Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

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DATE: February 2016

PROJECT NUMBER: 240027

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Executive Summary

The City of Alexandria, Virginia, has experienced repeated and increasingly frequent flooding events attributable to old infrastructure, inconsistent design criteria, and perhaps climate change. The purpose of the stormwater capacity analysis project is to provide a program for analyzing storm sewer capacity issues, identifying problem areas, developing and prioritizing solutions, and providing support for public outreach and education. The project is being implemented in phases by watershed. The watersheds include Hooffs Run, Four Mile Run, Holmes Run, Cameron Run, Taylor Run, Strawberry Run, Potomac River, and Backlick Run.

This technical memorandum focuses on hydrologic and hydraulic analyses of Hooffs Run watershed (Task 2 of the project). It summarizes the storm sewer system in the Hooffs Run watershed, the model development steps, data sources and gaps, model assumptions, and the results, focusing on the capacity deficiencies identified in the model. These deficiencies have been identified for further evaluation during Task 4.

The objective of this phase of the study is to identify the deficient stormwater collection system elements in Hooffs Run during a 10-year return period rainfall storm event. Results from three different design criteria alternatives developed in Task 1 were examined in the Hooffs Run watershed: the City's existing intensity-duration-frequency (IDF) curve, the updated curve using the full record of historical precipitation data (1949 to 2008), and the curve projected for the year 2100 using various climate change scenarios. In addition to the design storms, a large observed storm event (June 25–27, 2006) was examined for the Hooffs Run watershed. Results from the Hooffs Run modeling will be used to select the design criteria to be used in the future for the remaining watersheds.

The results of the hydrologic analyses show that the existing IDF design hyetograph produces the greatest amount of stormwater runoff, followed closely by the year 2100 IDF curve. The updated historical IDF curve produces the least amount of stormwater runoff. This hyetograph, although its peak intensity is significantly smaller than those of the City's existing IDF curve or the year 2100 curve, is similar to the current Virginia Department of Transportation design criteria. The existing IDF curve has been shown to be conservative and is similar to the projected year 2100 design hyetograph, but many pieces of the storm system in the City were designed before these criteria were put in place, and therefore capacity problems may exist regardless of the conservative design standards. By comparison, the June 2006 rainfall event has a peak intensity lower than all three of the 10-year, 24-hour design hyetograph alternatives analyzed in this study though, the total volume of the June 2006 event, which fell over a 48-hour period, is almost double the three design storms examined. Given the similarity in the extent of flooding produced for the Existing IDF and the June 2006 event, the Existing IDF was selected for use in problem identification and solution evaluations, and in all modeling of remaining watersheds (Rahal, 2013).

The hydraulic model predicts that a large portion of the Hooffs Run watershed system is experiencing capacity limitations. In the most conservative model results, the existing IDF scenario, 37 percent of the pipes flood the ground surface, 20 percent have a hydraulic grade line within 2 feet of the surface, and 11 percent surcharge above the crown of the pipe. Comparing the peak runoff to the estimated inlet capacity of each catchment indicates that about 40 percent of the catchments in the model may have insufficient inlet capacity. Approximately 10% of the catchments in the model do not have any inlets or catch basins, either because the systems were privately owned, drained overland, or inlets were not mapped. Given limited information on these catchments they were assumed to have sufficient capacity. Results from all four model runs are summarized in Table 1. Maps and profiles of flooding areas are presented in this technical memorandum to assist in locating problem areas and understanding the capacity limitations of the drainage system.

The June 2006 results are most similar to the existing IDF model results when the comparison is based on percent of the system that is flooded or has insufficient freeboard. However, the maximum instantaneous volume flooded at a single junction and the average volume flooded across all flooded junctions in the June

2006 storm event are greater than the volume flooded in the existing IDF model results due to the greater storm depth and longer duration of the June 2006 event.

The hydraulic modeling results presented in this memorandum should be reviewed with the understanding that several assumptions were made to fill data gaps, primarily assumptions of inverts in pipes with diameters less than 24 inches.

TABLE 1
Summary of Hydraulic Model Results for Hooffs Run (in Percent)
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Scenario	Sufficient Capacity	Surcharged	Insufficient Freeboard	Flooded	Runoff Input Points with Insufficient Inlet Capacity[a]
1. Existing IDF, existing boundary condition	32	11	20	37	41
2. Updated IDF, existing boundary condition	43	12	17	28	26
3. Year 2100 IDF, year 2100 boundary condition	36	12	19	32	32
4. June 2006 storm event, June 2006 boundary condition	31	11	17	40	38

[a]The Hooffs Run hydrologic model has 562 runoff input points with an average of 3.5 inlets/catch basins each. Percent represents percent of total count of runoff input points. Approximately 10% of the catchments in the model do not have any inlets or catch basins, either because the systems were privately owned, drained overland, or inlets were not mapped. Given the limited information available for these catchments, they were assumed to have sufficient capacity.

Project Introduction

The City of Alexandria, Virginia, has experienced repeated and increasingly frequent flooding events attributable to old infrastructure, inconsistent design criteria, and perhaps climate change. The purpose of the stormwater capacity analysis project is to provide a program for analyzing storm sewer capacity issues, identifying problem areas, developing and prioritizing solutions, and providing support for public outreach and education. The project is being implemented in phases by watershed.

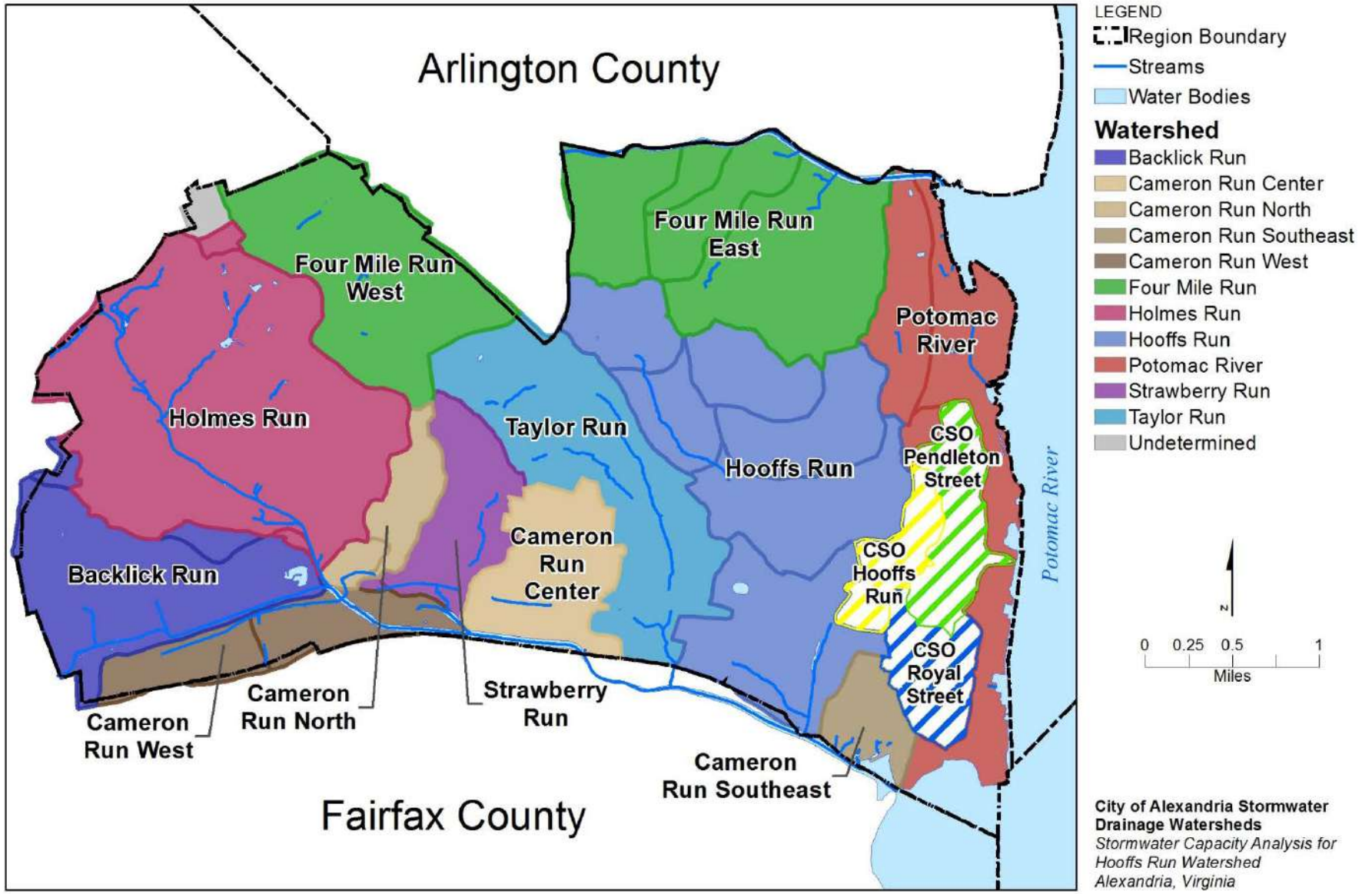
The purpose of the Task 1 was to review and propose revisions to the City's stormwater design criteria, through a series of four subtasks:

- Subtask 1.1—compare Alexandria's storm design criteria to those of neighboring jurisdictions
- Subtask 1.2—update precipitation frequency results and synthesize new intensity-duration-frequency (IDF) curves
- Subtask 1.3—review rainfall frequency and global climate change model options for study area
- Subtask 1.4—examine sea level rise potential

The purpose of Task 2, summarized in this technical memorandum, is to analyze the stormwater capacity of the City's stormwater collection system. During Task 4 the problems identified in Task 2 will be prioritized and potential solutions will be evaluated.

This technical memorandum describes the methodology and results of the stormwater capacity analysis for the stormwater collection system in the Hooffs Run watershed. Subsequent memorandums will describe the results for remaining watersheds in the City. Figure 1 presents the City's various stormwater drainage watersheds.

FIGURE 1
Stormwater Drainage Watersheds
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Task 2 Objective

The objective of this phase of the study is to identify the deficient stormwater collection system elements during a 10-year return period rainfall storm event. The Hooffs Run model was run using three different design criteria alternatives developed in Task 1: the City's existing IDF curve, the updated curve using the full historical record of precipitation data, and the curve projected using various climate change scenarios for year 2100. The model was also run for a historic storm event which occurred in June 2006. The results of these four model runs are compared in this memo in order to select a path forward for modeling the remaining watersheds.

The stormwater collection system elements include the following:

- Closed conduits, such as gravity mains (storm drains) and culverts
- Open channels, such as streams and trapezoidal channels that connect two pipe systems
- Drainage inlets and junctions, such as roadside curb inlets, manholes, catch basins, and ponds
- Flow-regulating structures, such as weirs, orifices, and tide gates (if any)

Description of Existing Stormwater Collection System

The City maintains a geodatabase of all stormwater system collection system elements, including conduits and drainage junction points. The City provided CH2M HILL with a checked-out copy of the Hooffs Run geodatabase to use as the basis of the stormwater collection system model. The data were thoroughly reviewed and updated with new survey data collected during Task 3, a Field Survey and Condition Assessment Task, and, in some locations, information available on the City's plan and as-built drawings to improve data quality and system connectivity in order to make the database more suitable for modeling tasks. This updated database was returned to the City for incorporation into the City-wide stormwater collection system geodatabase. The updated stormwater collection system in the Hooffs Run watershed contains the following elements:

- 208,824 linear feet of gravity mains (storm drains) represented by 3,068 pipes. Pipe diameter/height varies from 6 to 180 inches for circular, rectangular, elliptical, and arch pipes.
- 3,496 drainage junction points:
  - 316 catch basins
  - 32 culvert points
  - 1,739 drainage inlets
  - 890 manholes
  - 432 nodes (blind connections)
  - 81 pipe inlet/outlets
  - 4 control devices
  - 3 storage basins (stormwater ponds)

In addition to the structures represented in the stormwater collection system geodatabase, a network of natural streams and open channels convey storm flows in the City's drainage network. Streams in the Hooffs Run watershed include Timber Branch, Hooffs Run, and Old Cameron Run. These streams are documented separately in the City's GIS data in a stream layer.

The Hooffs Run watershed is split into six subwatersheds. The northernmost subwatershed was analyzed in a pilot study and is referred to as the "pilot subwatershed" or subwatershed 6. Results of the analysis of the pilot subwatershed were presented in *Stormwater Capacity Analysis for Hooff's Run Pilot Area, City of Alexandria, Virginia* (CH2M HILL, 2009d); however, because of updates to the model and available data, those results are superseded by the results in this document. Methods and results from the analysis of all six subwatersheds, including updated results for the pilot subwatershed, are presented in the following sections.

Public/Private and Disconnected Drainage Systems

During the pilot subwatershed analysis in Hooffs Run, it was learned that some structures included in the City's geodatabase are privately owned. City personnel directed that the hydraulic analyses and identification of capacity limitations include only the public facilities. An approach was developed for identifying the privately owned structures to be eliminated from the model, as documented in the meeting minutes presented in Attachment A. Because the model had already been constructed, the private structures were not eliminated from the pilot subwatershed model; however, private structures were eliminated from the remaining subwatersheds in Hooffs Run and will be removed from watersheds moving forward.

Modeled and Analyzed System

After reviewing and updating data in the City's geodatabase, the database was returned to the City and a copy of that geodatabase was used as the starting point for the hydraulic model. At the direction of the City, private systems were removed from the modeled system. Despite survey and review of available drawings and documents, small isolated systems remained in the database. These systems were identified and removed from the model database due to lack of accurate information.

The remaining structures were included in the hydraulic model. However, the scope includes only an analysis of approximately 20 percent of the inlets, so flow was frequently loaded downstream of the most upstream pipe. Therefore approximately 1,300 pipes with diameters of 6 to 24 inches and about seven pipes with diameters of 30 to 48 inches in the upstream-most portions of the system were effectively eliminated from the analysis. The seven pipes over 2 feet in diameter are either detention structures or large pipes draining private property. Flow was input downstream of these large-diameter pipes. Only results pertaining to the analyzed system are included in this report. The analyzed system contains the following elements:

- 141,185 linear feet of gravity mains (storm drains) represented by 1,540 pipes.[1] Pipe diameter/height varies from 8 to 78 inches for circular, rectangular, elliptical, and arch pipes.
- 1,555 drainage junction points:
  - 112 catch basins
  - 17 culvert points
  - 488 drainage inlets
  - 636 manholes
  - 276 nodes (blind connections)
  - 24 pipe inlet/outlets
  - 1 control device
  - 1 storage basin (stormwater pond)
- Seven open channel segments:
  - Timber Branch from Valley Drive north of Braddock Road to Timber Branch Parkway at West Glendale Avenue
  - Hooffs Run from East Maple Street to East Linden Street
  - Hooffs Run from the Hooffs Culvert outfall at Duke Street to approximately 150 feet downstream (south)[2]

[1] Five pipe segments are double barrels represented by a single pipe segment in the model; therefore only 1,535 unique pipes are analyzed in the model and presented in the results.

[2] A limited portion of the Hooffs Run stream below the culvert was included to evaluate the total flow discharged by the double-barrel culvert. The stream below the culverts was not evaluated in this project.

- Old Cameron Run from Mill Race Lane to Andrews Lane[3]
- Stream segment behind St. Stephen's & St. Agnes School from Fontaine Street to Russell Road
- Ditch in Alexandria National Cemetery from Roundhouse Lane to Jamieson Avenue

Figure 2 is a geographic schematic of the stormwater collection system in the Hooffs Run watershed.

[3] A limited portion of Old Cameron Run was modeled where it connected the piped drainage network. The stream below the culvert under Andrews Lane was not evaluated in this project.

FIGURE 2
Existing Stormwater Collection System, Pilot Watershed
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Legend

- DCatchBasin
- DControlDevice
- DCulvertPoint
- DInlet
- DManhole
- DNode
- DPipeIO
- DStorageBasin
- DGravityMain
- Hooffs Run Subwatersheds
- Modeled Open Channels
- Streams
- Roads

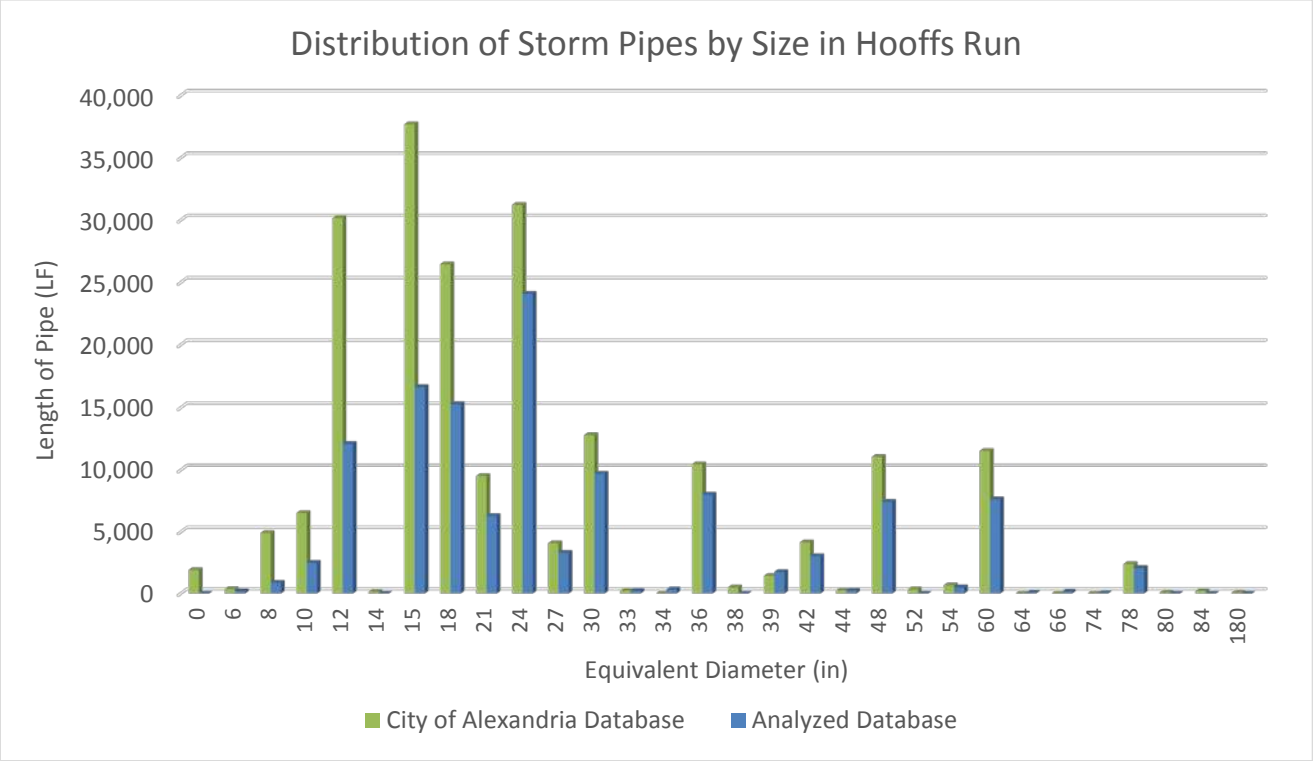
Hooffs Run Watershed Stormwater Collection System
Stormwater Capacity Analysis for Hooffs Run Watershed, Alexandria, Virginia

0 2,000 4,000
Feet

CH2MHILL

The distribution of storm drains in the City's Hooffs Run geodatabase and the storm drains analyzed in the Hooffs Run model by size is presented in Figure 3.

FIGURE 3
Distribution of Storm Drains by Size
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Data Gaps

The available physical data for the storm drains in the Hooffs Run watershed were evaluated for quality and completeness. Initial review of the Hooffs Run data compared to a pilot survey effort of about 90 manholes revealed that the data's quality was not sufficient for the modeling tasks. The scope of Task 3, which was originally dedicated to surveying problem areas, was expanded to include surveying most structures on pipes with diameters/heights greater than or equal to 24 inches. While some points in the pilot subwatershed were surveyed, not all pipes over 24 inches were included in the expanded survey effort. Although the increased scope of Task 3 provided quality data for large pipes, about 50 percent of the total linear footage of pipes in the modeled Hooffs Run watershed database, which does not include private or disconnected structures, are less than 24 inches in size (including pipes with unknown diameter); therefore many data gaps remained to be filled. It was found that 40 percent of the drainage inlets had no depth-to-invert data available. In addition, depth to invert is not available for any of the drainage nodes (DNode) because they are blind connections with no access manhole. Table 2 summarizes the missing data in Hooffs Run watershed. Attachment B details the available and missing data and the assumptions used to fill those gaps.

The following approaches were adopted to fill in the missing data:

- Missing data were inferred from the available data, if applicable. For example, a missing pipe size was assumed to equal the downstream pipe diameter.
- Pipe diameters at the most-upstream inlets were assumed to be 12 inches.
- A 6-inch-depth to crown was assumed for the most upstream inlets and DNodes.
- Interior point feature invert elevations were estimated by assuming that pipe slope is constant.

- Limited data available in the GIS for ponds and the outlet control structures were supplemented with data from as-built plans.

In addition to filling in missing data, CH2M HILL reviewed the data for quality and validity. Assumptions were made when the available data were not reasonable (e.g., a pipe crown was above the rim of a manhole). Additional information regarding the types of assumptions made to complete the hydraulic model is provided in Attachment B. These approaches will be applied to fill data gaps and resolve unreasonable data in the GIS data for the remaining watershed areas, except where field survey data are available.

TABLE 2
Available and Missing Physical Data for Hooffs Run Watershed Storm Drains and Junctions
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

			Structures			
Layer	**Feature Type**	**Type of Drainage Structure**	**Total**	**Missing Data**	**% Missing Data**	**Type of Missing Data**
DCatchBasin	Point	Catch basin	299	12	4	Rim elevation, depth to invert
DControlDevice	Point	Storage outlet control device	1	1	100	Outlet elevation, size, type
DCulvertPoint	Point	Interface between culvert and open conduit	17	17	100	Rim elevation, depth to invert
DInlet	Point	Curb/yard inlet	1,437	576	40	Rim elevation, depth to invert
DManhole	Point	Manhole	734	38	5	Rim elevation, depth to invert
DNode	Point	Blind pipe intersection	348	348	100	Rim elevation, depth to invert
DPipeIO	Point	Inlet or outlet for pipes	35	14	40	Rim elevation, depth to invert
DStorageBasin	Point	Storage basin	1	1	100	Stage storage discharge curve
DGravityMain	Polyline	Closed conduits	2,856	1,400	49	US/DS depth to invert, diameter, shape, material, length

Note:

Total count of structures includes all structures in the model, empty and analyzed. Does not include private or disconnected structures. US, upstream; DS, downstream.

Modeling Approach

The Hooffs Run watershed was analyzed using commercially available and public domain computer models that are widely used and industry accepted. The public domain software ArcHydro Tools (version 1.4) and HEC-GeoHMS (version 5.0)[4] were used to aid in the delineation of subwatersheds and to estimate hydrologic parameters, such as drainage areas, basin slope, and basin width. Other hydrologic parameters, including catchment width and percent impervious area, were estimated in ArcGIS after the catchment delineation was completed. The widely used and industry-accepted private domain stormwater management software xpswmm (version 2011 SP1a) was used to simulate natural rainfall-runoff processes and the performance of the stormwater collection system.

[4] ArcHydro and HEC-GeoHMS tools have been updated to be compatible with ArcGIS version 10.0 since the development of the Hooffs Run hydrologic model. Updated tools will be used in future watershed models.

The City provided the following required data:

- HooffsRun_Dsewer_CH2MHill_1122211.gdb, a checked-out copy of the Hooffs Run geodatabase of the stormwater collection system
- Spring 2008 DVD, City GIS data (shapefiles and orthophotography) such as topographic data and land use[5]
- Spring 2011 DVD, City GIS data (geodatabase and orthophotography) such as topographic data and land use
- Cameron Run HEC-RAS Model, a U.S. Army Corps of Engineers (USACE) model of the Cameron Run watershed, documented in *Hydrologic and Hydraulic Analysis for the Cameron Run Watershed in Northern Virginia, Final Report* (USACE, 2007)

The following sections describe the hydrologic and hydraulic modeling for the Hooffs Run watershed.

Hydrologic Modeling

The hydrologic modeling required two major types of inputs:

- **Hydrologic parameters:** Delineation of subwatersheds and computation of hydrologic parameters such as drainage areas, basin slope, basin width, percent impervious, and infiltration inputs for each subwatershed
- Rainfall inputs:
  - Design hyetographs—determination of 24 hours of synthetic rainfall distribution for the 10-year design storm event
  - June 2006 rainfall data—selection of representative rainfall data collected during the June 25–27, 2006, storm event

Hydrologic Parameters

Hydrologic parameters were estimated using ArcHydro Tools and HEC-GeoHMS.

ArcHydro Tools is a set of public domain utilities developed jointly by the Center for Research in Water Resources, of the University of Texas at Austin (http://www.crwr.utexas.edu), and the Environmental Systems Research Institute, Inc. (ESRI). These tools provide functionalities for terrain processing, watershed delineation, and attribute management. They operate on top of the ArcHydro data model in the ArcGIS environments. The model uses the digital elevation model (DEM) for the subject watershed to compute the hydrologic parameters and delineate catchments. The “burning in” technique allows the user to impose the drainage system on the terrain to better produce the catchment boundaries.

HEC-GeoHMS is geospatial hydrologic modeling software developed and maintained by the USACE’s Hydrologic Engineering Center (HEC). The model allows users to visualize spatial information, perform spatial analysis, delineate subbasins, and estimate watershed hydrologic parameters (USACE, 2003).

In this study, 2-foot contour data provided by the City were used to create a DEM of the Hooffs Run watershed. ArcHydro Tools was used to delineate the catchments (also referred to as subbasins in ArcHydro Tools). HEC-GeoHMS was used to compute hydrologic parameters such as drainage area, slope, and longest flow path for each catchment. Width was derived using the catchment drainage area and longest flow path using the equation width = (area/longest flow path). Percent impervious was estimated in ArcGIS using the delineated catchments and impervious shapefiles provided by the City, which included roads, driveways, parking lots, and sidewalks.

[5] The Hooffs Run hydrologic model was developed using impervious information generated from the 2008 dataset provided by the City. Updated 2011 data were not available at the time the model was developed.

Updated subwatershed and watershed boundaries were developed using the catchment layer developed during the modeling process and returned to the City. Schematics of the hydrologic model for each subwatershed are presented in Attachment C. The schematics show the catchment ID, delineated boundaries, and longest flow path for each catchment as well as the DEM of the Hooffs Run watershed. The elevation varies from 2 to 204 feet NAVD 1988. The hydrologic parameters for each subwatershed are also presented in Attachment C. The following are the major drainage characteristics for the Hooffs Run watershed, based on the hydrologic model:

- Total drainage area is 2.58 square miles (1,650 acres)
- Area divided into 650 catchments[6]
- 44.10 percent of the drainage area is impervious
- Average catchment area is 2.53 acres
- Average catchment slope is 0.06 feet/foot
- Average catchment width is 156 feet

Rainfall Inputs

The Hooffs Run watershed model was analyzed using four different rainfall inputs: three design storms and one historic rainfall event. These four rainfall inputs are summarized in Table 3 and described in greater detail in the following section.

