CONDUIT	2285.7	0.3516	0.0360
1035re	1030dp	1020dp	CONDUIT	1483.0	0.6792	0.0450
104	550in	5500dp	CONDUIT	869.1	2.7098	0.0100
1045re	1040dp	1030dp	CONDUIT	2436.5	0.4876	0.0520
105	511in	5110dp	CONDUIT	1872.6	8.8774	0.0100
1055re	1050dp	1040dp	CONDUIT	1064.9	0.8007	0.0500
109	510in	1300dp	CONDUIT	2201.9	5.3095	0.0100
1105re	1100dp	1050dp	CONDUIT	3228.4	0.5171	0.0490
111	512in	5120dp	CONDUIT	2228.1	4.4639	0.0100
1115re	1110dp	1100dp	CONDUIT	1038.4	0.2610	0.0320
1120re	1115dp	1110dp	CONDUIT	1130.4	0.7874	0.0320
1125re	1120dp	1115dp	CONDUIT	1277.1	0.7925	0.0550
113	471in	4710dp	CONDUIT	2483.8	1.6038	0.0100
1135re	1130dp	1120dp	CONDUIT	1867.5	0.5312	0.0410
115	470in	4700dp	CONDUIT	1382.8	2.3944	0.0100
117	443in	4430dp	CONDUIT	1481.6	2.7375	0.0100
119	442in	4420dp	CONDUIT	934.3	2.0862	0.0100
1205re	1200dp	1130dp	CONDUIT	1339.8	0.7661	0.0480
1215re	1210dp	1200dp	CONDUIT	1524.4	0.7019	0.0450
122	441in	4410dp	CONDUIT	1602.0	2.5405	0.0100
1227re	1222dp	1210dp	CONDUIT	2664.0	0.5583	0.0460
1230re	1225dp	1222dp	CONDUIT	2294.6	0.4827	0.0460
1235re	1230dp	1225dp	CONDUIT	308.6	0.1578	0.0470
124	440in	4400dp	CONDUIT	1722.0	1.1198	0.0100
126	501in	5010dp	CONDUIT	2075.7	2.6752	0.0100
129	502in	5020dp	CONDUIT	1687.2	2.2173	0.0100
13	205in	2050dp	CONDUIT	242.2	2.9252	0.0100
1305re	1300dp	1230dp	CONDUIT	1602.5	0.6555	0.0420
1306re	1301dp	1300dp	CONDUIT	1244.8	1.0117	0.0480
1307re	1302dp	1301dp	CONDUIT	2603.6	0.4934	0.0440
131	503in	5030dp	CONDUIT	753.6	4.7514	0.0100
132	531in	5310dp	CONDUIT	1017.5	9.2528	0.0100
134	530in	5300dp	CONDUIT	900.0	2.9690	0.0100
136	5300dp	1310dp	CONDUIT	725.1	1.2887	0.0100
137	520in	5200dp	CONDUIT	1029.8	10.0289	0.0100
138	451in	4510dp	CONDUIT	1517.7	2.6634	0.0100
14	212in	2112dp	CONDUIT	1932.4	2.5615	0.0100
140	450in	1225dp	CONDUIT	2110.6	2.2164	0.0100
1405re	1400dp	1310dp	CONDUIT	3701.1	0.6480	0.0470
141	4500dp	1225dp	CONDUIT	594.5	0.6663	0.0100
1415re	1410dp	1400dp	CONDUIT	3979.1	0.5939	0.0460
1420re	1415dp	1410dp	CONDUIT	2310.3	0.6273	0.0440
1425re	1420dp	1415dp	CONDUIT	2244.4	0.4378	0.0440
144	122in	1222dp	CONDUIT	1379.9	3.1626	0.0100
146	124in	1210dp	CONDUIT	920.2	4.2806	0.0100
148	113in	1130dp	CONDUIT	1078.2	4.3682	0.0100
15	211in	2110dp	CONDUIT	1371.0	3.0543	0.0100
1505re	1500dp	1420dp	CONDUIT	1373.9	0.8104	0.0640
1506re	1501dp	1500dp	CONDUIT	622.9	1.3414	0.0510
1507re	1502dp	1501dp	CONDUIT	528.4	1.2477	0.0500
151	400in	4000dp	CONDUIT	852.2	3.0840	0.0100
1525re	1520dp	1502dp	CONDUIT	680.8	0.5511	0.0560
1535re	1530dp	1520dp	CONDUIT	1291.0	0.3432	0.0430
154	431in	4310dp	CONDUIT	1464.0	2.1839	0.0100
1545re	1540dp	20	CONDUIT	910.5	2.2090	0.0590
156	430in	4300dp	CONDUIT	965.9	1.9672	0.0100
159	121in	1210dp	CONDUIT	1440.7	1.6392	0.0100
16	210in	2100dp	CONDUIT	753.0	4.2071	0.0100
1605re	1541dp	1540dp	CONDUIT	1107.0	0.6841	0.0480
1606re	1600dp	1541dp	CONDUIT	1299.0	1.0254	0.0730
162	332in	3320dp	CONDUIT	1710.5	2.4278	0.0100
1625re	1620dp	1600dp	CONDUIT	3020.7	1.1990	0.0540
1628re	1623dp	1620dp	CONDUIT	760.8	1.0553	0.0620
163	163.5in	1631dp	CONDUIT	488.1	2.8905	0.0100
1635re	1630dp	1623dp	CONDUIT	1120.1	1.3809	0.0620
1636re	1631dp	1630dp	CONDUIT	716.7	1.7584	0.0450
164	331in	3310dp	CONDUIT	1040.3	4.3384	0.0100
1640re	1635dp	1631dp	CONDUIT	308.0	1.3733	0.0680
1645re	1640dp	1635dp	CONDUIT	981.5	1.4406	0.0680
165	330in	3300dp	CONDUIT	1892.2	1.6038	0.0100

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

1655re	1650dp	1640dp	CONDUIT	1926.2	2.4429	0.0910	24	702in	7020dp	CONDUIT	1321.8	3.2655	0.0450
1665re	1660dp	1650dp	CONDUIT	1430.8	2.6222	0.0770	240	552in	5520dp	CONDUIT	2072.7	2.3209	0.0100
167	208in	2080dp	CONDUIT	1056.6	4.1908	0.0100	241	5010dp	5120dp	CONDUIT	787.8	1.7321	0.0100
169	207in	2070dp	CONDUIT	1816.8	2.8437	0.0100	242	131in	1310dp	CONDUIT	2141.0	0.6304	0.0100
17	301in	3010dp	CONDUIT	1554.2	2.2997	0.0100	243	130in	1300dp	CONDUIT	749.5	1.3465	0.0100
170	209in	2090dp	CONDUIT	1142.3	3.3943	0.0100	244	1310dp	1302dp	CONDUIT	437.4	0.8116	0.0100
173	206in	2060dp	CONDUIT	3774.2	1.9820	0.0100	245	5200dp	1301dp	CONDUIT	1463.1	3.3674	0.0100
174	230in	2300dp	CONDUIT	1195.4	2.4877	0.0100	25	703in	7030dp	CONDUIT	1332.6	2.3052	0.0450
176	220in	2200dp	CONDUIT	2693.0	2.6692	0.0100	27	440.5in	4405dp	CONDUIT	1014.3	2.5290	0.0100
179	203in	2030dp	CONDUIT	1276.5	1.6897	0.0100	28	4405dp	4400dp	CONDUIT	2000.8	0.6051	0.0100
18	300in	3000dp	CONDUIT	727.6	2.7420	0.0100	29	450.5in	4500dp	CONDUIT	1400.0	1.5962	0.0100
181	204in	2040dp	CONDUIT	1658.9	1.6803	0.0100	3	120in	1200dp	CONDUIT	517.0	1.8491	0.0100
184	2050dp	2041dp	CONDUIT	325.8	1.4306	0.0100	3015re	3010dp	3000dp	CONDUIT	617.3	1.2317	0.0450
186	320in	3200dp	CONDUIT	1784.1	1.4527	0.0100	3025re	3020dp	3010dp	CONDUIT	4371.2	1.6592	0.0450
189	104in	1040dp	CONDUIT	1170.5	2.7085	0.0100	3105re	3100dp	1050dp	CONDUIT	2337.6	1.0474	0.0820
19	310in	3100dp	CONDUIT	907.8	2.5035	0.0100	32	302in	3020dp	CONDUIT	1598.4	0.8646	0.0100
191	105in	1050dp	CONDUIT	1390.5	1.5818	0.0100	3205re	3200dp	1040dp	CONDUIT	1079.1	2.0538	0.0810
193	110in	1100dp	CONDUIT	912.9	2.7743	0.0100	3315re	3310dp	3300dp	CONDUIT	2886.0	0.9092	0.0530
195	311in	3100dp	CONDUIT	935.5	3.0344	0.0100	3325re	3320dp	3310dp	CONDUIT	3256.1	1.3065	0.0670
197	350in	3500dp	CONDUIT	1068.0	2.6209	0.0100	35	7600dp	1635dp	CONDUIT	96.7	7.5483	0.0450
198	352in	3520dp	CONDUIT	1162.1	0.0086	0.0100	3505re	3500dp	1100dp	CONDUIT	674.4	0.6174	0.1010
2	112in	1120dp	CONDUIT	1184.1	1.7666	0.0100	3515re	3510dp	3500dp	CONDUIT	1153.5	1.5373	0.0770
20	312in	1100dp	CONDUIT	1582.4	2.4469	0.0100	3516re	3511dp	3510dp	CONDUIT	200.9	3.3090	0.0590
2005re	2000dp	1010dp	CONDUIT	1237.5	0.4993	0.0420	3540re	3535dp	3520dp	CONDUIT	3778.5	0.9892	0.0610
201	351in	3510dp	CONDUIT	613.2	2.7875	0.0100	3545re	3540dp	3510dp	CONDUIT	1153.0	1.1594	0.0450
2015re	2010dp	2000dp	CONDUIT	342.9	0.2021	0.0800	3555re	3550dp	3535dp	CONDUIT	522.0	0.9117	0.0610
202	354in	3540dp	CONDUIT	1336.4	1.5320	0.0100	3565re	3560dp	3550dp	CONDUIT	1091.5	1.4396	0.0790
2035re	2030dp	2020dp	CONDUIT	703.9	1.1953	0.0900	36	2100dp	2085dp	CONDUIT	400.0	1.9764	0.0100
204	3530dp	3511dp	CONDUIT	1275.3	0.5898	0.0100	37	2090dp	2085dp	CONDUIT	40.0	26.8788	0.0100
2045re	2040dp	2030dp	CONDUIT	1387.4	0.5974	0.0880	3805re	3800dp	1115dp	CONDUIT	441.9	6.1821	0.0830
2046re	2041dp	2040dp	CONDUIT	1635.5	0.7789	0.0620	4005re	4000dp	4005dp	CONDUIT	430.8	4.3695	0.0100
205	3520dp	3511dp	CONDUIT	1308.1	0.6594	0.0100	4010re	4005dp	1120dp	CONDUIT	1552.0	0.9023	0.0500
206	353in	3530dp	CONDUIT	2525.1	1.5456	0.0100	4305re	4300dp	1200dp	CONDUIT	683.4	1.5446	0.1130
2065re	2060dp	2041dp	CONDUIT	632.7	0.7129	0.0620	4315re	4310dp	4300dp	CONDUIT	899.3	2.0372	0.0710
2075re	2070dp	2060dp	CONDUIT	4097.9	1.1991	0.0640	44	166in	1660dp	CONDUIT	1218.3	5.2061	0.0450
2085re	2080dp	2070dp	CONDUIT	2077.2	1.4132	0.0840	4405re	4400dp	1200dp	CONDUIT	1235.0	1.3123	0.0100
209	355in	3550dp	CONDUIT	618.1	2.3390	0.0100	4415re	4410dp	4405dp	CONDUIT	1343.0	2.3701	0.0620
2095re	2085dp	2080dp	CONDUIT	1335.1	1.5114	0.0720	4425re	4420dp	4400dp	CONDUIT	1322.1	2.2593	0.0100
21	354.5in	3535dp	CONDUIT	580.7	1.4035	0.0100	4430re	4425dp	4405dp	CONDUIT	762.4	2.8419	0.0100
210	356in	3560dp	CONDUIT	1542.1	2.5961	0.0100	4435re	4430dp	4425dp	CONDUIT	2586.0	1.9151	0.0100
2115re	2110dp	2020dp	CONDUIT	2538.7	1.2232	0.0450	45	770in	7700dp	CONDUIT	1788.2	5.1520	0.0450
2117re	2112dp	2110dp	CONDUIT	934.2	1.8429	0.0450	4515re	4510dp	4500dp	CONDUIT	2075.4	1.7231	0.0700
213	3000dp	1009dp	CONDUIT	1184.8	1.5111	0.0100	46	752in	7520dp	CONDUIT	1925.0	3.2329	0.0450
214	303in	3000dp	CONDUIT	3464.8	1.6976	0.0100	47	751in	10	CONDUIT	1046.9	8.1021	0.0450
215	100in	1000dp	CONDUIT	976.4	1.7591	0.0100	4705re	4700dp	4410dp	CONDUIT	1201.4	2.1973	0.0680
218	101in	1010dp	CONDUIT	1152.8	0.8899	0.0100	4715re	4710dp	4700dp	CONDUIT	2281.3	1.7692	0.0680
22	700in	7000dp	CONDUIT	1758.8	3.7133	0.0450	48	750in	1631dp	CONDUIT	864.1	5.0423	0.0450
2205re	2200dp	2030dp	CONDUIT	1611.1	1.2004	0.0940	49	162in	1620dp	CONDUIT	1356.0	6.4886	0.0450
221	201in	2010dp	CONDUIT	1887.3	1.4635	0.0100	5	130.2in	1302dp	CONDUIT	543.0	2.0907	0.0100
222	200in	2000dp	CONDUIT	1343.6	1.9788	0.0100	50	161in	1600dp	CONDUIT	1564.8	3.9896	0.0450
223	102in	1020dp	CONDUIT	668.4	3.0681	0.0100	5025re	5020dp	5010dp	CONDUIT	2620.9	1.8302	0.0680
225	202in	2020dp	CONDUIT	651.8	8.7134	0.0100	5035re	5030dp	5020dp	CONDUIT	2114.9	1.5822	0.0690
226	2020dp	2010dp	CONDUIT	1071.8	0.7677	0.0100	5115re	5110dp	1300dp	CONDUIT	2870.1	0.9762	0.0630
229	103in	1030dp	CONDUIT	1357.7	0.6625	0.0100	5125re	5120dp	1300dp	CONDUIT	3299.0	1.0903	0.0730
23	701in	7010dp	CONDUIT	1259.3	6.1068	0.0450	52	710in	7100dp	CONDUIT	1418.5	4.2851	0.0450
2305re	2300dp	2041dp	CONDUIT	1677.2	1.5619	0.0770	53	154in	1541dp	CONDUIT	709.0	5.7151	0.0450
231	3300dp	1050dp	CONDUIT	1289.1	1.3156	0.0100	5315re	5310dp	5300dp	CONDUIT	1289.7	2.6706	0.0770
234	111in	1110dp	CONDUIT	1949.0	1.6719	0.0100	54	155in	1540dp	CONDUIT	1497.3	5.6998	0.0450
235	630in	6300dp	CONDUIT	1017.2	2.7336	0.0100	55	153in	20	CONDUIT	891.2	6.4000	0.0450
237	380in	3800dp	CONDUIT	1325.8	1.0591	0.0100	5505re	5500dp	1310dp	CONDUIT	1621.1	1.1550	0.0780
239	123in	1230dp	CONDUIT	1294.0	1.9978	0.0100	5515re	5510dp	5500dp	CONDUIT	1438.1	1.7374	0.0100

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

5525re	5520dp	5500dp	CONDUIT	984.5	1.2402	0.0780	1035re	1035re	10.36	2967.06	5.32	552.00	1 24615.75
5535re	5530dp	5500dp	CONDUIT	1257.7	1.5009	0.0830	104	DUMMY	0.00	0.00	0.00	0.00	1 0.00
5545re	5540dp	5530dp	CONDUIT	1761.0	2.6886	0.0950	1045re	1045re	8.86	2829.54	5.01	562.25	1 16527.67
5555re	5550dp	5520dp	CONDUIT	2764.4	1.4471	0.0680	105	DUMMY	0.00	0.00	0.00	0.00	1 0.00
5565re	5560dp	5510dp	CONDUIT	6691.4	1.5461	0.0580	1055re	1055re	10.45	3132.69	3.28	947.31	1 18408.85
57	720in	7200dp	CONDUIT	1677.4	2.7598	0.0450	109	DUMMY	0.00	0.00	0.00	0.00	1 0.00
58	761in	7610dp	CONDUIT	1244.5	4.5994	0.0450	1105re	1105re	10.68	2076.51	2.36	872.45	1 8038.07
59	164in	1640dp	CONDUIT	1508.1	4.7364	0.0450	111	DUMMY	0.00	0.00	0.00	0.00	1 0.00
60	165in	1650dp	CONDUIT	483.4	18.7189	0.0450	1115re	1115re	14.64	2035.03	7.20	279.31	1 17995.55
6005re	6000dp	1310dp	CONDUIT	2370.7	1.3342	0.0700	1120re	1120re	16.53	1704.44	6.27	267.30	1 23879.21
6015re	6010dp	6000dp	CONDUIT	1955.3	1.2551	0.0660	1125re	1125re	18.83	5359.43	8.57	620.76	1 53991.41
61	760in	7605dp	CONDUIT	564.1	8.3444	0.0450	113	DUMMY	0.00	0.00	0.00	0.00	1 0.00
62	151in	1500dp	CONDUIT	1791.0	3.2871	0.0450	1135re	1135re	17.76	4580.87	9.38	479.83	1 53810.49
6205re	6200dp	1400dp	CONDUIT	2676.2	1.7224	0.0850	115	DUMMY	0.00	0.00	0.00	0.00	1 0.00
63	150in	1500dp	CONDUIT	1894.4	4.2573	0.0450	117	DUMMY	0.00	0.00	0.00	0.00	1 0.00
6305re	6300dp	1410dp	CONDUIT	1567.9	2.0299	0.0840	119	DUMMY	0.00	0.00	0.00	0.00	1 0.00
65	152in	1520dp	CONDUIT	1576.6	3.8948	0.0450	1205re	1205re	21.20	5706.00	9.18	610.07	1 67766.65
6505re	6500dp	1420dp	CONDUIT	2094.8	2.7425	0.0910	1215re	1215re	14.72	3288.86	8.14	398.00	1 36826.29
68	7000dp	1502dp	CONDUIT	78.5	1.8237	0.0450	122	DUMMY	0.00	0.00	0.00	0.00	1 0.00
69	163in	1630dp	CONDUIT	1106.2	6.0264	0.0450	1227re	1227re	12.56	1960.36	4.53	429.00	1 12945.41
7	141in	1410dp	CONDUIT	1148.1	1.7226	0.0100	1230re	1230re	9.38	1471.06	3.42	426.85	1 7499.89
70	160in	1600dp	CONDUIT	1579.1	4.6894	0.0450	1235re	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7015re	7010dp	7000dp	CONDUIT	2355.5	1.4115	0.0780	124	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7025re	7020dp	7010dp	CONDUIT	870.5	2.0956	0.0730	126	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7035re	7030dp	7020dp	CONDUIT	1608.4	1.7878	0.0580	129	DUMMY	0.00	0.00	0.00	0.00	1 0.00
71	650in	6500dp	CONDUIT	1027.5	3.2585	0.0100	13	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7105re	7100dp	1600dp	CONDUIT	713.7	3.8122	0.0650	1305re	1305re	12.45	1718.09	4.64	366.00	1 13682.74
72	142in	1420dp	CONDUIT	852.3	8.1905	0.0100	1306re	1306re	13.34	1484.76	7.96	177.64	1 18427.17
7205re	7200dp	1620dp	CONDUIT	1119.6	2.4001	0.0590	1307re	1307re	11.88	1292.33	6.25	203.59	1 10400.73
74	141.5in	1415dp	CONDUIT	1006.8	3.0339	0.0100	131	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7515re	7510dp	1631dp	CONDUIT	1093.8	0.9208	0.0450	132	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7525re	7520dp	10	CONDUIT	1580.5	3.5336	0.0840	134	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7605re	7610dp	7605dp	CONDUIT	625.5	3.5159	0.0350	136	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7615re	7605dp	7600dp	CONDUIT	522.5	2.2813	0.0910	137	DUMMY	0.00	0.00	0.00	0.00	1 0.00
77	620in	6200dp	CONDUIT	1227.3	3.1242	0.0100	138	DUMMY	0.00	0.00	0.00	0.00	1 0.00
7705re	7700dp	1650dp	CONDUIT	754.1	4.3981	0.0880	14	DUMMY	0.00	0.00	0.00	0.00	1 0.00
79	140in	1400dp	CONDUIT	1661.2	2.5219	0.0100	140	DUMMY	0.00	0.00	0.00	0.00	1 0.00
83	551in	5510dp	CONDUIT	2581.6	2.3646	0.0100	1405re	1405re	16.21	2779.97	7.17	384.23	1 26304.34
86	600in	6000dp	CONDUIT	1409.5	3.6169	0.0100	141	DUMMY	0.00	0.00	0.00	0.00	1 0.00
88	601in	6010dp	CONDUIT	1053.8	6.5491	0.0100	1415re	1415re	10.66	2028.78	3.84	525.18	1 12384.17
9	155.1in	1540dp	CONDUIT	2295.1	4.9649	0.0100	1420re	1420re	8.89	1507.79	3.66	410.22	1 9572.05
97	553in	5530dp	CONDUIT	1440.6	3.3644	0.0100	1425re	1425re	10.72	1368.28	3.16	429.34	1 6589.65
99	554in	5540dp	CONDUIT	1224.5	3.8630	0.0100	144	DUMMY	0.00	0.00	0.00	0.00	1 0.00
S-OUT	10	7510dp	OUTLET				146	DUMMY	0.00	0.00	0.00	0.00	1 0.00
TC-OUT	20	1530dp	OUTLET				148	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							15	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							1505re	1505re	14.42	2388.99	4.90	483.52	1 14412.55
							1506re	1506re	13.46	2256.49	5.85	382.61	1 24727.43
							1507re	1507re	9.34	2146.01	5.44	391.17	1 22049.30
							151	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							1525re	1525re	6.75	812.26	3.58	224.71	1 3742.97
							1535re	1535re	23.33	6696.86	13.91	464.67	1 78403.92
							154	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							1545re	1545re	17.51	2936.19	8.94	325.09	1 47351.63
							156	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							159	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							16	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							1605re	1605re	21.02	3688.26	11.96	305.00	1 49391.51
							1606re	1606re	29.36	5735.11	16.22	348.00	1 75755.87
							162	DUMMY	0.00	0.00	0.00	0.00	1 0.00
							1625re	1625re	28.48	4589.51	15.52	292.00	1 86040.69

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
1	DUMMY	0.00	0.00	0.00	0.00	1	0.00
10	DUMMY	0.00	0.00	0.00	0.00	1	0.00
100	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1000out	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1014re	1014re	9.74	1354.99	2.29	585.64	1	26316.62
1015re	DUMMY	0.00	0.00	0.00	0.00	1	0.00
102	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1025re	1025re	10.24	4028.49	5.77	694.11	1	31728.96