TABLE 3
Summary of Hooffs Run Watershed Model Rainfall Inputs
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Hyetograph/Rainfall Input	Total Volume (in.)	Peak Intensity (in./hr)
Existing IDF: 10-year, 24-hour design storm	5.04	5.9
Updated IDF: 10-year, 24-hour design storm	4.81	4.84
Year 2100 IDF: 10-year, 24-hour design storm	5.39	5.2
June 2006 storm event data from Taylor Run rain gauge	9.24	4.6

Design Hyetographs

Results of an evaluation of hyetograph generation and hydrologic analysis (runoff generation) methods detailed elsewhere (Attachment D) are used here. Twenty-four-hour synthetic rainfall distributions for the 10-year design storm event were developed using rainfall data from these three sources:

- The existing IDF curve for 10-year return period for the City, which is based on a limited period of record (1941–1969) (CH2M HILL, 2009a) (existing IDF curve)
- The L-moment analysis for 10-year return period for the City, which is an update of the IDF curve based on all available historical data (1948–2008) (CH2M HILL, 2009a) (updated IDF curve)
- Projected precipitation intensities for the year 2100, based on the ensemble average of five global change models and three greenhouse gas emission scenarios (CH2M HILL, 2011) (year 2100 IDF curve)

Existing IDF Curve

The existing 10-year, 24-hour design hyetograph was developed from the 10-year existing IDF curve presented in Figure 3 of *Updated Precipitation Frequency Results and Synthesis of New IDF Curves for the City of Alexandria, Virginia* (CH2M HILL, 2009a). A variable time step approach was used to generate the design

[6] Since streams were not the focus of this study, a total of 35 catchments which drain directly to the stream (or to private systems which drain directly to the stream) below the publicly owned closed conduit system were not modeled. A total of 615 catchments were modeled.

hyetograph. The design hyetograph data presented in Attachment E were developed to yield maximum rainfall intensity approximately at the center of the 24-hour storm. The 24-hour rainfall total is 5.04 inches, and the peak intensity is 5.9 in./hr. The existing IDF design hyetograph is presented in Figure 4.

Updated Historical IDF Curve

The 10-year, 24-hour updated IDF design hyetograph was developed from the 10-year L-Moment curve presented in Figure 3 of *Updated Precipitation Frequency Results and Synthesis of New IDF Curves for the City of Alexandria, Virginia* (CH2M HILL, 2009a). Since a variable time interval approach was used to generate the design hyetograph, only those values presented in Tables 6 and Table 8 of that memo were used. The design hyetograph, as presented in Attachment E, was developed to yield maximum rainfall intensity approximately at the center of the 24-hour storm. The 24-hour rainfall total is 4.81 inches, and the peak intensity is 4.84 in./hr. The updated historical IDF design hyetograph is presented in Figure 4.

Year 2100 IDF Curve

The projected 2100 10-year, 24-hour design hyetograph was based on the projected precipitation intensities for the year 2100 using the data presented in Table 4 of *Rainfall Frequency and Global Change Model Options for the City of Alexandria* (CH2M HILL, 2011). For the 10-year return period, the existing Alexandria IDF curve is higher than the projected 2100 curve for all durations below 12 hours (CH2M HILL, 2011). A variable time interval approach was used to generate the design hyetograph. The design hyetograph, as presented in Attachment E, was developed to yield maximum rainfall intensity approximately at the center of the 24-hour storm. The 24-hour rainfall total is 5.39 inches and the peak intensity is 5.2 in./hr. The year 2100 IDF design hyetograph is presented in Figure 4.

June 2006 Storm Event

The City requested that an additional, historic rainfall event be analyzed in order to provide a point of reference for updating the City's design criteria. The event used occurred June 25–27, 2006, over approximately 48 hours and varied between a 7-year and over a 100-year storm event depending on the duration. Rainfall data from the June 2006 storm event were collected from six gauges in and near Alexandria. The data were compared to evaluate the spatial variation in the storm, and ultimately, data from a temporary rain gauge in the Taylor Run watershed were selected as the best representation of the rainfall experienced throughout the City. This rain gauge was located on the roof of Douglas MacArthur Elementary School, on Janneys Lane, as part of a temporary metering project performed by the City. A total of 9.24 inches of rain fell between 5:00 am on the June 25 and 5:00 am on the June 27, with a peak 15-minute intensity of 4.6 in./hr. Figure 4 provides the rainfall time series for the June 2006 rain gauge in Taylor Run, and Figure 5 provides a plot of maximum rainfall volume by duration, as compared to City of Alexandria IDF curves.

FIGURE 4
Hooffs Run Watershed Model Rainfall Inputs
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

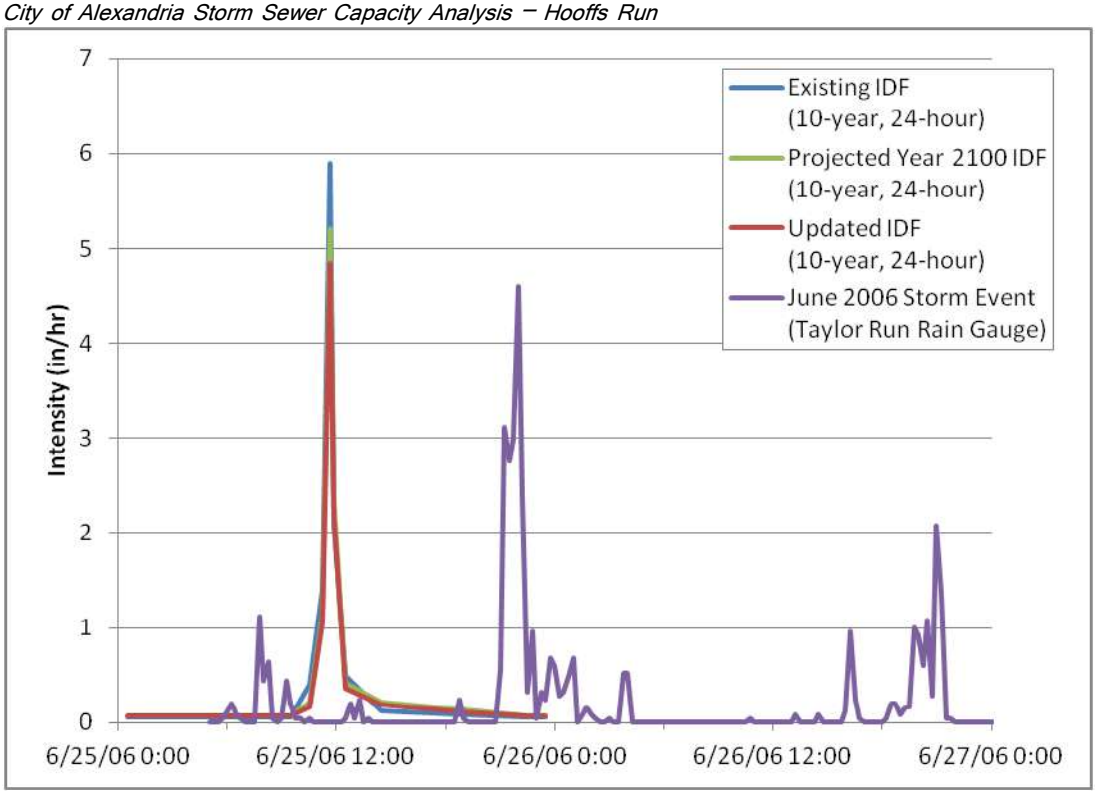
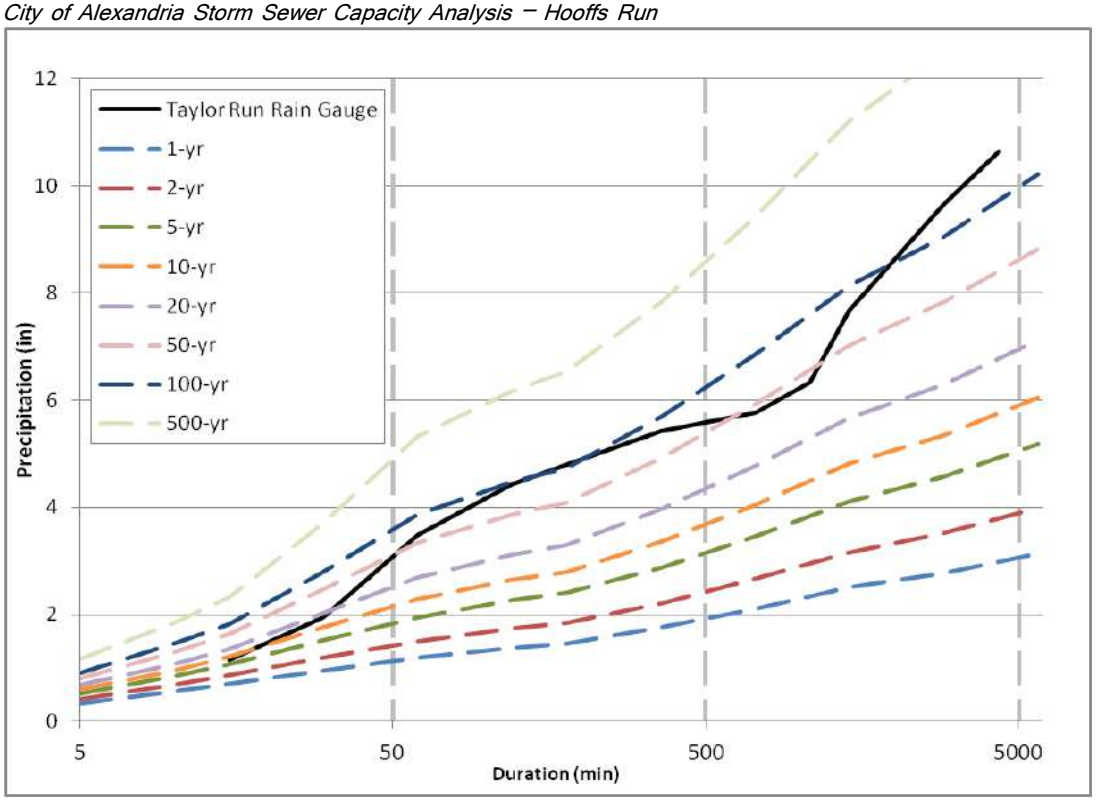


FIGURE 5
Measured June 2006 Storm vs. Updated Historical IDF Curves
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Simulation of Stormwater Runoff

The xpswmm model was used to simulate natural rainfall-runoff processes. The hydrologic parameters (including area, slope, width, percent impervious, and infiltration data) for 615 catchments listed in Attachment C were used as input to the RUNOFF module of xpswmm. The three design hyetographs for 10-year return period and rain gauge data from the June 2006 storm event were also used as input. The U.S. Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) Runoff Non-linear Reservoir Method was used to simulate the stormwater runoff from each subwatershed in response to each of the hyetographs.

Hydraulic Modeling

The Hooffs Run watershed was analyzed using xpswmm. The core simulation engine of this model is based on EPA's SWMM. The xpswmm model was used to simulate the hydraulic performance of the stormwater collection system during three 10-year return period design storm events and the June 2006 storm event. Model input data included the following physical data:

- Junctions (inlet, manhole, nodes, etc.), such as invert and rim elevations and inlet capacity
- Closed and open conduits (e.g., pipes and streams) such as invert elevations, size, shape, material, and length
- Stormwater storage ponds, such as stage-storage relationships
- Control devices (orifices, weirs, etc.)

The physical data for the stormwater collection system were primarily imported into the model from the geodatabase provided by the City. This geodatabase was updated with survey data for most publicly owned pipes with diameters/heights greater than or equal to 24 inches and the structures (manholes, inlets, etc.) attached to them. Private structures were not modeled, so any runoff from private property was applied to the next downstream public structure. All elevations (invert and rim) recorded in the geodatabase of the stormwater collection system are in NAVD 88 datum; therefore the xpswmm model was built in NAVD 88.

Open channels were added to the model using data from several sources. The Hooffs Run watershed includes three streams: Hooffs Run, Timber Branch, and Old Cameron Run. The alignment of natural stream segments was imported into the xpswmm model using the streams layer from the City's Spring 2011 DVD. Where available, cross sections for the stream were extracted from the USACE Cameron Run HEC-RAS model, provided to CH2M HILL by the City. All elevation data in the USACE model are in NGVD 29, and therefore a conversion was required before importing cross-sectional data into xpswmm. Conversion factors were determined for each stream using the free and publicly available VERTCON program provided by the National Geodetic Survey. Additional open channels near the St. Stephen's & St. Agnes School and in the Alexandria National Cemetery were digitized using aerial photography and cross sections assumed using topographic data.

The primary objective of the hydraulic modeling was to analyze pipe capacities. Hydrographs from the RUNOFF module were entered directly into the underground storm sewer system. This approach does not model the flow restrictions caused by the surface inlets. Due to modeling software and data limitations, inlet capacity cannot be readily modeled in xpswmm and is instead being evaluated in a separate spreadsheet. The details of the model limitations encountered during this study and the external spreadsheet evaluation are provided in *Inlet Capacity Analysis for City of Alexandria Storm Sewer Capacity Analysis* (CH2M HILL, 2012).

Four scenarios were evaluated in the hydraulic model. The scenarios were defined by the rainfall hyetographs and downstream boundary conditions. The four design hyetographs are described in detail in the hydrologic modeling section. Three tidal boundary condition input options were evaluated:

- A typical current tidal condition, averaging 6 months of tidal data (February–July 2012) from the Hains Point tidal gauge (station 8594900)
  - Mean higher high water = 2.02
  - Mean high water = 1.83
  - Mean low water = -0.96
  - Mean Lower Low Water = -1.15
- A projected 2100 tidal cycle, elevating the current tidal cycle by 2.03 feet based on the sea level rise evaluation results documented in *Sea Level Rise Potential for the City of Alexandria, Virginia CH2M HILL 2009c*
- Measured sea level data for the June 2006 storm event, at the Hains Point tidal gauge (station 8594900)

Table 4 summarizes the parameters used for each scenario.

TABLE 4
Modeling Scenarios
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Scenario	Rainfall Event	Tidal Condition
1	Existing 10-year, 24-hour IDF	typical current tide
2	Updated 10-year, 24-hour IDF	typical current tide
3	Year 2100 10-year, 24-hour design storm	year 2100 tide
4	June 2006 storm event	measured June 2006 tide

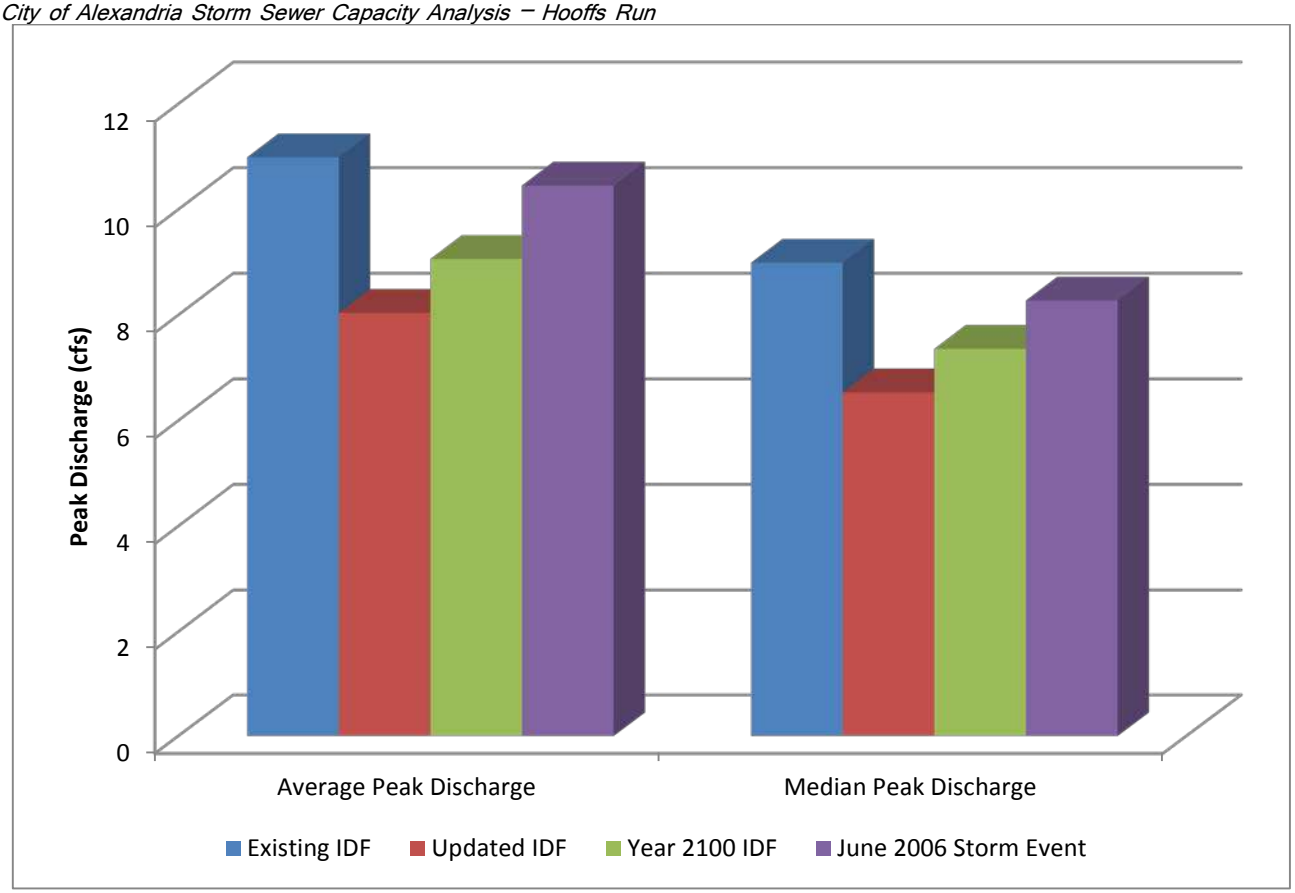
Model Results

Model results for all four scenarios are summarized in the following section and detailed in Attachments G, H, I, and J.

Hydrologic Model Results

Peak discharge for each point where overland flow was loaded into the hydraulic model is provided in Attachment F. Figure 6 shows the distribution of average and median peak discharges of all modeled catchments among the four model scenarios. Total runoff volume and peak discharge are dictated by the total rainfall volume and peak intensity of the rainfall; therefore Scenario 1, the existing IDF, produced the greatest volume of runoff and largest peak intensity, compared to the updated IDF and projected year 2100 design storms. The peak discharges from the June 2006 storm event, which has the lowest 15-minute peak rainfall intensity, are lower than those generated by the existing IDF and the projected year 2100 IDF design curves for the majority of the catchments; however, the storm peak lasted for a longer period of time, and therefore in some catchments the June 2006 peak is higher than the design storms'. The average peak discharge of all catchments for the June 2006 storm event is about equal to the average peak discharge of all catchments produced by the updated IDF. Maximum peak discharges vary by catchment based on area, percent impervious, and slope. The maximum instantaneous peak discharge for a single catchment during the June 2006 storm is 77 cubic feet per second (cfs), compared to 91 cfs for the existing IDF, and 91 cfs and 78 cfs for the updated IDF and year 2100 events, respectively.

FIGURE 6
Summary of Peak Discharge Results for the Hooffs Run Watershed
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Inlet Capacity Results

Inlet capacity was evaluated outside xpswmm due to limitations in the modeling software's capabilities. Details on the evaluation of the options for modeling inlet capacity are provided in *Inlet Capacity Analysis for City of Alexandria Storm Sewer Capacity Analysis* (CH2M HILL, 2012), which was provided to the City in September 2012. The spreadsheet evaluation multiplies the maximum capacity of a single inlet, estimated to be 3.25 cfs based on an assumed standard gutter spread and road cross-section, by the total number of catch basins and inlets draining to a single runoff input point, the location where overland flow was plugged into the hydraulic model. The model has flow loaded into 562 locations with an average of 3.5 inlets per runoff input point. The estimated capacity for each load point was compared to the peak runoff generated in the RUNOFF module of xpswmm to determine whether the catchment has sufficient inlet capacity. Results suggest that about 40 percent of the model load points, representing about 55 percent of the Hooffs Run drainage area, may be experiencing inlet capacity limitations.

The total inlets and catch basins count is based on the City's GIS data for Hooffs Run, including all available private and disconnected inlets and catch basins. Private structures are not always included in survey efforts; therefore many private inlets and catch basins may not be accounted for in the City's geodatabase, which would effectively undervalue the City's available inlet capacity in this analysis. Approximately 10% of the catchments in the model do not have any inlets or catch basins, either because the systems were privately owned, drained overland, or inlets were not mapped. Given limited information on these catchments they were assumed to have sufficient capacity. Inlet capacity results are summarized for all four scenarios in Table 5 and presented in full in Attachment F.

TABLE 5
Inlet Capacity Results Summary
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

	Count[a]		Drainage Area (Acres)[b]	
Scenario	**Insufficient Capacity**	**Percent of Total**	**Insufficient Capacity**	**Percent of Total**
1. Existing IDF, existing boundary condition	232	41	849	56
2. Updated IDF, existing boundary condition	147	26	584	39
3. Year 2100 IDF, year 2100 boundary condition	178	32	680	45
4. June 2006 storm event, June 2006 boundary condition	214	38	815	54

[a] Total number of model load points is 562; a model load point may collect flow from one to five catchments.

[b] Total drainage area is 1,514 acres.

Hydraulic Model Results

Model results for the pipes and stream segments are summarized in the following sections. Detailed results are presented in Attachments G–J.

Pipe Capacity

The conveyance capacity of the existing stormwater collection system during the storm events listed above was evaluated based on three evaluation criteria:

- If the hydraulic grade line (HGL) rose above the ground surface, the structure was considered flooded.
- If the HGL rose above the crown of the pipe to within 2 feet of the ground surface, the structure was considered to have insufficient freeboard.
- If the HGL rose above the crown of the pipe, but not within 2 feet of the ground surface, the structure was considered surcharged.

Pipes were evaluated for these conditions on the upstream and downstream ends and categorized based on the least desirable condition, flooding being the least desirable.

Results are summarized in Table 6 for the Existing IDF, Updated IDF, Year 2100 Design Storm, and the June 2006 Storm Event Scenarios. The results indicate a range of 28 to 40 percent of the system is flooded above the ground surface and a range of 31 to 43 percent of the system has sufficient capacity. The results are further broken down by pipe size in Table 7.

TABLE 6
Summary of Hydraulic Model Results for Hooffs Run
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

	Percent of Total Length of Pipe			
Scenario	**Sufficient Capacity**	**Surcharged**	**Insufficient Freeboard**	**Flooded**
1. Existing IDF, existing boundary condition	32	11	20	37
2. Updated IDF, existing boundary condition	43	12	17	28
3. Year 2100 IDF, year 2100 boundary condition	36	12	19	32
4. June 2006 storm event, June 2006 boundary condition	31	11	17	40

Existing IDF model results indicate that the existing IDF design storm is the most conservative design criterion, showing a greater percentage of the system as limited in capacity when compared to the updated IDF and year 2100 results. The existing IDF model generates the results that are most similar to the June 2006 model in terms of percent of system flooded and percent of system with insufficient freeboard. While the existing IDF results and the June 2006 event appear similar in terms of percent of system above capacity, it is important to note that the total volume flooded, as shown in Table 8, during the June 2006 simulation is almost twice as large as the volume flooded during the existing IDF simulation, due to the longer storm duration and longer duration of the high peak flow in June 2006. Given the similarity in the extent of flooding produced for the Existing IDF and the June 2006 event, the Existing IDF was selected for use in problem identification and solution evaluations, and in all modeling of remaining watersheds (Rahal, 2013).

As expected, the updated IDF scenario produces the least conservative results, showing about 31.5 percent of the system to have sufficient capacity. While differences in the extent of capacity limitation exist among the four scenarios, large portions of the system consistently appear to be under capacity in all four scenario model results.

Plan views of the Hooffs Run watershed for each of the four scenarios showing the model results for analyzed pipes are presented in Figures 7 through 10. Detailed results for each of the 10-year, 24-hour design storm scenarios, including tabular results and profiles by subwatershed, are presented in Attachments G–J. Tables include results for all pipes which are experiencing a capacity limitation. Pipes which were not analyzed or were found to have sufficient capacity were not included in the tabular reports. Profiles, numbered 1 to 35, are provided for selected pipe segments throughout the model as labeled on the map provided in Attachments G–J.

According to all four scenario models, Hooffs Run is severely limited in capacity in a few key locations: Commonwealth Avenue south of Braddock Road, E. Monroe Avenue, and the intersection of Braddock Road and West Street. Example profiles for the two bounding scenarios, the existing IDF and the updated IDF, are shown for these three locations in Figures 11 through 16. Based on information provided by the City, these are areas which are known to have capacity limitations.

The example profiles display the following:

- Vertical cross-sectional view of the conduits, including the inverts and crowns
- Water surface elevation in the conduit (i.e., HGL)
- HGL in junctions such as manholes, inlets, and nodes
- HGL above the conduit crown (surcharged conditions)
- HGL above the ground (flooding)

There are significant capacity limitations along Commonwealth Avenue south of Braddock Road (Profile 17 in Figures 11 and 12) upstream of the transition from a single barrel to the double-barrel Hooffs Run culvert.

The deficient capacity in the single barrel results in flooding in several reaches upstream (Profiles 18–29). Resolution of this limitation could significantly improve conditions well upstream of this area. East Monroe Avenue (Profile 23 in Figures 13 and 14) is one such location, which experiences flooding from Commonwealth Avenue to Mt. Vernon Avenue. Flooding on E. Monroe Avenue between Commonwealth Avenue and Wayne Street appears to be primarily due to backwater caused by the capacity limitation in the culvert, while short segments of reduced-diameter pipes exacerbate the problem between Wayne Street and Mt. Vernon Avenue, as noted in the profiles.

Braddock Road and West Street (Profile 14 in Figures 15 and 16) is an additional area that was noted as having severe capacity limitations that were not necessarily a result of the limitations along Commonwealth Avenue. The limitation at Braddock Road and West Street appears to be significantly influenced by short segments of reduced pipe sizes, as noted in the profile.