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

1628re	1628re	12.86	1500.61	8.74	168.38	1	15674.04	229	DUMMY	0.00	0.00	0.00	0.00	1	0.00
163	DUMMY	0.00	0.00	0.00	0.00	1	0.00	23	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1635re	1635re	25.14	4324.53	13.18	323.19	1	67969.47	2305re	2305re	10.55	2246.07	7.00	311.00	1	19827.19
1636re	1636re	12.55	797.38	5.41	142.78	1	10760.55	231	DUMMY	0.00	0.00	0.00	0.00	1	0.00
164	DUMMY	0.00	0.00	0.00	0.00	1	0.00	234	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1640re	1640re	26.34	6418.38	12.39	508.65	1	88025.48	235	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1645re	1645re	10.09	310.95	4.50	63.18	1	2223.50	237	DUMMY	0.00	0.00	0.00	0.00	1	0.00
165	DUMMY	0.00	0.00	0.00	0.00	1	0.00	239	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1655re	1655re	25.25	4267.42	11.01	381.45	1	53918.51	24	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1665re	1665re	33.70	3279.61	12.80	300.00	1	56087.82	240	DUMMY	0.00	0.00	0.00	0.00	1	0.00
167	DUMMY	0.00	0.00	0.00	0.00	1	0.00	241	DUMMY	0.00	0.00	0.00	0.00	1	0.00
169	DUMMY	0.00	0.00	0.00	0.00	1	0.00	242	DUMMY	0.00	0.00	0.00	0.00	1	0.00
17	DUMMY	0.00	0.00	0.00	0.00	1	0.00	243	DUMMY	0.00	0.00	0.00	0.00	1	0.00
170	DUMMY	0.00	0.00	0.00	0.00	1	0.00	244	DUMMY	0.00	0.00	0.00	0.00	1	0.00
173	DUMMY	0.00	0.00	0.00	0.00	1	0.00	245	DUMMY	0.00	0.00	0.00	0.00	1	0.00
174	DUMMY	0.00	0.00	0.00	0.00	1	0.00	25	DUMMY	0.00	0.00	0.00	0.00	1	0.00
176	DUMMY	0.00	0.00	0.00	0.00	1	0.00	27	DUMMY	0.00	0.00	0.00	0.00	1	0.00
179	DUMMY	0.00	0.00	0.00	0.00	1	0.00	28	DUMMY	0.00	0.00	0.00	0.00	1	0.00
18	DUMMY	0.00	0.00	0.00	0.00	1	0.00	29	DUMMY	0.00	0.00	0.00	0.00	1	0.00
181	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3	DUMMY	0.00	0.00	0.00	0.00	1	0.00
184	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3015re	3015re	6.16	286.13	3.22	87.68	1	2286.37
186	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3025re	3025re	0.83	18.17	0.35	52.11	1	38.19
189	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3105re	3105re	2.91	261.24	1.08	240.63	1	509.01
19	DUMMY	0.00	0.00	0.00	0.00	1	0.00	32	DUMMY	0.00	0.00	0.00	0.00	1	0.00
191	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3205re	3205re	4.60	241.72	1.26	192.43	1	743.33
193	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3315re	3315re	4.78	229.99	2.35	96.88	1	1086.01
195	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3325re	3325re	7.92	356.75	3.66	95.95	1	2146.58
197	DUMMY	0.00	0.00	0.00	0.00	1	0.00	35	DUMMY	0.00	0.00	0.00	0.00	1	0.00
198	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3505re	3505re	11.48	1023.66	3.39	296.32	1	2670.99
2	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3515re	3515re	11.01	1003.28	5.45	181.50	1	7430.90
20	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3516re	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2005re	2005re	8.40	1873.83	5.13	359.41	1	13935.97	3540re	3540re	15.36	1438.55	6.57	215.23	1	12230.91
201	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3545re	3545re	9.87	1107.43	5.33	202.23	1	12015.74
2015re	2015re	11.42	1315.03	5.21	250.00	1	3298.81	3555re	3555re	10.55	1038.71	5.39	190.05	1	7431.20
202	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3565re	3565re	7.34	1412.38	4.19	334.17	1	8289.11
2035re	2035re	8.20	1691.64	4.11	409.27	1	7835.58	36	DUMMY	0.00	0.00	0.00	0.00	1	0.00
204	DUMMY	0.00	0.00	0.00	0.00	1	0.00	37	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2045re	2045re	8.01	2588.97	5.34	477.82	1	10328.22	3805re	3805re	3.28	425.57	1.95	224.21	1	2960.71
2046re	2046re	12.97	3683.89	9.42	381.00	1	34752.08	4005re	4005re	6.14	1359.74	2.99	448.00	1	87714.46
205	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4010re	4010re	15.82	1562.45	5.79	265.91	1	14225.33
206	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4305re	4305re	2.95	256.71	1.57	162.21	1	567.85
2065re	2065re	7.66	890.29	3.09	283.38	1	3819.99	4315re	4315re	4.63	424.76	2.80	148.99	1	2523.67
2075re	2075re	9.93	514.05	2.98	169.83	1	2705.58	44	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2085re	2085re	16.28	2809.74	7.94	345.00	1	23521.04	4405re	4405re	9.54	1616.29	4.95	225.29	1	79885.42
209	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4415re	4415re	5.67	453.78	2.62	172.00	1	3183.77
2095re	2095re	8.81	741.38	4.20	173.97	1	4893.35	4425re	4425re	4.33	370.86	2.22	166.00	1	14104.05
21	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4430re	4430re	5.74	963.30	2.86	335.00	1	48615.42
210	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4435re	4435re	4.54	742.82	2.14	342.81	1	25359.48
2115re	2115re	11.90	3848.81	6.69	566.71	1	49901.16	45	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2117re	2117re	6.31	597.87	2.43	244.00	1	4848.36	4515re	4515re	16.46	3369.20	9.35	350.20	1	41670.79
213	DUMMY	0.00	0.00	0.00	0.00	1	0.00	46	DUMMY	0.00	0.00	0.00	0.00	1	0.00
214	DUMMY	0.00	0.00	0.00	0.00	1	0.00	47	DUMMY	0.00	0.00	0.00	0.00	1	0.00
215	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4705re	T-4705re	4.35	292.33	1.41	205.00	1	1193.07
218	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4715re	4715re	3.58	95.51	1.14	82.69	1	302.86
22	DUMMY	0.00	0.00	0.00	0.00	1	0.00	48	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2205re	2205re	3.71	348.72	1.80	190.63	1	895.15	49	DUMMY	0.00	0.00	0.00	0.00	1	0.00
221	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5	DUMMY	0.00	0.00	0.00	0.00	1	0.00
222	DUMMY	0.00	0.00	0.00	0.00	1	0.00	50	DUMMY	0.00	0.00	0.00	0.00	1	0.00
223	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5025re	5025re	3.35	186.09	1.19	155.41	1	618.06
225	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5035re	5035re	6.14	345.86	2.57	133.18	1	1758.12
226	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5115re	5115re	27.04	3445.48	15.68	216.00	1	50297.82

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

5125re	5125re	7.23	204.78	4.00	48.08	1	1096.74
52	DUMMY	0.00	0.00	0.00	0.00	1	0.00
53	DUMMY	0.00	0.00	0.00	0.00	1	0.00
5315re	5315re	9.14	1505.31	4.50	332.00	1	12933.61
54	DUMMY	0.00	0.00	0.00	0.00	1	0.00
55	DUMMY	0.00	0.00	0.00	0.00	1	0.00
5505re	5505re	8.68	611.83	3.81	156.53	1	3057.53
5515re	5515re	5.61	161.98	1.87	84.64	1	4823.81
5525re	5525re	8.87	1481.61	4.31	341.91	1	8323.09
5535re	5535re	10.65	1145.99	5.14	221.33	1	7487.45
5545re	5545re	6.68	1518.11	3.94	380.47	1	9708.40
5555re	5555re	8.25	1312.91	4.34	301.00	1	9181.01
5565re	5565re	13.31	2498.92	7.27	341.68	1	29888.53
57	DUMMY	0.00	0.00	0.00	0.00	1	0.00
58	DUMMY	0.00	0.00	0.00	0.00	1	0.00
59	DUMMY	0.00	0.00	0.00	0.00	1	0.00
60	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6005re	6005re	8.97	963.76	3.97	240.32	1	5926.96
6015re	6015re	15.63	2889.82	9.68	309.00	1	33102.16
61	DUMMY	0.00	0.00	0.00	0.00	1	0.00
62	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6205re	6205re	16.58	3864.32	8.51	450.84	1	36962.16
63	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6305re	6305re	8.90	1548.16	4.52	341.00	1	10663.27
65	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6505re	6505re	17.51	3714.82	9.20	401.00	1	44101.27
68	DUMMY	0.00	0.00	0.00	0.00	1	0.00
69	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7	DUMMY	0.00	0.00	0.00	0.00	1	0.00
70	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7015re	7015re	9.14	1446.87	5.08	283.20	1	9678.20
7025re	7025re	23.77	5883.86	15.32	370.00	1	106938.54
7035re	7035re	21.57	4437.17	13.18	332.00	1	84824.66
71	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7105re	7105re	5.46	1253.70	3.47	377.04	1	12819.21
72	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7205re	7205re	23.11	6733.99	14.72	454.00	1	157784.37
74	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7515re	7515re	21.68	5617.40	11.81	468.46	1	92309.90
7525re	7525re	6.28	795.85	4.10	190.09	1	6783.97
7605re	7605re	25.46	6610.51	17.22	396.20	1	350892.86
7615re	7615re	7.14	1638.17	3.98	406.63	1	10152.24
77	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7705re	7705re	27.44	6275.69	13.55	452.00	1	126298.09
79	DUMMY	0.00	0.00	0.00	0.00	1	0.00
83	DUMMY	0.00	0.00	0.00	0.00	1	0.00
86	DUMMY	0.00	0.00	0.00	0.00	1	0.00
88	DUMMY	0.00	0.00	0.00	0.00	1	0.00
9	DUMMY	0.00	0.00	0.00	0.00	1	0.00
97	DUMMY	0.00	0.00	0.00	0.00	1	0.00
99	DUMMY	0.00	0.00	0.00	0.00	1	0.00

****
Analysis Options
****
Flow Units ..... CFS
Process Models:
  Rainfall/Runoff ..... NO
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... NO
  Water Quality ..... NO
Infiltration Method ..... HORTON
Flow Routing Method ..... KINWAVE
Starting Date 04/01/2022 00:00:00
Ending Date 04/01/2022 12:00:00
Antecedent Dry Days 0.0
Report Time Step 00:05:00
Wet Time Step 00:05:00
Dry Time Step 01:00:00
Routing Time Step ..... 10.00 sec

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	0.000	0.000
Evaporation Loss	0.000	0.000
Infiltration Loss	0.000	0.000
Surface Runoff	0.000	0.000
Final Storage	0.000	0.000
Continuity Error (%)	0.000	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	1122.918	365.920
External Outflow	1121.513	365.462
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	18.303	5.964
Continuity Error (%)	-1.505	

****
Highest Flow Instability Indexes
****
Link 1000out (2)
Link 1014re (2)
Link 1025re (1)
Link 1035re (1)
Link 1055re (1)

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
****

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

```
*************************
Routing Time Step Summary
*************************
Minimum Time Step           :    10.00 sec
Average Time Step           :    10.00 sec
Maximum Time Step           :    10.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     1.00
Percent Not Converging      :     0.00


******************
Node Depth Summary
******************
```

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
1000dp	JUNCTION	2.98	7.05	5497.39	0 02:23	7.04
1009dp	JUNCTION	2.99	7.10	5514.98	0 02:15	7.10
100in	JUNCTION	0.00	0.00	5507.51	0 00:00	0.00
1010dp	JUNCTION	3.02	5.49	5516.66	0 02:46	5.49
101in	JUNCTION	0.00	0.00	5521.43	0 00:00	0.00
1020dp	JUNCTION	3.05	5.65	5524.86	0 02:40	5.65
102in	JUNCTION	0.00	0.00	5539.70	0 00:00	0.00
1030dp	JUNCTION	2.94	5.65	5534.93	0 02:37	5.65
103in	JUNCTION	0.00	0.00	5538.27	0 00:00	0.00
1040dp	JUNCTION	4.08	7.96	5549.11	0 02:31	7.95
104in	JUNCTION	0.00	0.00	5572.85	0 00:00	0.00
1050dp	JUNCTION	4.87	9.24	5558.92	0 02:29	9.23
105in	JUNCTION	0.00	0.00	5571.68	0 00:00	0.00
1100dp	JUNCTION	4.81	9.24	5575.62	0 02:12	9.24
110in	JUNCTION	0.00	0.00	5591.70	0 00:00	0.00
1110dp	JUNCTION	3.81	8.35	5577.44	0 02:20	8.35
1115dp	JUNCTION	3.79	8.35	5586.34	0 02:18	8.35
111in	JUNCTION	0.00	0.00	5601.67	0 00:00	0.00
1120dp	JUNCTION	3.57	7.92	5596.03	0 02:16	7.92
112in	JUNCTION	0.00	0.00	5609.03	0 00:00	0.00
1130dp	JUNCTION	3.15	7.07	5605.10	0 02:13	7.07
113in	JUNCTION	0.00	0.00	5645.09	0 00:00	0.00
1200dp	JUNCTION	3.15	7.07	5615.37	0 02:11	7.07
120in	JUNCTION	0.00	0.00	5617.85	0 00:00	0.00
1210dp	JUNCTION	3.58	8.48	5627.48	0 02:10	8.48
121in	JUNCTION	0.00	0.00	5642.61	0 00:00	0.00
1222dp	JUNCTION	3.56	8.50	5642.36	0 02:02	8.49
1225dp	JUNCTION	2.98	6.95	5651.89	0 01:57	6.94
122in	JUNCTION	0.00	0.00	5677.49	0 00:00	0.00
1230dp	JUNCTION	3.17	6.77	5652.20	0 02:23	6.77
123in	JUNCTION	0.00	0.00	5671.27	0 00:00	0.00
124in	JUNCTION	0.00	0.00	5658.35	0 00:00	0.00
130.2in	JUNCTION	0.00	0.00	5692.73	0 00:00	0.00
1300dp	JUNCTION	3.19	6.77	5662.71	0 02:21	6.77
1301dp	JUNCTION	2.97	6.68	5675.21	0 02:21	6.68
1302dp	JUNCTION	2.94	6.69	5688.06	0 02:16	6.69
130in	JUNCTION	0.00	0.00	5666.02	0 00:00	0.00
1310dp	JUNCTION	2.57	5.61	5690.54	0 02:24	5.61
131in	JUNCTION	0.00	0.00	5698.42	0 00:00	0.00
1400dp	JUNCTION	2.53	6.28	5715.18	0 02:12	6.25
140in	JUNCTION	0.00	0.00	5750.79	0 00:00	0.00
141.5in	JUNCTION	0.00	0.00	5777.56	0 00:00	0.00
1410dp	JUNCTION	2.44	6.31	5738.85	0 01:56	6.31
1415dp	JUNCTION	2.93	8.52	5755.55	0 01:49	8.52
141in	JUNCTION	0.00	0.00	5752.31	0 00:00	0.00
1420dp	JUNCTION	2.92	8.56	5765.42	0 01:38	8.56
142in	JUNCTION	0.00	0.00	5826.43	0 00:00	0.00
1500dp	JUNCTION	2.83	8.37	5776.36	0 01:34	8.37
1501dp	JUNCTION	2.04	5.84	5782.19	0 01:33	5.84
1502dp	JUNCTION	1.79	4.72	5787.65	0 01:37	4.71
150in	JUNCTION	0.00	0.00	5848.57	0 00:00	0.00
151in	JUNCTION	0.00	0.00	5826.83	0 00:00	0.00
1520dp	JUNCTION	6.79	10.32	5797.01	0 01:35	10.32
152in	JUNCTION	0.00	0.00	5848.05	0 00:00	0.00
1530dp	JUNCTION	1.93	5.45	5801.45	0 01:30	5.45
153in	JUNCTION	0.00	0.00	5852.92	0 00:00	0.00
1540dp	JUNCTION	1.82	6.20	5822.31	0 01:07	6.19
1541dp	JUNCTION	2.02	6.75	5830.43	0 01:03	6.74
154in	JUNCTION	0.00	0.00	5864.13	0 00:00	0.00
155.1in	JUNCTION	0.00	0.00	5929.91	0 00:00	0.00
155in	JUNCTION	0.00	0.00	5901.31	0 00:00	0.00
1600dp	JUNCTION	2.07	6.76	5843.76	0 01:00	6.76
160in	JUNCTION	0.00	0.00	5910.97	0 00:00	0.00
161in	JUNCTION	0.00	0.00	5899.38	0 00:00	0.00
162.1in	JUNCTION	0.00	0.00	5914.64	0 00:00	0.00
1620dp	JUNCTION	1.84	6.03	5879.24	0 00:53	6.02
1623dp	JUNCTION	1.82	6.03	5887.28	0 00:52	6.02
162in	JUNCTION	0.00	0.00	5961.02	0 00:00	0.00
163.5in	JUNCTION	0.00	0.00	5923.41	0 00:00	0.00
1630dp	JUNCTION	1.82	6.04	5902.75	0 00:49	6.04
1631dp	JUNCTION	1.76	5.72	5915.03	0 00:48	5.71
1635dp	JUNCTION	0.86	6.44	5919.98	0 00:46	6.42
163in	JUNCTION	0.00	0.00	5963.26	0 00:00	0.00
1640dp	JUNCTION	0.81	6.45	5934.13	0 00:44	6.45
164in	JUNCTION	0.00	0.00	5999.02	0 00:00	0.00
1650dp	JUNCTION	0.54	4.85	5979.57	0 00:38	4.84
165in	JUNCTION	0.00	0.00	6063.66	0 00:00	0.00
1660dp	JUNCTION	0.24	2.18	6014.41	0 00:40	2.18
166in	JUNCTION	0.00	0.00	6075.56	0 00:00	0.00
2000dp	JUNCTION	2.51	7.93	5525.28	0 01:32	7.92
200in	JUNCTION	0.00	0.00	5543.93	0 00:00	0.00
2010dp	JUNCTION	2.51	7.94	5525.98	0 01:30	7.94
201in	JUNCTION	0.00	0.00	5545.66	0 00:00	0.00
2020dp	JUNCTION	1.55	4.27	5530.54	0 01:32	4.26
202in	JUNCTION	0.00	0.00	5582.85	0 00:00	0.00
2030dp	JUNCTION	1.55	4.27	5538.95	0 01:28	4.27
203in	JUNCTION	0.00	0.00	5556.25	0 00:00	0.00
2040dp	JUNCTION	0.84	2.75	5545.72	0 01:19	2.75
2041dp	JUNCTION	1.03	4.82	5560.54	0 01:08	4.82
204in	JUNCTION	0.00	0.00	5570.84	0 00:00	0.00
2050dp	JUNCTION	0.00	0.00	5560.37	0 00:00	0.00
205in	JUNCTION	0.00	0.00	5567.45	0 00:00	0.00
2060dp	JUNCTION	0.92	4.83	5565.05	0 01:05	4.83
206in	JUNCTION	0.00	0.00	5635.01	0 00:00	0.00
2070dp	JUNCTION	0.69	4.85	5614.20	0 00:50	4.84
207in	JUNCTION	0.00	0.00	5661.00	0 00:00	0.00
2080dp	JUNCTION	0.47	3.84	5642.54	0 00:42	3.82
2085dp	JUNCTION	0.25	2.40	5661.28	0 00:35	2.39
208in	JUNCTION	0.00	0.00	5682.95	0 00:00	0.00
2090dp	JUNCTION	0.00	0.00	5669.27	0 00:00	0.00
209in	JUNCTION	0.00	0.00	5708.01	0 00:00	0.00
2100dp	JUNCTION	0.00	0.00	5666.79	0 00:00	0.00

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

210in	JUNCTION	0.00	0.00	5698.44	0	00:00	0.00
2110dp	JUNCTION	0.50	2.43	5559.76	0	00:56	2.43
2112dp	JUNCTION	0.34	1.46	5575.99	0	01:00	1.46
211in	JUNCTION	0.00	0.00	5599.18	0	00:00	0.00
212in	JUNCTION	0.00	0.00	5624.02	0	00:00	0.00
2200dp	JUNCTION	0.38	1.59	5555.61	0	01:05	1.59
220in	JUNCTION	0.00	0.00	5625.88	0	00:00	0.00
2300dp	JUNCTION	0.23	1.18	5583.09	0	00:55	1.18
230in	JUNCTION	0.00	0.00	5611.63	0	00:00	0.00
3000dp	JUNCTION	0.56	1.48	5527.26	0	01:13	1.48
300in	JUNCTION	0.00	0.00	5545.72	0	00:00	0.00
3010dp	JUNCTION	0.56	1.48	5534.86	0	01:11	1.48
301in	JUNCTION	0.00	0.00	5569.11	0	00:00	0.00
3020dp	JUNCTION	0.30	0.66	5606.55	0	01:20	0.66
302in	JUNCTION	0.00	0.00	5619.72	0	00:00	0.00
303in	JUNCTION	0.00	0.00	5584.59	0	00:00	0.00
3100dp	JUNCTION	0.34	1.80	5575.97	0	00:50	1.80
310in	JUNCTION	0.00	0.00	5596.89	0	00:00	0.00
311in	JUNCTION	0.00	0.00	5602.54	0	00:00	0.00
312in	JUNCTION	0.00	0.00	5605.09	0	00:00	0.00
3200dp	JUNCTION	0.30	0.86	5564.18	0	01:10	0.86
320in	JUNCTION	0.00	0.00	5589.23	0	00:00	0.00
3300dp	JUNCTION	0.52	2.64	5569.28	0	01:13	2.64
330in	JUNCTION	0.00	0.00	5596.99	0	00:00	0.00
3310dp	JUNCTION	0.49	2.67	5595.55	0	00:58	2.67
331in	JUNCTION	0.00	0.00	5637.97	0	00:00	0.00
3320dp	JUNCTION	0.33	2.28	5637.71	0	00:50	2.28
332in	JUNCTION	0.00	0.00	5676.94	0	00:00	0.00
3500dp	JUNCTION	1.15	4.74	5575.28	0	01:13	4.74
350in	JUNCTION	0.00	0.00	5598.53	0	00:00	0.00
3510dp	JUNCTION	0.74	3.11	5591.38	0	01:11	3.11
3511dp	JUNCTION	0.00	0.00	5594.92	0	00:00	0.00
351in	JUNCTION	0.00	0.00	5605.36	0	00:00	0.00
3520dp	JUNCTION	0.68	3.18	5606.72	0	01:17	3.17
352in	JUNCTION	0.00	0.00	5603.64	0	00:00	0.00
3530dp	JUNCTION	0.00	0.00	5602.44	0	00:00	0.00
3535dp	JUNCTION	0.62	3.26	5644.18	0	00:59	3.26
353in	JUNCTION	0.00	0.00	5641.46	0	00:00	0.00
354.5in	JUNCTION	0.00	0.00	5649.07	0	00:00	0.00
3540dp	JUNCTION	0.18	0.82	5602.46	0	00:55	0.82
354in	JUNCTION	0.00	0.00	5622.11	0	00:00	0.00
3550dp	JUNCTION	0.36	1.87	5647.55	0	00:59	1.87
355in	JUNCTION	0.00	0.00	5660.13	0	00:00	0.00
3560dp	JUNCTION	0.21	1.19	5662.58	0	00:50	1.19
356in	JUNCTION	0.00	0.00	5701.41	0	00:00	0.00
3800dp	JUNCTION	0.13	0.47	5605.73	0	01:00	0.47
380in	JUNCTION	0.00	0.00	5619.30	0	00:00	0.00
4000dp	JUNCTION	0.04	0.27	5621.19	0	00:45	0.27
4005dp	JUNCTION	0.21	1.62	5603.74	0	00:45	1.62
400in	JUNCTION	0.00	0.00	5647.19	0	00:00	0.00
4300dp	JUNCTION	0.26	1.43	5620.28	0	00:52	1.43
430in	JUNCTION	0.00	0.00	5637.85	0	00:00	0.00
4310dp	JUNCTION	0.14	1.07	5638.24	0	00:45	1.07
431in	JUNCTION	0.00	0.00	5669.13	0	00:00	0.00
440.5in	JUNCTION	0.00	0.00	5662.25	0	00:00	0.00
4400dp	JUNCTION	0.09	0.47	5624.97	0	00:51	0.47
4405dp	JUNCTION	0.50	1.56	5638.17	0	01:20	1.56
440in	JUNCTION	0.00	0.00	5643.78	0	00:00	0.00
4410dp	JUNCTION	0.76	2.31	5670.74	0	01:23	2.31
441in	JUNCTION	0.00	0.00	5709.11	0	00:00	0.00
442.5in	JUNCTION	0.00	0.00	5687.97	0	00:00	0.00
4420dp	JUNCTION	0.08	0.47	5654.83	0	00:50	0.47
4425dp	JUNCTION	0.13	0.77	5659.04	0	00:49	0.77
442in	JUNCTION	0.00	0.00	5673.85	0	00:00	0.00
4430dp	JUNCTION	0.09	0.60	5708.38	0	00:45	0.60
443in	JUNCTION	0.00	0.00	5748.32	0	00:00	0.00
450.5in	JUNCTION	0.00	0.00	5671.25	0	00:00	0.00
4500dp	JUNCTION	0.33	1.99	5650.89	0	00:59	1.99
450in	JUNCTION	0.00	0.00	5691.71	0	00:00	0.00
4510dp	JUNCTION	0.31	2.03	5686.68	0	00:50	2.02
451in	JUNCTION	0.00	0.00	5725.07	0	00:00	0.00
4700dp	JUNCTION	0.75	2.31	5697.13	0	01:14	2.31
470in	JUNCTION	0.00	0.00	5727.92	0	00:00	0.00
4710dp	JUNCTION	0.62	1.95	5737.12	0	01:15	1.95
471in	JUNCTION	0.00	0.00	5775.00	0	00:00	0.00
5010dp	JUNCTION	0.35	1.67	5707.21	0	01:22	1.65
501in	JUNCTION	0.00	0.00	5761.05	0	00:00	0.00
5020dp	JUNCTION	0.33	1.67	5755.18	0	01:02	1.67
502in	JUNCTION	0.00	0.00	5790.91	0	00:00	0.00
5030dp	JUNCTION	0.25	1.33	5788.29	0	00:55	1.33
503in	JUNCTION	0.00	0.00	5822.73	0	00:00	0.00
510in	JUNCTION	0.00	0.00	5772.68	0	00:00	0.00
5110dp	JUNCTION	0.35	2.53	5686.48	0	00:45	2.53
511in	JUNCTION	0.00	0.00	5849.54	0	00:00	0.00
5120dp	JUNCTION	0.80	4.11	5696.01	0	01:01	4.11
512in	JUNCTION	0.00	0.00	5791.26	0	00:00	0.00
5200dp	JUNCTION	0.00	0.00	5717.77	0	00:00	0.00
520in	JUNCTION	0.00	0.00	5820.53	0	00:00	0.00
5300dp	JUNCTION	0.13	1.30	5695.57	0	00:41	1.29
530in	JUNCTION	0.00	0.00	5720.98	0	00:00	0.00
5310dp	JUNCTION	0.12	1.35	5730.05	0	00:35	1.35
531in	JUNCTION	0.00	0.00	5822.45	0	00:00	0.00
5500dp	JUNCTION	1.25	4.89	5708.54	0	01:14	4.89
550in	JUNCTION	0.00	0.00	5727.19	0	00:00	0.00
5510dp	JUNCTION	0.33	1.18	5729.81	0	01:15	1.18
551in	JUNCTION	0.00	0.00	5789.66	0	00:00	0.00
5520dp	JUNCTION	0.56	2.05	5717.90	0	01:10	2.05
552in	JUNCTION	0.00	0.00	5763.95	0	00:00	0.00
5530dp	JUNCTION	0.60	2.42	5724.95	0	01:08	2.42
553in	JUNCTION	0.00	0.00	5770.97	0	00:00	0.00
5540dp	JUNCTION	0.27	1.15	5771.00	0	01:05	1.15
554in	JUNCTION	0.00	0.00	5817.12	0	00:00	0.00
5550dp	JUNCTION	0.28	1.29	5757.14	0	01:00	1.29
555in	JUNCTION	0.00	0.00	5859.22	0	00:00	0.00
5560dp	JUNCTION	0.15	1.15	5833.22	0	00:45	1.15
556in	JUNCTION	0.00	0.00	5867.29	0	00:00	0.00
6000dp	JUNCTION	0.39	2.26	5718.81	0	00:55	2.26
600in	JUNCTION	0.00	0.00	5767.50	0	00:00	0.00
6010dp	JUNCTION	0.28	2.00	5743.09	0	00:45	2.00
601in	JUNCTION	0.00	0.00	5809.96	0	00:00	0.00
6200dp	JUNCTION	0.38	2.40	5757.40	0	00:50	2.40
620in	JUNCTION	0.00	0.00	5793.32	0	00:00	0.00
6300dp	JUNCTION	0.16	0.79	5765.15	0	00:55	0.79
630in	JUNCTION	0.00	0.00	5792.16	0	00:00	0.00
6500dp	JUNCTION	0.21	1.34	5815.62	0	00:45	1.34
650in	JUNCTION	0.00	0.00	5847.75	0	00:00	0.00
7000dp	JUNCTION	0.52	3.44	5787.81	0	00:55	3.44
700in	JUNCTION	0.00	0.00	5849.63	0	00:00	0.00
7010dp	JUNCTION	0.47	3.54	5821.15	0	00:43	3.53
701in	JUNCTION	0.00	0.00	5894.38	0	00:00	0.00
7020dp	JUNCTION	0.33	2.47	5838.32	0	00:42	2.46
702in	JUNCTION	0.00	0.00	5878.99	0	00:00	0.00

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

7030dp	JUNCTION	0.21	1.81	5866.41	0	00:35	1.81
703in	JUNCTION	0.00	0.00	5895.32	0	00:00	0.00
7100dp	JUNCTION	0.11	0.77	5866.00	0	00:40	0.77
710in	JUNCTION	0.00	0.00	5925.96	0	00:00	0.00
7200dp	JUNCTION	0.18	1.26	5901.34	0	00:50	1.26
720in	JUNCTION	0.00	0.00	5946.35	0	00:00	0.00
750in	JUNCTION	0.00	0.00	5952.83	0	00:00	0.00
7510dp	JUNCTION	1.46	2.84	5922.22	0	01:24	2.84
751in	JUNCTION	0.00	0.00	6020.55	0	00:00	0.00
7520dp	JUNCTION	0.23	2.04	5993.85	0	00:35	2.03
752in	JUNCTION	0.00	0.00	6054.02	0	00:00	0.00
7600dp	JUNCTION	0.17	1.27	5922.08	0	00:47	1.26
7605dp	JUNCTION	0.17	1.27	5934.00	0	00:43	1.27
760in	JUNCTION	0.00	0.00	5979.64	0	00:00	0.00
7610dp	JUNCTION	0.11	0.74	5955.45	0	00:45	0.74
761in	JUNCTION	0.00	0.00	6011.89	0	00:00	0.00
7700dp	JUNCTION	0.31	2.95	6010.80	0	00:35	2.94
770in	JUNCTION	0.00	0.00	6099.86	0	00:00	0.00
1000outfall	OUTFALL	0.00	0.00	5490.00	0	00:00	0.00
10	STORAGE	6.72	12.78	5948.78	0	01:24	12.78
20	STORAGE	3.27	14.01	5810.01	0	01:30	14.01

****
Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
1000dp	JUNCTION	0.00	4161.93	0	02:23	0	365	0.000
1009dp	JUNCTION	0.00	4179.00	0	02:15	0	364	0.000
100in	JUNCTION	26.11	26.11	0	01:10	1.6	1.6	0.000
1010dp	JUNCTION	0.00	4095.18	0	02:15	0	355	0.000
101in	JUNCTION	23.61	23.61	0	01:00	1.14	1.14	0.000
1020dp	JUNCTION	0.00	3454.38	0	02:40	0	305	0.000
102in	JUNCTION	57.91	57.91	0	01:00	2.49	2.49	0.000
1030dp	JUNCTION	0.00	3440.27	0	02:37	0	302	0.000
103in	JUNCTION	36.75	36.75	0	01:05	2.02	2.02	0.000
1040dp	JUNCTION	0.00	3423.54	0	02:30	0	300	0.000
104in	JUNCTION	128.72	128.72	0	00:50	4.03	4.03	0.000
1050dp	JUNCTION	0.00	3399.35	0	02:26	0	295	0.000
105in	JUNCTION	86.42	86.42	0	00:55	3.27	3.27	0.000
1100dp	JUNCTION	0.00	3257.68	0	02:12	0	277	0.000
110in	JUNCTION	41.63	41.63	0	00:50	1.4	1.4	0.000
1110dp	JUNCTION	0.00	3078.29	0	02:19	0	259	0.000
1115dp	JUNCTION	0.00	3049.54	0	02:18	0	255	-0.000
111in	JUNCTION	110.94	110.94	0	00:50	4.13	4.13	0.000
1120dp	JUNCTION	0.00	3038.03	0	02:16	0	254	0.000
112in	JUNCTION	69.97	69.97	0	00:55	2.76	2.76	0.000
1130dp	JUNCTION	0.00	3006.31	0	02:13	0	249	0.000
113in	JUNCTION	89.38	89.38	0	00:45	2.91	2.91	0.000
1200dp	JUNCTION	0.00	2986.81	0	02:11	0	246	0.000
120in	JUNCTION	48.28	48.28	0	00:50	1.68	1.68	0.000
1210dp	JUNCTION	0.00	2773.13	0	02:10	0	223	0.000
121in	JUNCTION	59.22	59.22	0	01:10	3.6	3.6	0.000
1222dp	JUNCTION	0.00	2715.27	0	02:02	0	216	0.000
1225dp	JUNCTION	0.00	2676.74	0	01:57	0	212	0.000
122in	JUNCTION	90.31	90.31	0	00:55	3.71	3.71	0.000
1230dp	JUNCTION	0.00	2568.13	0	02:23	0	202	0.000
123in	JUNCTION	62.52	62.52	0	01:00	2.79	2.79	0.000
124in	JUNCTION	82.96	82.96	0	01:00	3.54	3.54	0.000
130.2in	JUNCTION	10.17	10.17	0	00:50	0.43	0.43	0.000
1300dp	JUNCTION	0.00	2547.58	0	02:21	0	200	0.000
1301dp	JUNCTION	0.00	2374.34	0	02:20	0	175	0.000
1302dp	JUNCTION	0.00	2333.56	0	02:16	0	167	0.000
130in	JUNCTION	30.65	30.65	0	01:00	1.53	1.53	0.000
1310dp	JUNCTION	0.00	2330.15	0	02:16	0	166	0.000
131in	JUNCTION	236.13	236.13	0	00:50	7.89	7.89	0.000
1400dp	JUNCTION	0.00	1949.13	0	02:12	0	118	0.000
140in	JUNCTION	80.95	80.95	0	01:10	4.21	4.21	0.000
141.5in	JUNCTION	85.79	85.79	0	00:55	3.2	3.2	0.000
1410dp	JUNCTION	0.00	1918.15	0	01:56	0	110	0.000
1415dp	JUNCTION	0.00	1884.86	0	01:49	0	106	-0.000
141in	JUNCTION	81.56	81.56	0	01:00	3.67	3.67	0.000
1420dp	JUNCTION	0.00	1893.82	0	01:38	0	103	0.000
142in	JUNCTION	96.13	96.13	0	00:50	3.19	3.19	0.000
1500dp	JUNCTION	0.00	1815.64	0	01:34	0	97.6	0.000
1501dp	JUNCTION	0.00	1695.65	0	01:33	0	90.1	-0.000
1502dp	JUNCTION	0.00	1696.14	0	01:32	0	90.2	0.000
150in	JUNCTION	79.19	79.19	0	00:55	3.21	3.21	0.000
151in	JUNCTION	100.51	100.51	0	00:55	4.32	4.32	0.000
1520dp	JUNCTION	0.00	1392.75	0	01:34	0	71.9	0.000
152in	JUNCTION	95.62	95.62	0	00:50	3.43	3.43	0.000
1530dp	JUNCTION	0.00	1342.35	0	01:30	0	68.6	-0.000
153in	JUNCTION	224.25	224.25	0	00:40	5.12	5.12	0.000
1540dp	JUNCTION	0.00	1709.22	0	01:05	0	63.8	0.000
1541dp	JUNCTION	0.00	1584.31	0	01:03	0	57.9	0.000
154in	JUNCTION	42.70	42.70	0	00:40	1.06	1.06	0.000
155.1in	JUNCTION	11.98	11.98	0	01:10	0.981	0.981	0.000
155in	JUNCTION	277.28	277.28	0	00:35	5.04	5.04	0.000
1600dp	JUNCTION	0.00	1564.85	0	01:00	0	56.9	0.000
160in	JUNCTION	55.85	55.85	0	00:50	2.22	2.22	0.000
161in	JUNCTION	132.49	132.49	0	00:55	5.61	5.61	0.000
162.1in	JUNCTION	28.27	28.27	0	00:40	0.768	0.768	0.000
1620dp	JUNCTION	0.00	1317.62	0	00:53	0	46.1	0.000
1623dp	JUNCTION	0.00	1010.59	0	00:52	0	37.3	0.000
162in	JUNCTION	212.73	212.73	0	00:35	4.5	4.5	0.000
163.5in	JUNCTION	23.00	23.00	0	00:40	0.622	0.622	0.000
1630dp	JUNCTION	0.00	987.75	0	00:49	0	36.6	0.000
1631dp	JUNCTION	0.00	950.97	0	00:48	0	35.5	0.000
1635dp	JUNCTION	0.00	851.74	0	00:46	0	19.9	0.000
163in	JUNCTION	38.86	38.86	0	00:40	1.07	1.07	0.000
1640dp	JUNCTION	0.00	718.05	0	00:44	0	16.2	0.000
164in	JUNCTION	189.31	189.31	0	00:40	4.59	4.59	0.000
1650dp	JUNCTION	0.00	550.85	0	00:38	0	11.6	0.000
165in	JUNCTION	90.29	90.29	0	00:35	1.52	1.52	0.000
1660dp	JUNCTION	0.00	111.65	0	00:40	0	2.7	0.000
166in	JUNCTION	111.65	111.65	0	00:40	2.7	2.7	0.000
2000dp	JUNCTION	0.00	1093.25	0	01:32	0	49.4	0.000
200in	JUNCTION	8.77	8.77	0	00:55	0.404	0.404	0.000
2010dp	JUNCTION	0.00	1088.65	0	01:30	0	49	0.000
201in	JUNCTION	85.86	85.86	0	01:05	4.09	4.09	0.000
2020dp	JUNCTION	0.00	1020.66	0	01:30	0	44.9	0.000
202in	JUNCTION	21.49	21.49	0	00:45	0.675	0.675	0.000
2030dp	JUNCTION	0.00	809.85	0	01:28	0	34.4	0.000
203in	JUNCTION	53.63	53.63	0	01:00	2.37	2.37	0.000
2040dp	JUNCTION	0.00	704.43	0	01:18	0	27.2	0.000
2041dp	JUNCTION	0.00	649.58	0	01:09	0	23.7	0.000

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

204in	JUNCTION	81.91	81.91	0	00:55	3.34	3.34	0.000	4005dp	JUNCTION	0.00	62.24	0	00:45	0	1.76	0.000
2050dp	JUNCTION	0.00	14.34	0	01:25	0	1.57	0.000	400in	JUNCTION	62.33	62.33	0	00:45	1.76	1.76	0.000
205in	JUNCTION	14.34	14.34	0	01:25	1.57	1.57	0.000	4300dp	JUNCTION	0.00	92.98	0	00:52	0	3.06	0.000
2060dp	JUNCTION	0.00	547.01	0	01:05	0	18.4	0.000	430in	JUNCTION	23.59	23.59	0	00:55	1.05	1.05	0.000
206in	JUNCTION	86.60	86.60	0	01:10	4.54	4.54	0.000	4310dp	JUNCTION	0.00	71.21	0	00:45	0	2	0.000
2070dp	JUNCTION	0.00	497.89	0	00:50	0	13.6	0.000	431in	JUNCTION	71.21	71.21	0	00:45	2	2	0.000
207in	JUNCTION	148.66	148.66	0	00:50	4.82	4.82	0.000	440.5in	JUNCTION	71.12	71.12	0	00:50	2.26	2.26	0.000
2080dp	JUNCTION	0.00	366.65	0	00:42	0	8.72	0.000	4400dp	JUNCTION	0.00	422.22	0	00:55	0	18.8	0.000
2085dp	JUNCTION	0.00	211.09	0	00:35	0	4.4	0.000	4405dp	JUNCTION	0.00	326.85	0	01:04	0	15	0.000
208in	JUNCTION	164.79	164.79	0	00:40	4.3	4.3	0.000	440in	JUNCTION	45.05	45.05	0	00:55	1.87	1.87	0.000
2090dp	JUNCTION	0.00	141.49	0	00:35	0	2.99	0.000	4410dp	JUNCTION	0.00	135.20	0	01:14	0	7.51	0.000
209in	JUNCTION	141.49	141.49	0	00:35	2.99	2.99	0.000	441in	JUNCTION	62.18	62.18	0	00:50	2.25	2.25	0.000
2100dp	JUNCTION	0.00	69.61	0	00:35	0	1.41	0.000	442.5in	JUNCTION	70.26	70.26	0	00:50	2.34	2.34	0.000
210in	JUNCTION	69.61	69.61	0	00:35	1.41	1.41	0.000	4420dp	JUNCTION	0.00	53.49	0	00:50	0	1.94	0.000
2110dp	JUNCTION	0.00	248.11	0	00:56	0	9.73	0.000	4425dp	JUNCTION	0.00	157.33	0	00:49	0	5.21	0.000
2112dp	JUNCTION	0.00	110.70	0	01:00	0	5.13	0.000	442in	JUNCTION	53.49	53.49	0	00:50	1.94	1.94	0.000
211in	JUNCTION	149.10	149.10	0	00:50	4.59	4.59	0.000	4430dp	JUNCTION	0.00	87.90	0	00:45	0	2.87	0.000
212in	JUNCTION	110.70	110.70	0	01:00	5.13	5.13	0.000	443in	JUNCTION	87.90	87.90	0	00:45	2.87	2.87	0.000
2200dp	JUNCTION	0.00	99.13	0	01:05	0	4.62	0.000	450.5in	JUNCTION	64.85	64.85	0	00:50	2.42	2.42	0.000
220in	JUNCTION	99.13	99.13	0	01:05	4.62	4.62	0.000	4500dp	JUNCTION	0.00	194.22	0	00:57	0	6.81	0.000
2300dp	JUNCTION	0.00	95.54	0	00:55	0	3.61	-0.000	450in	JUNCTION	58.38	58.38	0	01:10	3.21	3.21	0.000
230in	JUNCTION	95.54	95.54	0	00:55	3.61	3.61	0.000	4510dp	JUNCTION	0.00	136.81	0	00:50	0	4.33	0.000
3000dp	JUNCTION	0.00	146.31	0	01:07	0	9.11	0.000	451in	JUNCTION	136.81	136.81	0	00:50	4.33	4.33	0.000
300in	JUNCTION	40.62	40.62	0	00:50	1.45	1.45	0.000	4700dp	JUNCTION	0.00	89.11	0	01:14	0	5.26	0.000
3010dp	JUNCTION	0.00	73.50	0	01:11	0	5.11	0.000	470in	JUNCTION	39.84	39.84	0	00:50	1.54	1.54	0.000
301in	JUNCTION	63.91	63.91	0	01:05	3.11	3.11	0.000	4710dp	JUNCTION	0.00	58.68	0	01:15	0	3.7	0.000
3020dp	JUNCTION	0.00	22.03	0	01:20	0	1.95	0.000	471in	JUNCTION	58.68	58.68	0	01:15	3.7	3.7	0.000
302in	JUNCTION	22.03	22.03	0	01:20	1.95	1.95	0.000	5010dp	JUNCTION	0.00	183.06	0	01:03	0	7.73	0.000
303in	JUNCTION	37.94	37.94	0	01:10	2.55	2.55	0.000	501in	JUNCTION	119.16	119.16	0	00:55	4.36	4.36	0.000
3100dp	JUNCTION	0.00	90.06	0	00:50	0	3.46	0.000	5020dp	JUNCTION	0.00	82.38	0	01:02	0	3.31	0.000
310in	JUNCTION	47.75	47.75	0	00:50	1.76	1.76	0.000	502in	JUNCTION	46.63	46.63	0	00:50	1.63	1.63	0.000
311in	JUNCTION	42.31	42.31	0	00:50	1.69	1.69	0.000	5030dp	JUNCTION	0.00	41.00	0	00:55	0	1.65	0.000
312in	JUNCTION	35.54	35.54	0	00:50	1.53	1.53	0.000	503in	JUNCTION	41.00	41.00	0	00:55	1.65	1.65	0.000
3200dp	JUNCTION	0.00	11.09	0	01:10	0	0.76	0.000	510in	JUNCTION	230.86	230.86	0	00:40	4.89	4.89	0.000
320in	JUNCTION	11.09	11.09	0	01:10	0.76	0.76	0.000	5110dp	JUNCTION	0.00	154.99	0	00:45	0	4.71	0.000
3300dp	JUNCTION	0.00	290.58	0	01:10	0	11.5	0.000	511in	JUNCTION	154.99	154.99	0	00:45	4.71	4.71	0.000
330in	JUNCTION	92.10	92.10	0	01:00	3.95	3.95	0.000	5120dp	JUNCTION	0.00	330.37	0	01:01	0	13.3	0.000
3310dp	JUNCTION	0.00	209.84	0	00:58	0	7.49	0.000	512in	JUNCTION	162.27	162.27	0	00:50	5.55	5.55	0.000
331in	JUNCTION	135.56	135.56	0	00:50	4.61	4.61	0.000	5200dp	JUNCTION	0.00	257.88	0	00:50	0	8.43	0.000
3320dp	JUNCTION	0.00	89.66	0	00:50	0	2.79	0.000	520in	JUNCTION	257.88	257.88	0	00:50	8.43	8.43	0.000
332in	JUNCTION	89.66	89.66	0	00:50	2.79	2.79	0.000	5300dp	JUNCTION	0.00	330.65	0	00:45	0	8.83	0.000
3500dp	JUNCTION	0.00	357.62	0	01:13	0	15.5	0.000	530in	JUNCTION	180.82	180.82	0	00:50	6.15	6.15	0.000
350in	JUNCTION	64.18	64.18	0	00:50	2.44	2.44	0.000	5310dp	JUNCTION	0.00	174.14	0	00:35	0	2.66	0.000
3510dp	JUNCTION	0.00	305.01	0	01:11	0	13.1	0.000	531in	JUNCTION	174.14	174.14	0	00:35	2.66	2.66	0.000
3511dp	JUNCTION	0.00	253.22	0	01:12	0	10.7	0.000	5500dp	JUNCTION	0.00	465.95	0	01:14	0	22.6	0.000
351in	JUNCTION	14.49	14.49	0	00:50	0.592	0.592	0.000	550in	JUNCTION	56.37	56.37	0	00:40	1.37	1.37	0.000
3520dp	JUNCTION	0.00	185.55	0	01:16	0	7.75	0.000	5510dp	JUNCTION	0.00	131.96	0	01:15	0	7.14	0.000
352in	JUNCTION	24.94	24.94	0	01:10	1.48	1.48	0.000	551in	JUNCTION	96.09	96.09	0	01:15	5.53	5.53	0.000
3530dp	JUNCTION	0.00	91.53	0	00:45	0	2.93	0.000	5520dp	JUNCTION	0.00	151.68	0	01:10	0	7.05	0.000
3535dp	JUNCTION	0.00	173.10	0	00:59	0	6.17	0.000	552in	JUNCTION	88.09	88.09	0	00:55	3.54	3.54	0.000
353in	JUNCTION	91.53	91.53	0	00:45	2.93	2.93	0.000	5530dp	JUNCTION	0.00	155.42	0	01:08	0	6.99	0.000
354.5in	JUNCTION	40.05	40.05	0	00:40	1.01	1.01	0.000	553in	JUNCTION	79.60	79.60	0	00:50	2.78	2.78	0.000
3540dp	JUNCTION	0.00	40.15	0	00:55	0	1.79	0.000	5540dp	JUNCTION	0.00	89.64	0	01:05	0	4.15	0.000
354in	JUNCTION	40.15	40.15	0	00:55	1.79	1.79	0.000	554in	JUNCTION	89.64	89.64	0	01:05	4.15	4.15	0.000
3550dp	JUNCTION	0.00	142.35	0	00:59	0	5.15	0.000	5550dp	JUNCTION	0.00	77.45	0	01:00	0	3.41	0.000
355in	JUNCTION	50.77	50.77	0	00:45	1.65	1.65	0.000	555in	JUNCTION	77.45	77.45	0	01:00	3.41	3.41	0.000
3560dp	JUNCTION	0.00	97.70	0	00:50	0	3.46	0.000	5560dp	JUNCTION	0.00	49.13	0	00:45	0	1.36	0.000
356in	JUNCTION	97.70	97.70	0	00:50	3.46	3.46	0.000	556in	JUNCTION	49.13	49.13	0	00:45	1.36	1.36	0.000
3800dp	JUNCTION	0.00	25.98	0	01:00	0	1.28	-0.000	6000dp	JUNCTION	0.00	274.84	0	00:55	0	8.9	0.000
380in	JUNCTION	25.98	25.98	0	01:00	1.28	1.28	0.000	600in	JUNCTION	123.58	123.58	0	00:50	4.24	4.24	0.000
4000dp	JUNCTION	0.00	62.33	0	00:45	0	1.76	0.000	6010dp	JUNCTION	0.00	166.86	0	00:45	0	4.56	0.000

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

601in	JUNCTION	166.86	166.86	0	00:45	4.56	4.56	0.000
6200dp	JUNCTION	0.00	104.74	0	00:50	0	3.51	0.000
620in	JUNCTION	104.74	104.74	0	00:50	3.51	3.51	0.000
6300dp	JUNCTION	0.00	15.98	0	00:55	0	0.696	0.000
630in	JUNCTION	15.98	15.98	0	00:55	0.696	0.696	0.000
6500dp	JUNCTION	0.00	63.77	0	00:45	0	2.2	-0.000
650in	JUNCTION	63.77	63.77	0	00:45	2.2	2.2	0.000
7000dp	JUNCTION	0.00	673.92	0	00:55	0	18.3	0.000
700in	JUNCTION	60.16	60.16	0	01:00	2.7	2.7	0.000
7010dp	JUNCTION	0.00	659.39	0	00:43	0	15.4	0.000
701in	JUNCTION	170.44	170.44	0	00:35	3.53	3.53	0.000
7020dp	JUNCTION	0.00	512.07	0	00:42	0	11.9	0.000
702in	JUNCTION	287.47	287.47	0	00:35	6.38	6.38	0.000
7030dp	JUNCTION	0.00	250.58	0	00:35	0	5.45	0.000
703in	JUNCTION	250.58	250.58	0	00:35	5.45	5.45	0.000
7100dp	JUNCTION	0.00	115.23	0	00:40	0	3.02	0.000
710in	JUNCTION	115.23	115.23	0	00:40	3.02	3.02	0.000
7200dp	JUNCTION	0.00	151.92	0	00:50	0	4.32	0.000
720in	JUNCTION	151.92	151.92	0	00:50	4.32	4.32	0.000
750in	JUNCTION	51.10	51.10	0	00:40	1.24	1.24	0.000
7510dp	JUNCTION	0.00	164.49	0	01:24	0	13.8	0.000
751in	JUNCTION	274.97	274.97	0	00:35	5.28	5.28	0.000
7520dp	JUNCTION	0.00	468.60	0	00:35	0	8.79	0.000
752in	JUNCTION	468.60	468.60	0	00:35	8.79	8.79	0.000
7600dp	JUNCTION	0.00	136.71	0	00:47	0	3.71	0.000
7605dp	JUNCTION	0.00	136.97	0	00:43	0	3.7	0.000
760in	JUNCTION	40.16	40.16	0	00:35	0.713	0.713	0.000
7610dp	JUNCTION	0.00	101.46	0	00:45	0	2.99	0.000
761in	JUNCTION	101.46	101.46	0	00:45	2.99	2.99	0.000
7700dp	JUNCTION	0.00	378.72	0	00:35	0	7.33	0.000
770in	JUNCTION	378.72	378.72	0	00:35	7.33	7.33	0.000
1000outfall	OUTFALL	0.00	4161.93	0	02:23	0	365	0.000
10	STORAGE	0.00	699.87	0	00:39	0	14.1	0.028
20	STORAGE	0.00	1840.35	0	01:06	0	68.9	0.018

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
10	472.942	20	0	0	1264.348	53	0 01:24	164.49
20	402.144	13	0	0	2179.595	70	0 01:30	1342.35

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
1000outfall	98.45	1148.72	4161.93	365.435
System	98.45	1148.72	4161.93	365.435

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
1	DUMMY	70.26	0 00:50			
10	DUMMY	28.27	0 00:40			
100	DUMMY	77.45	0 01:00			
1000out	DUMMY	4161.93	0 02:23			
1014re	CHANNEL	4148.06	0 02:23	26.83	0.16	0.72
1015re	DUMMY	4095.18	0 02:15			
102	DUMMY	49.13	0 00:45			
1025re	CHANNEL	3453.75	0 02:46	4.02	0.11	0.54
1035re	CHANNEL	3440.08	0 02:40	4.52	0.14	0.55
104	DUMMY	56.37	0 00:40			
1045re	CHANNEL	3424.90	0 02:37	3.68	0.21	0.55
105	DUMMY	154.99	0 00:45			
1055re	CHANNEL	3399.29	0 02:31	5.92	0.18	0.76
109	DUMMY	230.86	0 00:40			
1105re	CHANNEL	3254.25	0 02:29	4.26	0.40	0.86
111	DUMMY	162.27	0 00:50			
1115re	CHANNEL	3078.00	0 02:21	6.08	0.17	0.50
1120re	CHANNEL	3049.37	0 02:20	10.27	0.13	0.51
1125re	CHANNEL	3037.57	0 02:18	5.19	0.06	0.42
113	DUMMY	58.68	0 01:15			
1135re	CHANNEL	3005.19	0 02:16	5.36	0.06	0.25
115	DUMMY	39.84	0 00:50			
117	DUMMY	87.90	0 00:45			
119	DUMMY	53.49	0 00:50			
1205re	CHANNEL	2986.81	0 02:13	6.38	0.04	0.33
1215re	CHANNEL	2772.32	0 02:12	5.36	0.08	0.37
122	DUMMY	62.18	0 00:50			
1227re	CHANNEL	2703.15	0 02:10	5.70	0.21	0.67
1230re	CHANNEL	2675.56	0 02:02	4.76	0.36	0.74
1235re	DUMMY	2568.13	0 02:23			
124	DUMMY	45.05	0 00:55			
126	DUMMY	119.16	0 00:55			
129	DUMMY	46.63	0 00:50			
13	DUMMY	14.34	0 01:25			
1305re	CHANNEL	2546.27	0 02:23	6.18	0.19	0.54
1306re	CHANNEL	2373.03	0 02:22	6.53	0.13	0.43
1307re	CHANNEL	2324.95	0 02:21	5.62	0.22	0.56
131	DUMMY	41.00	0 00:55			
132	DUMMY	174.14	0 00:35			
134	DUMMY	180.82	0 00:50			
136	DUMMY	330.65	0 00:45			
137	DUMMY	257.88	0 00:50			
138	DUMMY	136.81	0 00:50			