TABLE 7

Hooffs Run Watershed Model Results, Summarized by Pipe Size

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

		Sufficient Capacity			Surcharged			Insufficient Freeboard			Flooded		
Scenario	**Equivalent Pipe Diameter (ft)**	**Count**	**Length (LF)**	**Percent of Total Length**	**Count**	**Length (LF)**	**Percent of Total Length**	**Count**	**Length (LF)**	**Percent of Total Length**	**Count**	**Length (LF)**	**Percent of Total Length**
1. Existing IDF, existing boundary condition	Less than 2.0	186	14,593	10	68	5,204	4	172	12,615	9	380	24,785	18
	2.0 to 2.75	91	11,227	8	50	5,436	4	76	9,103	6	164	18,301	13
	3.0 to 4.9	70	9,075	6	35	3,487	2	41	4,565	3	27	3,171	2
	5.0 to 13.2	68	9,276	7	18	1,612	1	20	1,704	1	69	5,941	4
	Total	**415**	**44,171**	**32**	**171**	**15,738**	**11**	**309**	**27,988**	**20**	**640**	**52,198**	**37**
2. Updated IDF, existing boundary condition	Less than 2.0	282	21,082	15	79	5,878	4	167	11,702	8	277	18,426	13
	2.0 to 2.75	127	15,039	11	50	6,317	5	72	7,825	6	131	14,736	11
	3.0 to 4.9	83	10,177	7	33	3,757	3	33	3,541	3	26	3,082	2
	5.0 to 13.2	105	13,993	10	12	752	1	4	200	0	54	3,588	3
	Total	**597**	**60,292**	**43**	**174**	**16,703**	**12**	**276**	**23,268**	**17**	**488**	**39,831**	**28**
3. Year 2100 IDF, year 2100 boundary condition	Less than 2.0	231	17,500	12	76	5,925	4	171	12,682	9	328	21,090	15
	2.0 to 2.75	107	13,021	9	48	5,204	4	89	10,322	7	137	15,521	11
	3.0 to 4.9	78	9,840	7	34	3,833	3	36	3,651	3	25	2,972	2
	5.0 to 13.2	77	10,295	7	22	1,911	1	11	611	0	65	5,717	4
	Total	**493**	**50,657**	**36**	**180**	**16,872**	**12**	**307**	**27,266**	**19**	**555**	**45,300**	**32**
4. June 2006 storm event, June 2006 boundary condition	Less than 2.0	187	14,781	11	64	5,494	4	165	11,226	8	390	25,697	18
	2.0 to 2.75	90	11,318	8	44	4,820	3	74	7,852	6	173	20,078	14
	3.0 to 4.9	72	9,328	7	32	3,831	3	39	3,565	3	30	3,572	3
	5.0 to 13.2	61	7,934	6	18	1,906	1	21	1,641	1	75	7,053	5
	Total	**410**	**43,361**	**31**	**158**	**16,050**	**11**	**299**	**24,283**	**17**	**668**	**56,400**	**40**

Note: Table does not include pipes upstream of hydrologic load points in the model

Results are based on results at upstream end of pipe

ft = feet

LF = linear feet

TABLE 8
Hooffs Run Watershed Model Results, Summary by Capacity
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Scenario	Capacity	Conduit Count	Conduit Length (LF)	Percent of Total Length	Duration (hr)				Volume (ft^3)[a]			
					Max.	Min.	Avg.	Total	Max.	Min.	Avg.	Total
1. Existing IDF, existing boundary condition	Sufficient capacity	415	44,171	32	-	-	-	-	-	-	-	-
	Surcharged[b]	171	15,738	11	55.3	0.1	2.0	2,119	-	-	-	-
	Insufficient freeboard	309	27,988	20	-	-	-	-	-	-	-	-
	Flooded	640	52,198	37	15.3	0.0	1.5	992	260,841	0.2	8,254	5,282,357
2. Updated IDF, existing boundary condition	Sufficient capacity	597	60,292	43	-	-	-	-	-	-	-	-
	Surcharged[b]	174	16,703	12	55.4	0.1	1.7	1,507	-	-	-	-
	Insufficient freeboard	276	23,268	17	-	-	-	-	-	-	-	-
	Flooded	488	39,831	28	12.8	0.0	1.3	655	88,004	0.7	5,879	2,868,845
3. Year 2100 IDF, year 2100 boundary condition	Sufficient capacity	493	50,657	36	-	-	-	-	-	-	-	-
	Surcharged[b]	180	16,872	12	55.4	0.1	1.7	1,731	-	-	-	-
	Insufficient freeboard	307	27,266	19	-	-	-	-	-	-	-	-
	Flooded	555	45,300	32	14.5	0.0	1.4	753	83,935	0.2	6,234	3,459,785
4. June 2006 storm event, June 2006 boundary condition	Sufficient capacity	410	43,361	31	-	-	-	-	-	-	-	-
	Surcharged[b]	158	16,050	11	46.9	0.1	3.9	4,196	-	-	-	-
	Insufficient freeboard	299	24,283	17	-	-	-	-	-	-	-	-
	Flooded	668	56,400	40	31.8	0.0	3.1	2,073	441,248	0.4	15,232	10,174,995

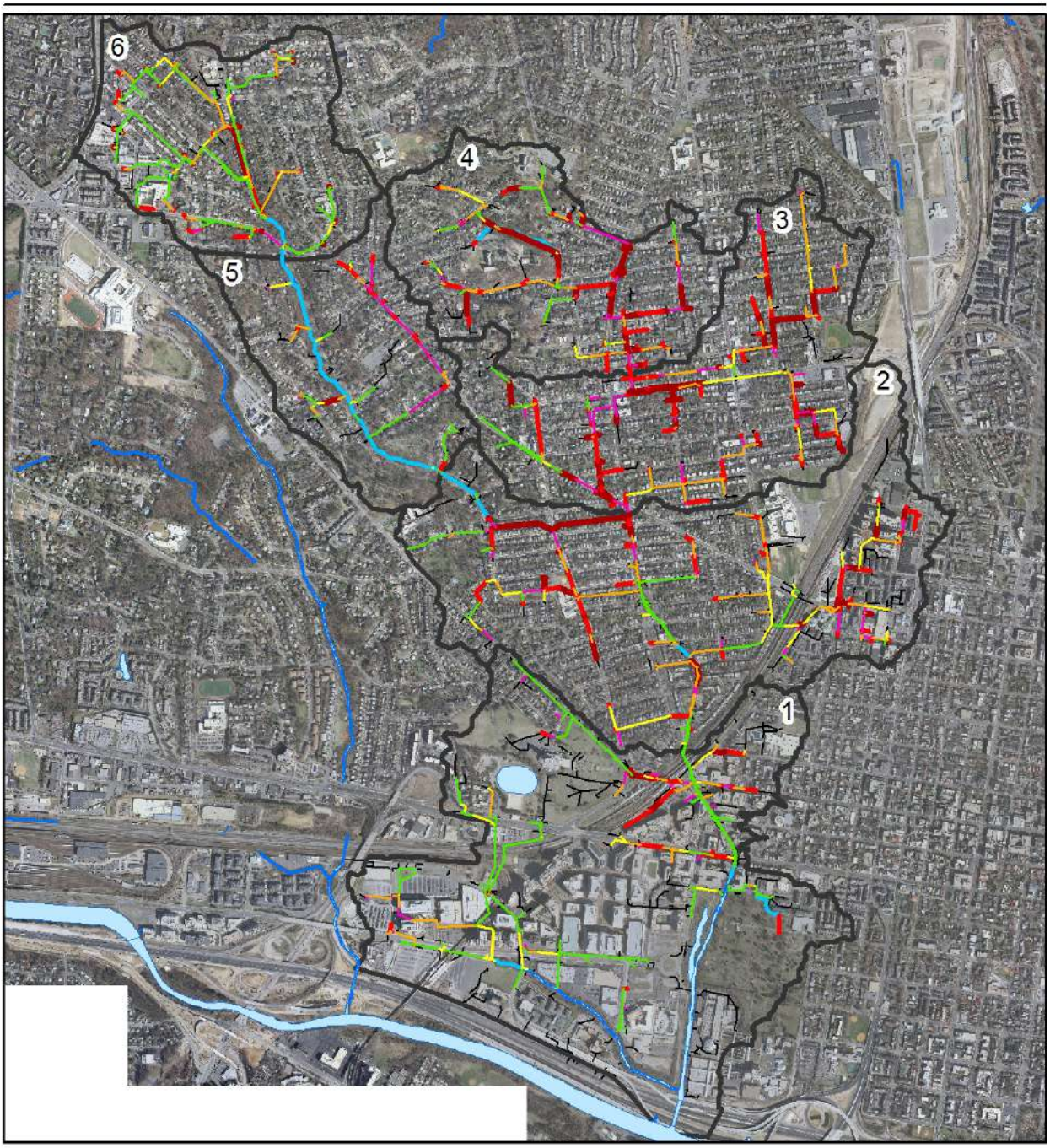
Note:

All results presented for pipe segments based on capacity at upstream end of pipe.

[a] Flooded volume is volume flooded at upstream end of each conduit

[b] Duration of surcharged flow includes time during which conduits have insufficient freeboard or are flooded at the upstream end.

FIGURE 7
Scenario 1 Results – Existing IDF, Existing Boundary Condition
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Legend

Model Results
- Sufficient Capacity
- Surcharged
- Insufficient Freeboard

Flood Volume (cu. ft.)
- 0.01- 1,000
- 1,000 - 10,000
- 10,000 - 260,841
- Not Analyzed (Private, disconnected, upstream of runoff input)

- Modeled Streams
- City of Alexandria Streams
- Water Bodies
- Subwatersheds

Note: Subwatershed number provided in upper corner of each subwatershed

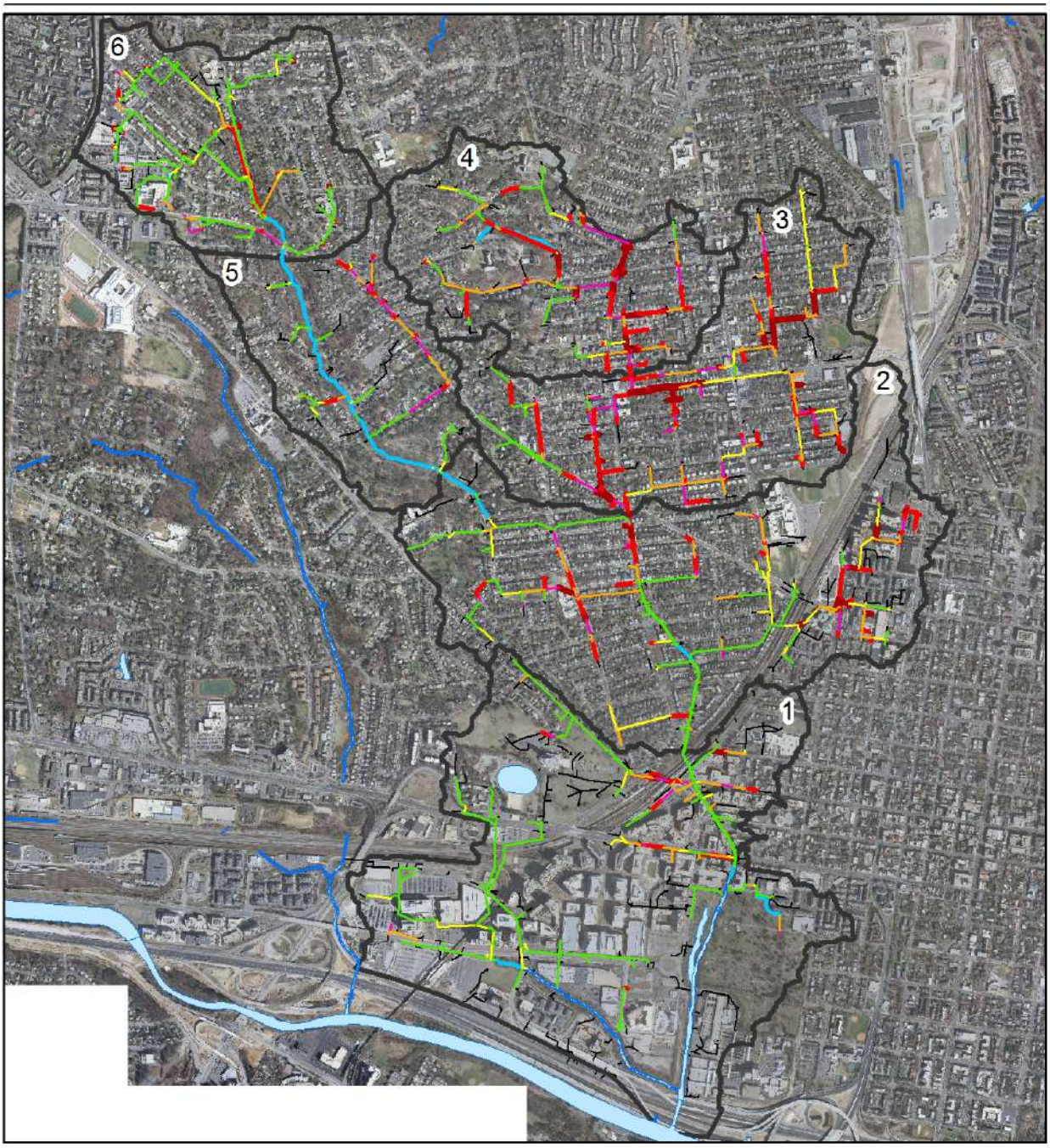
FIGURE 7
Scenario 1 Model Results: Existing IDF, Existing Boundary Condition
Stormwater Capacity Analysis for Hooffs Run Watershed, Alexandria, Virginia

0 750 1,500 3,000
Feet

N

CH2MHILL

FIGURE 8
Scenario 2 Results – Updated IDF, Existing Boundary Condition
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Legend

Model Results
- Sufficient Capacity
- Surcharged
- Insufficient Freeboard

Flood Volume (cu. ft.)
- 0.01- 1,000
- 1,000 - 10,000
- 10,000 - 88,004
- Not Analyzed (Private, disconnected, upstream of runoff input)

- Modeled Streams
- City of Alexandria Streams
- Water Bodies
- Subwatersheds

Note: Subwatershed number provided in upper corner of each subwatershed

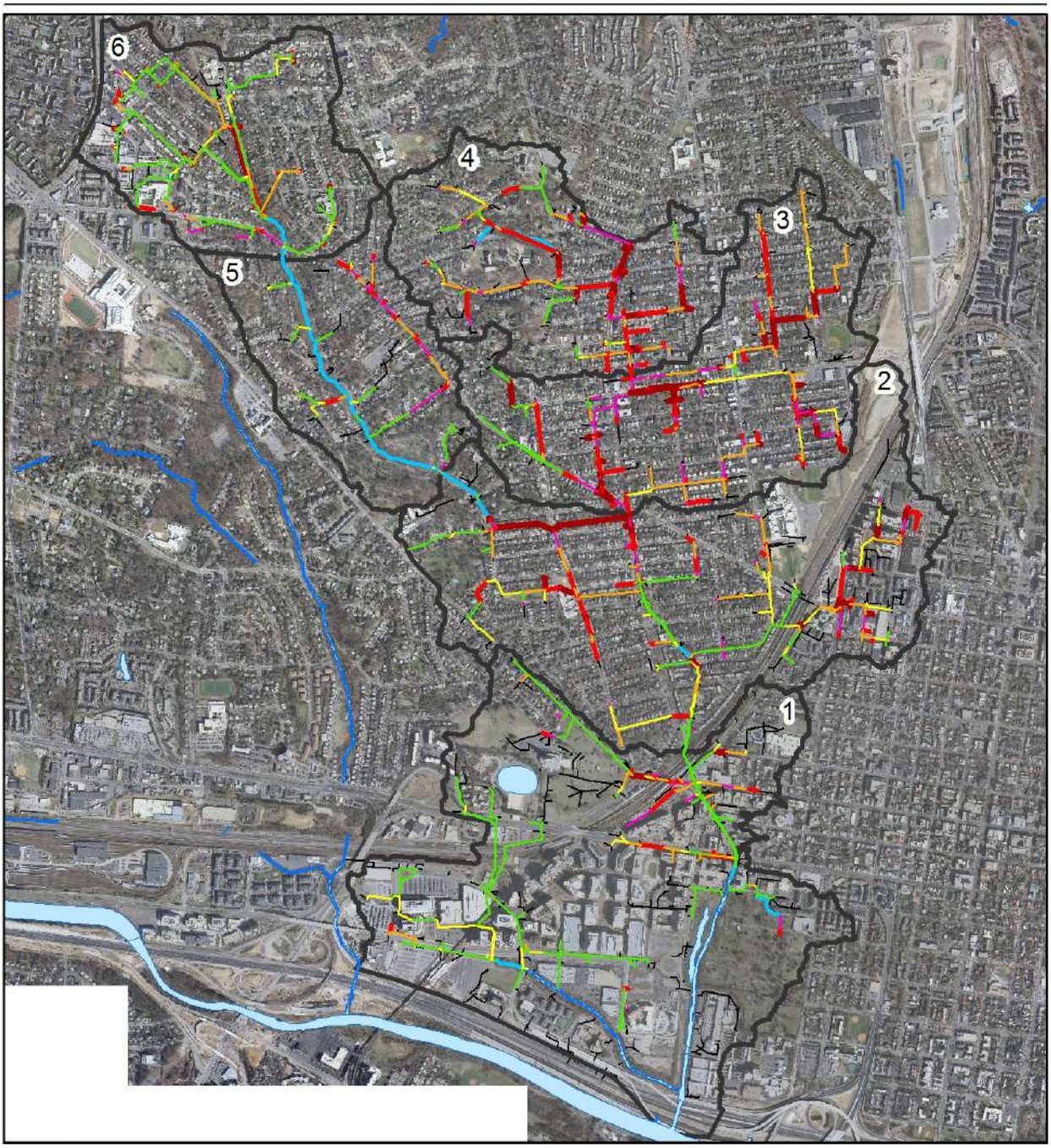
FIGURE 8
Scenario 2 Model Results: Updated IDF, Existing Boundary Condition
Stormwater Capacity Analysis for Hooffs Run Watershed, Alexandria, Virginia

0 750 1,500 3,000
Feet

N

CH2MHILL

FIGURE 9
Scenario 3 Results – Projected Year 2100 IDF and Boundary Condition
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Legend

Model Results
- Sufficient Capacity
- Surcharged
- Insufficient Freeboard

Flood Volume (cu. ft.)
- 0.01- 1,000
- 1,000 - 10,000
- 10,000 - 83,935
- Not Analyzed (Private, disconnected, upstream of runoff input)

- Modeled Streams
- City of Alexandria Streams
- Water Bodies
- Subwatersheds

Note: Subwatershed number provided in upper corner of each subwatershed

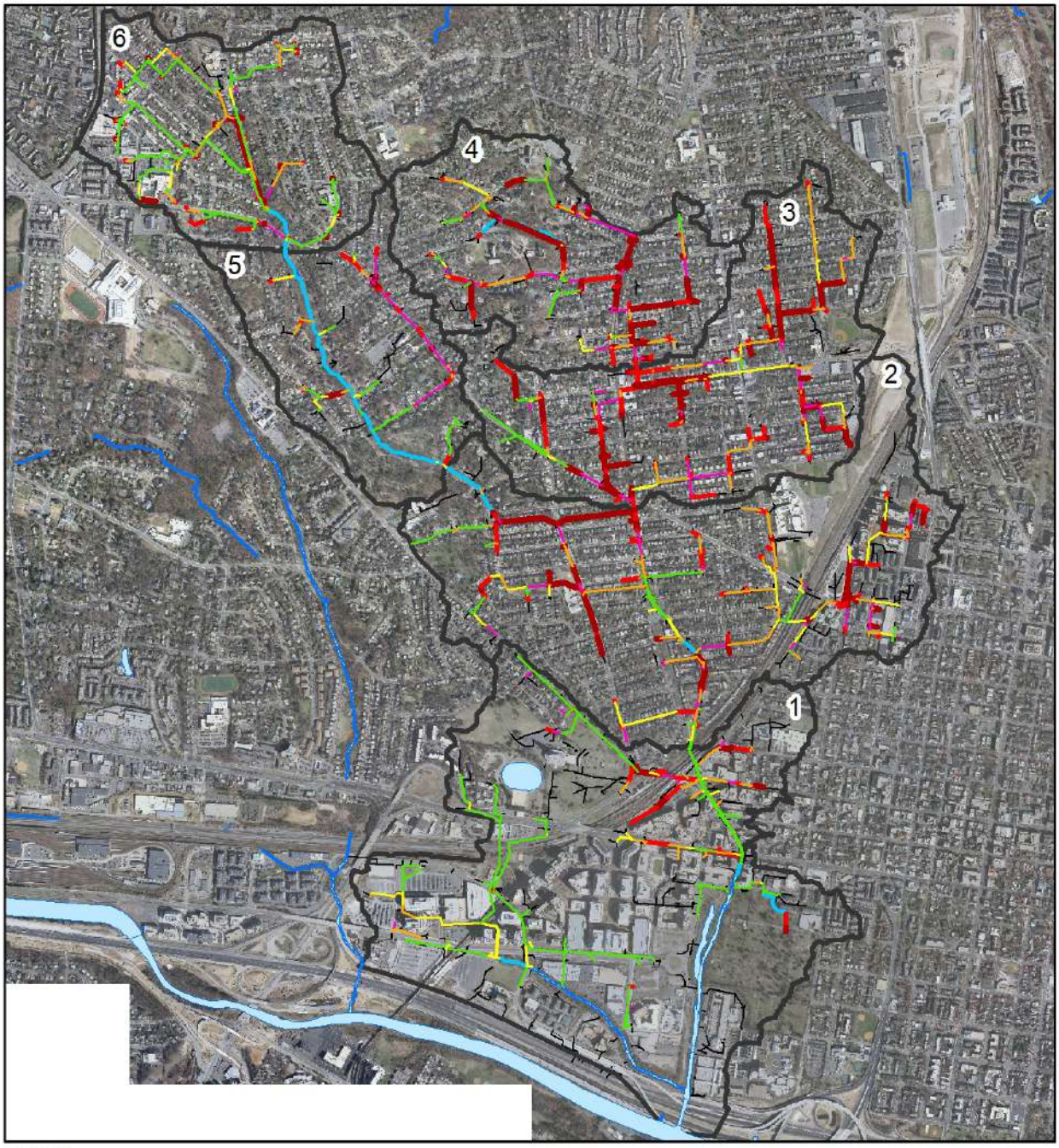
FIGURE 9
Scenario 3 Model Results: Year 2100 IDF and Boundary Condition
Stormwater Capacity Analysis for Hooffs Run Watershed, Alexandria, Virginia

0 750 1,500 3,000
Feet

N

CH2MHILL

FIGURE 10
Scenario 4 Results – June 2006 Storm Event and Boundary Condition
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Legend

Model Results
- Sufficient Capacity
- Surcharged
- Insufficient Freeboard

Flood Volume (cu. ft.)
- 0.01 - 1,000
- 1,000 - 10,000
- 10,000 - 441,248
- Not Analyzed (Private, disconnected, upstream of runoff input)

- Modeled Streams
- City of Alexandria Streams
- Water Bodies
- Subwatersheds

Note: Subwatershed number provided in upper corner of each subwatershed

FIGURE 10
Scenario 4 Model Results: June 2006 Storm Event and Boundary Condition
Stormwater Capacity Analysis for Hooffs Run Watershed, Alexandria, Virginia

0 750 1,500 3,000
Feet

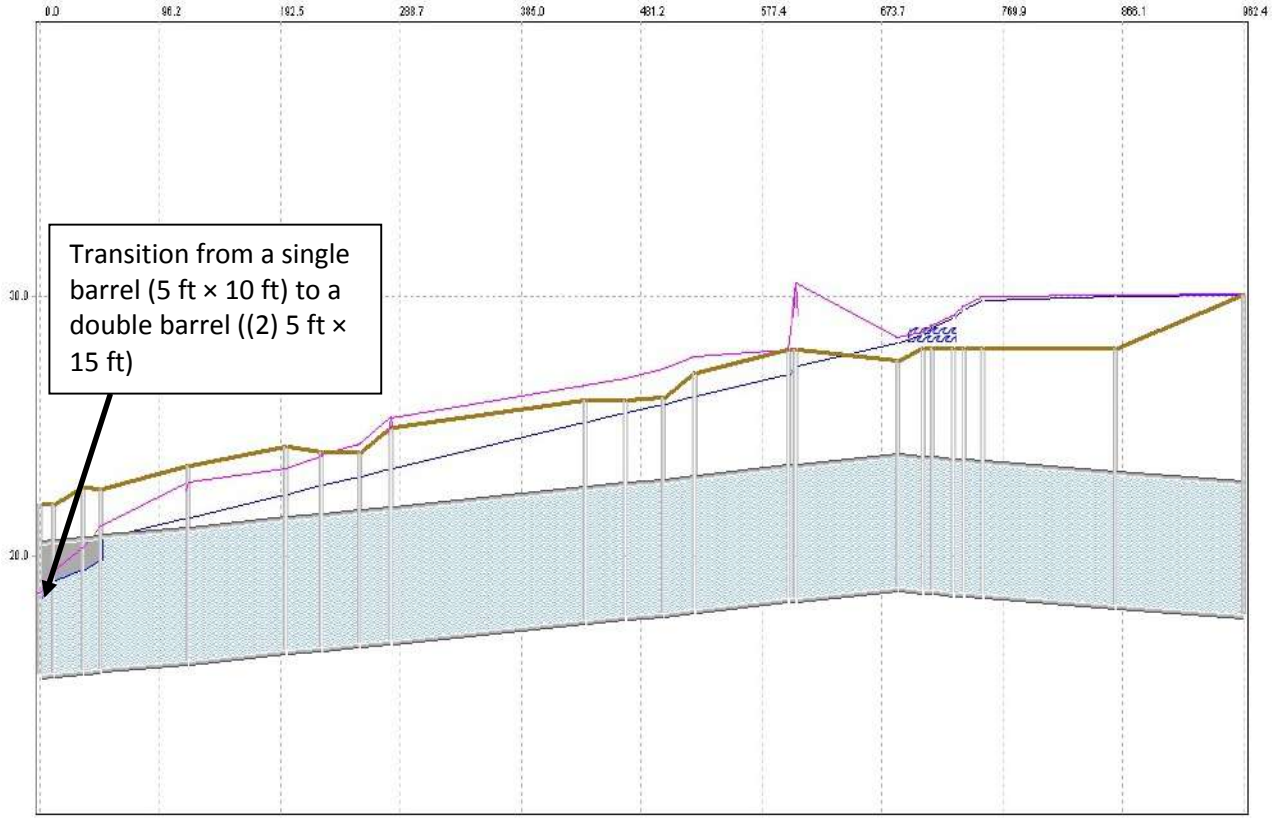
N

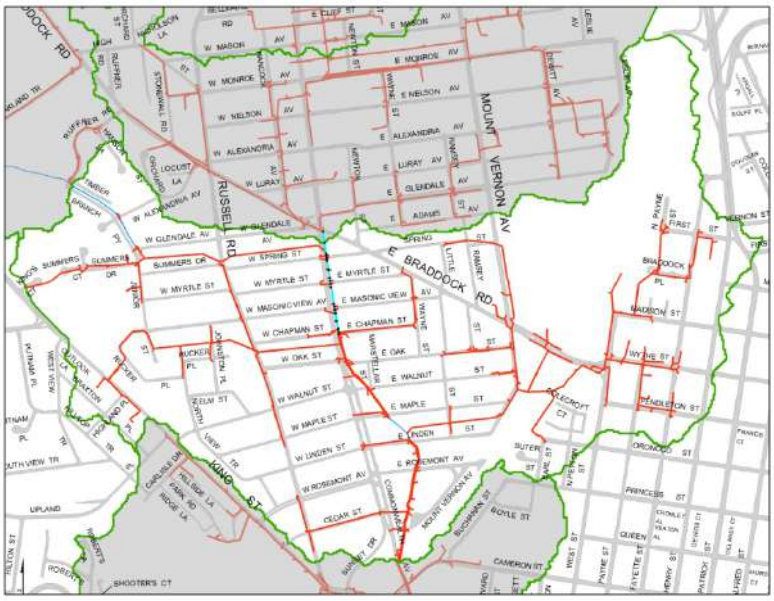
CH2MHILL

FIGURE 11

Scenario 1: Existing IDF, Exiting Boundary Condition—Profile 17 from 000815ND to 003166SMH, Commonwealth Avenue south of Braddock Road