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

14	DUMMY	110.70	0	01:00			
140	DUMMY	58.38	0	01:10			
1405re	CHANNEL	1912.46	0	02:24	5.08	0.07	0.35
141	DUMMY	194.22	0	00:57			
1415re	CHANNEL	1871.92	0	02:12	5.42	0.15	0.59
1420re	CHANNEL	1864.60	0	01:56	4.43	0.19	0.63
1425re	CHANNEL	1844.09	0	01:49	5.01	0.28	0.79
144	DUMMY	90.31	0	00:55			
146	DUMMY	82.96	0	01:00			
148	DUMMY	89.38	0	00:45			
15	DUMMY	149.10	0	00:50			
1505re	CHANNEL	1806.14	0	01:39	4.66	0.13	0.58
1506re	CHANNEL	1695.20	0	01:34	6.14	0.07	0.43
1507re	CHANNEL	1695.65	0	01:33	4.69	0.08	0.38
151	DUMMY	62.33	0	00:45			
1525re	CHANNEL	1391.80	0	01:37	3.45	0.37	0.70
1535re	CHANNEL	1337.48	0	01:35	3.86	0.02	0.23
154	DUMMY	71.21	0	00:45			
1545re	CHANNEL	1707.04	0	01:07	7.27	0.04	0.26
156	DUMMY	23.59	0	00:55			
159	DUMMY	59.22	0	01:10			
16	DUMMY	69.61	0	00:35			
1605re	CHANNEL	1578.31	0	01:07	5.23	0.03	0.29
1606re	CHANNEL	1554.77	0	01:03	4.52	0.02	0.23
162	DUMMY	89.66	0	00:50			
1625re	CHANNEL	1282.86	0	01:00	6.14	0.01	0.21
1628re	CHANNEL	1009.03	0	00:55	4.44	0.06	0.33
163	DUMMY	23.00	0	00:40			
1635re	CHANNEL	985.35	0	00:52	5.65	0.01	0.24
1636re	CHANNEL	950.62	0	00:49	8.65	0.09	0.46
164	DUMMY	135.56	0	00:50			
1640re	CHANNEL	851.56	0	00:47	6.00	0.01	0.21
1645re	CHANNEL	715.30	0	00:46	5.57	0.32	0.64
165	DUMMY	92.10	0	01:00			
1655re	CHANNEL	536.77	0	00:44	5.15	0.01	0.19
1665re	CHANNEL	109.13	0	00:44	4.04	0.00	0.06
167	DUMMY	164.79	0	00:40			
169	DUMMY	148.66	0	00:50			
17	DUMMY	63.91	0	01:05			
170	DUMMY	141.49	0	00:35			
173	DUMMY	86.60	0	01:10			
174	DUMMY	95.54	0	00:55			
176	DUMMY	99.13	0	01:05			
179	DUMMY	53.63	0	01:00			
18	DUMMY	40.62	0	00:50			
181	DUMMY	81.91	0	00:55			
184	DUMMY	14.34	0	01:25			
186	DUMMY	11.09	0	01:10			
189	DUMMY	128.72	0	00:50			
19	DUMMY	47.75	0	00:50			
191	DUMMY	86.42	0	00:55			
193	DUMMY	41.63	0	00:50			
195	DUMMY	42.31	0	00:50			
197	DUMMY	64.18	0	00:50			
198	DUMMY	24.94	0	01:10			
2	DUMMY	69.97	0	00:55			
20	DUMMY	35.54	0	00:50			
2005re	CHANNEL	1087.03	0	01:37	3.31	0.08	0.41
201	DUMMY	14.49	0	00:50			
2015re	CHANNEL	1087.06	0	01:32	1.93	0.33	0.69
202	DUMMY	40.15	0	00:55			
2035re	CHANNEL	807.38	0	01:32	2.34	0.10	0.52
204	DUMMY	91.53	0	00:45			
2045re	CHANNEL	678.37	0	01:30	1.85	0.07	0.32
2046re	CHANNEL	634.41	0	01:19	2.49	0.02	0.21
205	DUMMY	185.55	0	01:16			
206	DUMMY	91.53	0	00:45			
2065re	CHANNEL	545.15	0	01:08	4.33	0.14	0.63
2075re	CHANNEL	461.08	0	01:04	5.00	0.17	0.47
2085re	CHANNEL	350.01	0	00:51	3.76	0.01	0.23
209	DUMMY	50.77	0	00:45			
2095re	CHANNEL	203.36	0	00:42	3.32	0.04	0.27
21	DUMMY	40.05	0	00:40			
210	DUMMY	97.70	0	00:50			
2115re	CHANNEL	240.96	0	01:10	3.78	0.00	0.20
2117re	CHANNEL	110.74	0	01:06	3.50	0.02	0.23
213	DUMMY	146.31	0	01:07			
214	DUMMY	37.94	0	01:10			
215	DUMMY	26.11	0	01:10			
218	DUMMY	23.61	0	01:00			
22	DUMMY	60.16	0	01:00			
2205re	CHANNEL	95.54	0	01:18	1.54	0.11	0.42
221	DUMMY	85.86	0	01:05			
222	DUMMY	8.77	0	00:55			
223	DUMMY	57.91	0	01:00			
225	DUMMY	21.49	0	00:45			
226	DUMMY	1020.66	0	01:30			
229	DUMMY	36.75	0	01:05			
23	DUMMY	170.44	0	00:35			
2305re	CHANNEL	91.06	0	01:11	1.82	0.00	0.11
231	DUMMY	290.58	0	01:10			
234	DUMMY	110.94	0	00:50			
235	DUMMY	15.98	0	00:55			
237	DUMMY	25.98	0	01:00			
239	DUMMY	62.52	0	01:00			
24	DUMMY	287.47	0	00:35			
240	DUMMY	88.09	0	00:55			
241	DUMMY	183.06	0	01:03			
242	DUMMY	236.13	0	00:50			
243	DUMMY	30.65	0	01:00			
244	DUMMY	2330.15	0	02:16			
245	DUMMY	257.88	0	00:50			
25	DUMMY	250.58	0	00:35			
27	DUMMY	71.12	0	00:50			
28	DUMMY	326.85	0	01:04			
29	DUMMY	64.85	0	00:50			
3	DUMMY	48.28	0	00:50			
3015re	CHANNEL	73.47	0	01:13	3.39	0.03	0.24
3025re	CHANNEL	20.65	0	01:53	2.12	0.54	0.77
3105re	CHANNEL	81.41	0	01:20	1.66	0.16	0.59
32	DUMMY	22.03	0	01:20			
3205re	CHANNEL	11.01	0	01:17	1.69	0.01	0.19
3315re	CHANNEL	204.37	0	01:13	3.44	0.19	0.55
3325re	CHANNEL	82.72	0	01:07	3.12	0.04	0.28
35	DUMMY	136.71	0	00:47			
3505re	CHANNEL	356.88	0	01:16	2.33	0.13	0.41
3515re	CHANNEL	304.23	0	01:15	3.71	0.04	0.28
3516re	DUMMY	253.22	0	01:12			
3540re	CHANNEL	161.53	0	01:17	3.35	0.01	0.21
3545re	CHANNEL	39.70	0	01:02	2.04	0.00	0.08
3555re	CHANNEL	142.16	0	01:01	2.47	0.02	0.18
3565re	CHANNEL	95.18	0	01:00	1.69	0.01	0.16

TABLE B-6
Existing Condition 100-Year SWMM Input and Output

36	DUMMY	69.61	0	00:35			
37	DUMMY	141.49	0	00:35			
3805re	CHANNEL	25.97	0	01:06	1.68	0.01	0.14
4005re	CHANNEL	62.24	0	00:45	9.54	0.00	0.04
4010re	CHANNEL	60.54	0	00:53	2.90	0.00	0.10
4305re	CHANNEL	91.57	0	00:59	1.44	0.16	0.48
4315re	CHANNEL	69.65	0	00:51	2.06	0.03	0.23
44	DUMMY	111.65	0	00:40			
4405re	CHANNEL	422.17	0	00:58	9.32	0.01	0.05
4415re	CHANNEL	134.82	0	01:20	3.15	0.04	0.28
4425re	CHANNEL	53.33	0	00:51	9.80	0.00	0.11
4430re	CHANNEL	157.35	0	00:50	15.35	0.00	0.13
4435re	CHANNEL	87.23	0	00:48	10.23	0.00	0.13
45	DUMMY	378.72	0	00:35			
4515re	CHANNEL	131.20	0	00:59	3.01	0.00	0.12
46	DUMMY	468.60	0	00:35			
47	DUMMY	274.97	0	00:35			
4705re	CHANNEL	88.46	0	01:23	3.00	0.07	0.53
4715re	CHANNEL	57.94	0	01:26	2.90	0.19	0.54
48	DUMMY	51.10	0	00:40			
49	DUMMY	212.73	0	00:35			
5	DUMMY	10.17	0	00:50			
50	DUMMY	132.49	0	00:55			
5025re	CHANNEL	81.96	0	01:22	3.01	0.13	0.48
5035re	CHANNEL	39.65	0	01:08	2.43	0.02	0.21
5115re	CHANNEL	144.59	0	00:59	3.32	0.00	0.09
5125re	CHANNEL	324.22	0	01:11	4.08	0.30	0.56
52	DUMMY	115.23	0	00:40			
53	DUMMY	42.70	0	00:40			
5315re	CHANNEL	158.16	0	00:41	2.69	0.01	0.14
54	DUMMY	277.28	0	00:35			
55	DUMMY	224.25	0	00:40			
5505re	CHANNEL	460.79	0	01:26	3.39	0.15	0.56
5515re	CHANNEL	131.93	0	01:17	15.96	0.03	0.21
5525re	CHANNEL	150.97	0	01:16	2.21	0.02	0.23
5535re	CHANNEL	154.31	0	01:15	2.39	0.02	0.23
5545re	CHANNEL	87.50	0	01:14	>50.00	0.01	0.17
5555re	CHANNEL	73.16	0	01:18	2.23	0.01	0.15
5565re	CHANNEL	37.79	0	01:25	3.97	0.00	0.08
57	DUMMY	151.92	0	00:50			
58	DUMMY	101.46	0	00:45			
59	DUMMY	189.31	0	00:40			
60	DUMMY	90.29	0	00:35			
6005re	CHANNEL	267.06	0	01:06	3.11	0.05	0.25
6015re	CHANNEL	156.35	0	00:57	2.56	0.00	0.12
61	DUMMY	40.16	0	00:35			
62	DUMMY	100.51	0	00:55			
6205re	CHANNEL	97.71	0	01:08	2.84	0.00	0.14
63	DUMMY	79.19	0	00:55			
6305re	CHANNEL	15.48	0	01:11	1.61	0.00	0.09
65	DUMMY	95.62	0	00:50			
6505re	CHANNEL	59.94	0	01:02	2.29	0.00	0.07
68	DUMMY	673.92	0	00:55			
69	DUMMY	38.86	0	00:40			
7	DUMMY	81.56	0	01:00			
70	DUMMY	55.85	0	00:50			
7015re	CHANNEL	613.89	0	00:55	3.36	0.06	0.37
7025re	CHANNEL	509.41	0	00:45	>50.00	0.00	0.10
7035re	CHANNEL	240.69	0	00:45	4.87	0.00	0.08
71	DUMMY	63.77	0	00:45			
7105re	CHANNEL	113.72	0	00:45	18.58	0.01	0.14
72	DUMMY	96.13	0	00:50			
7205re	CHANNEL	150.81	0	00:52	18.65	0.00	0.05
74	DUMMY	85.79	0	00:55			
7515re	CHANNEL	164.18	0	01:29	3.57	0.00	0.13
7525re	CHANNEL	444.68	0	00:40	4.08	0.07	0.32
7605re	CHANNEL	101.17	0	00:46	4.81	0.00	0.03
7615re	CHANNEL	136.71	0	00:47	2.03	0.01	0.18
77	DUMMY	104.74	0	00:50			
7705re	CHANNEL	372.44	0	00:37	5.03	0.00	0.11
79	DUMMY	80.95	0	01:10			
83	DUMMY	96.09	0	01:15			
86	DUMMY	123.58	0	00:50			
88	DUMMY	166.86	0	00:45			
9	DUMMY	11.98	0	01:10			
97	DUMMY	79.60	0	00:50			
99	DUMMY	89.64	0	01:05			
S-OUT	DUMMY	164.49	0	01:24			
TC-OUT	DUMMY	1342.35	0	01:30			

```
*************************
Conduit Surcharge Summary
*************************

No conduits were surcharged.


Analysis begun on:  Fri Mar 24 14:45:56 2023
Analysis ended on:  Fri Mar 24 14:46:00 2023
Total elapsed time: 00:00:04
```

TABLE B-7
Future Condition 100-Year SWMM Input and Output

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)
--------------------------------------------------------------


*************
Element Count
*************
Number of rain gages ...... 1
Number of subcatchments ... 120
Number of nodes ........... 245
Number of links ........... 244
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                                 Data       Recording
Name                 Data Source                 Type       Interval
----------------------------------------------------------------------
Raingage1            Timeseries1                 INTENSITY    6 min.


********************
Subcatchment Summary
********************
  Name                            Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ----------------------------------------------------------------------------------------------
-------
  100                            49.84   1018.76     79.00     8.3000 Raingage1           1000dp
  101                            32.06   1330.46     46.33     6.1680 Raingage1           1010dp
  102                            64.00   1592.22     92.06     6.1330 Raingage1           1020dp
  103                            53.16    583.48     90.99     7.9600 Raingage1           1030dp
  104                           102.16   2161.91     84.80     5.3250 Raingage1           1040dp
  105                            85.02   1532.09     84.75     5.7710 Raingage1           1050dp
  110                            34.73   1629.47     60.20     7.0040 Raingage1           1100dp
  111                            87.33   1572.70     42.99     8.3370 Raingage1           1110dp
  112                            67.35   1772.16     33.28     8.8050 Raingage1           1120dp
  113                            61.41   1772.16     35.36     8.8050 Raingage1           1130dp
  120                            41.55   2113.57     36.70     5.4650 Raingage1           1200dp
  121                            89.18   1371.74     29.55     6.0780 Raingage1           1210dp
  122                            92.07   1137.67     46.11     6.8480 Raingage1           1222dp
  123                            67.36   1635.12     17.64     9.2190 Raingage1           1230dp
  124                            87.55   1876.27     52.03     6.3210 Raingage1           1210dp
  130                            29.54   1047.98     40.00    12.7280 Raingage1           1300dp
  130.2                           8.29    932.64     40.00    10.2480 Raingage1           1302dp
  131                           156.68   2499.37     40.01     9.3190 Raingage1           1310dp
  140                           105.22   1360.79     70.27     6.2370 Raingage1           1400dp
  141                            91.20    769.16     75.18     4.9520 Raingage1           1410dp
  141.5                          79.40   1418.78     50.02     5.7010 Raingage1           1415dp
  142                            79.28   1638.06     41.66     6.8310 Raingage1           1420dp
  150                            79.71   1474.76     86.90     5.7630 Raingage1           1500dp
  151                            97.03   2610.28     41.71     7.8810 Raingage1           1500dp
  152                            82.89    746.50     86.54     7.8000 Raingage1           1520dp
  153                            86.77   1595.23     64.79     8.7730 Raingage1           20
  154                            17.65   1060.36     69.91    10.8200 Raingage1           1541dp
  155                            83.71   1322.58     67.86     9.9460 Raingage1           1540dp
  155.1                          23.29   2153.85     47.70     8.9040 Raingage1           1540dp
  160                            47.46   1768.82     27.81    10.0820 Raingage1           1600dp
  161                           125.58   1768.82     34.50    10.0820 Raingage1           1600dp
  162                            78.85   1469.89     63.41    10.9470 Raingage1           1620dp
  162.1                          14.24   2227.41     49.55    11.5430 Raingage1           1623dp
  163                            23.89   2056.65     28.95    10.4500 Raingage1           1630dp
  163.5                          14.98   1554.86     55.53    12.5420 Raingage1           1631dp
  164                            76.79   2608.60     69.59    10.3640 Raingage1           1640dp
  165                            24.29   1932.95     82.39    12.3020 Raingage1           1650dp
  166                            51.05   1123.09     50.48    14.5790 Raingage1           1660dp
  200                            10.22   2020.46     75.41     5.3800 Raingage1           2000dp
  201                            99.48    780.67     29.14     4.6770 Raingage1           2020dp
  202                            17.95    856.57      2.29     4.2780 Raingage1           2020dp
  203                            61.62   1473.79     10.61     4.3660 Raingage1           2030dp
  204                            86.02   1607.36      2.07     3.9570 Raingage1           2040dp
  205                            38.90    583.48     54.69     7.9600 Raingage1           205in
  206                           115.64   1017.41      3.33     4.3440 Raingage1           2060dp
  207                           121.68   1594.62      7.17     4.9780 Raingage1           2070dp
  208                            84.39   1245.97     82.56     6.4960 Raingage1           2080dp
  209                            51.85   1230.11     79.20     6.6900 Raingage1           2090dp
  210                            27.16   1287.03     82.45     5.9950 Raingage1           2100dp
  211                           111.70    904.42      9.00     5.1470 Raingage1           2110dp
  212                           124.97    957.18      9.03     3.5010 Raingage1           2112dp
  220                           115.15   1473.79     10.39     4.3660 Raingage1           2200dp
  230                            91.72   1025.62      3.29     4.2960 Raingage1           2300dp
  300                            35.87   1236.93      9.00     6.2460 Raingage1           3000dp
  301                            75.76    742.01      9.00     4.4000 Raingage1           3010dp
  302                            47.42    742.01      9.00     4.4000 Raingage1           3020dp
  303                            62.04    736.74      9.00     3.4500 Raingage1           3000dp
  310                            42.73   2157.32     12.49     4.7720 Raingage1           3100dp
  311                            40.68   2050.34     12.67     6.3730 Raingage1           3100dp
  312                            30.20   1949.68     51.41     7.8790 Raingage1           1100dp
  320                            19.51   1205.87     14.00     6.6860 Raingage1           3200dp
  330                            97.98   1390.47     83.00     8.3230 Raingage1           3300dp
  331                           114.24   1172.80     94.29     5.3070 Raingage1           3310dp
  332                            69.26   1506.15     94.90     5.9460 Raingage1           3320dp
  350                            51.12   1820.63     44.24     7.7780 Raingage1           3500dp
  351                            14.05   1904.92     12.49     7.8250 Raingage1           3510dp
  352                            36.75   1880.37      6.04     6.7960 Raingage1           3520dp
  353                            51.32   1783.15     56.49     6.7650 Raingage1           3530dp
  354                            40.56    731.21     17.30     6.4200 Raingage1           3540dp
  354.5                          19.79   1886.07     38.09     6.7980 Raingage1           3535dp
  355                            40.38   1886.07     61.45     6.7980 Raingage1           3550dp
  356                            85.88   1886.07     58.62     6.7980 Raingage1           3560dp
  380                            31.76    764.21     92.73     5.6340 Raingage1           3800dp
  400                            43.83    764.21     95.00     5.6340 Raingage1           4000dp
  430                            25.97   2191.64     60.20     5.1830 Raingage1           4300dp
  431                            49.63    898.59     95.00     3.9030 Raingage1           4310dp
  440                            46.46   2193.62     45.94     5.1760 Raingage1           4400dp
  440.5                          55.92   2193.62     59.96     5.1760 Raingage1           4405dp
  441                            50.29    877.70     84.40     5.5280 Raingage1           4410dp
  442                            48.19   1019.92     91.78     4.5420 Raingage1           4420dp
  442.5                          56.65   1019.92     85.02     4.5420 Raingage1           4425dp
  443                            59.47    949.43     71.44     5.7440 Raingage1           4430dp
  450                            79.66   1222.30     56.90     5.3640 Raingage1           1225dp
  450.5                          58.96   2079.56     43.65     7.6280 Raingage1           4500dp
  451                           105.35   2105.26     65.55     7.6250 Raingage1           4510dp
  470                            38.13    824.67     88.81     5.3470 Raingage1           4700dp
  471                            91.81    738.57     85.08     8.5380 Raingage1           4710dp
  501                           108.23   1032.83     90.00     4.4680 Raingage1           5010dp
  502                            40.41    811.44     90.00     5.1720 Raingage1           5020dp
  503                            41.04    778.19     90.00     6.0530 Raingage1           5030dp
  510                            94.82   1171.60     40.00    15.3860 Raingage1           1300dp
  511                            90.80    832.30     40.00    13.5410 Raingage1           5110dp
  512                           108.41    908.90     42.69    12.4590 Raingage1           5120dp
```

TABLE B-7
Future Condition 100-Year SWMM Input and Output

520	162.56	814.36	40.00	16.4830	Raingage1	5200dp	1225dp	JUNCTION	5644.94	9.38	0.0
530	118.59	1587.31	40.00	12.8470	Raingage1	5300dp	122in	JUNCTION	5677.49	0.00	0.0
531	52.90	1089.74	40.00	14.2280	Raingage1	5310dp	1230dp	JUNCTION	5645.43	12.45	0.0
550	26.62	2751.20	40.00	8.3450	Raingage1	5500dp	123in	JUNCTION	5671.27	0.00	0.0
551	137.07	675.61	39.24	8.3890	Raingage1	5510dp	124in	JUNCTION	5658.35	0.00	0.0
552	86.63	1971.98	40.00	7.0020	Raingage1	5520dp	130.2in	JUNCTION	5692.73	0.00	0.0
553	67.98	1925.29	40.03	6.8300	Raingage1	5530dp	1300dp	JUNCTION	5655.93	27.04	0.0
554	102.97	1925.29	51.62	6.8300	Raingage1	5540dp	1301dp	JUNCTION	5668.53	13.34	0.0
555	84.71	1977.70	40.00	7.0230	Raingage1	5550dp	1302dp	JUNCTION	5681.38	11.88	0.0
556	33.76	1468.53	87.26	5.7520	Raingage1	5560dp	130in	JUNCTION	5666.02	0.00	0.0
600	92.87	1601.95	40.00	11.0830	Raingage1	6000dp	1310dp	JUNCTION	5684.93	16.21	0.0
601	109.01	1561.70	40.00	6.8270	Raingage1	6010dp	131in	JUNCTION	5698.42	0.00	0.0
620	87.23	1597.56	40.00	5.8520	Raingage1	6200dp	1400dp	JUNCTION	5708.91	16.58	0.0
630	17.28	883.76	66.78	5.6640	Raingage1	6300dp	140in	JUNCTION	5750.79	0.00	0.0
650	44.63	772.28	50.59	5.4630	Raingage1	6500dp	141.5in	JUNCTION	5777.56	0.00	0.0
700	64.85	2726.57	43.19	7.4050	Raingage1	7000dp	1410dp	JUNCTION	5732.54	10.66	0.0
701	55.34	2730.49	82.98	7.4040	Raingage1	7010dp	1415dp	JUNCTION	5747.03	10.72	0.0
702	97.14	2476.83	88.90	7.8810	Raingage1	7020dp	141in	JUNCTION	5752.31	0.00	0.0
703	90.24	1678.19	68.09	9.3840	Raingage1	7030dp	1420dp	JUNCTION	5756.86	17.51	0.0
710	60.66	1248.89	40.05	9.2150	Raingage1	7100dp	142in	JUNCTION	5826.43	0.00	0.0
720	122.55	1080.44	2.00	7.3720	Raingage1	7200dp	1500dp	JUNCTION	5767.99	14.42	0.0
750	29.09	1554.86	88.11	12.5420	Raingage1	1631dp	1501dp	JUNCTION	5776.35	13.46	0.0
751	76.91	1170.63	95.00	11.4810	Raingage1	10	1502dp	JUNCTION	5782.94	9.34	0.0
752	126.91	1215.76	95.00	8.1730	Raingage1	7520dp	150in	JUNCTION	5848.57	0.00	0.0
760	20.04	2331.40	7.56	9.4370	Raingage1	7605dp	151in	JUNCTION	5826.83	0.00	0.0
761	68.86	2370.64	24.32	9.5680	Raingage1	7610dp	1520dp	JUNCTION	5786.69	28.21	0.0
770	120.01	1658.52	73.51	11.2140	Raingage1	7700dp	152in	JUNCTION	5848.05	0.00	0.0
							1530dp	JUNCTION	5796.00	23.33	0.0
							153in	JUNCTION	5852.92	0.00	0.0
							1540dp	JUNCTION	5816.11	21.02	0.0
							1541dp	JUNCTION	5823.68	29.36	0.0
							154in	JUNCTION	5864.13	0.00	0.0
							155.1in	JUNCTION	5929.91	0.00	0.0
							155in	JUNCTION	5901.31	0.00	0.0
							1600dp	JUNCTION	5837.00	29.36	0.0
							160in	JUNCTION	5910.97	0.00	0.0
							161in	JUNCTION	5899.38	0.00	0.0
							162.1in	JUNCTION	5914.64	0.00	0.0
							1620dp	JUNCTION	5873.22	28.48	0.0
							1623dp	JUNCTION	5881.24	25.14	0.0
							162in	JUNCTION	5961.02	0.00	0.0
							163.5in	JUNCTION	5923.41	0.00	0.0
							1630dp	JUNCTION	5896.71	25.14	0.0
							1631dp	JUNCTION	5909.31	26.34	0.0
							1635dp	JUNCTION	5913.54	26.34	0.0
							163in	JUNCTION	5963.26	0.00	0.0
							1640dp	JUNCTION	5927.68	25.25	0.0
							164in	JUNCTION	5999.02	0.00	0.0
							1650dp	JUNCTION	5974.72	33.70	0.0
							165in	JUNCTION	6063.66	0.00	0.0
							1660dp	JUNCTION	6012.22	33.70	0.0
							166in	JUNCTION	6075.56	0.00	0.0
							2000dp	JUNCTION	5517.35	11.42	0.0
							200in	JUNCTION	5543.93	0.00	0.0
							2010dp	JUNCTION	5518.04	11.42	0.0
							201in	JUNCTION	5545.66	0.00	0.0
							2020dp	JUNCTION	5526.27	11.90	0.0
							202in	JUNCTION	5582.85	0.00	0.0
							2030dp	JUNCTION	5534.68	8.20	0.0
							203in	JUNCTION	5556.25	0.00	0.0
							2040dp	JUNCTION	5542.97	12.97	0.0
							2041dp	JUNCTION	5555.71	12.97	0.0