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run





Surface Flooding

Peak Hydraulic Grade Line

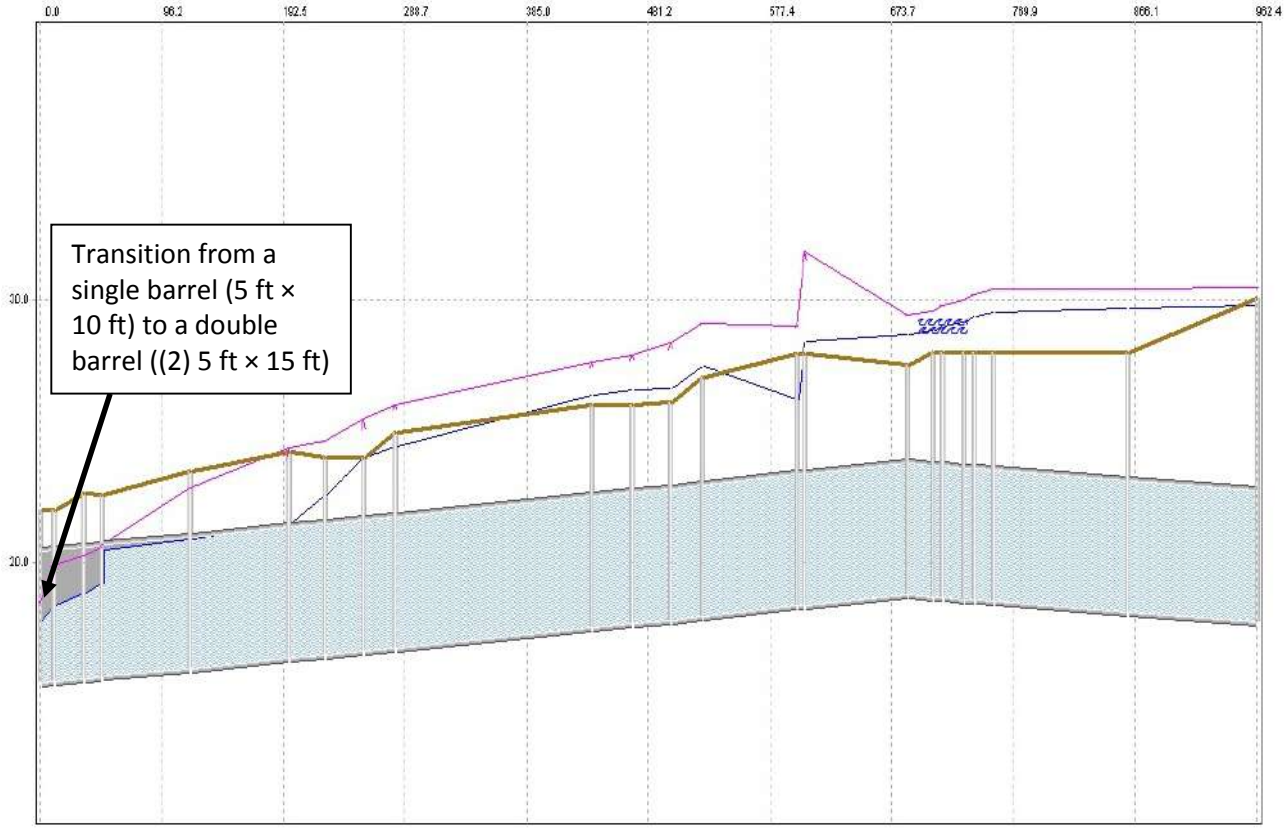
Instantaneous Hydraulic Grade Line

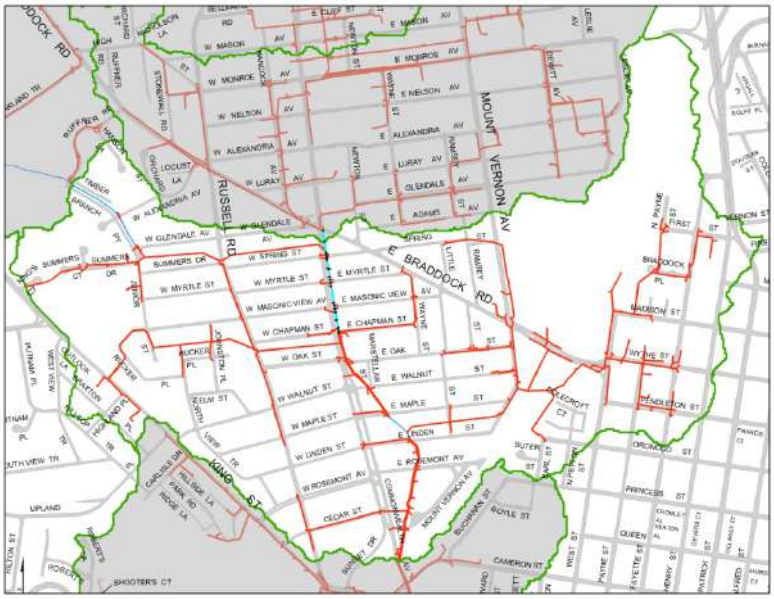
Ground Surface Elevation

FIGURE 12

Scenario 2: Updated IDF, Existing Boundary Condition—Profile 17 from 000815ND to 003166SMH, Commonwealth Avenue South of Braddock Road

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run





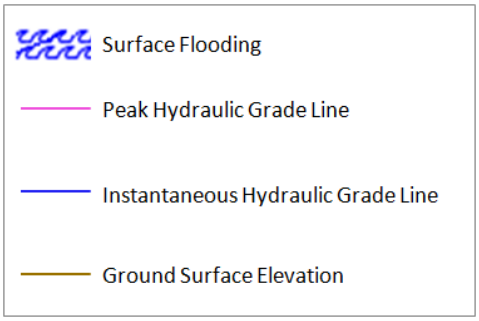
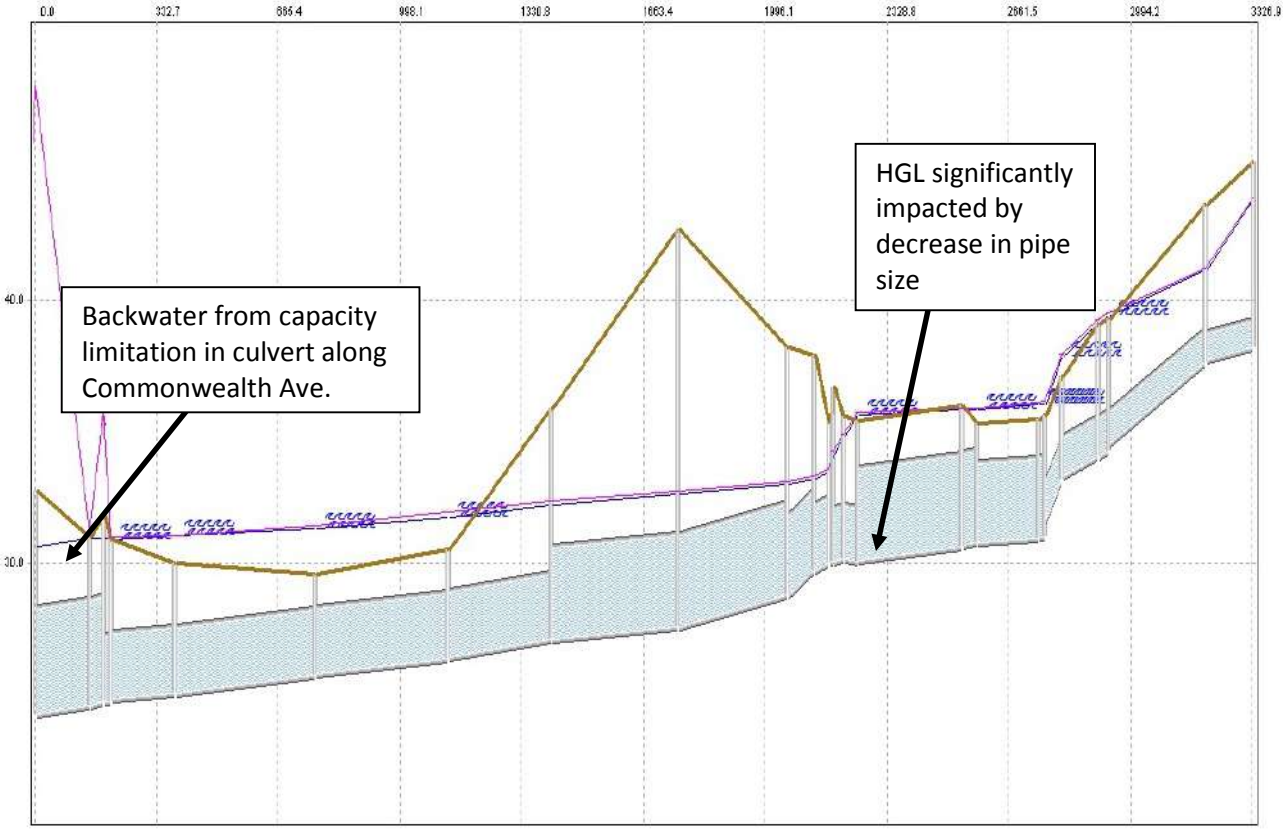


FIGURE 13

Scenario 1: Existing IDF, Existing Boundary Condition—Profile 23 from 000994ND to 000856ND, East Monroe Avenue

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



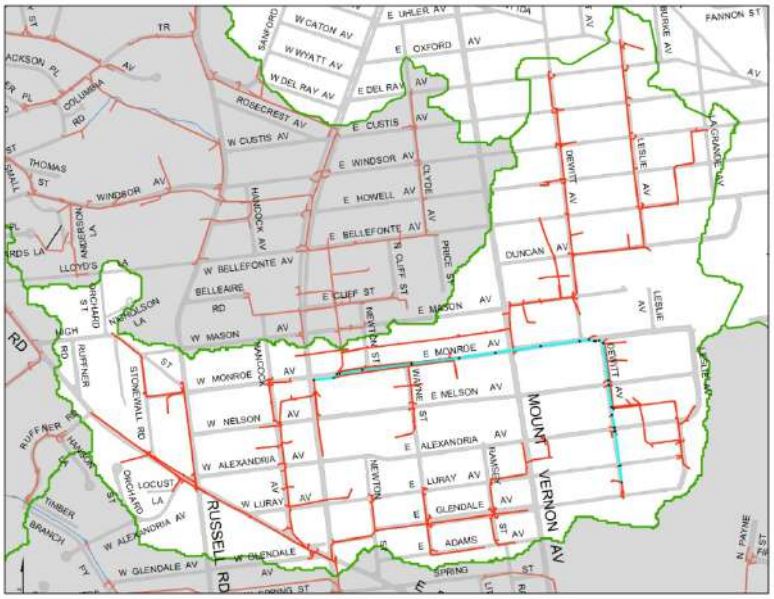
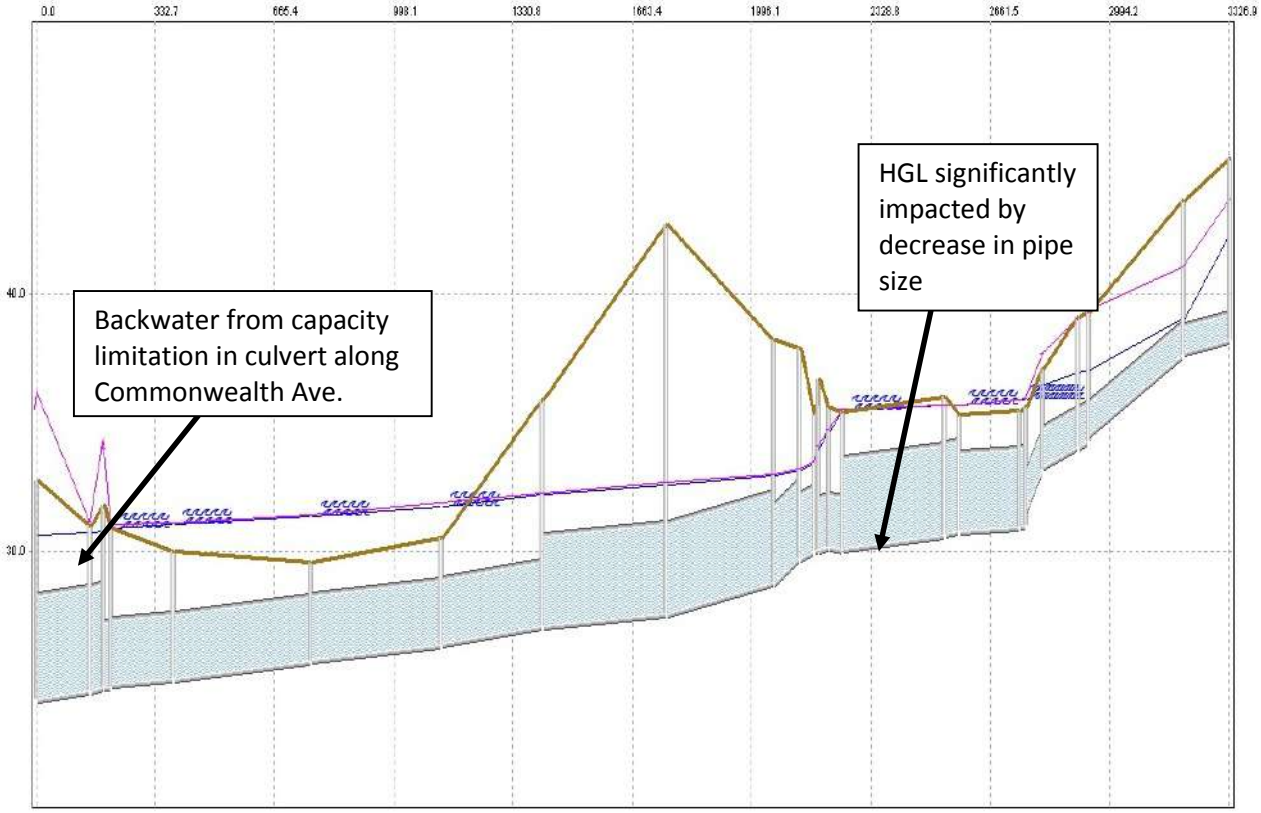


FIGURE 14

Scenario 2: Updated IDF, Existing Boundary Condition—Profile 23 from 000994ND to 000856ND, East Monroe Avenue

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



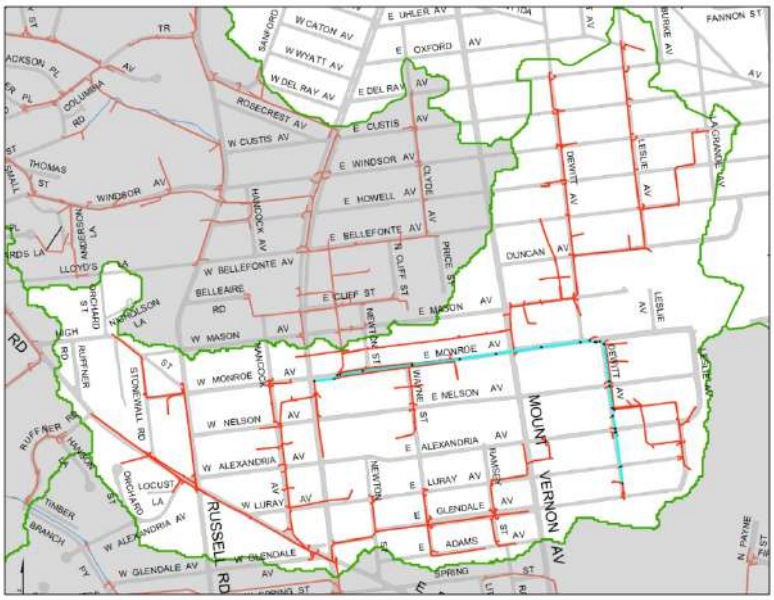
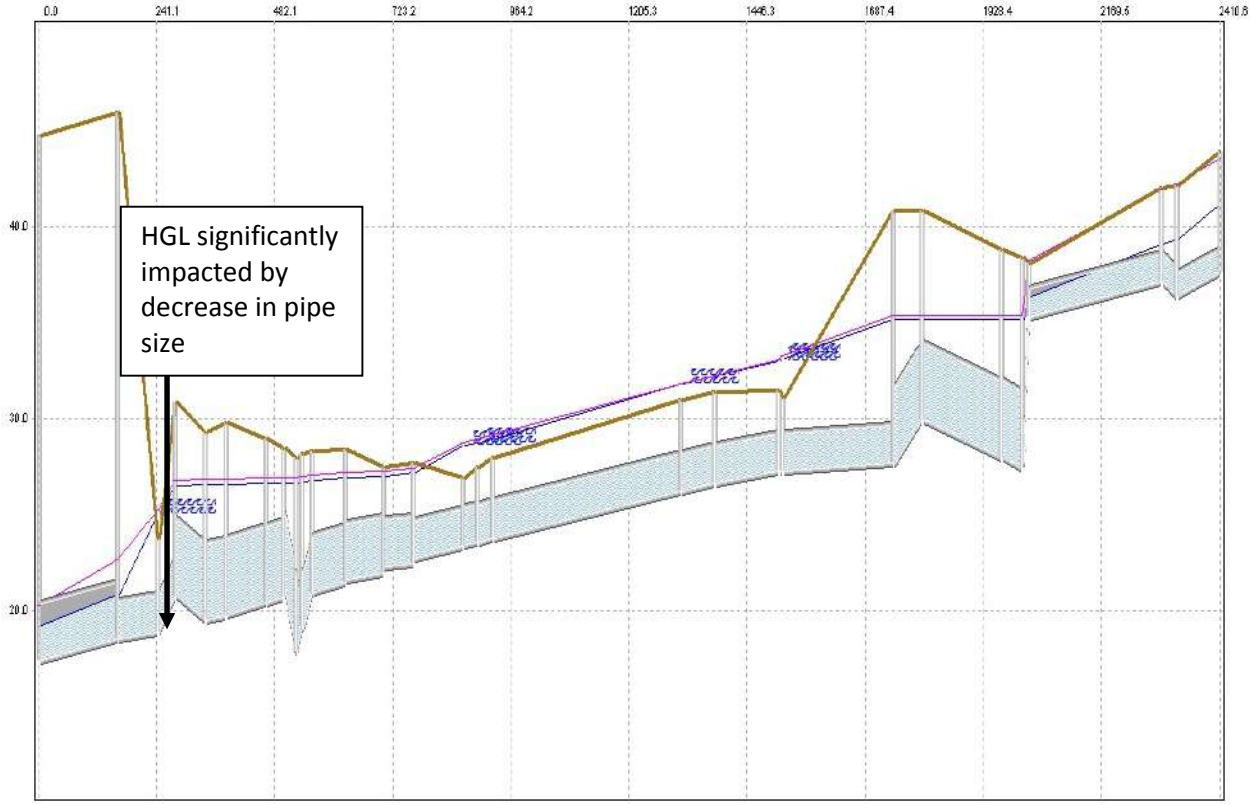
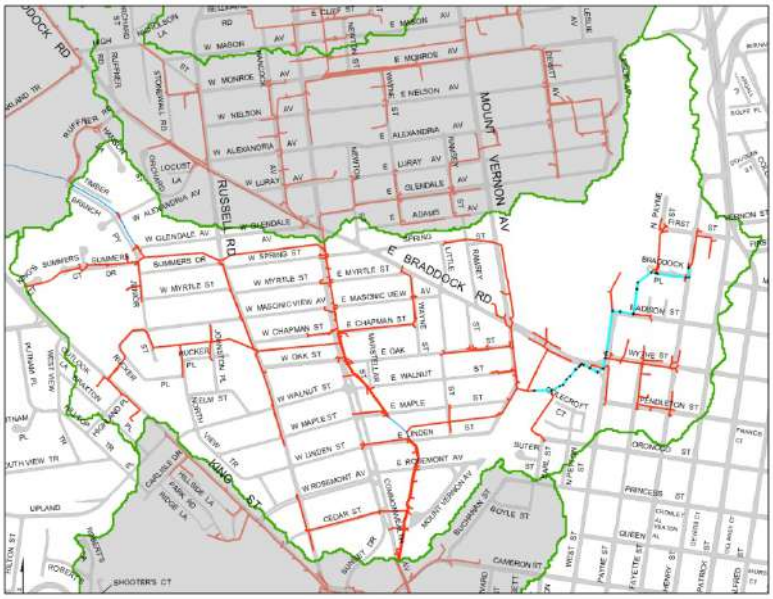


FIGURE 15

Scenario 1: Existing IDF, Existing Boundary Condition—Profile 14 from 000788ND to 003486SMH, Braddock Road and West Street

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run





Surface Flooding

Peak Hydraulic Grade Line

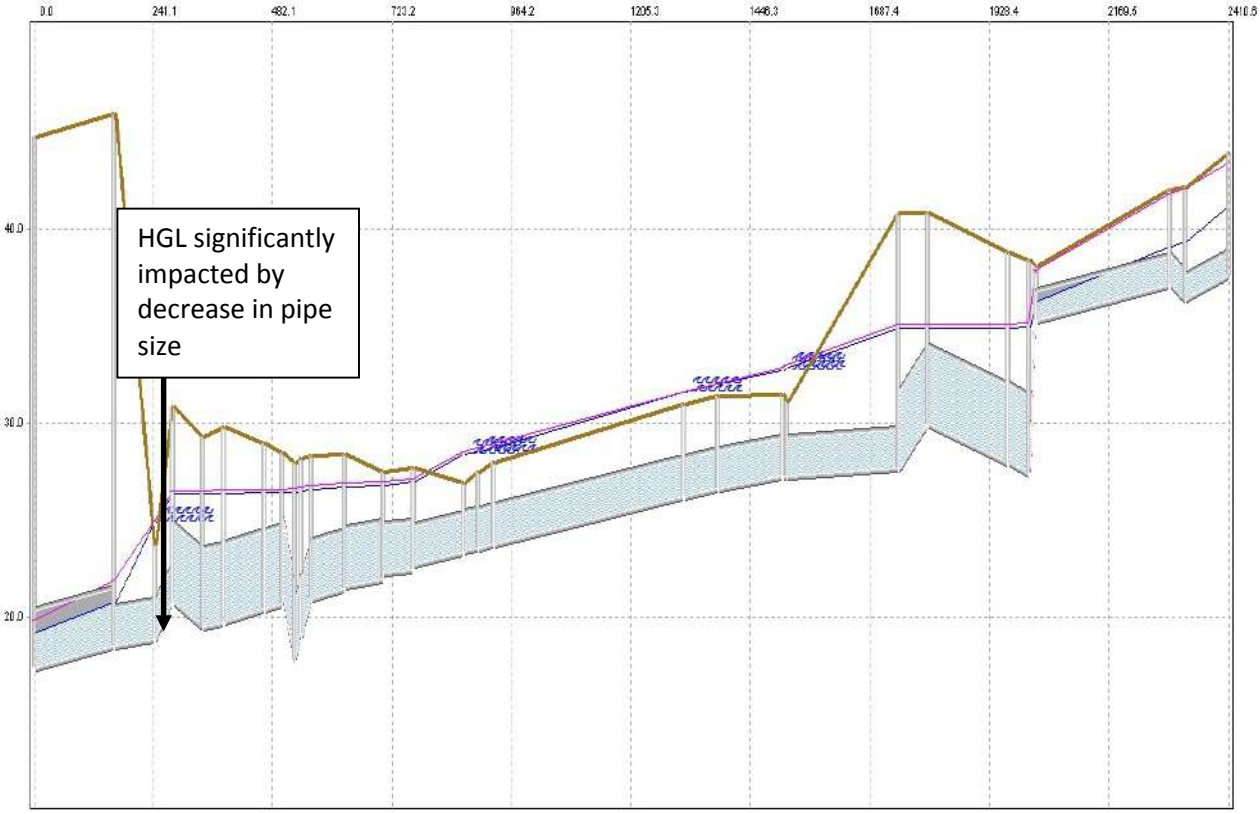
Instantaneous Hydraulic Grade Line

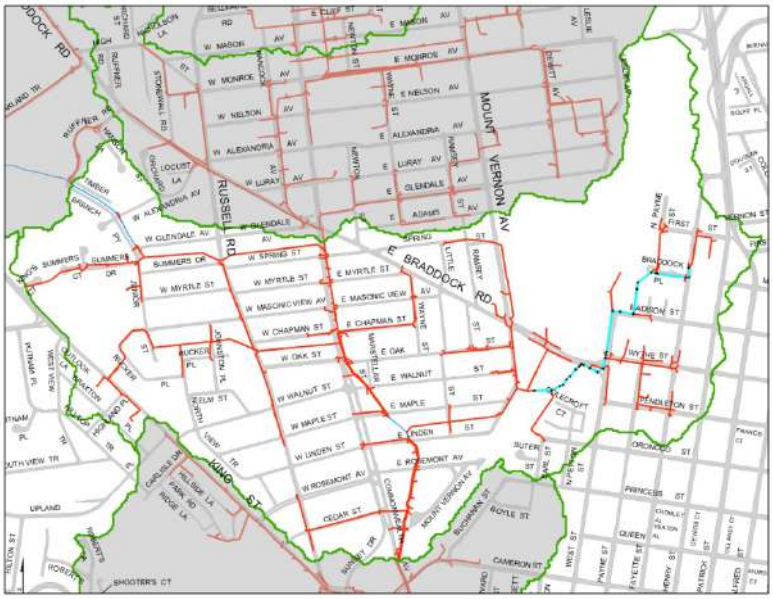
Ground Surface Elevation

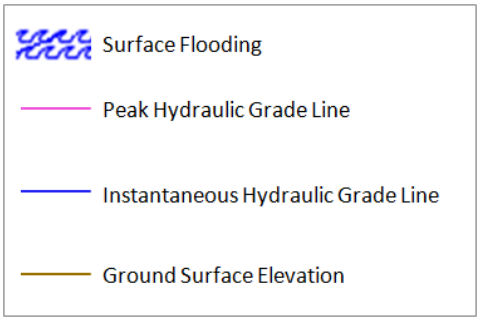
FIGURE 16

Scenario 2: Updated IDF, Existing Boundary Condition—Profile 14 from 000788ND to 003486SMH, Braddock Road and West Street

City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run





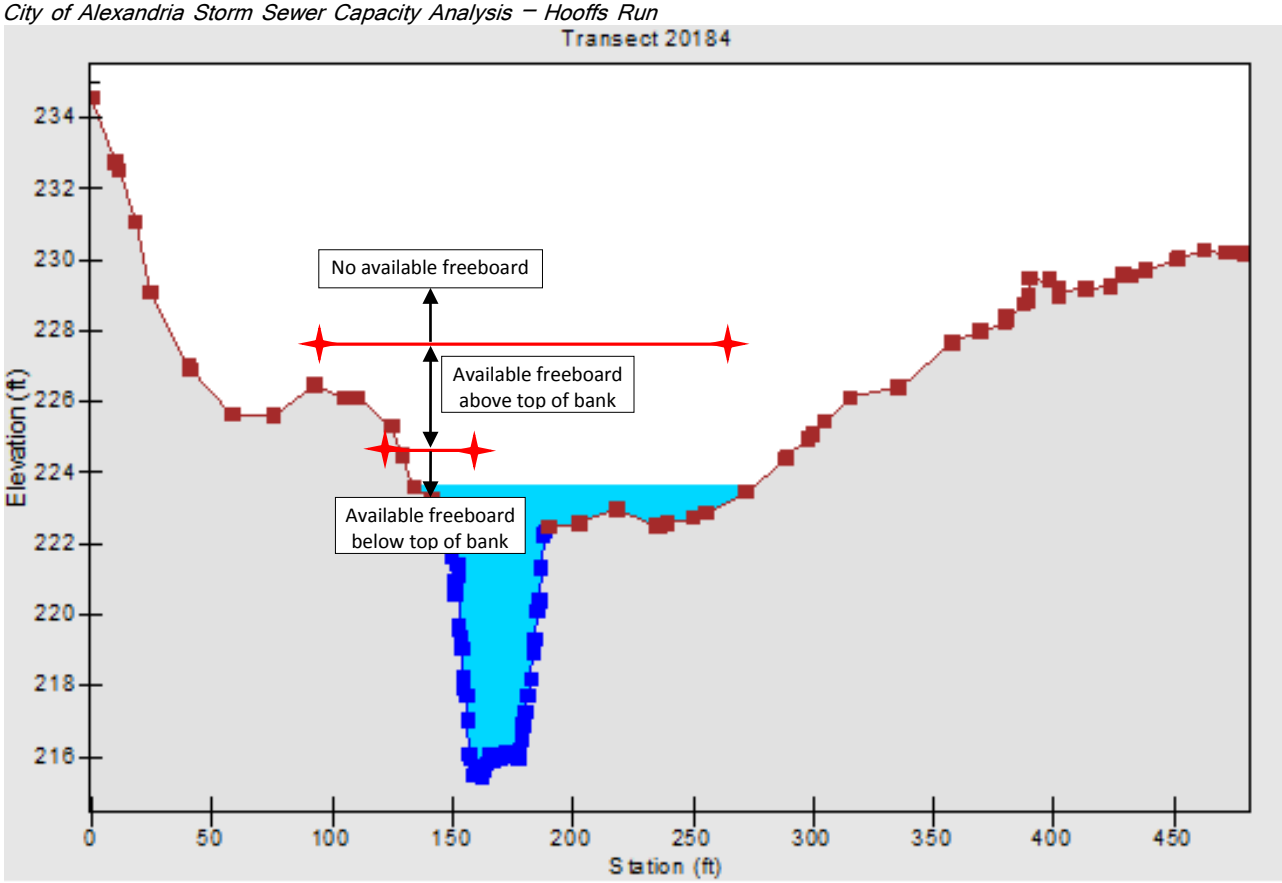


Open Channel Results

Water surface levels generated by the model were compared to two points defined on each cross section: top of cross section and top of bank. These points are defined in Figure 17. The conveyance capacity at each cross section was then define as falling into one of three categories:

- No available freeboard**:** HGL above the top of cross section
- Available freeboard above top of bank: HGL above the top of bank yet remained below the top of cross section
- Available freeboard below top of bank: HGL below the top of bank

FIGURE 17
Sample Cross Section
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run



Data on stream segments were limited to cross sections available in the Cameron Run watershed HEC-RAS model developed by USACE. This model includes only major streams in the City, including Hooffs Run, Old Cameron Run, and Timber Branch in the Hooffs Run watershed. While included, streams were not the focus of this modeling effort, and therefore the capacity of streams will not be reported in terms other than those described above. Results for stream segments are summarized in Table 9.

TABLE 9
Summary Results for Stream Segments in Hooffs Run
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Scenario	Linear Feet of Stream		
	Available Freeboard Below Top of Bank	Available Freeboard Above Top of Bank	No Available Freeboard
1. Existing IDF, existing boundary condition	4,109	1,243	388
2. Updated IDF, existing boundary condition	4,474	1,250	16
3. Year 2100 IDF, year 2100 boundary condition	4,109	1,467	164
4. June 2006 storm event, June 2006 boundary condition	3,970	1,347	423

One area of note is the open channel behind the St. Stephen's and St. Agnes School, in the northern portion of the Hooffs Run watershed. The stream segment stretches from Woodland Terrace to Russell Road and is parallel to a 24-inch storm sewer pipe. The pipe, which lies under the stream bed, is in poor condition and is known to have many large breaks, causing interflow between the pipe and stream. The hydraulic model does not attempt to capture the poor condition of the pipe or the connected nature of this portion of the system; instead, the flow is assumed to be contained mostly within the pipe. Model results show a flooded pipe at this junction, but due to the condition of the pipe, much of the flow that is modeled as being in the pipe is most likely in the stream rather than flooding the upstream and downstream ends of the pipe.

The results presented in this memorandum should be reviewed with the understanding that several assumptions were made to fill data gaps, as noted earlier.

Summary

The results of the hydrologic analyses show that the existing IDF design hyetograph produces the greatest amount of stormwater runoff, followed closely by the year 2100 IDF curve. The updated historical IDF curve produces the least amount of stormwater runoff. This hyetograph, although its peak intensity is significantly smaller than those of the City's existing IDF curve or the year 2100 curve, is similar to the current Virginia Department of Transportation design criteria. The Existing IDF Curve has been shown to be conservative and is similar to the projected year 2100 design hyetograph, but many pieces of the storm system in the City were designed before these criteria were put in place, and therefore capacity problems may exist regardless of the conservative design standards. By comparison, the June 2006 rainfall event has a peak intensity lower than all three of the 10-year, 24-hour design hyetograph alternatives analyzed in this study, though the total volume of the June 2006 event, which fell over a 48-hour period, is almost double the three design storms examined.

The hydraulic model predicts that a large portion of the Hooffs Run watershed system is experiencing capacity limitations during the 10-year, 24-hour design storm. In the most conservative model results, the Existing IDF scenario, 37 percent of the pipes flood the ground surface, 20 percent have a hydraulic grade line within 2 feet of the surface, and 11 percent surcharge above the crown of the pipe. Comparing the peak runoff to the estimated inlet capacity of each catchment indicates that 40 percent of the catchments in the model may have insufficient inlet capacity. Results from all four model runs are summarized in Table 10. Maps and profiles of flooding areas are presented in this technical memorandum to assist in locating problem areas and understanding the capacity limitations of the drainage system.

TABLE 10
Summary of Hydraulic Model Results for Hooffs Run (in Percent)
City of Alexandria Storm Sewer Capacity Analysis – Hooffs Run

Scenario	Sufficient Capacity	Surcharged	Insufficient Freeboard	Flooded	Runoff Input Points with Insufficient Inlet Capacity[a]
1. Existing IDF, existing boundary condition	32	11	20	37	41
2. Updated IDF, existing boundary condition	43	12	17	28	26
3. Year 2100 IDF, year 2100 boundary condition	36	12	19	32	32
4. June 2006 storm event, June 2006 boundary condition	31	11	17	40	38

[a] The Hooffs Run hydrologic model has 562 runoff input points with an average of 3.5 inlets/catch basins each. Percent represents percent of total count of runoff input points. Approximately 10% of the catchments in the model do not have any inlets or catch basins, either because the systems were privately owned, drained overland, or inlets were not mapped. Given the limited information available for these catchments, they were assumed to have sufficient capacity.

The June 2006 results are most similar to the existing IDF model results when the comparison is based on percent of the system that is flooded or has insufficient freeboard. However, the maximum instantaneous volume flooded at a single junction and the average volume flooded across all flooded junctions in the June 2006 storm event are greater than the volume flooded in the existing IDF model results due to the greater storm depth and longer duration of the June 2006 event.

The hydraulic modeling results presented in this memorandum should be reviewed with the understanding that several assumptions were made to fill data gaps, primarily assumptions of inverts in pipes with diameters less than 24 inches.

References

These documents were consulted in the preparation of this memorandum. Not all are cited in the text.

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CH2M HILL. 2012a. *Inlet Capacity Analysis for City of Alexandria Storm Sewer Capacity Analysis*. Prepared for the City of Alexandria Transportation & Environmental Services Department. September 12.

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Attachment A
Methodology for Identifying Public vs. Private Structures: August 6, 2009, Meeting Summary

City of Alexandria Storm Sewer Capacity Analysis Project – Task Order 1

Meeting, August 6, 2009 (2:30-3:00 pm)

ATTENDEES:

Craig Perl/City of Alexandria
Laurens van der Tak/CH2M HILL
Cheri Salas/ CH2M HILL

FROM: Cheri Salas/CH2M HILL

DATE: August 7, 2009

PROJECT NUMBER: 383412

Meeting Purpose

Review memorandum dated July 31, 2009, entitled Evaluation of modeling issues discussed during July 27, 2009 Progress Meeting

- Discuss results of initial public\private structure determinations
- Review initial evaluation of survey data quality
- Discuss altered approach to filling data gaps associated with missing inlet inverts

Meeting Review

Private vs. Public Structures

It was difficult to readily identify structures as private or public, based solely on the parcel layer because of potential errors in the structure locations. The memorandum includes several examples. Several of these include individual public structures that are upstream of larger private storm sewer areas. Craig will share these with Suzanne and others to confirm a path forward. It was agreed that regardless of the path forward on future sewersheds, we would not change the model for the pilot sewershed, but will not attempt to evaluate capacity limitations in the private areas. Craig will confirm which areas in the memo examples should be evaluated.

As we move into the remainder of Hooffs Run CH2M HILL will identify large areas of private sewers based on a broad visual review of the sewersheds, CH2M HILL will recommend a starting point for the hydraulic model (pour point for hydrologic basin) and allow the City to review the recommendations prior to beginning filling data gaps or modeling.

Stormwater ponds were discussed. These are mostly, if not all, private facilities; however they should have significant impact on the peak flows in the system. It was recognized that there is significant effort associated with obtaining the data for these ponds, and adding it to

the model. The one pond in the pilot sewershed was retrofitted since the as-built plans; therefore a site visit may be required to obtain appropriate outlet dimensions.

Survey Data Quality

We do not foresee any significant data issues in the Pilot sewershed related to surveyed inverts; however it may be a bigger issue as we move into flatter sewersheds. This issue will be tabled until we move on to other sewersheds

Filling Data Gaps in Inlet Inverts

As we were filling data gaps we recommended using a 1-foot depth to invert for all inlets for which the data were not available. In approximately 15 of the 153 inlets for which invert data were not available, the pipe diameter was larger than 12-inches, resulting in model errors. A revised approach of using the pipe diameter plus 6-inches as the assumed depth to invert is recommended, however it is unclear whether this approach will be appropriate for the locations in question. CH2M HILL will provide a Google Earth Map of these inlets and Craig will review, and possibly conduct field inspections. CH2M HILL will not continue modeling of the pilot shed until results of this review are received.

Action Items

Craig will share July 31, 2009 memo with additional City staff and determine extent of capacity evaluation in pilot area. He will also confirm recommended path forward.

Craig will determine preferred approach to inclusion of stormwater ponds in the model.

Cheri will provide Google Earth maps of locations where a 1-foot depth to invert was not sufficient.

Craig will review these sites and provide input on an appropriate assumption moving forward.

Attachment B
Technical Memorandum: Summary of Data Gaps and Assumptions in the Hooffs Run Watershed

Summary of Data Gaps and Assumptions in the Hooffs Run Watershed

PREPARED FOR: City of Alexandria

COPY TO: File

PREPARED BY: CH2M HILL

DATE: October 22, 2012

PROJECT NUMBER: 240027

The purpose of this memo is to document the range of assumptions made to fill data gaps and correct anomalies in the GIS data for the Hooffs Run Watershed. All data gaps have been filled in a personal geodatabase (.mdb) referred to as the "model geodatabase." The model geodatabase is a copy of the City's geodatabase, created after the City's geodatabase was populated with survey data collected during Task 3 of the City of Alexandria Storm Sewer Capacity Analysis (CASSCA) project.

City of Alexandria GIS Data and Data Gaps

The City of Alexandria maintains a geodatabase of the storm drainage network for the City that includes gravity main storm drains and series of junction features (manholes, inlets, catch basins, etc.). The data in this geodatabase will be used to build a hydraulic model of the storm sewer network. This model requires several pieces of data, including rim and invert elevation of pipes and junctions, pipe diameter, shape, roughness, length, and slope. Data required for modeling is stored in attribute tables within the geodatabase; however, there are gaps that need to be filled before the hydraulic model can be built. In order to fill the data gaps, a set of standard assumptions were generated and documented in training materials. These assumptions are provided in detail in this document.

Sources of Depth Data

Both the pipe and junction features contain depth data in the geodatabase from the City. Because of the uncertainty surrounding the validity of these depth data and methods of collection, the depth data in the geodatabase were compared to depth data collected during a pilot survey of about 90 manholes to assess the accuracy of each.

The comparison revealed that the depth data in the junction features was more reliable, with 85 percent of the surveyed depths falling within ±0.5 feet of the depth data in the geodatabase. By comparison, only about 73 percent of the surveyed depth in the pipe features data fell within the same ±0.5-foot-depth range. Because of the greater confidence in the depth data provided on the junction features, the junction depth data were assumed for the US/DS ends of the pipe even when depth data were available on the pipe feature. This causes a very large percentage of the modeled gravity mains to have an assumed invert, but the assumptions must be reviewed with the understanding that the assumed data are from the junction features. The exception to this assumption is that wherever a drop was indicated by the depth data on the downstream end of a pipe, the depth on the pipe data was used to represent that drop. This exception was only applied where it did not cause a reverse slope in the pipe.

In general, with the understanding of the two sources of depth data, depth data for modeling was pulled from the following sources, in the following order of precedence:

- Survey data
- Depth data from points
- Depth data from lines

- Assumption (extrapolation, interpolation, 6-inch depth to crown for most upstream inlets and nodes)

Data Gaps and Assumptions on Junctions

The following is a summary of data gaps and assumptions on the junction feature classes in the City of Alexandria's Hooffs Run geodatabase. There are eight types of junctions in the City of Alexandria's storm sewer database. Data required for hydraulic modeling includes rim elevation and invert elevation. Where both rim and depth data were available for junctions, invert was calculated as rim minus depth. If an assumption was made to determine a rim or a depth, this was documented as such and not as an invert assumption, though it does indirectly imply that an assumption was made on the invert. If an invert was computed directly, such as by interpolation between two known inverts, it was documented as an assumption on the invert. In total, 979 (39 percent) structures have at least one assumption made to determine rim or invert.

Table 1 below shows the types of junctions in the Hooffs Run watershed, the count in the original database, the count in the hydraulic model database, and the number of assumption made for the rim, depth, and invert. The model database does not include private or disconnected structures. The table below does not include structures in the pilot subwatershed.[1]

TABLE 1
Summary of Feature Classes

Feature Class	Count of Structures (City Geodatabase)	Count of Structures (Model Database)*	Count of Rim Assumptions	Count of Depth Assumptions	Count of Invert Assumptions	Count of Structures with at Least One Assumption
DCatchBasin	282	266	4	0	12	12
DControlDevice	3	0	0	0	0	0
DCulvertPoint	32	17	17	0	17	17
DInlet	1,462	1,182	3	395	180	576
DManhole	793	641	3	8	30	38
DNode	391	322	322	11	311	322
DPipeIO	70	28	10	0	10	14
DStorageBasin	2	0	0	0	0	0
Total	**3,035**	**2,456**	**359**	**414**	**560**	**979**
					Percent of Total:	**40**

* Does not include private or disconnected structures.

It is important to note that there are no rim or invert data on DNodes (blind connections/ terminal nodes with unknown connectivity) in the GIS. Assumptions were made for 100 percent of the DNode features, which accounts for about 90 percent of the rim assumptions and 56 percent of the invert assumptions. Additionally, a 6-inch depth to crown was assumed for 395 inlets, or 95 percent of the total number depth assumptions. These were all inlets at the most upstream point in a line. The types of assumptions made for each type of data, rim, depth, and invert, are shown in Tables 2, 3, and 4, below.

The City of Alexandria provided CH2M HILL with 2-foot contours and a HEC-RAS model of Cameron Run. The contours were used to create a digital elevation model (DEM) of the city. This elevation model has been used to develop the hydrologic model as well as to fill rim elevation data gaps. The HEC-RAS model contains information on streams in Hooffs Run watershed, including culvert inverts and road deck elevations. The lowest value of the deck/roadway high chord was assumed as the rim elevation of culvert points.

[1] During the effort to model the remainder of Hooffs Run watershed, assumptions made in the pilot subwatershed were not revised.

TABLE 2
Rim Assumptions

Rim Assumptions	Total Count of Assumption	Catch Basin	Culvert Point	Inlet	Manhole	Node	Pipe In/Out
Rim from contours	2	-	2	-	-	-	-
Rim from DEM	333	4	-	3	3	321	2
Rim from HEC-RAS model	22	-	15	-	-	1	6
Rim from GIS ELEV + DEPTH	2	-	-	-	-	-	2
Total	**359**	**4**	**17**	**3**	**3**	**322**	**10**

Note: Survey data or GIS ELEV data in PipeIO attribute table assumed to be best available rim elevation in all other cases.

TABLE 3
Depth Assumptions

Depth Assumption	Count of Assumption	Catch Basin	Culvert Point	Inlet	Manhole	Node	Pipe In/Out
6-inch depth to crown	406	-	-	395	1	10	-
Depth from DS pipe	4	-	-	-	4	1	-
Depth from US pipe	3	-	-	-	3	-	-
Total	**414**	**0**	**0**	**395**	**8**	**11**	**0**

TABLE 4
Invert Assumptions

Invert Assumption	Count of Assumption	Catch Basin	Culvert Point	Inlet	Manhole	Node	Pipe In/Out
5-foot depth to invert*	1	1	-	-	-	-	-
Invert from DS pipe	12	7	-	1	4	-	-
Invert from US pipe	2	1	-		1	-	-
Extrapolated from DS data	54	1	-	-	2	50	1
Extrapolated from US data	3	-	-	-	-	-	3
Invert from GIS ELEV	3	-	-	-	-	-	3
Interpolated invert	465	2	-	179	23	261	-
Invert estimated from contours	1	-	-	-	-	-	1
Invert from HEC-RAS model	19	-	17	-	-	-	2
Total	**560**	**12**	**17**	**180**	**30**	**311**	**10**

* In some cases, a standard assumption does not apply, and engineers' judgment must be used.

Data Gaps and Assumptions on Gravity Mains

The following is a summary of data gaps and assumptions on the DGravityMain feature class in the City of Alexandria's Hooffs Run geodatabase. Data required for hydraulic modeling includes: US/DS rim elevation, US/DS invert elevation, length, shape, roughness, pipe dimensions (diameter/height, width), and slope. Slope (percent) is a calculated value equal to ((US invert – DS invert)/Length)*100, therefore assumptions made on either invert or the length implies an assumption on the slope. In this project, the pipe length is always assumed to be equal to the shape length in GIS per the protocol of the City of Alexandria. Since this is the length used by the City, it is not documented as an assumption for the purposes of the hydraulic modeling.

Table 5 below shows a summary of the number of assumptions made for each required data field. In total, 2453 pipes are being modeled, 2,081 of which have at least one piece of assumed data. Tables 6 through 10 show the type and count of assumptions made for each data type. Please note that because there was greater confidence in the depth data stored in the junction features, an assumption was made for the US/DS invert of the pipes even where depth data were available (assumption was pulled from the junction). Therefore, a majority of the assumptions on the US/DS inverts are locations where data from the original database is still being used. This includes the following assumption types: US invert from US junction, US invert from US pipe, DS invert from DS junction, and DS invert from DS pipe depth.

TABLE 5
Summary of Assumptions on Gravity Mains

	Count of Structures (City Geodatabase)	Count of Structures (Model Geodatabase)	Count of US Invert Assumptions	Count of DS Invert Assumptions	Count of Shape Assumptions	Count of Material Assumptions	Count of Dimension Assumptions	Count of Structures with at Least One Assumption
DGravityMain	3,068	2,453	1,618	1,497	1	0	40	2,081
							Percent of Total:	**85**

TABLE 6
US Invert Assumptions

US Invert Assumptions	Count of US Invert Assumptions
US invert extrapolated from DS data	54
US invert from US junction	1,097
US invert from US pipe	4
US invert interpolated	462
US invert from US pipe depth	1
Total	**1,618**

TABLE 7

DS Invert Assumptions

DS Invert Assumptions	Count of DS Invert Assumptions
DS invert extrapolated from US data	1
DS invert from DS junction	223
DS invert from DS pipe depth*	502
DS invert interpolated	771
Total	**1,497**

*358 depths from DS pipe depth to reflect drop.

TABLE 8

Shape Assumptions

Shape Assumptions	Count of Shape Assumptions
Assumed circular pipe shape	1
Total	**1**

TABLE 9

Dimension Assumptions

Dimension Assumptions	Count of Dimension Assumptions
Assumed 12-inch diameter	16
Diameter from DS pipe	8
Diameter from HEC-RAS	7
Diameter from US pipe	9
Total	**40**

Data Anomalies

After filling all fields required for modeling, the data were reviewed for several anomalies, including reverse slopes, large slopes (slopes over 10 percent), drops, sunken pipes, and daylighting pipes. Several assumptions were made to correct anomalies in the modeled system. Anomalies upstream of the point where flow is to be entered in the hydraulic model were left in the database. Anomalies were handled in the following ways:

- Reverse slopes
  - Leave if both ends of the pipe were surveyed
  - Leave if < -1 percent slope
  - Leave if upstream of the model load point

  - Leave if pipe/node data indicates a reverse slope is correct and engineering judgment indicates reverse slope is possible
  - Review available data on pipe and junction features and apply a data gap assumption to correct if deemed necessary by engineering judgment
- Slopes over 10 percent
  - Leave if both ends of pipe were surveyed
  - Leave if upstream of model load point
  - Leave if pipe/node data indicates a reverse slope is correct and engineering judgment indicates large slope is possible
  - Review available data on pipe and junction features and apply a data gap assumption to correct if deemed necessary by engineering judgment
- Drops
  - Leave if ≤ 5 feet
  - Review available data on pipe and junction features if > 5 feet and apply data gaps assumptions to correct if deemed necessary by engineering judgment
- Sumps
  - Leave if ≤ 1 foot (xpswmm may not allow sumps—if not use standard assumptions and treat as data gaps to correct)
  - Review available data on pipe and junction features if > 1 foot and apply data gaps assumptions to correct if deemed necessary by engineering judgment
- Daylighting
  - Review available data on pipes and nodes for corrections
  - Apply data gaps assumptions to correct to correct if deemed necessary by engineering judgment

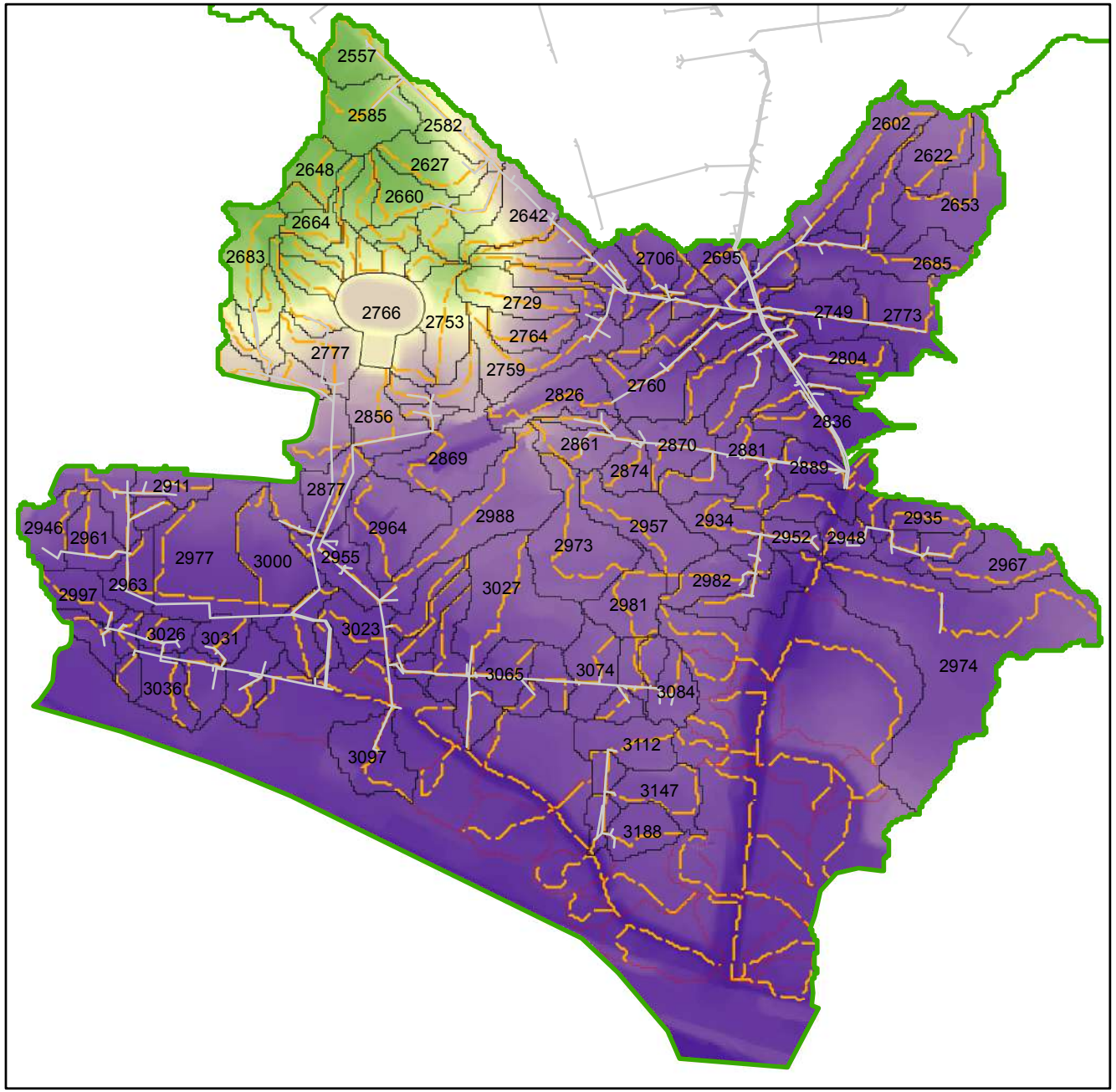
Table 11 below summarizes the types and counts of anomalies in the Hooffs Run system.