```
************
Node Summary
************
```

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
1000dp	JUNCTION	5490.34	9.74	0.0	
1009dp	JUNCTION	5507.88	9.74	0.0	
100in	JUNCTION	5507.51	0.00	0.0	
1010dp	JUNCTION	5511.17	10.24	0.0	
101in	JUNCTION	5521.43	0.00	0.0	
1020dp	JUNCTION	5519.21	10.36	0.0	
102in	JUNCTION	5539.70	0.00	0.0	
1030dp	JUNCTION	5529.28	10.36	0.0	
103in	JUNCTION	5538.27	0.00	0.0	
1040dp	JUNCTION	5541.16	10.45	0.0	
104in	JUNCTION	5572.85	0.00	0.0	
1050dp	JUNCTION	5549.69	10.68	0.0	
105in	JUNCTION	5571.68	0.00	0.0	
1100dp	JUNCTION	5566.38	14.64	0.0	
110in	JUNCTION	5591.70	0.00	0.0	
1110dp	JUNCTION	5569.09	16.53	0.0	
1115dp	JUNCTION	5577.99	18.83	0.0	
111in	JUNCTION	5601.67	0.00	0.0	
1120dp	JUNCTION	5588.11	18.83	0.0	
112in	JUNCTION	5609.03	0.00	0.0	
1130dp	JUNCTION	5598.03	21.20	0.0	
113in	JUNCTION	5645.09	0.00	0.0	
1200dp	JUNCTION	5608.30	21.20	0.0	
120in	JUNCTION	5617.85	0.00	0.0	
1210dp	JUNCTION	5618.99	14.72	0.0	
121in	JUNCTION	5642.61	0.00	0.0	
1222dp	JUNCTION	5633.87	12.56	0.0	

TABLE B-7
Future Condition 100-Year SWMM Input and Output

204in	JUNCTION	5570.84	0.00	0.0
2050dp	JUNCTION	5560.37	0.00	0.0
205in	JUNCTION	5567.45	0.00	0.0
2060dp	JUNCTION	5560.22	9.93	0.0
206in	JUNCTION	5635.01	0.00	0.0
2070dp	JUNCTION	5609.35	16.28	0.0
207in	JUNCTION	5661.00	0.00	0.0
2080dp	JUNCTION	5638.71	16.28	0.0
2085dp	JUNCTION	5658.88	8.81	0.0
208in	JUNCTION	5682.95	0.00	0.0
2090dp	JUNCTION	5669.27	0.00	0.0
209in	JUNCTION	5708.01	0.00	0.0
2100dp	JUNCTION	5666.79	0.00	0.0
210in	JUNCTION	5698.44	0.00	0.0
2110dp	JUNCTION	5557.32	11.90	0.0
2112dp	JUNCTION	5574.53	6.31	0.0
211in	JUNCTION	5599.18	0.00	0.0
212in	JUNCTION	5624.02	0.00	0.0
2200dp	JUNCTION	5554.02	3.71	0.0
220in	JUNCTION	5625.88	0.00	0.0
2300dp	JUNCTION	5581.90	10.55	0.0
230in	JUNCTION	5611.63	0.00	0.0
3000dp	JUNCTION	5525.78	6.16	0.0
300in	JUNCTION	5545.72	0.00	0.0
3010dp	JUNCTION	5533.38	6.16	0.0
301in	JUNCTION	5569.11	0.00	0.0
3020dp	JUNCTION	5605.90	0.83	0.0
302in	JUNCTION	5619.72	0.00	0.0
303in	JUNCTION	5584.59	0.00	0.0
3100dp	JUNCTION	5574.17	2.91	0.0
310in	JUNCTION	5596.89	0.00	0.0
311in	JUNCTION	5602.54	0.00	0.0
312in	JUNCTION	5605.09	0.00	0.0
3200dp	JUNCTION	5563.32	4.60	0.0
320in	JUNCTION	5589.23	0.00	0.0
3300dp	JUNCTION	5566.64	4.78	0.0
330in	JUNCTION	5596.99	0.00	0.0
3310dp	JUNCTION	5592.88	7.92	0.0
331in	JUNCTION	5637.97	0.00	0.0
3320dp	JUNCTION	5635.42	7.92	0.0
332in	JUNCTION	5676.94	0.00	0.0
3500dp	JUNCTION	5570.54	11.48	0.0
350in	JUNCTION	5598.53	0.00	0.0
3510dp	JUNCTION	5588.27	11.01	0.0
3511dp	JUNCTION	5594.92	0.00	0.0
351in	JUNCTION	5605.36	0.00	0.0
3520dp	JUNCTION	5603.54	15.36	0.0
352in	JUNCTION	5603.64	0.00	0.0
3530dp	JUNCTION	5602.44	0.00	0.0
3535dp	JUNCTION	5640.92	15.36	0.0
353in	JUNCTION	5641.46	0.00	0.0
354.5in	JUNCTION	5649.07	0.00	0.0
3540dp	JUNCTION	5601.64	9.87	0.0
354in	JUNCTION	5622.11	0.00	0.0
3550dp	JUNCTION	5645.68	10.55	0.0
355in	JUNCTION	5660.13	0.00	0.0
3560dp	JUNCTION	5661.39	7.34	0.0
356in	JUNCTION	5701.41	0.00	0.0
3800dp	JUNCTION	5605.26	3.28	0.0
380in	JUNCTION	5619.30	0.00	0.0
4000dp	JUNCTION	5620.92	6.14	0.0
4005dp	JUNCTION	5602.11	15.82	0.0
400in	JUNCTION	5647.19	0.00	0.0
4300dp	JUNCTION	5618.85	4.63	0.0
430in	JUNCTION	5637.85	0.00	0.0
4310dp	JUNCTION	5637.17	4.63	0.0
431in	JUNCTION	5669.13	0.00	0.0
440.5in	JUNCTION	5662.25	0.00	0.0
4400dp	JUNCTION	5624.50	9.54	0.0
4405dp	JUNCTION	5636.61	5.74	0.0
440in	JUNCTION	5643.78	0.00	0.0
4410dp	JUNCTION	5668.43	5.67	0.0
441in	JUNCTION	5709.11	0.00	0.0
442.5in	JUNCTION	5687.97	0.00	0.0
4420dp	JUNCTION	5654.36	4.33	0.0
4425dp	JUNCTION	5658.26	5.74	0.0
442in	JUNCTION	5673.85	0.00	0.0
4430dp	JUNCTION	5707.78	4.54	0.0
443in	JUNCTION	5748.32	0.00	0.0
450.5in	JUNCTION	5671.25	0.00	0.0
4500dp	JUNCTION	5648.90	16.46	0.0
450in	JUNCTION	5691.71	0.00	0.0
4510dp	JUNCTION	5684.66	16.46	0.0
451in	JUNCTION	5725.07	0.00	0.0
4700dp	JUNCTION	5694.82	4.35	0.0
470in	JUNCTION	5727.92	0.00	0.0
4710dp	JUNCTION	5735.17	3.58	0.0
471in	JUNCTION	5775.00	0.00	0.0
5010dp	JUNCTION	5705.55	3.35	0.0
501in	JUNCTION	5761.05	0.00	0.0
5020dp	JUNCTION	5753.51	6.14	0.0
502in	JUNCTION	5790.91	0.00	0.0
5030dp	JUNCTION	5786.96	6.14	0.0
503in	JUNCTION	5822.73	0.00	0.0
510in	JUNCTION	5772.68	0.00	0.0
5110dp	JUNCTION	5683.95	27.04	0.0
511in	JUNCTION	5849.54	0.00	0.0
5120dp	JUNCTION	5691.90	7.23	0.0
512in	JUNCTION	5791.26	0.00	0.0
5200dp	JUNCTION	5717.77	0.00	0.0
520in	JUNCTION	5820.53	0.00	0.0
5300dp	JUNCTION	5694.27	9.14	0.0
530in	JUNCTION	5720.98	0.00	0.0
5310dp	JUNCTION	5728.70	9.14	0.0
531in	JUNCTION	5822.45	0.00	0.0
5500dp	JUNCTION	5703.65	10.65	0.0
550in	JUNCTION	5727.19	0.00	0.0
5510dp	JUNCTION	5728.63	13.31	0.0
551in	JUNCTION	5789.66	0.00	0.0
5520dp	JUNCTION	5715.86	8.87	0.0
552in	JUNCTION	5763.95	0.00	0.0
5530dp	JUNCTION	5722.52	10.65	0.0
553in	JUNCTION	5770.97	0.00	0.0
5540dp	JUNCTION	5769.85	6.68	0.0
554in	JUNCTION	5817.12	0.00	0.0
5550dp	JUNCTION	5755.85	8.25	0.0
555in	JUNCTION	5859.22	0.00	0.0
5560dp	JUNCTION	5832.07	13.31	0.0
556in	JUNCTION	5867.29	0.00	0.0
6000dp	JUNCTION	5716.55	15.63	0.0
600in	JUNCTION	5767.50	0.00	0.0
6010dp	JUNCTION	5741.09	15.63	0.0
601in	JUNCTION	5809.96	0.00	0.0
6200dp	JUNCTION	5755.00	16.58	0.0

TABLE B-7
Future Condition 100-Year SWMM Input and Output

620in	JUNCTION	5793.32	0.00	0.0
6300dp	JUNCTION	5764.36	8.90	0.0
630in	JUNCTION	5792.16	0.00	0.0
6500dp	JUNCTION	5814.28	17.51	0.0
650in	JUNCTION	5847.75	0.00	0.0
7000dp	JUNCTION	5784.37	9.14	0.0
700in	JUNCTION	5849.63	0.00	0.0
7010dp	JUNCTION	5817.61	23.77	0.0
701in	JUNCTION	5894.38	0.00	0.0
7020dp	JUNCTION	5835.85	23.77	0.0
702in	JUNCTION	5878.99	0.00	0.0
7030dp	JUNCTION	5864.60	21.57	0.0
703in	JUNCTION	5895.32	0.00	0.0
7100dp	JUNCTION	5865.23	5.46	0.0
710in	JUNCTION	5925.96	0.00	0.0
7200dp	JUNCTION	5900.08	23.11	0.0
720in	JUNCTION	5946.35	0.00	0.0
750in	JUNCTION	5952.83	0.00	0.0
7510dp	JUNCTION	5919.38	21.68	0.0
751in	JUNCTION	6020.55	0.00	0.0
7520dp	JUNCTION	5991.81	6.28	0.0
752in	JUNCTION	6054.02	0.00	0.0
7600dp	JUNCTION	5920.81	7.14	0.0
7605dp	JUNCTION	5932.73	25.46	0.0
760in	JUNCTION	5979.64	0.00	0.0
7610dp	JUNCTION	5954.71	25.46	0.0
761in	JUNCTION	6011.89	0.00	0.0
7700dp	JUNCTION	6007.85	27.44	0.0
770in	JUNCTION	6099.86	0.00	0.0
1000outfall	OUTFALL	5490.00	0.00	0.0
10	STORAGE	5936.00	20.00	0.0
20	STORAGE	5796.00	17.50	0.0

****
Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
1	442.5in	4425dp	CONDUIT	1431.1	2.0765	0.0100
10	162.1in	1623dp	CONDUIT	440.5	7.6027	0.0100
100	555in	5550dp	CONDUIT	1411.8	7.3412	0.0100
1000out	1000dp	1000outfall	CONDUIT	15.2	2.2255	0.0100
1014re	1009dp	1000dp	CONDUIT	3095.5	0.5665	0.0100
1015re	1010dp	1009dp	CONDUIT	116.2	2.8369	0.0100
102	556in	5560dp	CONDUIT	737.1	4.7834	0.0100
1025re	1020dp	1010dp	CONDUIT	2285.7	0.3516	0.0360
1035re	1030dp	1020dp	CONDUIT	1483.0	0.6792	0.0450
104	550in	5500dp	CONDUIT	869.1	2.7098	0.0100
1045re	1040dp	1030dp	CONDUIT	2436.5	0.4876	0.0520
105	511in	5110dp	CONDUIT	1872.6	8.8774	0.0100
1055re	1050dp	1040dp	CONDUIT	1064.9	0.8007	0.0500
109	510in	1300dp	CONDUIT	2201.9	5.3095	0.0100
1105re	1100dp	1050dp	CONDUIT	3228.4	0.5171	0.0490
111	512in	5120dp	CONDUIT	2228.1	4.4639	0.0100
1115re	1110dp	1100dp	CONDUIT	1038.4	0.2610	0.0320
1120re	1115dp	1110dp	CONDUIT	1130.4	0.7874	0.0320
1125re	1120dp	1115dp	CONDUIT	1277.1	0.7925	0.0550
113	471in	4710dp	CONDUIT	2483.8	1.6038	0.0100
1135re	1130dp	1120dp	CONDUIT	1867.5	0.5312	0.0410
115	470in	4700dp	CONDUIT	1382.8	2.3944	0.0100
117	443in	4430dp	CONDUIT	1481.6	2.7375	0.0100
119	442in	4420dp	CONDUIT	934.3	2.0862	0.0100
1205re	1200dp	1130dp	CONDUIT	1339.8	0.7661	0.0480
1215re	1210dp	1200dp	CONDUIT	1524.4	0.7019	0.0450
122	441in	4410dp	CONDUIT	1602.0	2.5405	0.0100
1227re	1222dp	1210dp	CONDUIT	2664.0	0.5583	0.0460
1230re	1225dp	1222dp	CONDUIT	2294.6	0.4827	0.0460
1235re	1230dp	1225dp	CONDUIT	308.6	0.1578	0.0470
124	440in	4400dp	CONDUIT	1722.0	1.1198	0.0100
126	501in	5010dp	CONDUIT	2075.7	2.6752	0.0100
129	502in	5020dp	CONDUIT	1687.2	2.2173	0.0100
13	205in	2050dp	CONDUIT	242.2	2.9252	0.0100
1305re	1300dp	1230dp	CONDUIT	1602.5	0.6555	0.0420
1306re	1301dp	1300dp	CONDUIT	1244.8	1.0117	0.0480
1307re	1302dp	1301dp	CONDUIT	2603.6	0.4934	0.0440
131	503in	5030dp	CONDUIT	753.6	4.7514	0.0100
132	531in	5310dp	CONDUIT	1017.5	9.2528	0.0100
134	530in	5300dp	CONDUIT	900.0	2.9690	0.0100
136	5300dp	1310dp	CONDUIT	725.1	1.2887	0.0100
137	520in	5200dp	CONDUIT	1029.8	10.0289	0.0100
138	451in	4510dp	CONDUIT	1517.7	2.6634	0.0100
14	212in	2112dp	CONDUIT	1932.4	2.5615	0.0100
140	450in	1225dp	CONDUIT	2110.6	2.2164	0.0100
1405re	1400dp	1310dp	CONDUIT	3701.1	0.6480	0.0470
141	4500dp	1225dp	CONDUIT	594.5	0.6663	0.0100
1415re	1410dp	1400dp	CONDUIT	3979.1	0.5939	0.0460
1420re	1415dp	1410dp	CONDUIT	2310.3	0.6273	0.0440
1425re	1420dp	1415dp	CONDUIT	2244.4	0.4378	0.0440
144	122in	1222dp	CONDUIT	1379.9	3.1626	0.0100
146	124in	1210dp	CONDUIT	920.2	4.2806	0.0100
148	113in	1130dp	CONDUIT	1078.2	4.3682	0.0100
15	211in	2110dp	CONDUIT	1371.0	3.0543	0.0100
1505re	1500dp	1420dp	CONDUIT	1373.9	0.8104	0.0640
1506re	1501dp	1500dp	CONDUIT	622.9	1.3414	0.0510
1507re	1502dp	1501dp	CONDUIT	528.4	1.2477	0.0500
151	400in	4000dp	CONDUIT	852.2	3.0840	0.0100
1525re	1520dp	1502dp	CONDUIT	680.8	0.5511	0.0560
1535re	1530dp	1520dp	CONDUIT	1291.0	0.3432	0.0430
154	431in	4310dp	CONDUIT	1464.0	2.1839	0.0100
1545re	1540dp	20	CONDUIT	910.5	2.2090	0.0590
156	430in	4300dp	CONDUIT	965.9	1.9672	0.0100
159	121in	1210dp	CONDUIT	1440.7	1.6392	0.0100
16	210in	2100dp	CONDUIT	753.0	4.2071	0.0100
1605re	1541dp	1540dp	CONDUIT	1107.0	0.6841	0.0480
1606re	1600dp	1541dp	CONDUIT	1299.0	1.0254	0.0730
162	332in	3320dp	CONDUIT	1710.5	2.4278	0.0100
1625re	1620dp	1600dp	CONDUIT	3020.7	1.1990	0.0540
1628re	1623dp	1620dp	CONDUIT	760.8	1.0553	0.0620
163	163.5in	1631dp	CONDUIT	488.1	2.8905	0.0100
1635re	1630dp	1623dp	CONDUIT	1120.1	1.3809	0.0620
1636re	1631dp	1630dp	CONDUIT	716.7	1.7584	0.0450
164	331in	3310dp	CONDUIT	1040.3	4.3384	0.0100
1640re	1635dp	1631dp	CONDUIT	308.0	1.3733	0.0680
1645re	1640dp	1635dp	CONDUIT	981.5	1.4406	0.0680
165	330in	3300dp	CONDUIT	1892.2	1.6038	0.0100
1655re	1650dp	1640dp	CONDUIT	1926.2	2.4429	0.0910
1665re	1660dp	1650dp	CONDUIT	1430.8	2.6222	0.0770
167	208in	2080dp	CONDUIT	1056.6	4.1908	0.0100
169	207in	2070dp	CONDUIT	1816.8	2.8437	0.0100
17	301in	3010dp	CONDUIT	1554.2	2.2997	0.0100
170	209in	2090dp	CONDUIT	1142.3	3.3943	0.0100
173	206in	2060dp	CONDUIT	3774.2	1.9820	0.0100
174	230in	2300dp	CONDUIT	1195.4	2.4877	0.0100

TABLE B-7
Future Condition 100-Year SWMM Input and Output

176	220in	2200dp	CONDUIT	2693.0	2.6692	0.0100	28	4405dp	4400dp	CONDUIT	2000.8	0.6051	0.0100
179	203in	2030dp	CONDUIT	1276.5	1.6897	0.0100	29	450.5in	4500dp	CONDUIT	1400.0	1.5962	0.0100
18	300in	3000dp	CONDUIT	727.6	2.7420	0.0100	3	120in	1200dp	CONDUIT	517.0	1.8491	0.0100
181	204in	2040dp	CONDUIT	1658.9	1.6803	0.0100	3015re	3010dp	3000dp	CONDUIT	617.3	1.2317	0.0450
184	2050dp	2041dp	CONDUIT	325.8	1.4306	0.0100	3025re	3020dp	3010dp	CONDUIT	4371.2	1.6592	0.0450
186	320in	3200dp	CONDUIT	1784.1	1.4527	0.0100	3105re	3100dp	1050dp	CONDUIT	2337.6	1.0474	0.0820
189	104in	1040dp	CONDUIT	1170.5	2.7085	0.0100	32	302in	3020dp	CONDUIT	1598.4	0.8646	0.0100
19	310in	3100dp	CONDUIT	907.8	2.5035	0.0100	3205re	3200dp	1040dp	CONDUIT	1079.1	2.0538	0.0810
191	105in	1050dp	CONDUIT	1390.5	1.5818	0.0100	3315re	3310dp	3300dp	CONDUIT	2886.0	0.9092	0.0530
193	110in	1100dp	CONDUIT	912.9	2.7743	0.0100	3325re	3320dp	3310dp	CONDUIT	3256.1	1.3065	0.0670
195	311in	3100dp	CONDUIT	935.5	3.0344	0.0100	35	7600dp	1635dp	CONDUIT	96.7	7.5483	0.0450
197	350in	3500dp	CONDUIT	1068.0	2.6209	0.0100	3505re	3500dp	1100dp	CONDUIT	674.4	0.6174	0.1010
198	352in	3520dp	CONDUIT	1162.1	0.0086	0.0100	3515re	3510dp	3500dp	CONDUIT	1153.5	1.5373	0.0770
2	112in	1120dp	CONDUIT	1184.1	1.7666	0.0100	3516re	3511dp	3510dp	CONDUIT	200.9	3.3090	0.0590
20	312in	1100dp	CONDUIT	1582.4	2.4469	0.0100	3540re	3535dp	3520dp	CONDUIT	3778.5	0.9892	0.0610
2005re	2000dp	1010dp	CONDUIT	1237.5	0.4993	0.0420	3545re	3540dp	3510dp	CONDUIT	1153.0	1.1594	0.0450
201	351in	3510dp	CONDUIT	613.2	2.7875	0.0100	3555re	3550dp	3535dp	CONDUIT	522.0	0.9117	0.0610
2015re	2010dp	2000dp	CONDUIT	342.9	0.2021	0.0800	3565re	3560dp	3550dp	CONDUIT	1091.5	1.4396	0.0790
202	354in	3540dp	CONDUIT	1336.4	1.5320	0.0100	36	2100dp	2085dp	CONDUIT	400.0	1.9764	0.0100
2035re	2030dp	2020dp	CONDUIT	703.9	1.1953	0.0900	37	2090dp	2085dp	CONDUIT	40.0	26.8788	0.0100
204	3530dp	3511dp	CONDUIT	1275.3	0.5898	0.0100	3805re	3800dp	1115dp	CONDUIT	441.9	6.1821	0.0830
2045re	2040dp	2030dp	CONDUIT	1387.4	0.5974	0.0880	4005re	4000dp	4005dp	CONDUIT	430.8	4.3695	0.0100
2046re	2041dp	2040dp	CONDUIT	1635.5	0.7789	0.0620	4010re	4005dp	1120dp	CONDUIT	1552.0	0.9023	0.0500
205	3520dp	3511dp	CONDUIT	1308.1	0.6594	0.0100	4305re	4300dp	1200dp	CONDUIT	683.4	1.5446	0.1130
206	353in	3530dp	CONDUIT	2525.1	1.5456	0.0100	4315re	4310dp	4300dp	CONDUIT	899.3	2.0372	0.0710
2065re	2060dp	2041dp	CONDUIT	632.7	0.7129	0.0620	44	166in	1660dp	CONDUIT	1218.3	5.2061	0.0450
2075re	2070dp	2060dp	CONDUIT	4097.9	1.1991	0.0640	4405re	4400dp	1200dp	CONDUIT	1235.0	1.3123	0.0100
2085re	2080dp	2070dp	CONDUIT	2077.2	1.4132	0.0840	4415re	4410dp	4405dp	CONDUIT	1343.0	2.3701	0.0620
209	355in	3550dp	CONDUIT	618.1	2.3390	0.0100	4425re	4420dp	4400dp	CONDUIT	1322.1	2.2593	0.0100
2095re	2085dp	2080dp	CONDUIT	1335.1	1.5114	0.0720	4430re	4425dp	4405dp	CONDUIT	762.4	2.8419	0.0100
21	354.5in	3535dp	CONDUIT	580.7	1.4035	0.0100	4435re	4430dp	4425dp	CONDUIT	2586.0	1.9151	0.0100
210	356in	3560dp	CONDUIT	1542.1	2.5961	0.0100	45	770in	7700dp	CONDUIT	1788.2	5.1520	0.0450
2115re	2110dp	2020dp	CONDUIT	2538.7	1.2232	0.0450	4515re	4510dp	4500dp	CONDUIT	2075.4	1.7231	0.0700
2117re	2112dp	2110dp	CONDUIT	934.2	1.8429	0.0450	46	752in	7520dp	CONDUIT	1925.0	3.2329	0.0450
213	3000dp	1009dp	CONDUIT	1184.8	1.5111	0.0100	47	751in	10	CONDUIT	1046.9	8.1021	0.0450
214	303in	3000dp	CONDUIT	3464.8	1.6976	0.0100	4705re	4700dp	4410dp	CONDUIT	1201.4	2.1973	0.0680
215	100in	1000dp	CONDUIT	976.4	1.7591	0.0100	4715re	4710dp	4700dp	CONDUIT	2281.3	1.7692	0.0680
218	101in	1010dp	CONDUIT	1152.8	0.8899	0.0100	48	750in	1631dp	CONDUIT	864.1	5.0423	0.0450
22	700in	7000dp	CONDUIT	1758.8	3.7133	0.0450	49	162in	1620dp	CONDUIT	1356.0	6.4886	0.0450
2205re	2200dp	2030dp	CONDUIT	1611.1	1.2004	0.0940	5	130.2in	1302dp	CONDUIT	543.0	2.0907	0.0100
221	201in	2010dp	CONDUIT	1887.3	1.4635	0.0100	50	161in	1600dp	CONDUIT	1564.8	3.9896	0.0450
222	200in	2000dp	CONDUIT	1343.6	1.9788	0.0100	5025re	5020dp	5010dp	CONDUIT	2620.9	1.8302	0.0680
223	102in	1020dp	CONDUIT	668.4	3.0681	0.0100	5035re	5030dp	5020dp	CONDUIT	2114.9	1.5822	0.0690
225	202in	2020dp	CONDUIT	651.8	8.7134	0.0100	5115re	5110dp	1300dp	CONDUIT	2870.1	0.9762	0.0630
226	2020dp	2010dp	CONDUIT	1071.8	0.7677	0.0100	5125re	5120dp	1300dp	CONDUIT	3299.0	1.0903	0.0730
229	103in	1030dp	CONDUIT	1357.7	0.6625	0.0100	52	710in	7100dp	CONDUIT	1418.5	4.2851	0.0450
23	701in	7010dp	CONDUIT	1259.3	6.1068	0.0450	53	154in	1541dp	CONDUIT	709.0	5.7151	0.0450