TABLE 11

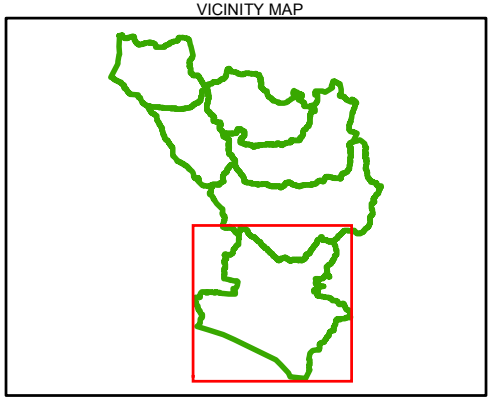
Data Anomalies Identified in Hooffs Run

Data Anomalies	Count of Data Anomalies
Large drop surveyed by city	11
Large drop US of model load point	1
Large slope based on pipe/node data	110
Large slope surveyed by City	2
Large slope US of model load point	474
Reverse slope < -1%	78
Reverse slope based on pipe/node data	12
Reverse slope surveyed by City	11
Reverse slope US of model load point	51
Total	**750**

Attachment C
Hydrologic Model Schematic and Parameters



VICINITY MAP



LEGEND

DEM Elevation (ft)

High : 204

Low : 2

DGravityMain

Longest Flow Path

Modeled Catchments

Unmodeled Catchments

Hooffs Run Subwatersheds

N

0 250 500 1,000

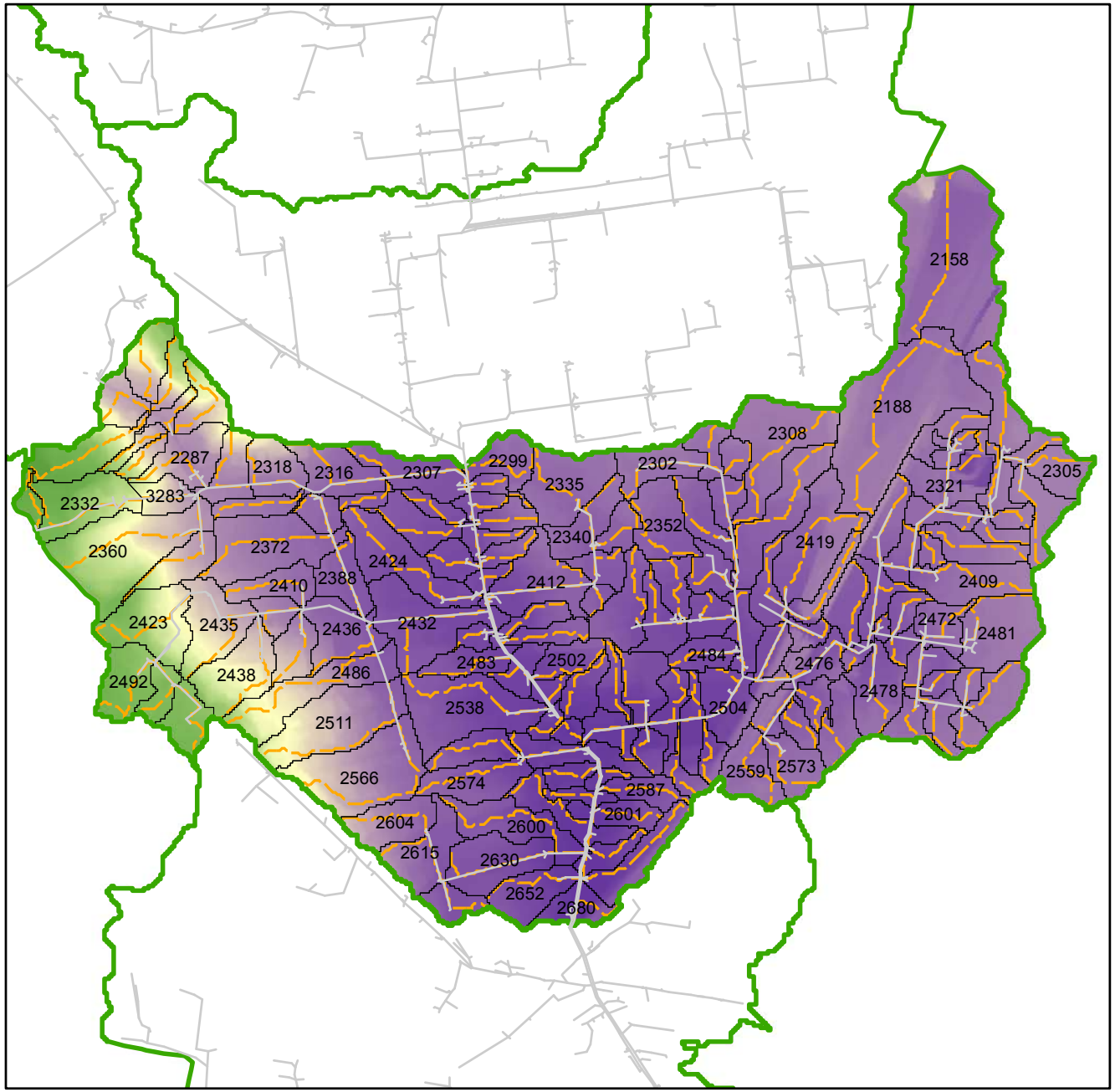
Feet

FIGURE 1

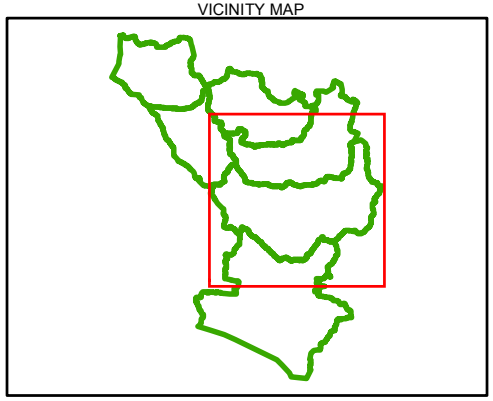
Hooffs Run Subwatershed 1 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL



VICINITY MAP



LEGEND

DEM Elevation (ft)

High : 204

Low : 2

DGravityMain

Longest Flow Path

Modeled Catchments

Hooffs Run Subwatersheds

N

0 250 500 1,000

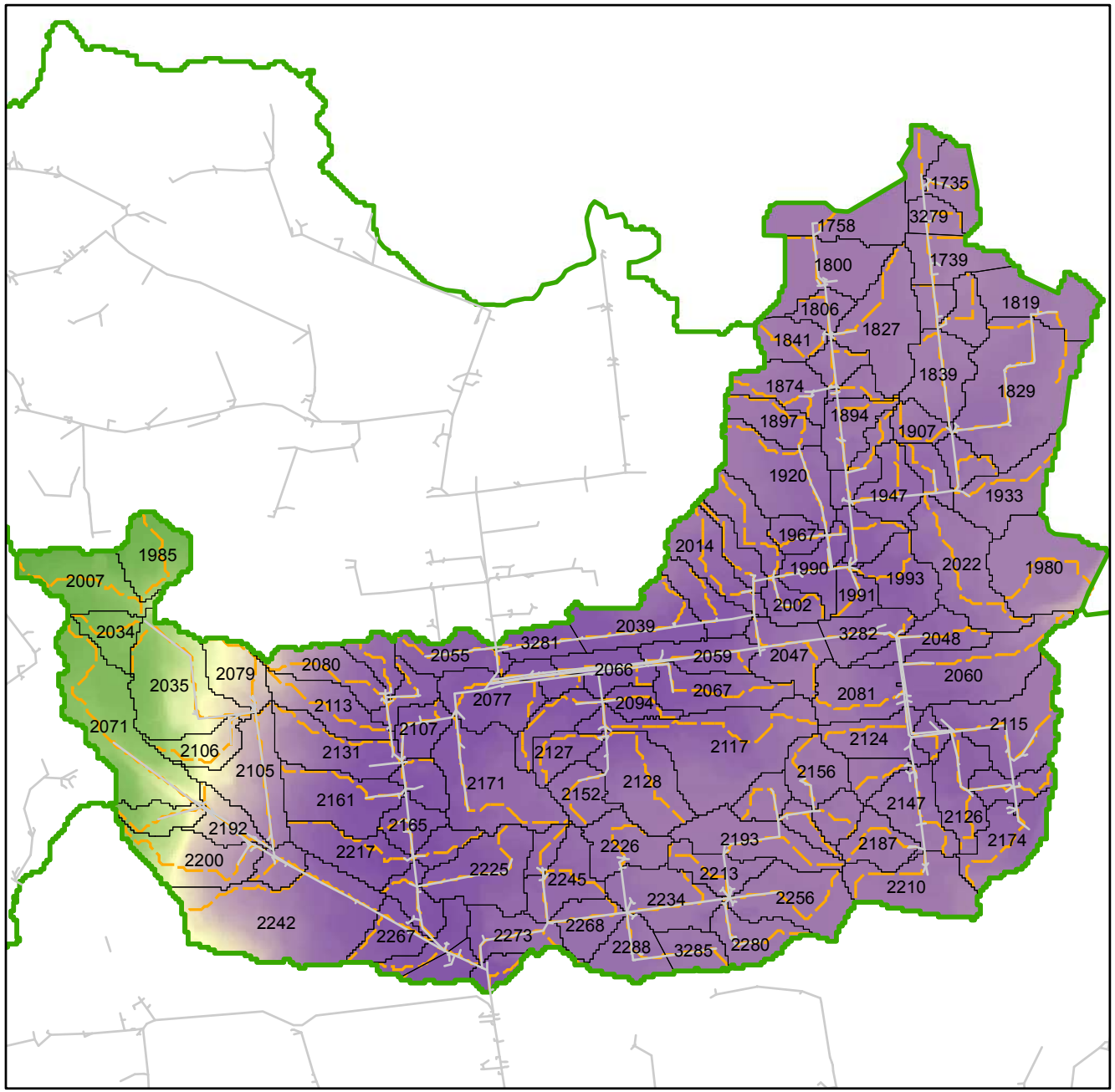
Feet

FIGURE 2

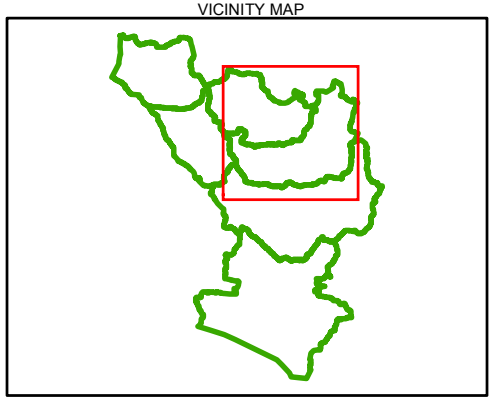
Hooffs Run Subwatershed 2 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL



VICINITY MAP



LEGEND

DEM Elevation (ft)

High : 204

Low : 2

DGravityMain

Longest Flow Path

Modeled Catchments

Hooffs Run Subwatersheds

N

0 250 500 1,000

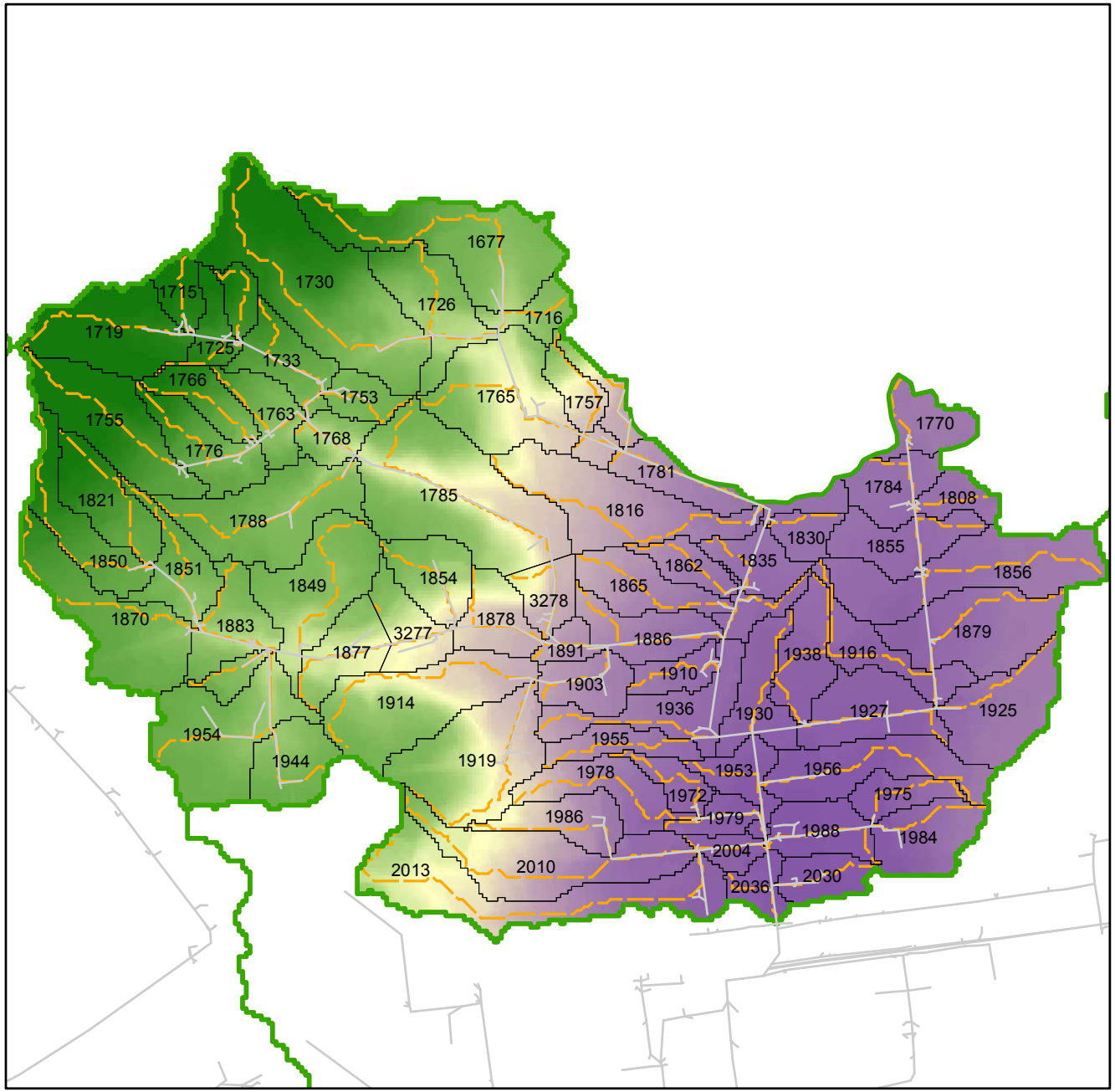
Feet

FIGURE 3

Hooffs Run Subwatershed 3 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL



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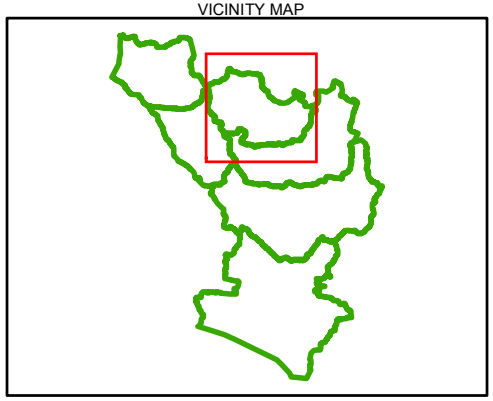


LEGEND

DEM Elevation (ft)

High : 204

Low : 2

DGravityMain

Longest Flow Path

Modeled Catchments

Hooffs Run Subwatersheds

N

0 250 500 1,000

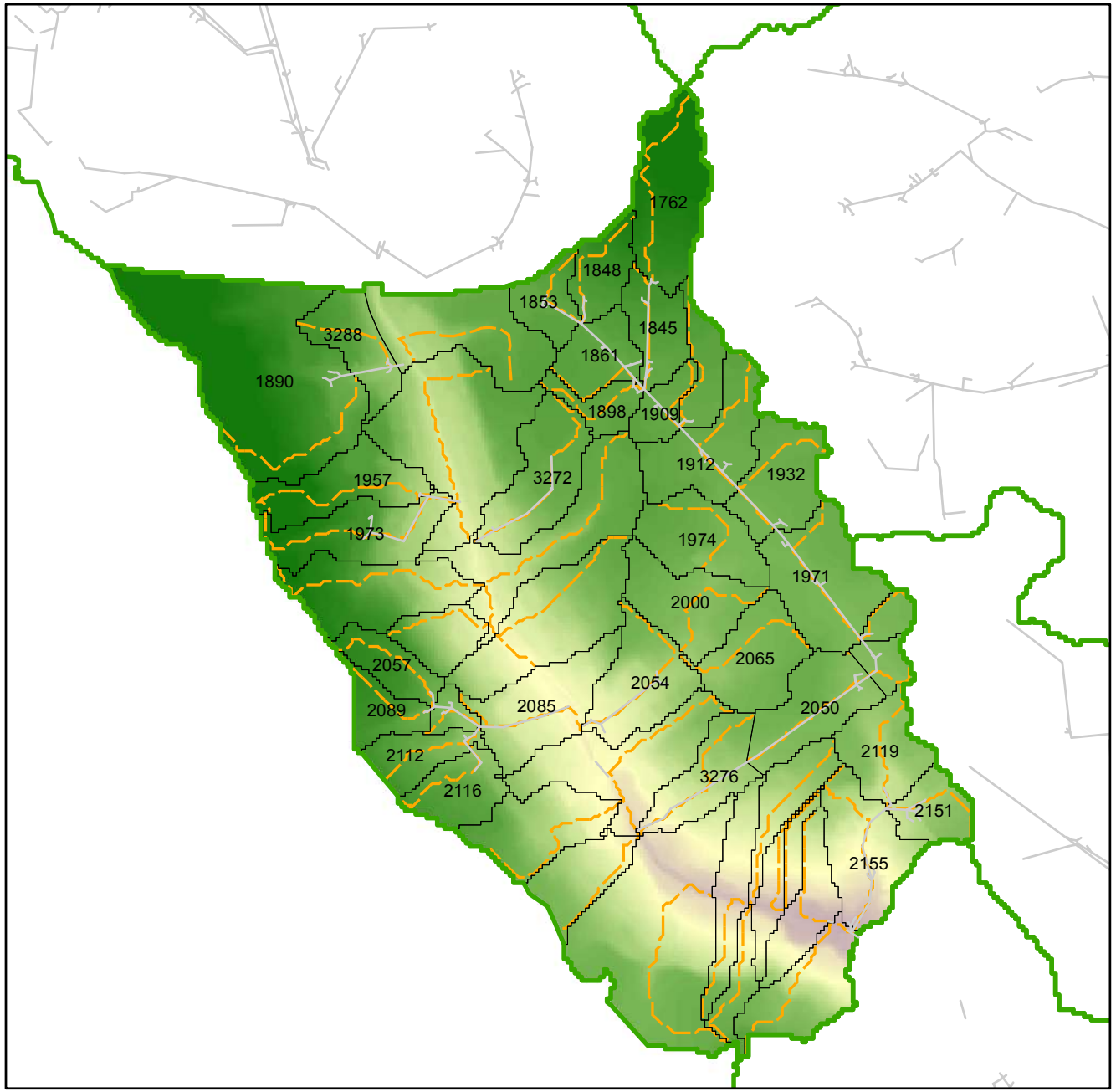
Feet

FIGURE 4

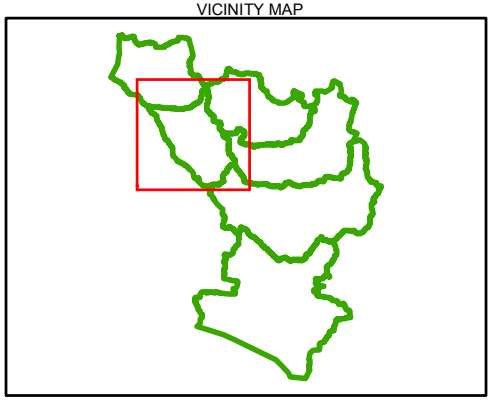
Hooffs Run Subwatershed 4 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL



VICINITY MAP



LEGEND

DEM Elevation (ft)

High : 204

Low : 2

DGravityMain

Longest Flow Path

Modeled Catchments

Hooffs Run Subwatersheds

N

0 255 510 1,020

Feet

FIGURE 5

Hooffs Run Subwatershed 5 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL

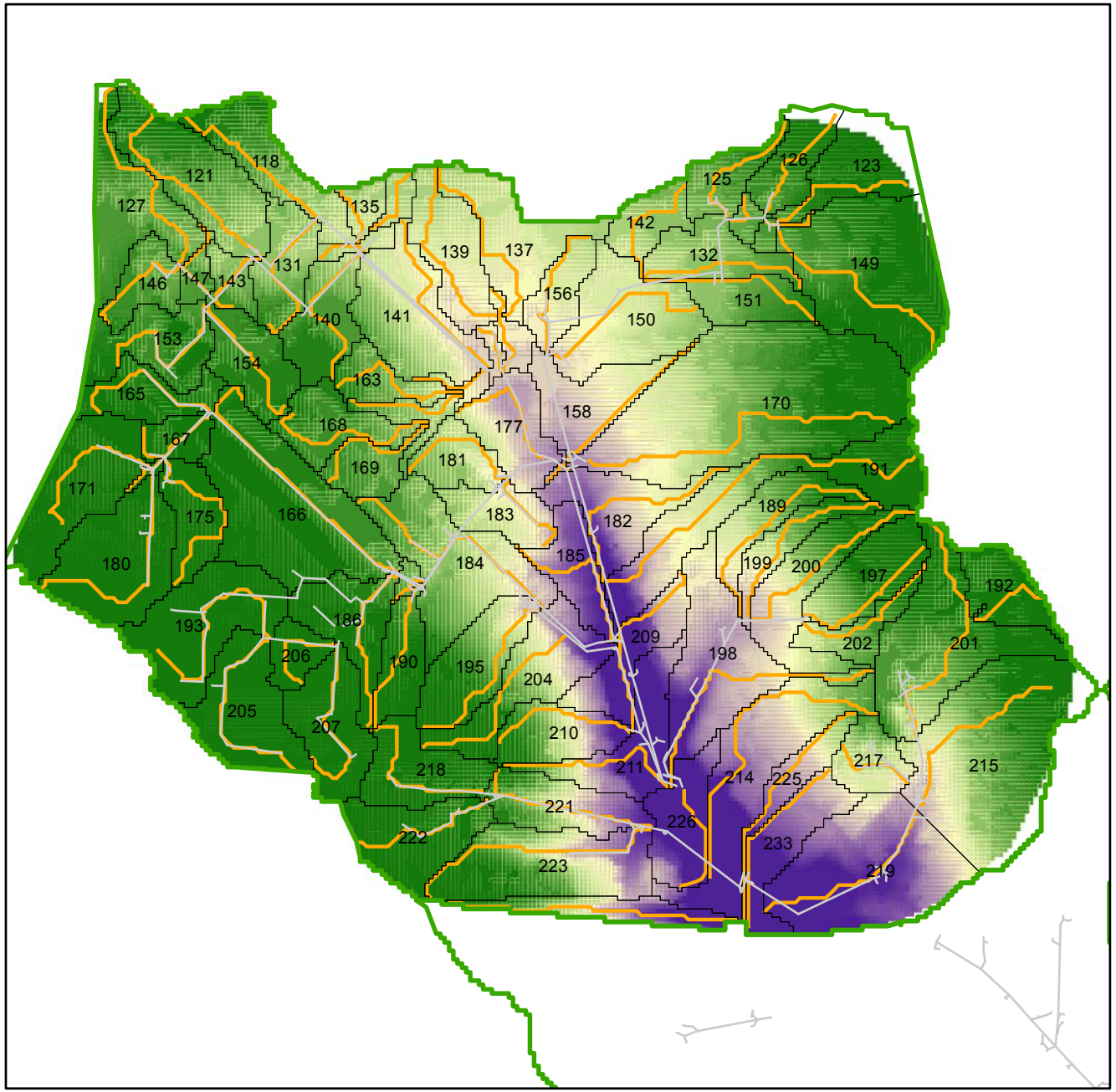


FIGURE 6

Hooffs Run Subwatershed 6 Catchments

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

CH2MHILL

Attachment D
Technical Memorandum: Comparison of Model Hyetograph Generation and Hydrologic Computation Methods, July 14, 2009

Comparison of Model Hyetograph Generation and Hydrologic Computation Methods

PREPARED FOR: City of Alexandria
Transportation & Environmental Services Department

PREPARED BY: CH2M HILL

DATE: July 14, 2009

PROJECT NUMBER: 240027

Comparison of Methods to Generate Design Hyetographs

Two methods were evaluated for generating design hyetographs for use in the hydrologic modeling:

- 10-year 24-hour L-Moment Design Hyetograph
- SCS Type 2 Distribution

The 10-year 24-hour L-Moment design hyetograph was developed from data presented in a Technical Memo entitled "Updated Precipitation Frequency Results and Synthesis of New IDF Curves for the City of Alexandria, Virginia", prepared for City of Alexandria Transportation & Environmental Services Department (Ref. 1). A variable time interval approach was used to generate the design hyetograph. Therefore, only those values presented in Table 6 (Ref. 1) and Table 8 (Ref. 1) were used. The data used to develop the design hyetograph are presented in Table 1. The design hyetograph data as presented in Table 2, were developed to yield maximum rainfall intensity approximately at the center of the 24-hour storm. Figure 1 compares the 10-year 24-hour L-Moment design hyetograph and SCS Type II distribution hyetograph. Figure 1 shows that L-Moment design hyetograph yields a maximum rainfall intensity of 7.2 inch/hour and SCS Type II distribution hyetograph yields a maximum rainfall intensity of 6.6 inch/hour. The difference is due to the fact that smallest time intervals are 5 and 6 minutes for L-Moment design hyetograph and SCS Type II hyetograph, respectively. Figure 1 also shows a phase lag between the two hyetographs. This is due to using variable time interval approach for L-Moment hyetograph with maximum rainfall intensity centered at 700-minute as evident in Table 2. The 24-hour rainfall total is equal to 4.81 inches for both the hyetographs. Generally, these two hyetographs show very similar rainfall distribution. The L-moment hyetograph generates approximately 36 percent of the 24-hour total rainfall in 30 minutes and 47 percent in 60 minutes. The SCS Type II hyetograph generates 38 percent in 30 minutes and 45 percent in 60 minutes.

TABLE 1
Data for 10-year 24-hour L-Moment Design Hyetograph

Duration (minutes)	Cumulative Depth (inches)	Source
5	0.600	Table 8, Ref. 1
10	0.960	Table 8, Ref. 1
15	1.210	Table 8, Ref. 1
30	1.750	Table 8, Ref. 1
60	2.280	Table 6, Ref. 1

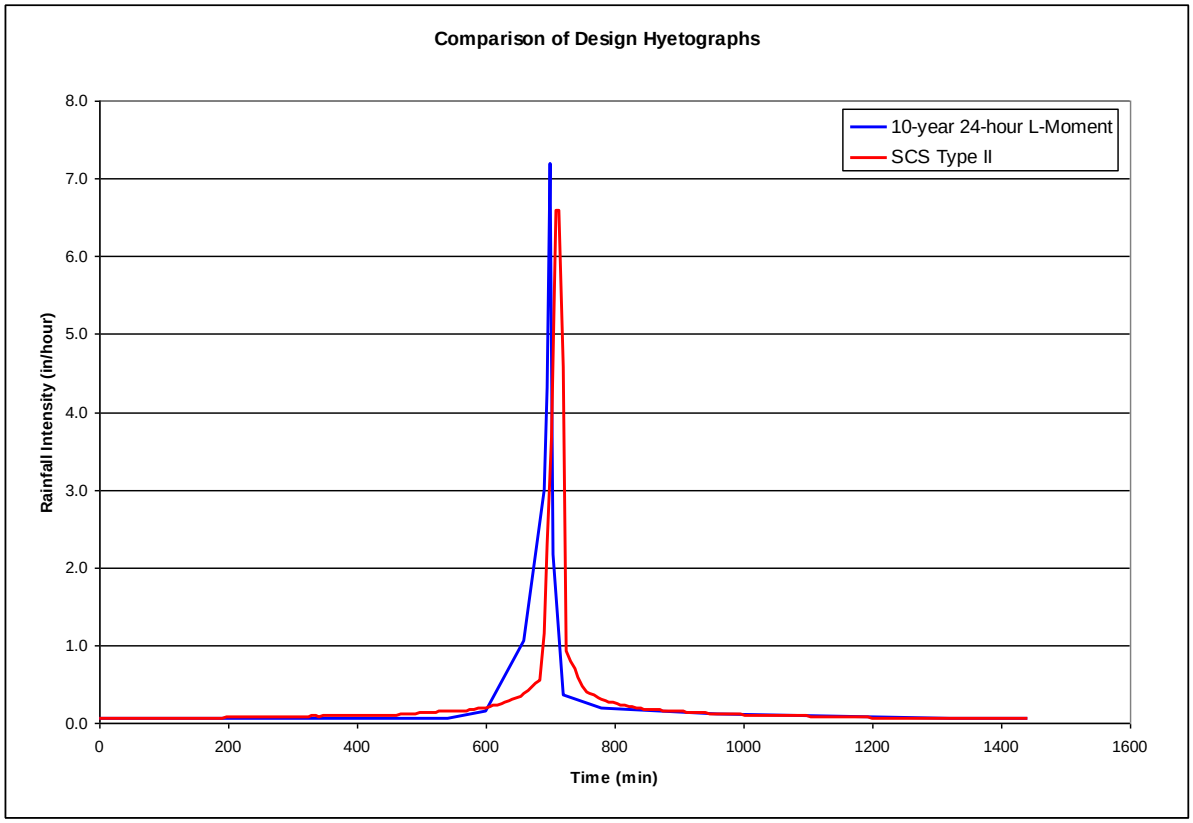
TABLE 1
Data for 10-year 24-hour L-Moment Design Hyetograph

Duration (minutes)	Cumulative Depth (inches)	Source
120	2.640	Table 6, Ref. 1
180	2.800	Table 6, Ref. 1
360	3.360	Table 6, Ref. 1
720	4.050	Table 6, Ref. 1
1440	4.810	Table 6, Ref. 1

TABLE 2
10-year 24-hour L-Moment Design Hyetograph Input Data for XP-SWMM Model

Start Time (minutes)	Duration (minutes)	Absolute Rainfall Depth (inches)	Intensity
0	60	0.0633	0.0633
60	60	0.0633	0.0633
120	60	0.0633	0.0633
180	60	0.0633	0.0633
240	60	0.0633	0.0633
300	60	0.0633	0.0633
360	60	0.0633	0.0633
420	60	0.0633	0.0633
480	60	0.0633	0.0633
540	60	0.0633	0.0633
600	60	0.16	0.1600
660	30	0.53	1.0600
690	5	0.25	3.0000
695	5	0.36	4.3200
700	5	0.6	7.2000
705	15	0.54	2.1600
720	60	0.36	0.3600
780	180	0.56	0.1867
960	360	0.69	0.1150
1320	60	0.0633	0.0633
1380	60	0.0633	0.0633

FIGURE 1
Comparison of Design Hyetographs



Comparison of Runoff Generation Methods

Runoff hydrographs were generated for 10 sub-watersheds located in the Pilot Area of Hooffs Run known as Timber Branch as shown in Figure 2. Two different runoff generation methods and two different design hyetographs were applied as listed below:

<u>Runoff Generation Method:</u>

- EPA-SWMM runoff method
- SCS runoff curve number method

<u>Design Hyetograph:</u>

- The 10-year 24-hour L-Moment design hyetograph
- The 10-year 24-hour SCS Type II design hyetograph

Figure 3 compares the stormwater runoff generated for sub-watershed “007509” in response to SCS Type II design hyetograph using the SCS and SWMM runoff methods. Figure 4 compares the stormwater runoff generated for the same sub-watershed in response to the L-Moment design hyetograph using the SCS and SWMM runoff methods.

These plots are not intended to show that one runoff generation method is better than the other. The two methods use different watershed parameters that are typically calibrated before model predictions are made. The SWMM method uses drainage area, watershed width, basin slope, imperviousness, and infiltration capacity. The SCS method uses drainage area, the curve number CN, time of concentration, and infiltration capacity. In general, for all practical purposes the two methods would produce similar results

with appropriate model calibration. Because flow monitoring data are not available, model calibration is not included in this project.

Recommendations

Given the similarity of the two hyetograph generation approaches, the selection of a method will have limited impact on the modeling results. The L-Moment design hyetograph is recommended for use in the hydrologic modeling because it is based on a more current data set and localized analysis. The SCS Type II hyetograph is based on TP-40 data which has become outdated with the publication of NOAA Atlas 14 in 2004.

Similarly, the runoff generation methods are comparable, within the expected error of the input data. The SWMM runoff method was initially developed for use in ultra-urban areas, therefore this is the recommended approach for runoff generation in the City of Alexandria Storm Sewer Capacity Analysis Project. An additional benefit of this approach is a reduced level of effort associated with compiling the input data. Given the number of drainage areas included in the model, the computation of time of concentrations required for the SCS runoff approach would require a significant effort.

FIGURE 2
Ten sub-watersheds in Pilot Area

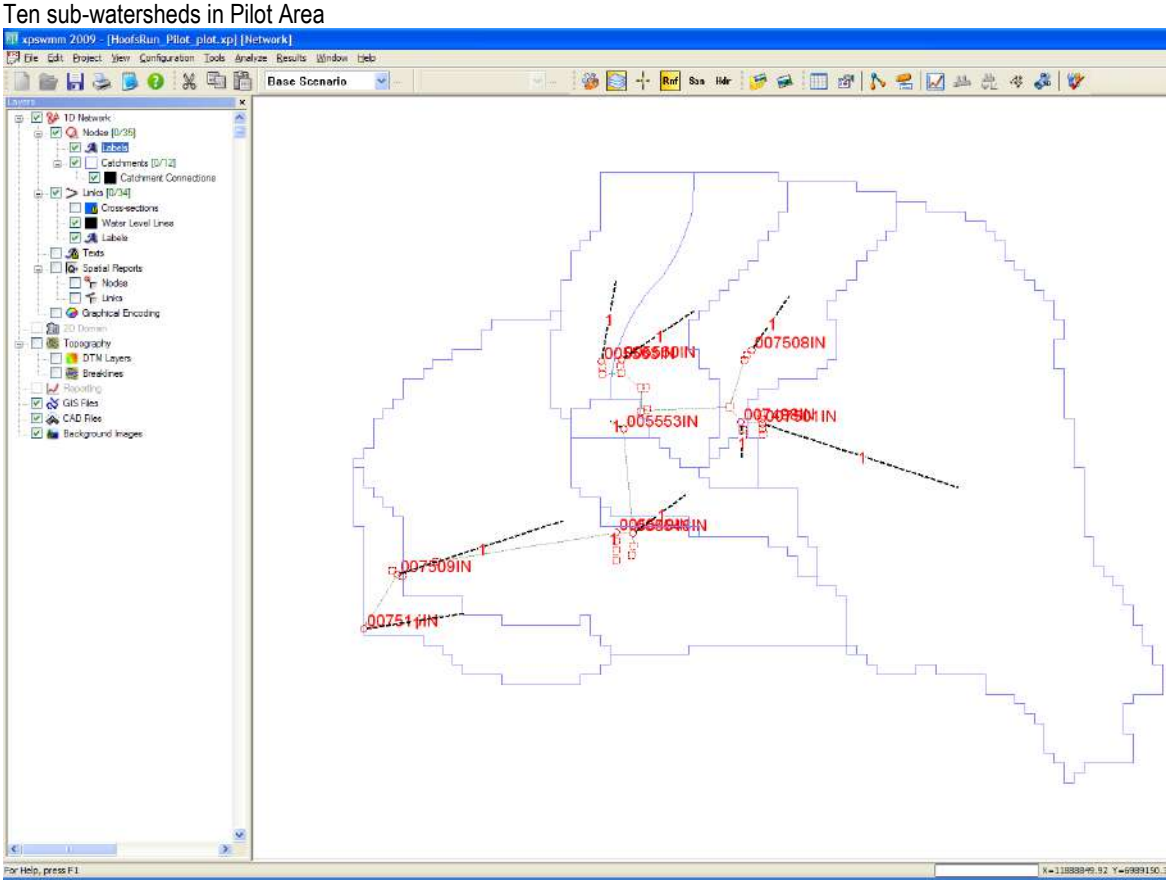


FIGURE 3
Comparison of Different Hydrologic Methods for SCS Type II Hyetograph

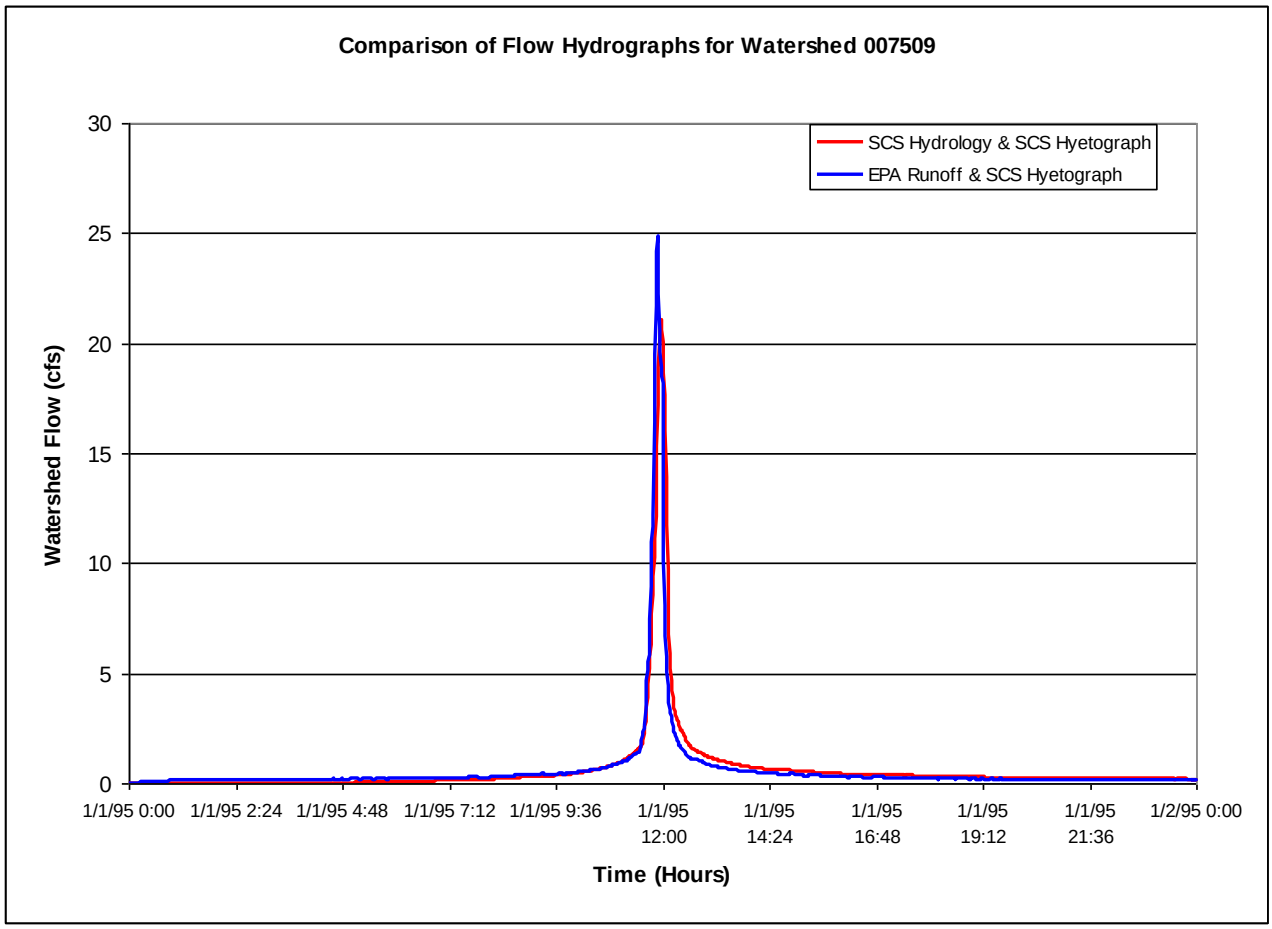
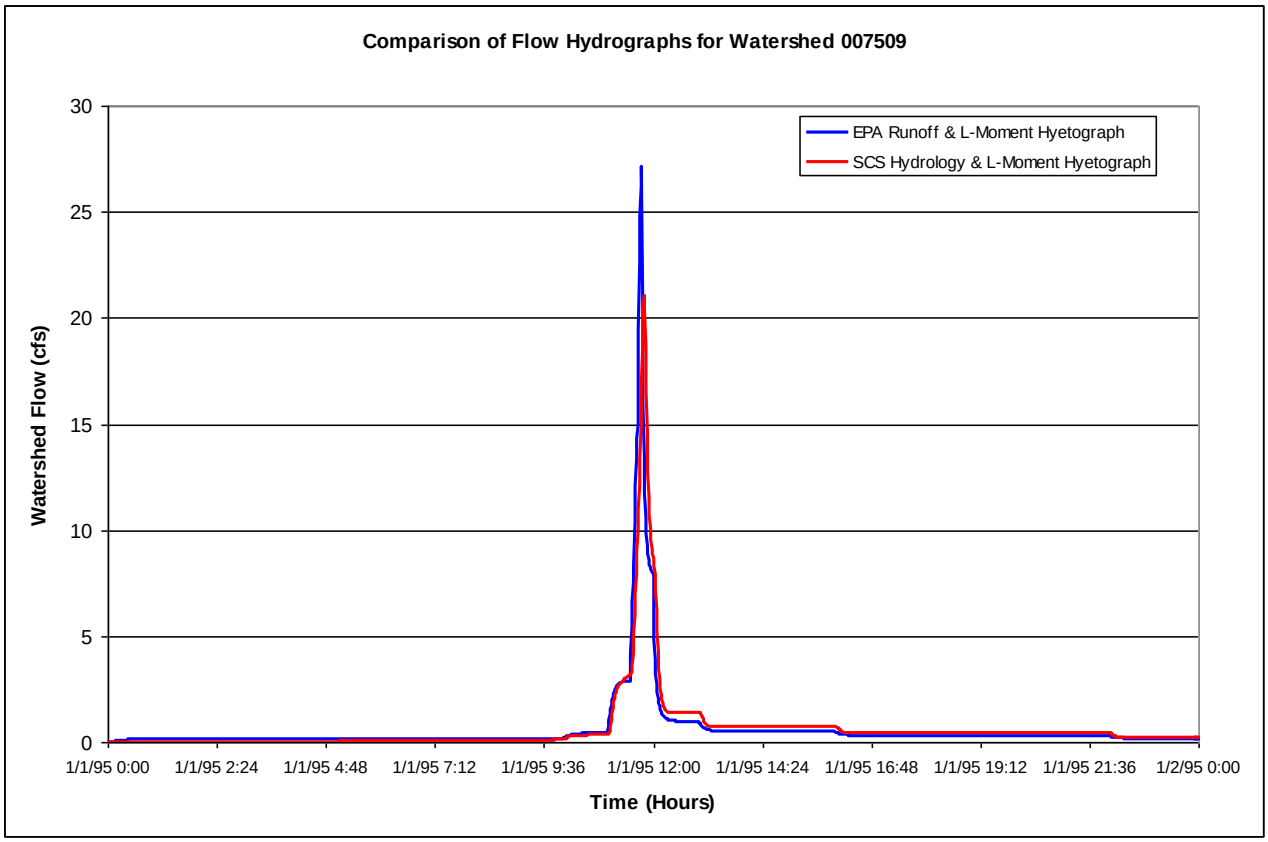


FIGURE 4
Comparison of Different Hydrologic Methods for the L-Moment Hyetograph



References

Updated Precipitation Frequency Results and Synthesis of New IDF Curves for the City of Alexandria, Virginia, prepared for City of Alexandria Transportation & Environmental Services Department, by Wilbert Thomas, Michael Baker, May 1, 2009.

Attachment E
Design Storm Hyetograph Data

TABLE 1

Existing 10-year, 24-hour Design Hyetograph Data

Start Time (minutes)	Duration (minutes)	Absolute Rainfall Depth (inches)	Intensity (in/hr)
0	60	0.05	0.05
60	60	0.05	0.05
120	60	0.05	0.05
180	60	0.05	0.05
240	60	0.05	0.05
300	60	0.05	0.05
360	60	0.05	0.05
420	60	0.05	0.05
480	60	0.05	0.05
540	60	0.05	0.05
600	60	0.40	0.40
660	30	0.70	1.40
690	15	1.475	5.90
705	15	0.525	2.10
720	60	0.50	0.50
780	180	0.36	0.12
960	360	0.48	0.08
1320	60	0.05	0.05
1380	60	0.05	0.05
1440	60	0.00	0.00

TABLE 2
Updated 10-year, 24-hour Design Hyetograph Data

Start Time (minutes)	Duration (minutes)	Absolute Rainfall Depth (inches)	Intensity (in/hr)
0	60	0.063	0.063
60	60	0.063	0.063
120	60	0.063	0.063
180	60	0.063	0.063
240	60	0.063	0.063
300	60	0.063	0.063
360	60	0.063	0.063
420	60	0.063	0.063
480	60	0.063	0.063
540	60	0.063	0.063
600	60	0.160	0.160
660	30	0.530	1.060
690	15	1.210	4.840
705	15	0.540	2.160
720	60	0.360	0.360
780	180	0.560	0.187
960	360	0.690	0.115
1320	60	0.063	0.063
1380	60	0.063	0.063
1440	0	0.000	0.000

TABLE 3

Projected Year 2100 10-year, 24-hour Design Hyetograph Data

Start Time (minutes)	Duration (minutes)	Absolute Rainfall Depth (inches)	Intensity (in/hr)
0	60	0.072	0.072
60	60	0.072	0.072
120	60	0.072	0.072
180	60	0.072	0.072
240	60	0.072	0.072
300	60	0.072	0.072
360	60	0.072	0.072
420	60	0.072	0.072
480	60	0.072	0.072
540	60	0.072	0.072
600	60	0.210	0.210
660	30	0.560	1.120
690	15	1.300	5.200
705	15	0.580	2.320
720	60	0.410	0.410
780	180	0.650	0.217
960	360	0.820	0.137
1320	60	0.072	0.072
1380	60	0.072	0.072
1440	0	0.000	0.000