2305re	2300dp	2041dp	CONDUIT	1677.2	1.5619	0.0770	5315re	5310dp	5300dp	CONDUIT	1289.7	2.6706	0.0770
231	3300dp	1050dp	CONDUIT	1289.1	1.3156	0.0100	54	155in	1540dp	CONDUIT	1497.3	5.6998	0.0450
234	111in	1110dp	CONDUIT	1949.0	1.6719	0.0100	55	153in	20	CONDUIT	891.2	6.4000	0.0450
235	630in	6300dp	CONDUIT	1017.2	2.7336	0.0100	5505re	5500dp	1310dp	CONDUIT	1621.1	1.1550	0.0780
237	380in	3800dp	CONDUIT	1325.8	1.0591	0.0100	5515re	5510dp	5500dp	CONDUIT	1438.1	1.7374	0.0100
239	123in	1230dp	CONDUIT	1294.0	1.9978	0.0100	5525re	5520dp	5500dp	CONDUIT	984.5	1.2402	0.0780
24	702in	7020dp	CONDUIT	1321.8	3.2655	0.0450	5535re	5530dp	5500dp	CONDUIT	1257.7	1.5009	0.0830
240	552in	5520dp	CONDUIT	2072.7	2.3209	0.0100	5545re	5540dp	5530dp	CONDUIT	1761.0	2.6886	0.0950
241	5010dp	5120dp	CONDUIT	787.8	1.7321	0.0100	5555re	5550dp	5520dp	CONDUIT	2764.4	1.4471	0.0680
242	131in	1310dp	CONDUIT	2141.0	0.6304	0.0100	5565re	5560dp	5510dp	CONDUIT	6691.4	1.5461	0.0580
243	130in	1300dp	CONDUIT	749.5	1.3465	0.0100	57	720in	7200dp	CONDUIT	1677.4	2.7598	0.0450
244	1310dp	1302dp	CONDUIT	437.4	0.8116	0.0100	58	761in	7610dp	CONDUIT	1244.5	4.5994	0.0450
245	5200dp	1301dp	CONDUIT	1463.1	3.3674	0.0100	59	164in	1640dp	CONDUIT	1508.1	4.7364	0.0450
25	703in	7030dp	CONDUIT	1332.6	2.3052	0.0450	60	165in	1650dp	CONDUIT	483.4	18.7189	0.0450
27	440.5in	4405dp	CONDUIT	1014.3	2.5290	0.0100	6005re	6000dp	1310dp	CONDUIT	2370.7	1.3342	0.0700

TABLE B-7
Future Condition 100-Year SWMM Input and Output

6015re	6010dp	6000dp	CONDUIT	1955.3	1.2551	0.0660	113	DUMMY	0.00	0.00	0.00	0.00	1	0.00
61	760in	7605dp	CONDUIT	564.1	8.3444	0.0450	1135re	1135re	17.76	4580.87	9.38	479.83	1	53810.49
62	151in	1500dp	CONDUIT	1791.0	3.2871	0.0450	115	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6205re	6200dp	1400dp	CONDUIT	2676.2	1.7224	0.0850	117	DUMMY	0.00	0.00	0.00	0.00	1	0.00
63	150in	1500dp	CONDUIT	1894.4	4.2573	0.0450	119	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6305re	6300dp	1410dp	CONDUIT	1567.9	2.0299	0.0840	1205re	1205re	21.20	5706.00	9.18	610.07	1	67766.65
65	152in	1520dp	CONDUIT	1576.6	3.8948	0.0450	1215re	1215re	14.72	3288.86	8.14	398.00	1	36826.29
6505re	6500dp	1420dp	CONDUIT	2094.8	2.7425	0.0910	122	DUMMY	0.00	0.00	0.00	0.00	1	0.00
68	7000dp	1502dp	CONDUIT	78.5	1.8237	0.0450	1227re	1227re	12.56	1960.36	4.53	429.00	1	12945.41
69	163in	1630dp	CONDUIT	1106.2	6.0264	0.0450	1230re	1230re	9.38	1471.06	3.42	426.85	1	7499.89
7	141in	1410dp	CONDUIT	1148.1	1.7226	0.0100	1235re	DUMMY	0.00	0.00	0.00	0.00	1	0.00
70	160in	1600dp	CONDUIT	1579.1	4.6894	0.0450	124	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7015re	7010dp	7000dp	CONDUIT	2355.5	1.4115	0.0780	126	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7025re	7020dp	7010dp	CONDUIT	870.5	2.0956	0.0730	129	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7035re	7030dp	7020dp	CONDUIT	1608.4	1.7878	0.0580	13	DUMMY	0.00	0.00	0.00	0.00	1	0.00
71	650in	6500dp	CONDUIT	1027.5	3.2585	0.0100	1305re	1305re	12.45	1718.09	4.64	366.00	1	13682.74
7105re	7100dp	1600dp	CONDUIT	713.7	3.8122	0.0650	1306re	1306re	13.34	1484.76	7.96	177.64	1	18427.17
72	142in	1420dp	CONDUIT	852.3	8.1905	0.0100	1307re	1307re	11.88	1292.33	6.25	203.59	1	10400.73
7205re	7200dp	1620dp	CONDUIT	1119.6	2.4001	0.0590	131	DUMMY	0.00	0.00	0.00	0.00	1	0.00
74	141.5in	1415dp	CONDUIT	1006.8	3.0339	0.0100	132	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7515re	7510dp	1631dp	CONDUIT	1093.8	0.9208	0.0450	134	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7525re	7520dp	10	CONDUIT	1580.5	3.5336	0.0840	136	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7605re	7610dp	7605dp	CONDUIT	625.5	3.5159	0.0350	137	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7615re	7605dp	7600dp	CONDUIT	522.5	2.2813	0.0910	138	DUMMY	0.00	0.00	0.00	0.00	1	0.00
77	620in	6200dp	CONDUIT	1227.3	3.1242	0.0100	14	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7705re	7700dp	1650dp	CONDUIT	754.1	4.3981	0.0880	140	DUMMY	0.00	0.00	0.00	0.00	1	0.00
79	140in	1400dp	CONDUIT	1661.2	2.5219	0.0100	1405re	1405re	16.21	2779.97	7.17	384.23	1	26304.34
83	551in	5510dp	CONDUIT	2581.6	2.3646	0.0100	141	DUMMY	0.00	0.00	0.00	0.00	1	0.00
86	600in	6000dp	CONDUIT	1409.5	3.6169	0.0100	1415re	1415re	10.66	2028.78	3.84	525.18	1	12384.17
88	601in	6010dp	CONDUIT	1053.8	6.5491	0.0100	1420re	1420re	8.89	1507.79	3.66	410.22	1	9572.05
9	155.1in	1540dp	CONDUIT	2295.1	4.9649	0.0100	1425re	1425re	10.72	1368.28	3.16	429.34	1	6589.65
97	553in	5530dp	CONDUIT	1440.6	3.3644	0.0100	144	DUMMY	0.00	0.00	0.00	0.00	1	0.00
99	554in	5540dp	CONDUIT	1224.5	3.8630	0.0100	146	DUMMY	0.00	0.00	0.00	0.00	1	0.00
S-OUT	10	7510dp	OUTLET				148	DUMMY	0.00	0.00	0.00	0.00	1	0.00
TC-OUT	20	1530dp	OUTLET				15	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1505re	1505re	14.42	2388.99	4.90	483.52	1	14412.55
							1506re	1506re	13.46	2256.49	5.85	382.61	1	24727.43
							1507re	1507re	9.34	2146.01	5.44	391.17	1	22049.30
							151	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1525re	1525re	6.75	812.26	3.58	224.71	1	3742.97
							1535re	1535re	23.33	6696.86	13.91	464.67	1	78403.92
							154	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1545re	1545re	17.51	2936.19	8.94	325.09	1	47351.63
							156	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							159	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							16	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1605re	1605re	21.02	3688.26	11.96	305.00	1	49391.51
							1606re	1606re	29.36	5735.11	16.22	348.00	1	75755.87
							162	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1625re	1625re	28.48	4589.51	15.52	292.00	1	86040.69
							1628re	1628re	12.86	1500.61	8.74	168.38	1	15674.04
							163	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1635re	1635re	25.14	4324.53	13.18	323.19	1	67969.47
							1636re	1636re	12.55	797.38	5.41	142.78	1	10760.55
							164	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1640re	1640re	26.34	6418.38	12.39	508.65	1	88025.48
							1645re	1645re	10.09	310.95	4.50	63.18	1	2223.50
							165	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							1655re	1655re	25.25	4267.42	11.01	381.45	1	53918.51
							1665re	1665re	33.70	3279.61	12.80	300.00	1	56087.82
							167	DUMMY	0.00	0.00	0.00	0.00	1	0.00
							169	DUMMY	0.00	0.00	0.00	0.00	1	0.00

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
1	DUMMY	0.00	0.00	0.00	0.00	1	0.00
10	DUMMY	0.00	0.00	0.00	0.00	1	0.00
100	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1000out	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1014re	1014re	9.74	1354.99	2.29	585.64	1	26316.62
1015re	DUMMY	0.00	0.00	0.00	0.00	1	0.00
102	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1025re	1025re	10.24	4028.49	5.77	694.11	1	31728.96
1035re	1035re	10.36	2967.06	5.32	552.00	1	24615.75
104	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1045re	1045re	8.86	2829.54	5.01	562.25	1	16527.67
105	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1055re	1055re	10.45	3132.69	3.28	947.31	1	18408.85
109	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1105re	1105re	10.68	2076.51	2.36	872.45	1	8038.07
111	DUMMY	0.00	0.00	0.00	0.00	1	0.00
1115re	1115re	14.64	2035.03	7.20	279.31	1	17995.55
1120re	1120re	16.53	1704.44	6.27	267.30	1	23879.21
1125re	1125re	18.83	5359.43	8.57	620.76	1	53991.41

TABLE B-7
Future Condition 100-Year SWMM Input and Output

17	DUMMY	0.00	0.00	0.00	0.00	1	0.00	244	DUMMY	0.00	0.00	0.00	0.00	1	0.00
170	DUMMY	0.00	0.00	0.00	0.00	1	0.00	245	DUMMY	0.00	0.00	0.00	0.00	1	0.00
173	DUMMY	0.00	0.00	0.00	0.00	1	0.00	25	DUMMY	0.00	0.00	0.00	0.00	1	0.00
174	DUMMY	0.00	0.00	0.00	0.00	1	0.00	27	DUMMY	0.00	0.00	0.00	0.00	1	0.00
176	DUMMY	0.00	0.00	0.00	0.00	1	0.00	28	DUMMY	0.00	0.00	0.00	0.00	1	0.00
179	DUMMY	0.00	0.00	0.00	0.00	1	0.00	29	DUMMY	0.00	0.00	0.00	0.00	1	0.00
18	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3	DUMMY	0.00	0.00	0.00	0.00	1	0.00
181	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3015re	3015re	6.16	286.13	3.22	87.68	1	2286.37
184	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3025re	3025re	0.83	18.17	0.35	52.11	1	38.19
186	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3105re	3105re	2.91	261.24	1.08	240.63	1	509.01
189	DUMMY	0.00	0.00	0.00	0.00	1	0.00	32	DUMMY	0.00	0.00	0.00	0.00	1	0.00
19	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3205re	3205re	4.60	241.72	1.26	192.43	1	743.33
191	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3315re	3315re	4.78	229.99	2.35	96.88	1	1086.01
193	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3325re	3325re	7.92	356.75	3.66	95.95	1	2146.58
195	DUMMY	0.00	0.00	0.00	0.00	1	0.00	35	DUMMY	0.00	0.00	0.00	0.00	1	0.00
197	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3505re	3505re	11.48	1023.66	3.39	296.32	1	2670.99
198	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3515re	3515re	11.01	1003.28	5.45	181.50	1	7430.90
2	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3516re	DUMMY	0.00	0.00	0.00	0.00	1	0.00
20	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3540re	3540re	15.36	1438.55	6.57	215.23	1	12230.91
2005re	2005re	8.40	1873.83	5.13	359.41	1	13935.97	3545re	3545re	9.87	1107.43	5.33	202.23	1	12015.74
201	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3555re	3555re	10.55	1038.71	5.39	190.05	1	7431.20
2015re	2015re	11.42	1315.03	5.21	250.00	1	3298.81	3565re	3565re	7.34	1412.38	4.19	334.17	1	8289.11
202	DUMMY	0.00	0.00	0.00	0.00	1	0.00	36	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2035re	2035re	8.20	1691.64	4.11	409.27	1	7835.58	37	DUMMY	0.00	0.00	0.00	0.00	1	0.00
204	DUMMY	0.00	0.00	0.00	0.00	1	0.00	3805re	3805re	3.28	425.57	1.95	224.21	1	2960.71
2045re	2045re	8.01	2588.97	5.34	477.82	1	10328.22	4005re	4005re	6.14	1359.74	2.99	448.00	1	87714.46
2046re	2046re	12.97	3683.89	9.42	381.00	1	34752.08	4010re	4010re	15.82	1562.45	5.79	265.91	1	14225.33
205	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4305re	4305re	2.95	256.71	1.57	162.21	1	567.85
206	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4315re	4315re	4.63	424.76	2.80	148.99	1	2523.67
2065re	2065re	7.66	890.29	3.09	283.38	1	3819.99	44	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2075re	2075re	9.93	514.05	2.98	169.83	1	2705.58	4405re	4405re	9.54	1616.29	4.95	225.29	1	79885.42
2085re	2085re	16.28	2809.74	7.94	345.00	1	23521.04	4415re	4415re	5.67	453.78	2.62	172.00	1	3183.77
209	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4425re	4425re	4.33	370.86	2.22	166.00	1	14104.05
2095re	2095re	8.81	741.38	4.20	173.97	1	4893.35	4430re	4430re	5.74	963.30	2.86	335.00	1	48615.42
21	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4435re	4435re	4.54	742.82	2.14	342.81	1	25359.48
210	DUMMY	0.00	0.00	0.00	0.00	1	0.00	45	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2115re	2115re	11.90	3848.81	6.69	566.71	1	49901.16	4515re	4515re	16.46	3369.20	9.35	350.20	1	41670.79
2117re	2117re	6.31	597.87	2.43	244.00	1	4848.36	46	DUMMY	0.00	0.00	0.00	0.00	1	0.00
213	DUMMY	0.00	0.00	0.00	0.00	1	0.00	47	DUMMY	0.00	0.00	0.00	0.00	1	0.00
214	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4705re	T-4705re	4.35	292.33	1.41	205.00	1	1193.07
215	DUMMY	0.00	0.00	0.00	0.00	1	0.00	4715re	4715re	3.58	95.51	1.14	82.69	1	302.86
218	DUMMY	0.00	0.00	0.00	0.00	1	0.00	48	DUMMY	0.00	0.00	0.00	0.00	1	0.00
22	DUMMY	0.00	0.00	0.00	0.00	1	0.00	49	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2205re	2205re	3.71	348.72	1.80	190.63	1	895.15	5	DUMMY	0.00	0.00	0.00	0.00	1	0.00
221	DUMMY	0.00	0.00	0.00	0.00	1	0.00	50	DUMMY	0.00	0.00	0.00	0.00	1	0.00
222	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5025re	5025re	3.35	186.09	1.19	155.41	1	618.06
223	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5035re	5035re	6.14	345.86	2.57	133.18	1	1758.12
225	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5115re	5115re	27.04	3445.48	15.68	216.00	1	50297.82
226	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5125re	5125re	7.23	204.78	4.00	48.08	1	1096.74
229	DUMMY	0.00	0.00	0.00	0.00	1	0.00	52	DUMMY	0.00	0.00	0.00	0.00	1	0.00
23	DUMMY	0.00	0.00	0.00	0.00	1	0.00	53	DUMMY	0.00	0.00	0.00	0.00	1	0.00
2305re	2305re	10.55	2246.07	7.00	311.00	1	19827.19	5315re	5315re	9.14	1505.31	4.50	332.00	1	12933.61
231	DUMMY	0.00	0.00	0.00	0.00	1	0.00	54	DUMMY	0.00	0.00	0.00	0.00	1	0.00
234	DUMMY	0.00	0.00	0.00	0.00	1	0.00	55	DUMMY	0.00	0.00	0.00	0.00	1	0.00
235	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5505re	5505re	8.68	611.83	3.81	156.53	1	3057.53
237	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5515re	5515re	5.61	161.98	1.87	84.64	1	4823.81
239	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5525re	5525re	8.87	1481.61	4.31	341.91	1	8323.09
24	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5535re	5535re	10.65	1145.99	5.14	221.33	1	7487.45
240	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5545re	5545re	6.68	1518.11	3.94	380.47	1	9708.40
241	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5555re	5555re	8.25	1312.91	4.34	301.00	1	9181.01
242	DUMMY	0.00	0.00	0.00	0.00	1	0.00	5565re	5565re	13.31	2498.92	7.27	341.68	1	29888.53
243	DUMMY	0.00	0.00	0.00	0.00	1	0.00	57	DUMMY	0.00	0.00	0.00	0.00	1	0.00

TABLE B-7
Future Condition 100-Year SWMM Input and Output

58	DUMMY	0.00	0.00	0.00	0.00	1	0.00
59	DUMMY	0.00	0.00	0.00	0.00	1	0.00
60	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6005re	6005re	8.97	963.76	3.97	240.32	1	5926.96
6015re	6015re	15.63	2889.82	9.68	309.00	1	33102.16
61	DUMMY	0.00	0.00	0.00	0.00	1	0.00
62	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6205re	6205re	16.58	3864.32	8.51	450.84	1	36962.16
63	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6305re	6305re	8.90	1548.16	4.52	341.00	1	10663.27
65	DUMMY	0.00	0.00	0.00	0.00	1	0.00
6505re	6505re	17.51	3714.82	9.20	401.00	1	44101.27
68	DUMMY	0.00	0.00	0.00	0.00	1	0.00
69	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7	DUMMY	0.00	0.00	0.00	0.00	1	0.00
70	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7015re	7015re	9.14	1446.87	5.08	283.20	1	9678.20
7025re	7025re	23.77	5883.86	15.32	370.00	1	106938.54
7035re	7035re	21.57	4437.17	13.18	332.00	1	84824.66
71	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7105re	7105re	5.46	1253.70	3.47	377.04	1	12819.21
72	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7205re	7205re	23.11	6733.99	14.72	454.00	1	157784.37
74	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7515re	7515re	21.68	5617.40	11.81	468.46	1	92309.90
7525re	7525re	6.28	795.85	4.10	190.09	1	6783.97
7605re	7605re	25.46	6610.51	17.22	396.20	1	350892.86
7615re	7615re	7.14	1638.17	3.98	406.63	1	10152.24
77	DUMMY	0.00	0.00	0.00	0.00	1	0.00
7705re	7705re	27.44	6275.69	13.55	452.00	1	126298.09
79	DUMMY	0.00	0.00	0.00	0.00	1	0.00
83	DUMMY	0.00	0.00	0.00	0.00	1	0.00
86	DUMMY	0.00	0.00	0.00	0.00	1	0.00
88	DUMMY	0.00	0.00	0.00	0.00	1	0.00
9	DUMMY	0.00	0.00	0.00	0.00	1	0.00
97	DUMMY	0.00	0.00	0.00	0.00	1	0.00
99	DUMMY	0.00	0.00	0.00	0.00	1	0.00

```
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... HORTON
Flow Routing Method ...... KINWAVE
Starting Date ............ 04/01/2022 00:00:00
Ending Date .............. 04/01/2022 12:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:05:00
Wet Time Step ............ 00:05:00
Dry Time Step ............ 01:00:00
Routing Time Step ........ 10.00 sec
```

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	0.000	0.000
Evaporation Loss	0.000	0.000
Infiltration Loss	0.000	0.000
Surface Runoff	0.000	0.000
Final Storage	0.000	0.000
Continuity Error (%)	0.000	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.000	0.000
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	1360.109	443.212
External Outflow	1363.373	444.276
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	17.831	5.810
Continuity Error (%)	-1.551	

```
*********************************
Highest Flow Instability Indexes
*********************************
Link 1014re (2)
Link 1000out (2)
Link 1025re (1)
Link 1015re (1)
Link 1035re (1)
```

```
************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ NO
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
```

```
************************
Routing Time Step Summary
************************
Minimum Time Step           :    10.00 sec
Average Time Step           :    10.00 sec
Maximum Time Step           :    10.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     1.00
Percent Not Converging      :     0.00
```

TABLE B-7
Future Condition 100-Year SWMM Input and Output

```
******************
Node Depth Summary
******************
```

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
1000dp	JUNCTION	3.16	7.84	5498.18	0 02:11	7.84
1009dp	JUNCTION	3.16	7.84	5515.71	0 02:06	7.84
100in	JUNCTION	0.00	0.00	5507.51	0 00:00	0.00
1010dp	JUNCTION	3.15	5.98	5517.15	0 02:10	5.98
101in	JUNCTION	0.00	0.00	5521.43	0 00:00	0.00
1020dp	JUNCTION	3.21	6.30	5525.50	0 02:04	6.30
102in	JUNCTION	0.00	0.00	5539.70	0 00:00	0.00
1030dp	JUNCTION	3.09	6.30	5535.58	0 02:01	6.30
103in	JUNCTION	0.00	0.00	5538.27	0 00:00	0.00
1040dp	JUNCTION	4.20	8.45	5549.61	0 01:53	8.45
104in	JUNCTION	0.00	0.00	5572.85	0 00:00	0.00
1050dp	JUNCTION	5.01	9.83	5559.51	0 01:53	9.83
105in	JUNCTION	0.00	0.00	5571.68	0 00:00	0.00
1100dp	JUNCTION	4.85	9.86	5576.24	0 01:38	9.86
110in	JUNCTION	0.00	0.00	5591.70	0 00:00	0.00
1110dp	JUNCTION	3.97	9.67	5578.76	0 01:39	9.66
1115dp	JUNCTION	3.96	9.67	5587.66	0 01:37	9.66
111in	JUNCTION	0.00	0.00	5601.67	0 00:00	0.00
1120dp	JUNCTION	3.71	8.88	5596.99	0 01:35	8.88
112in	JUNCTION	0.00	0.00	5609.03	0 00:00	0.00
1130dp	JUNCTION	3.29	8.15	5606.19	0 01:32	8.15
113in	JUNCTION	0.00	0.00	5645.09	0 00:00	0.00
1200dp	JUNCTION	3.29	8.16	5616.45	0 01:30	8.16
120in	JUNCTION	0.00	0.00	5617.85	0 00:00	0.00
1210dp	JUNCTION	3.68	9.40	5628.39	0 01:40	9.40
121in	JUNCTION	0.00	0.00	5642.61	0 00:00	0.00
1222dp	JUNCTION	3.65	9.40	5643.27	0 01:34	9.40
1225dp	JUNCTION	3.04	7.74	5652.68	0 01:29	7.74
122in	JUNCTION	0.00	0.00	5677.49	0 00:00	0.00
1230dp	JUNCTION	3.20	7.58	5653.01	0 01:30	7.58
123in	JUNCTION	0.00	0.00	5671.27	0 00:00	0.00
124in	JUNCTION	0.00	0.00	5658.35	0 00:00	0.00
130.2in	JUNCTION	0.00	0.00	5692.73	0 00:00	0.00
1300dp	JUNCTION	3.22	7.59	5663.52	0 01:28	7.58
1301dp	JUNCTION	3.03	7.17	5675.70	0 01:28	7.17
1302dp	JUNCTION	3.00	7.20	5688.58	0 01:24	7.20
130in	JUNCTION	0.00	0.00	5666.02	0 00:00	0.00
1310dp	JUNCTION	2.65	5.86	5690.78	0 02:05	5.85
131in	JUNCTION	0.00	0.00	5698.42	0 00:00	0.00
1400dp	JUNCTION	2.65	6.45	5715.36	0 02:03	6.43
140in	JUNCTION	0.00	0.00	5750.79	0 00:00	0.00
141.5in	JUNCTION	0.00	0.00	5777.56	0 00:00	0.00
1410dp	JUNCTION	2.54	6.45	5738.99	0 01:48	6.45
1415dp	JUNCTION	3.02	8.64	5755.68	0 01:43	8.64
141in	JUNCTION	0.00	0.00	5752.31	0 00:00	0.00
1420dp	JUNCTION	3.00	8.66	5765.52	0 01:34	8.66
142in	JUNCTION	0.00	0.00	5826.43	0 00:00	0.00
1500dp	JUNCTION	2.91	8.54	5776.53	0 01:31	8.54
1501dp	JUNCTION	2.08	5.94	5782.28	0 01:31	5.94
1502dp	JUNCTION	1.82	4.80	5787.74	0 01:34	4.80
150in	JUNCTION	0.00	0.00	5848.57	0 00:00	0.00
151in	JUNCTION	0.00	0.00	5826.83	0 00:00	0.00
1520dp	JUNCTION	6.79	10.42	5797.11	0 01:32	10.41
152in	JUNCTION	0.00	0.00	5848.05	0 00:00	0.00
1530dp	JUNCTION	1.93	5.54	5801.54	0 01:28	5.54
153in	JUNCTION	0.00	0.00	5852.92	0 00:00	0.00
1540dp	JUNCTION	1.82	6.31	5822.42	0 01:05	6.31
1541dp	JUNCTION	2.02	6.84	5830.52	0 01:02	6.83
154in	JUNCTION	0.00	0.00	5864.13	0 00:00	0.00
155.1in	JUNCTION	0.00	0.00	5929.91	0 00:00	0.00
155in	JUNCTION	0.00	0.00	5901.31	0 00:00	0.00
1600dp	JUNCTION	2.07	6.86	5843.86	0 00:59	6.85
160in	JUNCTION	0.00	0.00	5910.97	0 00:00	0.00
161in	JUNCTION	0.00	0.00	5899.38	0 00:00	0.00
162.1in	JUNCTION	0.00	0.00	5914.64	0 00:00	0.00
1620dp	JUNCTION	1.85	6.09	5879.31	0 00:52	6.07
1623dp	JUNCTION	1.84	6.11	5887.35	0 00:51	6.11
162in	JUNCTION	0.00	0.00	5961.02	0 00:00	0.00
163.5in	JUNCTION	0.00	0.00	5923.41	0 00:00	0.00
1630dp	JUNCTION	1.85	6.12	5902.83	0 00:47	6.10
1631dp	JUNCTION	1.79	5.80	5915.12	0 00:46	5.79
1635dp	JUNCTION	0.86	6.44	5919.98	0 00:46	6.42
163in	JUNCTION	0.00	0.00	5963.26	0 00:00	0.00
1640dp	JUNCTION	0.81	6.45	5934.13	0 00:44	6.45
164in	JUNCTION	0.00	0.00	5999.02	0 00:00	0.00
1650dp	JUNCTION	0.54	4.85	5979.57	0 00:38	4.84
165in	JUNCTION	0.00	0.00	6063.66	0 00:00	0.00
1660dp	JUNCTION	0.24	2.18	6014.41	0 00:40	2.18
166in	JUNCTION	0.00	0.00	6075.56	0 00:00	0.00
2000dp	JUNCTION	2.40	8.36	5525.71	0 01:27	8.35
200in	JUNCTION	0.00	0.00	5543.93	0 00:00	0.00
2010dp	JUNCTION	2.40	8.36	5526.41	0 01:24	8.36
201in	JUNCTION	0.00	0.00	5545.66	0 00:00	0.00
2020dp	JUNCTION	1.44	4.44	5530.72	0 01:27	4.44
202in	JUNCTION	0.00	0.00	5582.85	0 00:00	0.00
2030dp	JUNCTION	1.44	4.45	5539.13	0 01:23	4.44
203in	JUNCTION	0.00	0.00	5556.25	0 00:00	0.00
2040dp	JUNCTION	0.75	2.92	5545.89	0 01:11	2.92
2041dp	JUNCTION	0.96	5.04	5560.75	0 01:02	5.03
204in	JUNCTION	0.00	0.00	5570.84	0 00:00	0.00
2050dp	JUNCTION	0.00	0.00	5560.37	0 00:00	0.00
205in	JUNCTION	0.00	0.00	5567.45	0 00:00	0.00
2060dp	JUNCTION	0.93	5.21	5565.43	0 00:58	5.20
206in	JUNCTION	0.00	0.00	5635.01	0 00:00	0.00
2070dp	JUNCTION	0.72	5.41	5614.77	0 00:46	5.40
207in	JUNCTION	0.00	0.00	5661.00	0 00:00	0.00
2080dp	JUNCTION	0.50	4.54	5643.24	0 00:38	4.53
2085dp	JUNCTION	0.27	2.68	5661.57	0 00:35	2.68
208in	JUNCTION	0.00	0.00	5682.95	0 00:00	0.00
2090dp	JUNCTION	0.00	0.00	5669.27	0 00:00	0.00
209in	JUNCTION	0.00	0.00	5708.01	0 00:00	0.00
2100dp	JUNCTION	0.00	0.00	5666.79	0 00:00	0.00
210in	JUNCTION	0.00	0.00	5698.44	0 00:00	0.00
2110dp	JUNCTION	0.50	2.43	5559.76	0 00:56	2.43
2112dp	JUNCTION	0.34	1.46	5575.99	0 01:00	1.46
211in	JUNCTION	0.00	0.00	5599.18	0 00:00	0.00
212in	JUNCTION	0.00	0.00	5624.02	0 00:00	0.00
2200dp	JUNCTION	0.39	1.61	5555.63	0 01:00	1.61
220in	JUNCTION	0.00	0.00	5625.88	0 00:00	0.00
2300dp	JUNCTION	0.23	1.18	5583.09	0 00:55	1.18
230in	JUNCTION	0.00	0.00	5611.63	0 00:00	0.00
3000dp	JUNCTION	0.56	1.48	5527.26	0 01:13	1.48
300in	JUNCTION	0.00	0.00	5545.72	0 00:00	0.00
3010dp	JUNCTION	0.56	1.48	5534.86	0 01:11	1.48
301in	JUNCTION	0.00	0.00	5569.11	0 00:00	0.00

TABLE B-7
Future Condition 100-Year SWMM Input and Output

3020dp	JUNCTION	0.30	0.66	5606.55	0	01:20	0.66	5010dp	JUNCTION	0.35	2.30	5707.85	0	00:56	2.30
302in	JUNCTION	0.00	0.00	5619.72	0	00:00	0.00	501in	JUNCTION	0.00	0.00	5761.05	0	00:00	0.00
303in	JUNCTION	0.00	0.00	5584.59	0	00:00	0.00	5020dp	JUNCTION	0.33	2.38	5755.89	0	00:42	2.37
3100dp	JUNCTION	0.35	1.82	5575.98	0	00:50	1.82	502in	JUNCTION	0.00	0.00	5790.91	0	00:00	0.00
310in	JUNCTION	0.00	0.00	5596.89	0	00:00	0.00	5030dp	JUNCTION	0.25	2.17	5789.13	0	00:35	2.16
311in	JUNCTION	0.00	0.00	5602.54	0	00:00	0.00	503in	JUNCTION	0.00	0.00	5822.73	0	00:00	0.00
312in	JUNCTION	0.00	0.00	5605.09	0	00:00	0.00	510in	JUNCTION	0.00	0.00	5772.68	0	00:00	0.00
3200dp	JUNCTION	0.31	0.90	5564.21	0	01:10	0.90	5110dp	JUNCTION	0.35	2.53	5686.48	0	00:45	2.53
320in	JUNCTION	0.00	0.00	5589.23	0	00:00	0.00	511in	JUNCTION	0.00	0.00	5849.54	0	00:00	0.00
3300dp	JUNCTION	0.57	3.82	5570.46	0	00:52	3.81	5120dp	JUNCTION	0.82	5.66	5697.56	0	00:48	5.65
330in	JUNCTION	0.00	0.00	5596.99	0	00:00	0.00	512in	JUNCTION	0.00	0.00	5791.26	0	00:00	0.00
3310dp	JUNCTION	0.53	3.91	5596.79	0	00:40	3.91	5200dp	JUNCTION	0.00	0.00	5717.77	0	00:00	0.00
331in	JUNCTION	0.00	0.00	5637.97	0	00:00	0.00	520in	JUNCTION	0.00	0.00	5820.53	0	00:00	0.00
3320dp	JUNCTION	0.36	3.58	5639.00	0	00:35	3.57	5300dp	JUNCTION	0.13	1.30	5695.57	0	00:41	1.29
332in	JUNCTION	0.00	0.00	5676.94	0	00:00	0.00	530in	JUNCTION	0.00	0.00	5720.98	0	00:00	0.00
3500dp	JUNCTION	1.15	5.71	5576.26	0	01:03	5.70	5310dp	JUNCTION	0.12	1.35	5730.05	0	00:35	1.35
350in	JUNCTION	0.00	0.00	5598.53	0	00:00	0.00	531in	JUNCTION	0.00	0.00	5822.45	0	00:00	0.00
3510dp	JUNCTION	0.74	3.76	5592.03	0	01:00	3.76	5500dp	JUNCTION	1.14	5.75	5709.40	0	01:00	5.75
3511dp	JUNCTION	0.00	0.00	5594.92	0	00:00	0.00	550in	JUNCTION	0.00	0.00	5727.19	0	00:00	0.00
351in	JUNCTION	0.00	0.00	5605.36	0	00:00	0.00	5510dp	JUNCTION	0.33	1.59	5730.22	0	00:55	1.59
3520dp	JUNCTION	0.65	4.00	5607.55	0	01:01	4.00	551in	JUNCTION	0.00	0.00	5789.66	0	00:00	0.00
352in	JUNCTION	0.00	0.00	5603.64	0	00:00	0.00	5520dp	JUNCTION	0.51	2.50	5718.36	0	00:57	2.50
3530dp	JUNCTION	0.00	0.00	5602.44	0	00:00	0.00	552in	JUNCTION	0.00	0.00	5763.95	0	00:00	0.00
3535dp	JUNCTION	0.57	4.17	5645.09	0	00:46	4.16	5530dp	JUNCTION	0.53	3.04	5725.57	0	00:53	3.04
353in	JUNCTION	0.00	0.00	5641.46	0	00:00	0.00	553in	JUNCTION	0.00	0.00	5770.97	0	00:00	0.00
354.5in	JUNCTION	0.00	0.00	5649.07	0	00:00	0.00	5540dp	JUNCTION	0.24	1.57	5771.43	0	00:45	1.57
3540dp	JUNCTION	0.18	0.82	5602.46	0	00:55	0.82	554in	JUNCTION	0.00	0.00	5817.12	0	00:00	0.00
354in	JUNCTION	0.00	0.00	5622.11	0	00:00	0.00	5550dp	JUNCTION	0.26	1.63	5757.48	0	00:45	1.63
3550dp	JUNCTION	0.35	2.59	5648.26	0	00:44	2.59	555in	JUNCTION	0.00	0.00	5859.22	0	00:00	0.00
355in	JUNCTION	0.00	0.00	5660.13	0	00:00	0.00	5560dp	JUNCTION	0.17	1.72	5833.79	0	00:35	1.72
3560dp	JUNCTION	0.20	1.63	5663.02	0	00:40	1.63	556in	JUNCTION	0.00	0.00	5867.29	0	00:00	0.00
356in	JUNCTION	0.00	0.00	5701.41	0	00:00	0.00	6000dp	JUNCTION	0.38	2.71	5719.26	0	00:47	2.70
3800dp	JUNCTION	0.11	0.70	5605.96	0	00:40	0.70	600in	JUNCTION	0.00	0.00	5767.50	0	00:00	0.00
380in	JUNCTION	0.00	0.00	5619.30	0	00:00	0.00	6010dp	JUNCTION	0.28	2.38	5743.47	0	00:40	2.38
4000dp	JUNCTION	0.04	0.42	5621.34	0	00:35	0.42	601in	JUNCTION	0.00	0.00	5809.96	0	00:00	0.00
4005dp	JUNCTION	0.24	2.56	5604.67	0	00:35	2.55	6200dp	JUNCTION	0.37	3.07	5758.07	0	00:40	3.07
400in	JUNCTION	0.00	0.00	5647.19	0	00:00	0.00	620in	JUNCTION	0.00	0.00	5793.32	0	00:00	0.00
4300dp	JUNCTION	0.25	2.18	5621.03	0	00:38	2.17	6300dp	JUNCTION	0.15	1.21	5765.57	0	00:40	1.21
430in	JUNCTION	0.00	0.00	5637.85	0	00:00	0.00	630in	JUNCTION	0.00	0.00	5792.16	0	00:00	0.00
4310dp	JUNCTION	0.15	1.57	5638.74	0	00:35	1.57	6500dp	JUNCTION	0.20	1.55	5815.84	0	00:40	1.55
431in	JUNCTION	0.00	0.00	5669.13	0	00:00	0.00	650in	JUNCTION	0.00	0.00	5847.75	0	00:00	0.00
440.5in	JUNCTION	0.00	0.00	5662.25	0	00:00	0.00	7000dp	JUNCTION	0.52	3.46	5787.83	0	00:54	3.46
4400dp	JUNCTION	0.10	0.76	5625.26	0	00:36	0.75	700in	JUNCTION	0.00	0.00	5849.63	0	00:00	0.00
4405dp	JUNCTION	0.42	2.23	5638.84	0	00:56	2.22	7010dp	JUNCTION	0.48	3.56	5821.17	0	00:43	3.55
440in	JUNCTION	0.00	0.00	5643.78	0	00:00	0.00	701in	JUNCTION	0.00	0.00	5894.38	0	00:00	0.00
4410dp	JUNCTION	0.61	2.92	5671.35	0	00:55	2.92	7020dp	JUNCTION	0.33	2.48	5838.33	0	00:42	2.47
441in	JUNCTION	0.00	0.00	5709.11	0	00:00	0.00	702in	JUNCTION	0.00	0.00	5878.99	0	00:00	0.00
442.5in	JUNCTION	0.00	0.00	5687.97	0	00:00	0.00	7030dp	JUNCTION	0.21	1.81	5866.41	0	00:35	1.81
4420dp	JUNCTION	0.08	0.76	5655.12	0	00:35	0.76	703in	JUNCTION	0.00	0.00	5895.32	0	00:00	0.00
4425dp	JUNCTION	0.13	1.10	5659.36	0	00:37	1.09	7100dp	JUNCTION	0.11	0.77	5866.00	0	00:40	0.77
442in	JUNCTION	0.00	0.00	5673.85	0	00:00	0.00	710in	JUNCTION	0.00	0.00	5925.96	0	00:00	0.00
4430dp	JUNCTION	0.09	0.80	5708.58	0	00:35	0.79	7200dp	JUNCTION	0.18	1.26	5901.34	0	00:50	1.26
443in	JUNCTION	0.00	0.00	5748.32	0	00:00	0.00	720in	JUNCTION	0.00	0.00	5946.35	0	00:00	0.00
450.5in	JUNCTION	0.00	0.00	5671.25	0	00:00	0.00	750in	JUNCTION	0.00	0.00	5952.83	0	00:00	0.00
4500dp	JUNCTION	0.33	2.79	5651.69	0	00:46	2.78	7510dp	JUNCTION	1.46	2.84	5922.22	0	01:24	2.84
450in	JUNCTION	0.00	0.00	5691.71	0	00:00	0.00	751in	JUNCTION	0.00	0.00	6020.55	0	00:00	0.00
4510dp	JUNCTION	0.31	2.90	5687.56	0	00:35	2.89	7520dp	JUNCTION	0.23	2.04	5993.85	0	00:35	2.03
451in	JUNCTION	0.00	0.00	5725.07	0	00:00	0.00	752in	JUNCTION	0.00	0.00	6054.02	0	00:00	0.00
4700dp	JUNCTION	0.60	3.07	5697.89	0	01:02	3.04	7600dp	JUNCTION	0.17	1.27	5922.08	0	00:47	1.26
470in	JUNCTION	0.00	0.00	5727.92	0	00:00	0.00	7605dp	JUNCTION	0.17	1.27	5934.00	0	00:43	1.27
4710dp	JUNCTION	0.50	3.07	5738.24	0	00:45	3.07	760in	JUNCTION	0.00	0.00	5979.64	0	00:00	0.00
471in	JUNCTION	0.00	0.00	5775.00	0	00:00	0.00	7610dp	JUNCTION	0.11	0.74	5955.45	0	00:45	0.74

TABLE B-7
Future Condition 100-Year SWMM Input and Output

761in	JUNCTION	0.00	0.00	6011.89	0	00:00	0.00
7700dp	JUNCTION	0.31	2.95	6010.80	0	00:35	2.94
770in	JUNCTION	0.00	0.00	6099.86	0	00:00	0.00
1000outfall	OUTFALL	0.00	0.00	5490.00	0	00:00	0.00
10	STORAGE	6.72	12.78	5948.78	0	01:24	12.78
20	STORAGE	3.27	14.26	5810.26	0	01:28	14.25

****
Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
1000dp	JUNCTION	0.00	6072.55	0	02:11	0	444	0.000
1009dp	JUNCTION	0.00	6057.82	0	02:06	0	441	0.000
100in	JUNCTION	91.91	91.91	0	00:45	3.09	3.09	0.000
1010dp	JUNCTION	0.00	5966.22	0	02:06	0	432	0.000
101in	JUNCTION	49.42	49.42	0	00:45	1.63	1.63	0.000
1020dp	JUNCTION	0.00	5148.93	0	02:04	0	377	0.000
102in	JUNCTION	179.55	179.55	0	00:40	4.36	4.36	0.000
1030dp	JUNCTION	0.00	5132.06	0	02:01	0	373	0.000
103in	JUNCTION	121.01	121.01	0	00:40	3.61	3.61	0.000
1040dp	JUNCTION	0.00	5119.73	0	01:53	0	369	0.000
104in	JUNCTION	358.32	358.32	0	00:35	6.71	6.71	0.000
1050dp	JUNCTION	0.00	5084.04	0	01:50	0	362	0.000
105in	JUNCTION	248.70	248.70	0	00:35	5.56	5.56	0.000
1100dp	JUNCTION	0.00	4959.07	0	01:38	0	333	0.000
110in	JUNCTION	94.01	94.01	0	00:35	2.01	2.01	0.000
1110dp	JUNCTION	0.00	4595.76	0	01:38	0	311	0.000
1115dp	JUNCTION	0.00	4538.23	0	01:37	0	307	0.000
111in	JUNCTION	154.72	154.72	0	00:45	4.55	4.55	0.000
1120dp	JUNCTION	0.00	4515.08	0	01:35	0	305	0.000
112in	JUNCTION	103.59	103.59	0	00:45	3.34	3.34	0.000
1130dp	JUNCTION	0.00	4451.28	0	01:32	0	298	0.000
113in	JUNCTION	112.61	112.61	0	00:40	3.09	3.09	0.000
1200dp	JUNCTION	0.00	4411.67	0	01:30	0	295	0.000
120in	JUNCTION	77.00	77.00	0	00:40	2.11	2.11	0.000
1210dp	JUNCTION	0.00	3983.92	0	01:39	0	260	0.000
121in	JUNCTION	82.82	82.82	0	01:05	4.34	4.34	0.000
1222dp	JUNCTION	0.00	3866.16	0	01:34	0	251	0.000
1225dp	JUNCTION	0.00	3794.41	0	01:29	0	246	0.000
122in	JUNCTION	174.60	174.60	0	00:45	4.96	4.96	0.000
1230dp	JUNCTION	0.00	3585.13	0	01:30	0	232	0.000
123in	JUNCTION	68.92	68.92	0	00:55	3.03	3.03	0.000
124in	JUNCTION	174.51	174.51	0	00:45	4.88	4.88	0.000
130.2in	JUNCTION	10.17	10.17	0	00:50	0.43	0.43	0.000
1300dp	JUNCTION	0.00	3541.75	0	01:28	0	229	-0.000
1301dp	JUNCTION	0.00	2982.98	0	01:28	0	199	0.000
1302dp	JUNCTION	0.00	2858.86	0	01:24	0	191	0.000
130in	JUNCTION	30.65	30.65	0	01:00	1.53	1.53	0.000
1310dp	JUNCTION	0.00	2851.33	0	01:24	0	191	0.000
131in	JUNCTION	261.70	261.70	0	00:45	8.13	8.13	0.000
1400dp	JUNCTION	0.00	2174.14	0	02:03	0	134	0.000
140in	JUNCTION	217.22	217.22	0	00:45	6.45	6.45	0.000
141.5in	JUNCTION	174.64	174.64	0	00:40	4.37	4.37	0.000
1410dp	JUNCTION	0.00	2092.83	0	01:48	0	123	0.000
1415dp	JUNCTION	0.00	2045.14	0	01:42	0	116	0.000
141in	JUNCTION	223.17	223.17	0	00:40	5.74	5.74	0.000
1420dp	JUNCTION	0.00	2025.11	0	01:34	0	112	0.000
142in	JUNCTION	168.97	168.97	0	00:40	4.15	4.15	0.000
1500dp	JUNCTION	0.00	1940.65	0	01:31	0	105	0.000
1501dp	JUNCTION	0.00	1803.35	0	01:31	0	94.7	0.000
1502dp	JUNCTION	0.00	1804.09	0	01:30	0	94.7	0.000
150in	JUNCTION	227.29	227.29	0	00:40	5.3	5.3	0.000
151in	JUNCTION	163.34	163.34	0	00:45	5.08	5.08	0.000
1520dp	JUNCTION	0.00	1465.49	0	01:32	0	75.5	0.000
152in	JUNCTION	265.19	265.19	0	00:35	5.49	5.49	0.000
1530dp	JUNCTION	0.00	1428.59	0	01:28	0	70.2	0.000
153in	JUNCTION	227.49	227.49	0	00:40	5.17	5.17	0.000
1540dp	JUNCTION	0.00	1794.88	0	01:04	0	65.3	0.000
1541dp	JUNCTION	0.00	1653.05	0	01:02	0	59.1	0.000
154in	JUNCTION	42.70	42.70	0	00:40	1.06	1.06	0.000
155.1in	JUNCTION	24.18	24.18	0	01:00	1.26	1.26	0.000
155in	JUNCTION	277.28	277.28	0	00:35	5.04	5.04	0.000
1600dp	JUNCTION	0.00	1632.68	0	00:59	0	58.1	0.000
160in	JUNCTION	55.85	55.85	0	00:50	2.22	2.22	0.000
161in	JUNCTION	165.76	165.76	0	00:50	5.95	5.95	0.000
162.1in	JUNCTION	28.27	28.27	0	00:40	0.768	0.768	0.000
1620dp	JUNCTION	0.00	1356.08	0	00:52	0	46.9	0.000
1623dp	JUNCTION	0.00	1044.43	0	00:51	0	38.1	0.000
162in	JUNCTION	216.16	216.16	0	00:35	4.53	4.53	0.000
163.5in	JUNCTION	43.04	43.04	0	00:35	0.795	0.795	0.000
1630dp	JUNCTION	0.00	1022.79	0	00:47	0	37.4	0.000
1631dp	JUNCTION	0.00	985.83	0	00:46	0	36.3	0.000
1635dp	JUNCTION	0.00	851.74	0	00:46	0	19.9	0.000
163in	JUNCTION	38.86	38.86	0	00:40	1.07	1.07	0.000
1640dp	JUNCTION	0.00	718.05	0	00:44	0	16.2	0.000
164in	JUNCTION	189.31	189.31	0	00:40	4.59	4.59	0.000
1650dp	JUNCTION	0.00	550.85	0	00:38	0	11.6	0.000
165in	JUNCTION	90.29	90.29	0	00:35	1.52	1.52	0.000
1660dp	JUNCTION	0.00	111.65	0	00:40	0	2.7	0.000
166in	JUNCTION	111.65	111.65	0	00:40	2.7	2.7	0.000
2000dp	JUNCTION	0.00	1269.07	0	01:27	0	53.5	0.000
200in	JUNCTION	24.05	24.05	0	00:40	0.639	0.639	0.000
2010dp	JUNCTION	0.00	1261.17	0	01:24	0	52.9	0.000
201in	JUNCTION	114.35	114.35	0	00:55	4.8	4.8	0.000
2020dp	JUNCTION	0.00	1173.41	0	01:25	0	48.1	0.000
202in	JUNCTION	21.49	21.49	0	00:45	0.675	0.675	0.000
2030dp	JUNCTION	0.00	947.32	0	01:23	0	37.6	0.000
203in	JUNCTION	56.81	56.81	0	00:55	2.53	2.53	0.000
2040dp	JUNCTION	0.00	843.73	0	01:11	0	30	0.000
2041dp	JUNCTION	0.00	794.08	0	01:02	0	26.4	0.000
204in	JUNCTION	81.95	81.95	0	00:55	3.35	3.35	0.000
2050dp	JUNCTION	0.00	36.39	0	01:10	0	2.2	0.000
205in	JUNCTION	36.39	36.39	0	01:10	2.2	2.2	0.000
2060dp	JUNCTION	0.00	672.46	0	00:59	0	20.5	0.000
206in	JUNCTION	86.76	86.76	0	01:10	4.55	4.55	0.000
2070dp	JUNCTION	0.00	645.42	0	00:46	0	15.6	0.000
207in	JUNCTION	151.26	151.26	0	00:50	4.93	4.93	0.000
2080dp	JUNCTION	0.00	525.22	0	00:38	0	10.6	0.000
2085dp	JUNCTION	0.00	271.58	0	00:35	0	5.05	0.000
208in	JUNCTION	279.22	279.22	0	00:35	5.51	5.51	0.000
2090dp	JUNCTION	0.00	170.70	0	00:35	0	3.33	0.000
209in	JUNCTION	170.70	170.70	0	00:35	3.33	3.33	0.000
2100dp	JUNCTION	0.00	100.88	0	00:35	0	1.72	0.000
210in	JUNCTION	100.88	100.88	0	00:35	1.72	1.72	0.000
2110dp	JUNCTION	0.00	248.11	0	00:56	0	9.73	0.000
2112dp	JUNCTION	0.00	110.70	0	01:00	0	5.13	0.000
211in	JUNCTION	149.10	149.10	0	00:50	4.59	4.59	0.000

TABLE B-7
Future Condition 100-Year SWMM Input and Output

212in	JUNCTION	110.70	110.70	0	01:00	5.13	5.13	0.000	450.5in	JUNCTION	117.19	117.19	0	00:40	3.12	3.12	0.000
2200dp	JUNCTION	0.00	102.33	0	01:00	0	4.78	0.000	4500dp	JUNCTION	0.00	401.56	0	00:45	0	9.45	0.000
220in	JUNCTION	102.33	102.33	0	01:00	4.78	4.78	0.000	450in	JUNCTION	134.68	134.68	0	00:45	4.56	4.56	0.000
2300dp	JUNCTION	0.00	95.55	0	00:55	0	3.61	0.000	4510dp	JUNCTION	0.00	316.79	0	00:35	0	6.28	0.000
230in	JUNCTION	95.55	95.55	0	00:55	3.61	3.61	0.000	451in	JUNCTION	316.79	316.79	0	00:35	6.28	6.28	0.000
3000dp	JUNCTION	0.00	146.31	0	01:07	0	9.11	0.000	4700dp	JUNCTION	0.00	251.44	0	01:02	0	8.67	-0.000
300in	JUNCTION	40.62	40.62	0	00:50	1.45	1.45	0.000	470in	JUNCTION	116.25	116.25	0	00:35	2.56	2.56	0.000
3010dp	JUNCTION	0.00	73.50	0	01:11	0	5.11	0.000	4710dp	JUNCTION	0.00	182.34	0	00:45	0	6.08	0.000
301in	JUNCTION	63.91	63.91	0	01:05	3.11	3.11	0.000	471in	JUNCTION	182.34	182.34	0	00:45	6.08	6.08	0.000
3020dp	JUNCTION	0.00	22.03	0	01:20	0	1.95	0.000	5010dp	JUNCTION	0.00	463.74	0	00:48	0	12.9	0.000
302in	JUNCTION	22.03	22.03	0	01:20	1.95	1.95	0.000	501in	JUNCTION	341.93	341.93	0	00:35	7.3	7.3	0.000
303in	JUNCTION	37.94	37.94	0	01:10	2.55	2.55	0.000	5020dp	JUNCTION	0.00	225.66	0	00:42	0	5.53	0.000
3100dp	JUNCTION	0.00	91.91	0	00:50	0	3.52	0.000	502in	JUNCTION	135.01	135.01	0	00:35	2.73	2.73	0.000
310in	JUNCTION	48.83	48.83	0	00:50	1.8	1.8	0.000	5030dp	JUNCTION	0.00	120.63	0	00:35	0	2.77	0.000
311in	JUNCTION	43.08	43.08	0	00:50	1.72	1.72	0.000	503in	JUNCTION	120.63	120.63	0	00:35	2.77	2.77	0.000
312in	JUNCTION	46.78	46.78	0	00:45	1.68	1.68	0.000	510in	JUNCTION	230.86	230.86	0	00:40	4.89	4.89	0.000
3200dp	JUNCTION	0.00	12.25	0	01:10	0	0.832	0.000	5110dp	JUNCTION	0.00	154.99	0	00:45	0	4.71	0.000
320in	JUNCTION	12.25	12.25	0	01:10	0.832	0.832	0.000	511in	JUNCTION	154.99	154.99	0	00:45	4.71	4.71	0.000
3300dp	JUNCTION	0.00	745.23	0	00:50	0	19.3	0.000	5120dp	JUNCTION	0.00	640.55	0	00:48	0	18.6	0.000
330in	JUNCTION	265.72	265.72	0	00:40	6.43	6.43	0.000	512in	JUNCTION	177.43	177.43	0	00:45	5.72	5.72	0.000
3310dp	JUNCTION	0.00	563.63	0	00:40	0	12.8	0.000	5200dp	JUNCTION	0.00	257.88	0	00:50	0	8.43	0.000
331in	JUNCTION	398.79	398.79	0	00:35	7.9	7.9	0.000	520in	JUNCTION	257.88	257.88	0	00:50	8.43	8.43	0.000
3320dp	JUNCTION	0.00	257.41	0	00:35	0	4.76	0.000	5300dp	JUNCTION	0.00	330.65	0	00:45	0	8.83	0.000
332in	JUNCTION	257.41	257.41	0	00:35	4.76	4.76	0.000	530in	JUNCTION	180.82	180.82	0	00:50	6.15	6.15	0.000
3500dp	JUNCTION	0.00	539.58	0	01:03	0	18.1	0.000	5310dp	JUNCTION	0.00	174.14	0	00:35	0	2.66	0.000
350in	JUNCTION	88.47	88.47	0	00:45	2.69	2.69	0.000	531in	JUNCTION	174.14	174.14	0	00:35	2.66	2.66	0.000
3510dp	JUNCTION	0.00	466.41	0	01:00	0	15.4	0.000	5500dp	JUNCTION	0.00	838.03	0	01:00	0	29.5	0.000
3511dp	JUNCTION	0.00	412.79	0	01:00	0	13	0.000	550in	JUNCTION	56.52	56.52	0	00:40	1.38	1.38	0.000
351in	JUNCTION	14.49	14.49	0	00:50	0.592	0.592	0.000	5510dp	JUNCTION	0.00	253.70	0	00:55	0	9.79	0.000
3520dp	JUNCTION	0.00	332.21	0	01:01	0	10.1	0.000	551in	JUNCTION	169.48	169.48	0	00:55	7.08	7.08	0.000
352in	JUNCTION	24.94	24.94	0	01:10	1.48	1.48	0.000	5520dp	JUNCTION	0.00	253.60	0	00:57	0	9.02	0.000
3530dp	JUNCTION	0.00	91.53	0	00:45	0	2.93	0.000	552in	JUNCTION	151.54	151.54	0	00:45	4.5	4.5	0.000
3535dp	JUNCTION	0.00	344.80	0	00:46	0	8.34	0.000	5530dp	JUNCTION	0.00	295.37	0	00:53	0	9.29	0.000
353in	JUNCTION	91.53	91.53	0	00:45	2.93	2.93	0.000	553in	JUNCTION	134.45	134.45	0	00:40	3.52	3.52	0.000
354.5in	JUNCTION	40.08	40.08	0	00:40	1.01	1.01	0.000	5540dp	JUNCTION	0.00	190.40	0	00:45	0	5.72	0.000
3540dp	JUNCTION	0.00	40.15	0	00:55	0	1.79	0.000	554in	JUNCTION	190.40	190.40	0	00:45	5.72	5.72	0.000
354in	JUNCTION	40.15	40.15	0	00:55	1.79	1.79	0.000	5550dp	JUNCTION	0.00	135.22	0	00:45	0	4.4	0.000
3550dp	JUNCTION	0.00	307.47	0	00:44	0	7.33	0.000	555in	JUNCTION	135.22	135.22	0	00:45	4.4	4.4	0.000
355in	JUNCTION	115.13	115.13	0	00:35	2.35	2.35	0.000	5560dp	JUNCTION	0.00	127.66	0	00:35	0	2.2	0.000
3560dp	JUNCTION	0.00	217.97	0	00:40	0	4.95	0.000	556in	JUNCTION	127.66	127.66	0	00:35	2.2	2.2	0.000
356in	JUNCTION	217.97	217.97	0	00:40	4.95	4.95	0.000	6000dp	JUNCTION	0.00	419.46	0	00:47	0	10.5	0.000
3800dp	JUNCTION	0.00	80.86	0	00:40	0	2.18	0.000	600in	JUNCTION	184.39	184.39	0	00:40	4.81	4.81	0.000
380in	JUNCTION	80.86	80.86	0	00:40	2.18	2.18	0.000	6010dp	JUNCTION	0.00	265.24	0	00:40	0	5.61	0.000
4000dp	JUNCTION	0.00	169.20	0	00:35	0	2.97	0.000	601in	JUNCTION	265.24	265.24	0	00:40	5.61	5.61	0.000
4005dp	JUNCTION	0.00	168.99	0	00:35	0	2.97	0.000	6200dp	JUNCTION	0.00	178.55	0	00:40	0	4.52	0.000
400in	JUNCTION	169.20	169.20	0	00:35	2.97	2.97	0.000	620in	JUNCTION	178.55	178.55	0	00:40	4.52	4.52	0.000
4300dp	JUNCTION	0.00	241.69	0	00:38	0	4.89	0.000	6300dp	JUNCTION	0.00	39.93	0	00:40	0	1.04	0.000
430in	JUNCTION	55.39	55.39	0	00:40	1.51	1.51	0.000	630in	JUNCTION	39.93	39.93	0	00:40	1.04	1.04	0.000
4310dp	JUNCTION	0.00	192.75	0	00:35	0	3.37	0.000	6500dp	JUNCTION	0.00	91.24	0	00:40	0	2.46	-0.000
431in	JUNCTION	192.75	192.75	0	00:35	3.37	3.37	0.000	650in	JUNCTION	91.24	91.24	0	00:40	2.46	2.46	0.000
440.5in	JUNCTION	159.50	159.50	0	00:35	3.24	3.24	0.000	7000dp	JUNCTION	0.00	725.48	0	00:54	0	19.2	0.000
4400dp	JUNCTION	0.00	987.11	0	00:42	0	28.4	0.000	700in	JUNCTION	109.02	109.02	0	00:45	3.43	3.43	0.000
4405dp	JUNCTION	0.00	755.28	0	00:43	0	22.6	0.000	7010dp	JUNCTION	0.00	669.19	0	00:43	0	15.6	0.000
440in	JUNCTION	86.01	86.01	0	00:40	2.49	2.49	0.000	701in	JUNCTION	175.63	175.63	0	00:35	3.61	3.61	0.000
4410dp	JUNCTION	0.00	354.50	0	00:53	0	12	0.000	7020dp	JUNCTION	0.00	518.14	0	00:42	0	12	-0.000
441in	JUNCTION	157.05	157.05	0	00:35	3.3	3.3	0.000	702in	JUNCTION	296.54	296.54	0	00:35	6.52	6.52	0.000
442.5in	JUNCTION	192.20	192.20	0	00:35	3.74	3.74	0.000	7030dp	JUNCTION	0.00	250.58	0	00:35	0	5.45	0.000
4420dp	JUNCTION	0.00	157.42	0	00:35	0	3.28	0.000	703in	JUNCTION	250.58	250.58	0	00:35	5.45	5.45	0.000
4425dp	JUNCTION	0.00	347.27	0	00:37	0	7.4	0.000	7100dp	JUNCTION	0.00	115.23	0	00:40	0	3.02	0.000
442in	JUNCTION	157.42	157.42	0	00:35	3.28	3.28	0.000	710in	JUNCTION	115.23	115.23	0	00:40	3.02	3.02	0.000
4430dp	JUNCTION	0.00	167.85	0	00:35	0	3.66	0.000	7200dp	JUNCTION	0.00	151.92	0	00:50	0	4.32	0.000
443in	JUNCTION	167.85	167.85	0	00:35	3.66	3.66	0.000	720in	JUNCTION	151.92	151.92	0	00:50	4.32	4.32	0.000

TABLE B-7
Future Condition 100-Year SWMM Input and Output

750in	JUNCTION	115.06	115.06	0	00:35	1.87	1.87	0.000
7510dp	JUNCTION	0.00	164.69	0	01:24	0	13.8	0.000
751in	JUNCTION	275.87	275.87	0	00:35	5.3	5.3	0.000
7520dp	JUNCTION	0.00	468.60	0	00:35	0	8.79	0.000
752in	JUNCTION	468.60	468.60	0	00:35	8.79	8.79	0.000
7600dp	JUNCTION	0.00	136.71	0	00:47	0	3.71	0.000
7605dp	JUNCTION	0.00	136.97	0	00:43	0	3.7	0.000
760in	JUNCTION	40.16	40.16	0	00:35	0.713	0.713	0.000
7610dp	JUNCTION	0.00	101.46	0	00:45	0	2.99	0.000
761in	JUNCTION	101.46	101.46	0	00:45	2.99	2.99	0.000
7700dp	JUNCTION	0.00	378.72	0	00:35	0	7.33	0.000
770in	JUNCTION	378.72	378.72	0	00:35	7.33	7.33	0.000
1000outfall	OUTFALL	0.00	6072.55	0	02:11	0	444	0.000
10	STORAGE	0.00	700.56	0	00:39	0	14.2	0.028
20	STORAGE	0.00	1930.64	0	01:05	0	70.4	0.020

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
10	473.249	20	0	0	1265.341	53	0 01:24	164.69
20	406.593	13	0	0	2244.649	72	0 01:27	1428.59

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
1000outfall	98.59	1394.48	6072.55	444.243
System	98.59	1394.48	6072.55	444.243

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
1	DUMMY	192.20	0 00:35			
10	DUMMY	28.27	0 00:40			
100	DUMMY	135.22	0 00:45			
1000out	DUMMY	6072.55	0 02:11			
1014re	CHANNEL	6049.07	0 02:11	27.13	0.23	0.80
1015re	DUMMY	5966.22	0 02:06			
102	DUMMY	127.66	0 00:35			
1025re	CHANNEL	5136.74	0 02:10	4.10	0.16	0.58
1035re	CHANNEL	5129.47	0 02:04	5.13	0.21	0.61
104	DUMMY	56.52	0 00:40			
1045re	CHANNEL	5104.05	0 02:01	4.18	0.31	0.64
105	DUMMY	154.99	0 00:45			
1055re	CHANNEL	5080.60	0 01:53	5.91	0.28	0.81
109	DUMMY	230.86	0 00:40			
1105re	CHANNEL	4855.94	0 01:53	4.53	0.60	0.92
111	DUMMY	177.43	0 00:45			
1115re	CHANNEL	4593.85	0 01:40	6.84	0.26	0.59
1120re	CHANNEL	4537.33	0 01:39	11.33	0.19	0.58
1125re	CHANNEL	4511.09	0 01:37	5.84	0.08	0.47
113	DUMMY	182.34	0 00:45			
1135re	CHANNEL	4444.44	0 01:35	6.19	0.08	0.30
115	DUMMY	116.25	0 00:35			
117	DUMMY	167.85	0 00:35			
119	DUMMY	157.42	0 00:35			
1205re	CHANNEL	4408.02	0 01:32	7.18	0.07	0.38
1215re	CHANNEL	3982.83	0 01:42	6.03	0.11	0.42
122	DUMMY	157.05	0 00:35			
1227re	CHANNEL	3864.26	0 01:40	5.65	0.30	0.75
1230re	CHANNEL	3796.90	0 01:34	4.72	0.51	0.82
1235re	DUMMY	3585.13	0 01:30			
124	DUMMY	86.01	0 00:40			
126	DUMMY	341.93	0 00:35			
129	DUMMY	135.01	0 00:35			
13	DUMMY	36.39	0 01:10			
1305re	CHANNEL	3535.53	0 01:30	6.80	0.26	0.61
1306re	CHANNEL	2978.64	0 01:30	7.07	0.16	0.46
1307re	CHANNEL	2829.74	0 01:28	5.79	0.27	0.60
131	DUMMY	120.63	0 00:35			
132	DUMMY	174.14	0 00:35			
134	DUMMY	180.82	0 00:50			
136	DUMMY	330.65	0 00:45			
137	DUMMY	257.88	0 00:50			
138	DUMMY	316.79	0 00:35			
14	DUMMY	110.70	0 01:00			
140	DUMMY	134.68	0 00:45			
1405re	CHANNEL	2163.74	0 02:05	5.26	0.08	0.36
141	DUMMY	401.56	0 00:45			
1415re	CHANNEL	2084.59	0 02:03	5.50	0.17	0.60
1420re	CHANNEL	2033.89	0 01:49	4.49	0.21	0.65
1425re	CHANNEL	2003.41	0 01:43	5.02	0.30	0.81
144	DUMMY	174.60	0 00:45			
146	DUMMY	174.51	0 00:45			
148	DUMMY	112.61	0 00:40			
15	DUMMY	149.10	0 00:50			
1505re	CHANNEL	1931.31	0 01:35	4.69	0.13	0.59
1506re	CHANNEL	1802.77	0 01:32	6.16	0.07	0.44
1507re	CHANNEL	1803.35	0 01:31	4.78	0.08	0.39
151	DUMMY	169.20	0 00:35			
1525re	CHANNEL	1464.11	0 01:34	3.50	0.39	0.71
1535re	CHANNEL	1422.64	0 01:32	3.86	0.02	0.24
154	DUMMY	192.75	0 00:35			
1545re	CHANNEL	1792.77	0 01:06	7.35	0.04	0.26
156	DUMMY	55.39	0 00:40			
159	DUMMY	82.82	0 01:05			

TABLE B-7
Future Condition 100-Year SWMM Input and Output

16	DUMMY	100.88	0	00:35				222	DUMMY	24.05	0	00:40			
1605re	CHANNEL	1645.92	0	01:05	5.27	0.03	0.30	223	DUMMY	179.55	0	00:40			
1606re	CHANNEL	1622.87	0	01:02	4.58	0.02	0.23	225	DUMMY	21.49	0	00:45			
162	DUMMY	257.41	0	00:35				226	DUMMY	1173.41	0	01:25			
1625re	CHANNEL	1322.33	0	00:59	6.19	0.02	0.21	229	DUMMY	121.01	0	00:40			
1628re	CHANNEL	1041.42	0	00:53	4.46	0.07	0.34	23	DUMMY	175.63	0	00:35			
163	DUMMY	43.04	0	00:35				2305re	CHANNEL	91.07	0	01:11	1.82	0.00	0.11
1635re	CHANNEL	1018.62	0	00:51	5.69	0.01	0.24	231	DUMMY	745.23	0	00:50			
1636re	CHANNEL	985.23	0	00:47	8.69	0.09	0.46	234	DUMMY	154.72	0	00:45			
164	DUMMY	398.79	0	00:35				235	DUMMY	39.93	0	00:40			
1640re	CHANNEL	851.56	0	00:47	6.00	0.01	0.21	237	DUMMY	80.86	0	00:40			
1645re	CHANNEL	715.30	0	00:46	5.57	0.32	0.64	239	DUMMY	68.92	0	00:55			
165	DUMMY	265.72	0	00:40				24	DUMMY	296.54	0	00:35			
1655re	CHANNEL	536.77	0	00:44	5.15	0.01	0.19	240	DUMMY	151.54	0	00:45			
1665re	CHANNEL	109.13	0	00:44	4.04	0.00	0.06	241	DUMMY	463.74	0	00:48			
167	DUMMY	279.22	0	00:35				242	DUMMY	261.70	0	00:45			
169	DUMMY	151.26	0	00:50				243	DUMMY	30.65	0	01:00			
17	DUMMY	63.91	0	01:05				244	DUMMY	2851.33	0	01:24			
170	DUMMY	170.70	0	00:35				245	DUMMY	257.88	0	00:50			
173	DUMMY	86.76	0	01:10				25	DUMMY	250.58	0	00:35			
174	DUMMY	95.55	0	00:55				27	DUMMY	159.50	0	00:35			
176	DUMMY	102.33	0	01:00				28	DUMMY	755.28	0	00:43			
179	DUMMY	56.81	0	00:55				29	DUMMY	117.19	0	00:40			
18	DUMMY	40.62	0	00:50				3	DUMMY	77.00	0	00:40			
181	DUMMY	81.95	0	00:55				3015re	CHANNEL	73.47	0	01:13	3.39	0.03	0.24
184	DUMMY	36.39	0	01:10				3025re	CHANNEL	20.65	0	01:53	2.12	0.54	0.77
186	DUMMY	12.25	0	01:10				3105re	CHANNEL	83.04	0	01:19	1.65	0.16	0.59
189	DUMMY	358.32	0	00:35				32	DUMMY	22.03	0	01:20			
19	DUMMY	48.83	0	00:50				3205re	CHANNEL	12.18	0	01:16	1.74	0.02	0.19
191	DUMMY	248.70	0	00:35				3315re	CHANNEL	520.12	0	00:52	4.51	0.48	0.79
193	DUMMY	94.01	0	00:35				3325re	CHANNEL	217.36	0	00:47	4.06	0.10	0.42
195	DUMMY	43.08	0	00:50				35	DUMMY	136.71	0	00:47			
197	DUMMY	88.47	0	00:45				3505re	CHANNEL	538.08	0	01:06	2.59	0.20	0.50
198	DUMMY	24.94	0	01:10				3515re	CHANNEL	465.01	0	01:03	4.21	0.06	0.34
2	DUMMY	103.59	0	00:45				3516re	DUMMY	412.79	0	01:00			
20	DUMMY	46.78	0	00:45				3540re	CHANNEL	307.70	0	01:01	3.96	0.03	0.26
2005re	CHANNEL	1260.99	0	01:32	3.41	0.09	0.44	3545re	CHANNEL	39.70	0	01:02	2.04	0.00	0.08
201	DUMMY	14.49	0	00:50				3555re	CHANNEL	306.78	0	00:46	3.10	0.04	0.24
2015re	CHANNEL	1259.57	0	01:27	1.97	0.38	0.73	3565re	CHANNEL	208.12	0	00:46	2.13	0.03	0.22
202	DUMMY	40.15	0	00:55				36	DUMMY	100.88	0	00:35			
2035re	CHANNEL	943.97	0	01:27	2.43	0.12	0.54	37	DUMMY	170.70	0	00:35			
204	DUMMY	91.53	0	00:45				3805re	CHANNEL	80.48	0	00:41	2.48	0.03	0.21
2045re	CHANNEL	803.84	0	01:23	1.90	0.08	0.34	4005re	CHANNEL	168.99	0	00:35	11.87	0.00	0.07
2046re	CHANNEL	767.75	0	01:11	2.64	0.02	0.22	4010re	CHANNEL	161.91	0	00:39	3.95	0.01	0.16
205	DUMMY	332.21	0	01:01				4305re	CHANNEL	230.13	0	00:44	1.88	0.41	0.72
206	DUMMY	91.53	0	00:45				4315re	CHANNEL	187.79	0	00:37	2.83	0.07	0.33
2065re	CHANNEL	670.12	0	01:02	4.32	0.18	0.66	44	DUMMY	111.65	0	00:40			
2075re	CHANNEL	589.80	0	00:58	5.32	0.22	0.52	4405re	CHANNEL	986.56	0	00:43	12.98	0.01	0.07
2085re	CHANNEL	497.67	0	00:46	4.16	0.02	0.27	4415re	CHANNEL	353.79	0	00:56	4.29	0.11	0.39
209	DUMMY	115.13	0	00:35				4425re	CHANNEL	155.83	0	00:36	13.12	0.01	0.18
2095re	CHANNEL	257.84	0	00:39	3.58	0.05	0.30	4430re	CHANNEL	347.21	0	00:38	19.43	0.01	0.19
21	DUMMY	40.08	0	00:40				4435re	CHANNEL	165.83	0	00:41	12.03	0.01	0.17
210	DUMMY	217.97	0	00:40				45	DUMMY	378.72	0	00:35			
2115re	CHANNEL	240.96	0	01:10	3.78	0.00	0.20	4515re	CHANNEL	287.87	0	00:46	3.62	0.01	0.17
2117re	CHANNEL	110.74	0	01:06	3.50	0.02	0.23	46	DUMMY	468.60	0	00:35			
213	DUMMY	146.31	0	01:07				47	DUMMY	275.87	0	00:35			
214	DUMMY	37.94	0	01:10				4705re	CHANNEL	246.08	0	00:55	3.35	0.21	0.67
215	DUMMY	91.91	0	00:45				4715re	CHANNEL	182.01	0	01:02	3.79	0.60	0.83
218	DUMMY	49.42	0	00:45				48	DUMMY	115.06	0	00:35			
22	DUMMY	109.02	0	00:45				49	DUMMY	216.16	0	00:35			
2205re	CHANNEL	98.78	0	01:16	1.55	0.11	0.43	5	DUMMY	10.17	0	00:50			
221	DUMMY	114.35	0	00:55				50	DUMMY	165.76	0	00:50			

TABLE B-7
Future Condition 100-Year SWMM Input and Output

5025re	CHANNEL	205.28	0	00:56	3.45	0.33	0.68
5035re	CHANNEL	111.61	0	00:47	3.27	0.06	0.34
5115re	CHANNEL	144.59	0	00:59	3.32	0.00	0.09
5125re	CHANNEL	620.80	0	00:57	4.83	0.57	0.77
52	DUMMY	115.23	0	00:40			
53	DUMMY	42.70	0	00:40			
5315re	CHANNEL	158.16	0	00:41	2.69	0.01	0.14
54	DUMMY	277.28	0	00:35			
55	DUMMY	227.49	0	00:40			
5505re	CHANNEL	831.16	0	01:06	3.65	0.27	0.66
5515re	CHANNEL	253.51	0	00:56	19.25	0.05	0.28
5525re	CHANNEL	252.36	0	01:03	2.49	0.03	0.28
5535re	CHANNEL	291.88	0	01:00	2.76	0.04	0.28
5545re	CHANNEL	179.27	0	00:57	>50.00	0.02	0.23
5555re	CHANNEL	123.65	0	01:06	2.56	0.01	0.19
5565re	CHANNEL	84.60	0	00:58	5.35	0.00	0.11
57	DUMMY	151.92	0	00:50			
58	DUMMY	101.46	0	00:45			
59	DUMMY	189.31	0	00:40			
60	DUMMY	90.29	0	00:35			
6005re	CHANNEL	402.92	0	00:56	3.60	0.07	0.30
6015re	CHANNEL	244.41	0	00:49	2.91	0.01	0.15
61	DUMMY	40.16	0	00:35			
62	DUMMY	163.34	0	00:45			
6205re	CHANNEL	160.25	0	00:57	3.24	0.00	0.17
63	DUMMY	227.29	0	00:40			
6305re	CHANNEL	36.87	0	00:53	2.03	0.00	0.13
65	DUMMY	265.19	0	00:35			
6505re	CHANNEL	83.68	0	00:55	2.49	0.00	0.09
68	DUMMY	725.48	0	00:54			
69	DUMMY	38.86	0	00:40			
7	DUMMY	223.17	0	00:40			
70	DUMMY	55.85	0	00:50			
7015re	CHANNEL	623.03	0	00:54	3.38	0.06	0.38
7025re	CHANNEL	515.42	0	00:44	>50.00	0.00	0.10
7035re	CHANNEL	240.69	0	00:45	4.87	0.00	0.08
71	DUMMY	91.24	0	00:40			
7105re	CHANNEL	113.72	0	00:45	18.58	0.01	0.14
72	DUMMY	168.97	0	00:40			
7205re	CHANNEL	150.81	0	00:52	18.65	0.00	0.05
74	DUMMY	174.64	0	00:40			
7515re	CHANNEL	164.39	0	01:29	3.57	0.00	0.13
7525re	CHANNEL	444.68	0	00:40	4.08	0.07	0.32
7605re	CHANNEL	101.17	0	00:46	4.81	0.00	0.03
7615re	CHANNEL	136.71	0	00:47	2.03	0.01	0.18
77	DUMMY	178.55	0	00:40			
7705re	CHANNEL	372.44	0	00:37	5.03	0.00	0.11
79	DUMMY	217.22	0	00:45			
83	DUMMY	169.48	0	00:55			
86	DUMMY	184.39	0	00:40			
88	DUMMY	265.24	0	00:40			
9	DUMMY	24.18	0	01:00			
97	DUMMY	134.45	0	00:40			
99	DUMMY	190.40	0	00:45			
S-OUT	DUMMY	164.69	0	01:24			
TC-OUT	DUMMY	1428.59	0	01:28			

```
*************************
Conduit Surcharge Summary
*************************

No conduits were surcharged.


Analysis begun on:  Fri Mar 24 14:23:26 2023
Analysis ended on:  Fri Mar 24 14:23:27 2023
Total elapsed time: 00:00:01
```