Attachment F
Detailed Inlet Capacity Results

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
1	000246SMH	1.379	2	6.5	6.7	Insufficient	5.0		5.6		5.9	
1	000615ND	2.913	8	26.0	14.1		10.6		11.8		12.4	
1	000626ND	2.345	0	0.0	12.1	Insufficient	9.4	Insufficient	10.3	Insufficient	10.2	Insufficient
1	000647ND	7.800	0	0.0	38.5	Insufficient	29.6	Insufficient	32.7	Insufficient	33.2	Insufficient
1	000653IN	3.254	3	9.8	14.2	Insufficient	10.3	Insufficient	11.7	Insufficient	13.2	Insufficient
1	000657IN	1.591	3	9.8	8.3		6.4		7.1		7.0	
1	000661IN	0.931	2	6.5	5.5		4.5		4.9		4.3	
1	000922ND	6.317	1	3.3	24.6	Insufficient	17.4	Insufficient	19.9	Insufficient	24.3	Insufficient
1	000976ND	5.749	0	0.0	23.0	Insufficient	15.8	Insufficient	18.4	Insufficient	22.6	Insufficient
1	001542SMH	2.549	8	26.0	11.8		8.8		9.9		10.6	
1	001545SMH	3.700	0	0.0	18.4	Insufficient	13.8	Insufficient	15.4	Insufficient	15.8	Insufficient
1	001556SMH	2.701	3	9.8	15.6	Insufficient	12.6	Insufficient	13.6	Insufficient	12.3	Insufficient
1	001574SMH	1.816	5	16.3	7.8		5.6		6.4		7.3	
1	001584SMH	1.927	1	3.3	11.3	Insufficient	9.2	Insufficient	9.9	Insufficient	8.9	Insufficient
1	001586SMH	1.038	0	0.0	5.2	Insufficient	3.9	Insufficient	4.4	Insufficient	4.5	Insufficient
1	001593SMH	1.379	3	9.8	7.6		6.0		6.6		6.2	
1	001595SMH	2.521	5	16.3	13.6		10.7		11.7		11.2	
1	001596SMH	4.044	3	9.8	21.0	Insufficient	16.4	Insufficient	18.0	Insufficient	17.6	Insufficient
1	001609SMH	2.185	4	13.0	12.9		10.5		11.3		10.1	
1	001614SMH	1.596	1	3.3	9.4	Insufficient	7.7	Insufficient	8.3	Insufficient	7.4	Insufficient
1	001616SMH	0.806	3	9.8	4.5		3.5		3.9		3.6	
1	001617SMH	17.738	13	42.3	91.3	Insufficient	71.2	Insufficient	78.0	Insufficient	77.0	Insufficient
1	001636SMH	2.877	4	13.0	16.8	Insufficient	13.7	Insufficient	14.8	Insufficient	13.2	Insufficient
1	001642SMH	2.939	0	0.0	14.7	Insufficient	11.3	Insufficient	12.5	Insufficient	12.6	Insufficient
1	001660SMH	2.608	1	3.3	13.4	Insufficient	10.3	Insufficient	11.4	Insufficient	11.3	Insufficient
1	001661SMH	2.231	2	6.5	12.9	Insufficient	10.4	Insufficient	11.3	Insufficient	10.2	Insufficient
1	001665SMH	5.537	3	9.8	24.9	Insufficient	18.3	Insufficient	20.6	Insufficient	22.8	Insufficient
1	001675SMH	2.200	5	16.3	9.1		6.5		7.4		8.7	
1	001677SMH	1.090	2	6.5	6.2		5.0		5.4		4.9	
1	001680SMH	3.192	1	3.3	16.9	Insufficient	13.1	Insufficient	14.4	Insufficient	14.0	Insufficient
1	001683SMH	1.555	2	6.5	8.9	Insufficient	7.1	Insufficient	7.8	Insufficient	7.1	Insufficient
1	001685SMH	2.169	3	9.8	11.8	Insufficient	9.2		10.1	Insufficient	9.6	
1	001690SMH	1.684	0	0.0	9.9	Insufficient	8.1	Insufficient	8.7	Insufficient	7.8	Insufficient
1	001901CB	2.027	3	9.8	9.3		6.8		7.7		8.4	
1	003225SMH	5.612	0	0.0	17.9	Insufficient	11.0	Insufficient	13.5	Insufficient	20.2	Insufficient
1	003226SMH	0.677	3	9.8	3.8		3.0		3.3		3.0	
1	003261SMH	4.483	6	19.5	16.2		11.6		13.1		16.5	
1	003262SMH	6.074	6	19.5	21.2	Insufficient	13.8		16.4		22.7	Insufficient
1	003263SMH	1.637	1	3.3	6.4	Insufficient	4.5	Insufficient	5.1	Insufficient	6.4	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
1	003275SMH	1.384	8	26.0	6.8		5.1		5.7		5.9	
1	003279SMH	2.841	4	13.0	12.6		9.2		10.4		11.6	
1	003281SMH	3.151	5	16.3	14.2		10.3		11.6		13.0	
1	003287SMH	1.570	1	3.3	6.2	Insufficient	4.0	Insufficient	4.8	Insufficient	6.1	Insufficient
1	003289SMH	3.538	11	35.8	13.5		9.1		10.7		13.7	
1	003291SMH	1.849	2	6.5	6.2		4.0		4.8		6.8	Insufficient
1	003294SMH	1.214	2	6.5	4.4		2.8		3.4		4.6	
1	003309SMH	1.322	0	0.0	6.1	Insufficient	4.4	Insufficient	5.0	Insufficient	5.5	Insufficient
1	003322SMH	1.482	4	13.0	8.3		6.6		7.2		6.6	
1	003371SMH	4.716	2	6.5	25.5	Insufficient	20.0	Insufficient	21.9	Insufficient	20.9	Insufficient
1	003373SMH	3.673	4	13.0	21.5	Insufficient	17.5	Insufficient	18.9	Insufficient	16.9	Insufficient
1	003382SMH	1.969	0	0.0	9.2	Insufficient	6.4	Insufficient	7.5	Insufficient	8.2	Insufficient
1	003496SMH	4.437	3	9.8	17.4	Insufficient	12.2	Insufficient	14.0	Insufficient	17.3	Insufficient
1	004010SMH	9.049	2	6.5	49.6	Insufficient	39.3	Insufficient	42.8	Insufficient	40.4	Insufficient
1	004013SMH	4.979	0	0.0	20.2	Insufficient	15.0	Insufficient	16.8	Insufficient	19.3	Insufficient
1	004018SMH	0.775	2	6.5	3.8		2.9		3.2		3.3	
1	004469IN	2.392	4	13.0	13.2	Insufficient	10.5		11.4		10.7	
1	004472IN	2.991	2	6.5	14.5	Insufficient	11.1	Insufficient	12.3	Insufficient	12.7	Insufficient
1	004474IN	0.909	1	3.3	5.3	Insufficient	4.3	Insufficient	4.6	Insufficient	4.2	Insufficient
1	004475IN	1.049	2	6.5	5.8		4.6		5.0		4.7	
1	004477IN	3.321	2	6.5	19.4	Insufficient	15.7	Insufficient	17.0	Insufficient	15.2	Insufficient
1	004479IN	3.905	2	6.5	15.9	Insufficient	11.7	Insufficient	13.1	Insufficient	15.2	Insufficient
1	004792IN	2.557	6	19.5	14.9		12.1		13.1		11.7	
1	004798IN	0.764	3	9.8	4.5		3.7		4.0		3.5	
1	004809IN	0.888	1	3.3	4.8	Insufficient	3.8	Insufficient	4.1	Insufficient	3.9	Insufficient
1	004818IN	1.379	2	6.5	7.2	Insufficient	5.5		6.1		6.0	
1	004831IN	2.588	2	6.5	13.7	Insufficient	10.7	Insufficient	11.7	Insufficient	11.4	Insufficient
1	004839IN	2.257	2	6.5	12.9	Insufficient	10.4	Insufficient	11.3	Insufficient	10.3	Insufficient
1	004843IN	2.299	4	13.0	13.2	Insufficient	10.7		11.5		10.5	
1	004845IN	0.821	6	19.5	4.3		3.3		3.7		3.6	
1	004847IN	1.346	4	13.0	7.9		6.5		7.0		6.2	
1	004852IN	1.431	7	22.8	8.2		6.5		7.1		6.5	
1	004862IN	2.603	5	16.3	12.1		8.9		10.0		10.9	
1	004893IN	1.663	6	19.5	9.3		7.4		8.1		7.5	
1	004902IN	1.901	3	9.8	11.0	Insufficient	8.8		9.6		8.7	
1	004902SMH	5.101	1	3.3	24.7	Insufficient	18.3	Insufficient	20.6	Insufficient	21.6	Insufficient
1	004904SMH	1.105	0	0.0	6.5	Insufficient	5.3	Insufficient	5.7	Insufficient	5.1	Insufficient
1	004926IN	0.909	3	9.8	5.3		4.2		4.6		4.1	
1	004928IN	1.586	5	16.3	7.9		5.9		6.6		6.8	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
1	004933IN	1.281	2	6.5	7.4	Insufficient	5.9		6.4		5.8	
1	004940IN	1.415	2	6.5	8.2	Insufficient	6.7	Insufficient	7.2	Insufficient	6.5	
1	004951IN	1.798	1	3.3	9.2	Insufficient	7.1	Insufficient	7.9	Insufficient	7.8	Insufficient
1	004959IN	2.634	1	3.3	10.5	Insufficient	7.1	Insufficient	8.3	Insufficient	10.4	Insufficient
1	004970IN	1.658	1	3.3	9.7	Insufficient	7.9	Insufficient	8.5	Insufficient	7.6	Insufficient
1	004971IN	1.622	2	6.5	9.4	Insufficient	7.6	Insufficient	8.2	Insufficient	7.4	Insufficient
1	004977IN	0.692	3	9.8	4.1		3.3		3.6		3.2	
1	004985IN	8.177	2	6.5	41.8	Insufficient	32.6	Insufficient	35.7	Insufficient	35.4	Insufficient
1	004988IN	21.973	2	6.5	48.1	Insufficient	35.1	Insufficient	39.3	Insufficient	54.2	Insufficient
1	005001IN	0.873	1	3.3	4.8	Insufficient	3.8	Insufficient	4.2	Insufficient	3.9	Insufficient
1	005013IN	0.785	1	3.3	4.6	Insufficient	3.8	Insufficient	4.1	Insufficient	3.6	Insufficient
1	005014IN	0.930	1	3.3	4.8	Insufficient	3.6	Insufficient	4.0	Insufficient	4.0	Insufficient
1	006001IN	2.056	6	19.5	11.9		9.6		10.4		9.4	
1	006006IN	1.245	7	22.8	7.3		6.0		6.4		5.7	
1	006016IN	6.450	6	19.5	23.0	Insufficient	15.2		17.9		24.1	Insufficient
1	006019IN	0.790	3	9.8	4.6		3.7		4.0		3.6	
1	006022IN	4.055	1	3.3	17.2	Insufficient	12.2	Insufficient	13.9	Insufficient	16.3	Insufficient
1	006023IN	4.127	4	13.0	21.6	Insufficient	16.7	Insufficient	18.4	Insufficient	18.1	Insufficient
1	006027IN	1.198	2	6.5	7.0	Insufficient	5.8		6.2		5.5	
1	006086IN	0.728	1	3.3	3.9	Insufficient	3.0		3.3	Insufficient	3.2	
1	006089IN	1.560	2	6.5	6.7	Insufficient	4.9		5.5		6.3	
1	006100IN	12.185	6	19.5	48.6	Insufficient	36.2	Insufficient	40.4	Insufficient	46.5	Insufficient
1	006106IN	2.164	4	13.0	10.5		7.9		8.8		9.2	
1	006109IN	0.775	1	3.3	3.4	Insufficient	2.4		2.8		3.2	
1	006110IN	0.816	3	9.8	4.4		3.3		3.7		3.6	
1	006113IN	1.240	3	9.8	7.2		5.8		6.3		5.7	
1	006115IN	2.831	5	16.3	16.6	Insufficient	13.5		14.5		13.0	
1	006119IN	2.386	3	9.8	13.7	Insufficient	11.0	Insufficient	11.9	Insufficient	10.8	Insufficient
1	006131IN	1.942	2	6.5	8.0	Insufficient	5.4		6.3		7.7	Insufficient
1	006133IN	0.785	1	3.3	4.0	Insufficient	3.0		3.3	Insufficient	3.4	Insufficient
1	006134IN	0.563	1	3.3	3.2		2.5		2.8		2.5	
1	006137IN	4.902	2	6.5	24.6	Insufficient	19.0	Insufficient	20.9	Insufficient	21.0	Insufficient
1	006138IN	5.677	2	6.5	14.7	Insufficient	9.6	Insufficient	11.3	Insufficient	18.0	Insufficient
1	006143IN	1.018	2	6.5	6.0		4.9		5.3		4.7	
1	006149IN	0.346	2	6.5	2.0		1.6		1.7		1.6	
1	006152IN	2.577	2	6.5	15.1	Insufficient	12.3	Insufficient	13.3	Insufficient	11.8	Insufficient
1	006157IN	0.764	2	6.5	4.0		3.0		3.3		3.3	
1	007859IN	3.853	6	19.5	21.8	Insufficient	17.4		18.9		17.4	
1	008054IN	3.135	2	6.5	13.5	Insufficient	9.6	Insufficient	11.0	Insufficient	12.7	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
1	009911IN	2.913	1	3.3	10.2	Insufficient	6.8	Insufficient	7.9	Insufficient	10.8	Insufficient
1	009912IN	2.405	1	3.3	11.7	Insufficient	8.6	Insufficient	9.8	Insufficient	10.2	Insufficient
2	0001038ND	1.364	3	9.8	7.2		5.6		6.2		6.0	
2	000484CB	2.800	2	6.5	11.7	Insufficient	8.5	Insufficient	9.6	Insufficient	11.2	Insufficient
2	000485CB	1.395	6	19.5	6.7		5.0		5.6		5.9	
2	000487CB	0.656	3	9.8	3.0		2.1		2.4		2.7	
2	000496CB	2.681	6	19.5	11.5		8.5		9.6		10.7	
2	000509CB	1.839	8	26.0	7.8		5.8		6.5		7.3	
2	000512CB	4.773	4	13.0	20.0	Insufficient	14.7	Insufficient	16.6	Insufficient	19.0	Insufficient
2	000514CB	2.030	2	6.5	7.2	Insufficient	5.1		5.8		7.4	Insufficient
2	000515CB	7.133	5	16.3	27.3	Insufficient	20.5	Insufficient	22.8	Insufficient	26.5	Insufficient
2	000518CB	6.343	1	3.3	21.7	Insufficient	15.8	Insufficient	17.8	Insufficient	22.4	Insufficient
2	000519CB	2.314	1	3.3	11.0	Insufficient	8.2	Insufficient	9.2	Insufficient	9.7	Insufficient
2	000537IO	8.833	1	3.3	22.0	Insufficient	13.8	Insufficient	16.5	Insufficient	28.0	Insufficient
2	000538CB	3.347	4	13.0	13.8	Insufficient	10.1		11.3		13.2	Insufficient
2	000539CB	2.211	5	16.3	7.8		5.5		6.3		8.2	
2	000543CB	3.223	4	13.0	13.6	Insufficient	9.7		11.1		12.9	
2	000543IO	29.620	3	9.8	59.2	Insufficient	38.7	Insufficient	45.4	Insufficient	77.8	Insufficient
2	000544CB	3.724	3	9.8	17.0	Insufficient	12.5	Insufficient	14.0	Insufficient	15.4	Insufficient
2	000633CB	0.362	5	16.3	1.8		1.4		1.5		1.5	
2	000634CB	1.410	4	13.0	6.2		4.6		5.1		5.7	
2	000764ND	3.352	7	22.8	13.5		9.2		10.7		13.2	
2	000770ND	1.064	4	13.0	3.8		2.7		3.1		4.0	
2	000775ND	1.147	2	6.5	5.4		4.0		4.5		4.8	
2	000829ND	5.708	0	0.0	21.6	Insufficient	15.0	Insufficient	17.3	Insufficient	21.8	Insufficient
2	000834ND	6.875	5	16.3	28.8	Insufficient	21.1	Insufficient	23.7	Insufficient	27.3	Insufficient
2	002416SMH	4.840	12	39.0	25.8		20.2		22.1		21.3	
2	002459SMH	2.629	3	9.8	11.2	Insufficient	8.7		9.5		10.2	Insufficient
2	002908SMH	1.405	2	6.5	6.4		4.7		5.3		5.8	
2	002916SMH	4.979	2	6.5	18.9	Insufficient	13.0	Insufficient	15.1	Insufficient	19.1	Insufficient
2	003060SMH	3.264	3	9.8	18.6	Insufficient	14.9	Insufficient	16.1	Insufficient	14.8	Insufficient
2	003069SMH	2.392	2	6.5	9.0	Insufficient	6.1		7.1	Insufficient	9.2	Insufficient
2	003072SMH	1.720	10	32.5	8.7		6.4		7.2		7.3	
2	003091SMH	0.759	4	13.0	3.7		2.8		3.1		3.2	
2	003099SMH	2.593	5	16.3	10.3		7.5		8.5		10.1	
2	003104SMH	5.243	8	26.0	19.0		14.4		16.0		18.5	
2	003107SMH	5.418	1	3.3	19.3	Insufficient	13.7	Insufficient	15.6	Insufficient	19.9	Insufficient
2	003112SMH	1.921	6	19.5	9.1		6.9		7.7		8.1	
2	003115SMH	2.252	4	13.0	8.1		5.8		6.6		8.2	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
2	003117SMH	1.715	11	35.8	6.6		4.8		5.4		6.6	
2	003128SMH	6.064	0	0.0	13.0	Insufficient	8.2	Insufficient	9.8	Insufficient	17.5	Insufficient
2	003137SMH	6.436	3	9.8	25.0	Insufficient	19.0	Insufficient	21.0	Insufficient	23.8	Insufficient
2	003138SMH	1.436	3	9.8	6.2		4.6		5.1		5.8	
2	003143SMH	1.033	2	6.5	4.8		3.5		4.0		4.3	
2	003144SMH	5.165	9	29.3	20.0		15.2		16.8		19.1	
2	003157SMH	1.265	0	0.0	4.9	Insufficient	3.1	Insufficient	3.8	Insufficient	4.9	Insufficient
2	003158SMH	4.241	4	13.0	16.7	Insufficient	11.5		13.4	Insufficient	16.6	Insufficient
2	003160SMH	3.667	3	9.8	17.0	Insufficient	12.6	Insufficient	14.1	Insufficient	15.3	Insufficient
2	003163SMH	7.107	2	6.5	26.2	Insufficient	18.8	Insufficient	21.4	Insufficient	26.5	Insufficient
2	003164SMH	3.228	6	19.5	13.0		8.9		10.3		12.7	
2	003168SMH	7.748	3	9.8	29.1	Insufficient	21.2	Insufficient	23.9	Insufficient	29.1	Insufficient
2	003199SMH	3.058	0	0.0	12.0	Insufficient	8.6	Insufficient	9.8	Insufficient	11.8	Insufficient
2	003200SMH	0.878	3	9.8	3.9		2.8		3.2		3.6	
2	003205SMH	4.411	2	6.5	17.5	Insufficient	13.0	Insufficient	14.5	Insufficient	16.9	Insufficient
2	003206SMH	2.758	1	3.3	9.4	Insufficient	6.8	Insufficient	7.7	Insufficient	9.8	Insufficient
2	003265SMH	3.058	2	6.5	9.1	Insufficient	5.9		7.0	Insufficient	10.5	Insufficient
2	003381SMH	2.567	4	13.0	10.8		8.0		8.9		10.2	
2	003440SMH	1.911	4	13.0	9.2		7.0		7.8		8.1	
2	003454SMH	2.479	2	6.5	11.9	Insufficient	8.8	Insufficient	9.9	Insufficient	10.5	Insufficient
2	003460SMH	4.726	6	19.5	25.6	Insufficient	19.9	Insufficient	21.9	Insufficient	20.9	Insufficient
2	003464SMH	2.211	5	16.3	11.9		9.2		10.1		9.8	
2	003474SMH	3.120	8	26.0	16.0		12.3		13.6		13.5	
2	003483SMH	3.884	4	13.0	20.1	Insufficient	15.7	Insufficient	17.2	Insufficient	16.9	Insufficient
2	003489SMH	1.100	6	19.5	6.2		4.9		5.4		5.0	
2	005209IN	1.038	1	3.3	6.1	Insufficient	5.0	Insufficient	5.4	Insufficient	4.8	Insufficient
2	005210IN	2.454	5	16.3	13.9		11.1		12.1		11.1	
2	005224IN	0.811	1	3.3	4.7	Insufficient	3.8	Insufficient	4.2	Insufficient	3.7	Insufficient
2	005775IN	0.828	2	6.5	4.2		3.2		3.5		3.6	
2	005785IN	3.197	6	19.5	11.6		8.1		9.3		11.9	
2	005793IN	2.335	4	13.0	8.7		6.2		7.0		8.8	
2	005813IN	4.592	4	13.0	20.1	Insufficient	14.9	Insufficient	16.7	Insufficient	18.7	Insufficient
2	005833IN	5.181	1	3.3	21.8	Insufficient	15.2	Insufficient	17.6	Insufficient	20.8	Insufficient
2	005846IN	2.479	3	9.8	9.7		7.2		8.1		9.4	
2	005847IN	1.012	3	9.8	4.0		2.9		3.3		3.9	
2	005855IN	1.374	6	19.5	6.8		5.1		5.7		5.9	
2	005862IN	0.677	6	19.5	3.5		2.6		3.0		2.9	
2	005868IN	3.456	7	22.8	10.3		7.5		8.4		10.9	
2	005876IN	1.539	3	9.8	6.1		4.2		4.9		6.0	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
2	005881IN	1.477	5	16.3	6.7		5.0		5.6		6.1	
2	005885IN	1.457	3	9.8	4.9		3.3		3.9		5.4	
2	005891IN	6.111	2	6.5	21.6	Insufficient	16.1	Insufficient	18.0	Insufficient	21.5	Insufficient
2	005899IN	1.038	6	19.5	4.7		3.4		3.8		4.3	
2	005903IN	1.513	5	16.3	6.1		4.5		5.0		5.9	
2	005921IN	0.873	5	16.3	3.9		2.8		3.2		3.6	
2	005927IN	2.123	6	19.5	9.8		7.1		8.1		8.8	
2	005928IN	4.437	4	13.0	17.6	Insufficient	12.3		14.1	Insufficient	17.4	Insufficient
2	005934IN	1.162	1	3.3	5.3	Insufficient	3.8	Insufficient	4.4	Insufficient	4.8	Insufficient
2	005935IN	0.666	1	3.3	2.8		1.8		2.2		2.6	
2	005936IN	1.415	1	3.3	5.9	Insufficient	3.9	Insufficient	4.6	Insufficient	5.6	Insufficient
2	005946IN	3.249	3	9.8	14.1	Insufficient	10.4	Insufficient	11.7	Insufficient	13.2	Insufficient
2	005957IN	1.746	9	29.3	6.7		4.9		5.5		6.7	
2	005984IN	1.849	3	9.8	7.4		5.5		6.1		7.1	
2	005988IN	1.792	8	26.0	8.4		6.4		7.1		7.5	
2	005994IN	3.642	0	0.0	14.5	Insufficient	10.6	Insufficient	12.0	Insufficient	14.1	Insufficient
2	005995IN	2.371	2	6.5	8.1	Insufficient	5.9		6.6	Insufficient	8.4	Insufficient
2	006028IN	1.823	4	13.0	8.7		6.6		7.3		7.7	
2	006034IN	1.916	2	6.5	6.6	Insufficient	4.5		5.2		7.0	Insufficient
2	006035IN	1.364	2	6.5	5.9		4.3		4.9		5.5	
2	006036IN	4.106	1	3.3	16.2	Insufficient	12.2	Insufficient	13.6	Insufficient	15.5	Insufficient
2	006044IN	1.581	1	3.3	6.8	Insufficient	4.9	Insufficient	5.5	Insufficient	6.4	Insufficient
2	006094IN	1.260	1	3.3	4.4	Insufficient	2.7		3.3	Insufficient	4.7	Insufficient
2	006122IN	3.110	3	9.8	7.7		4.6		5.7		10.0	Insufficient
2	006123IN	3.094	3	9.8	10.8	Insufficient	7.6		8.7		11.3	Insufficient
2	006128IN	1.999	5	16.3	7.0		4.6		5.4		7.5	
2	007225IN	2.226	1	3.3	8.8	Insufficient	6.8	Insufficient	7.5	Insufficient	8.2	Insufficient
2	007226IN	0.919	3	9.8	5.3		4.3		4.6		4.2	
2	007729IN	1.462	1	3.3	6.2	Insufficient	4.5	Insufficient	5.1	Insufficient	5.9	Insufficient
2	007736IN	1.875	2	6.5	8.1	Insufficient	5.9		6.6	Insufficient	7.6	Insufficient
2	007745IN	0.687	5	16.3	3.3		2.3		2.7		2.9	
2	007748IN	2.397	1	3.3	9.9	Insufficient	7.2	Insufficient	8.1	Insufficient	9.5	Insufficient
2	007751IN	4.556	4	13.0	16.7	Insufficient	12.1		13.7	Insufficient	16.8	Insufficient
2	007754IN	0.770	0	0.0	2.8	Insufficient	1.9	Insufficient	2.2	Insufficient	2.9	Insufficient
2	007761IN	1.555	5	16.3	7.4		5.5		6.2		6.6	
2	007765IN	2.851	5	16.3	11.9		8.9		9.9		11.2	
2	007842IN	2.789	5	16.3	11.6		8.5		9.6		11.0	
2	007843IN	1.074	1	3.3	4.4	Insufficient	3.1		3.5	Insufficient	4.3	Insufficient
2	007844IN	0.548	3	9.8	1.9		1.2		1.5		2.1	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
2	007963IN	3.497	5	16.3	16.8	Insufficient	12.7		14.1		14.8	
2	007977IN	1.684	3	9.8	4.8		2.9		3.6		5.8	
2	007992IN	0.961	2	6.5	4.9		3.6		4.1		4.1	
2	007994IN	2.164	2	6.5	10.4	Insufficient	7.5	Insufficient	8.6	Insufficient	9.1	Insufficient
2	008004IN	0.558	2	6.5	3.3		2.6		2.9		2.6	
2	008007IN	0.806	1	3.3	4.1	Insufficient	3.1		3.5	Insufficient	3.5	Insufficient
2	008008IN	1.126	2	6.5	5.3		3.9		4.4		4.7	
2	008012IN	2.133	6	19.5	10.0		7.4		8.3		8.9	
2	008015IN	1.405	1	3.3	8.2	Insufficient	6.7	Insufficient	7.2	Insufficient	6.4	Insufficient
2	008017IN	0.718	2	6.5	4.3		3.5		3.7		3.3	
2	008023IN	1.860	3	9.8	10.5	Insufficient	8.4		9.1		8.4	
2	008027IN	1.710	1	3.3	9.5	Insufficient	7.6	Insufficient	8.2	Insufficient	7.7	Insufficient
2	008030IN	0.899	2	6.5	5.3		4.3		4.6		4.1	
2	008032IN	0.883	2	6.5	5.2		4.2		4.6		4.1	
2	008033IN	3.595	4	13.0	19.3	Insufficient	15.0	Insufficient	16.5	Insufficient	15.9	Insufficient
2	008046IN	1.410	2	6.5	8.2	Insufficient	6.6	Insufficient	7.1	Insufficient	6.4	
2	008049IN	1.829	2	6.5	9.6	Insufficient	7.3	Insufficient	8.1	Insufficient	8.0	Insufficient
2	Hooffs1220	0.635	1	3.3	2.6		1.7		2.1		2.5	
2	Hooffs124b	1.787	3	9.8	7.7		5.6		6.3		7.2	
2	Timber_043	3.931	12	39.0	17.4		12.3		14.2		16.0	
2	Timber_075	0.801	0	0.0	3.5	Insufficient	2.4	Insufficient	2.8	Insufficient	3.2	Insufficient
2	Timber_093	7.614	8	26.0	31.8	Insufficient	22.4		25.7		30.4	Insufficient
2	Timber_136	1.968	0	0.0	9.2	Insufficient	6.5	Insufficient	7.5	Insufficient	8.2	Insufficient
3	0001031ND	6.327	3	9.8	21.4	Insufficient	15.3	Insufficient	17.3	Insufficient	22.4	Insufficient
3	000140CB	4.210	1	3.3	14.5	Insufficient	10.6	Insufficient	12.0	Insufficient	14.9	Insufficient
3	000142CB	1.492	3	9.8	7.0		5.3		5.9		6.2	
3	000476CB	1.229	2	6.5	5.7		4.1		4.7		5.1	
3	000481CB	0.759	1	3.3	3.8	Insufficient	2.8		3.2		3.2	
3	000505CB	1.637	3	9.8	6.6		4.8		5.4		6.3	
3	000507CB	1.007	5	16.3	5.0		3.8		4.2		4.3	
3	000524IO	7.392	8	26.0	16.1		9.9		12.0		22.8	
3	000525CB	2.784	4	13.0	10.9		7.8		8.9		10.8	
3	000529CB	0.987	3	9.8	5.0		3.8		4.2		4.3	
3	000530CB	2.588	3	9.8	11.0	Insufficient	8.1		9.1		10.4	Insufficient
3	000562CB	0.987	4	13.0	4.1		3.1		3.5		3.9	
3	000566CB	1.374	2	6.5	5.6		4.0		4.5		5.4	
3	000572CB	3.110	5	16.3	13.3		10.1		11.2		12.3	
3	000574CB	0.759	3	9.8	3.1		2.2		2.5		3.0	
3	000577CB	2.324	7	22.8	8.1		5.8		6.6		8.4	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
3	000601CB	1.074	3	9.8	6.3		5.1		5.5		4.9	
3	000607CB	1.327	3	9.8	6.1		4.5		5.0		5.5	
3	000618CB	0.775	2	6.5	3.1		2.3		2.6		2.9	
3	000620CB	3.559	4	13.0	14.8	Insufficient	11.2		12.4		13.7	Insufficient
3	000621CB	1.710	7	22.8	7.0		5.2		5.8		6.7	
3	000622CB	3.125	3	9.8	12.1	Insufficient	8.7		9.9	Insufficient	12.0	Insufficient
3	000626CB	1.033	5	16.3	5.4		4.1		4.6		4.5	
3	000628CB	3.233	8	26.0	11.9		8.2		9.5		12.3	
3	000639CB	2.040	1	3.3	8.3	Insufficient	6.1	Insufficient	6.8	Insufficient	8.0	Insufficient
3	001905SMH	7.636	8	26.0	23.9		17.5		19.6		25.1	
3	001909SMH	1.085	0	0.0	4.7	Insufficient	3.5	Insufficient	3.9	Insufficient	4.4	Insufficient
3	001920SMH	3.212	3	9.8	11.7	Insufficient	8.6		9.7		11.6	Insufficient
3	001942SMH	1.896	4	13.0	7.0		5.1		5.7		7.1	
3	001946SMH	2.113	2	6.5	8.2	Insufficient	6.0		6.7	Insufficient	8.0	Insufficient
3	001947SMH	0.981	5	16.3	3.5		2.5		2.8		3.6	
3	001961SMH	0.677	3	9.8	3.4		2.6		2.8		2.9	
3	001975SMH	1.007	4	13.0	4.0		2.9		3.3		3.9	
3	001984SMH	3.187	4	13.0	11.7		8.6		9.6		11.5	
3	001992SMH	1.415	4	13.0	6.8		5.1		5.7		6.0	
3	002693SMH	1.736	3	9.8	5.9		4.2		4.8		6.2	
3	003051SMH	9.453	7	22.8	31.8	Insufficient	22.5		25.6	Insufficient	33.6	Insufficient
3	003171SMH	4.840	4	13.0	20.8	Insufficient	15.6	Insufficient	17.4	Insufficient	19.3	Insufficient
3	003175SMH	4.406	6	19.5	19.2		14.7		16.2		17.5	
3	003184SMH	2.211	0	0.0	8.1	Insufficient	5.7	Insufficient	6.5	Insufficient	8.3	Insufficient
3	003186SMH	1.353	4	13.0	6.1		4.6		5.1		5.6	
3	003189SMH	2.614	3	9.8	9.6		6.9		7.9		9.8	Insufficient
3	003192SMH	2.877	6	19.5	10.2		7.1		8.2		10.7	
3	003193SMH	3.533	3	9.8	10.0	Insufficient	6.6		7.8		11.7	Insufficient
3	003211SMH	1.999	5	16.3	9.8		7.3		8.2		8.5	
3	003212SMH	3.626	4	13.0	16.3	Insufficient	11.9		13.5	Insufficient	14.9	Insufficient
3	003214SMH	1.901	4	13.0	9.8		7.6		8.4		8.3	
3	003217SMH	3.393	3	9.8	10.3	Insufficient	7.1		8.2		11.6	Insufficient
3	003328SMH	1.369	9	29.3	6.1		4.5		5.1		5.6	
3	003332SMH	1.829	5	16.3	6.7		4.8		5.4		6.8	
3	003338SMH	1.080	1	3.3	5.3	Insufficient	4.0	Insufficient	4.4	Insufficient	4.6	Insufficient
3	003341SMH	3.218	6	19.5	12.5		9.5		10.5		11.9	
3	003350SMH	1.983	7	22.8	9.1		6.8		7.6		8.2	
3	003353SMH	1.968	6	19.5	7.7		5.6		6.3		7.6	
3	003358SMH	1.441	7	22.8	7.5		5.7		6.3		6.3	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
3	003366SMH	8.512	1	3.3	28.5	Insufficient	20.0	Insufficient	22.9	Insufficient	30.4	Insufficient
3	003367SMH	5.217	0	0.0	19.1	Insufficient	13.3	Insufficient	15.3	Insufficient	19.7	Insufficient
3	003384SMH	1.865	7	22.8	7.3		5.5		6.1		7.0	
3	003396SMH	2.221	6	19.5	9.0		6.6		7.4		8.7	
3	003402SMH	2.882	3	9.8	12.7	Insufficient	9.5		10.6	Insufficient	11.7	Insufficient
3	003407SMH	1.333	5	16.3	3.8		2.6		3.0		4.4	
3	003430SMH	3.905	3	9.8	13.2	Insufficient	9.3		10.7	Insufficient	14.0	Insufficient
3	003431SMH	1.147	3	9.8	4.8		3.5		3.9		4.6	
3	003434SMH	1.395	4	13.0	5.7		4.2		4.7		5.4	
3	005975IN	1.333	4	13.0	5.6		4.0		4.6		5.3	
3	006171IN	2.774	3	9.8	10.6	Insufficient	7.8		8.7		10.4	Insufficient
3	006178IN	1.813	1	3.3	8.2	Insufficient	5.9	Insufficient	6.7	Insufficient	7.5	Insufficient
3	006182IN	0.992	1	3.3	2.8		1.9		2.2		3.3	Insufficient
3	006183IN	1.643	2	6.5	4.8		3.3		3.8		5.4	
3	006207IN	1.080	2	6.5	5.0		3.6		4.1		4.5	
3	006212IN	2.268	6	19.5	8.3		5.8		6.7		8.6	
3	006217IN	2.505	1	3.3	10.0	Insufficient	7.1	Insufficient	8.1	Insufficient	9.8	Insufficient
3	006223IN	1.178	3	9.8	5.3		3.7		4.3		4.8	
3	006224IN	3.471	3	9.8	11.8	Insufficient	8.1		9.4		12.7	Insufficient
3	006230IN	2.438	2	6.5	13.8	Insufficient	11.0	Insufficient	11.9	Insufficient	11.0	Insufficient
3	006234IN	1.198	2	6.5	5.5		4.0		4.6		5.0	
3	006235IN	1.978	1	3.3	10.9	Insufficient	8.6	Insufficient	9.4	Insufficient	8.8	Insufficient
3	006239IN	2.309	1	3.3	9.1	Insufficient	6.4	Insufficient	7.3	Insufficient	9.0	Insufficient
3	006241IN	0.966	2	6.5	4.0		2.7		3.2		3.8	
3	006245IN	0.904	1	3.3	4.1	Insufficient	3.0		3.4	Insufficient	3.7	Insufficient
3	006246IN	2.598	1	3.3	9.0	Insufficient	6.3	Insufficient	7.2	Insufficient	9.5	Insufficient
3	006250IN	1.358	7	22.8	5.8		4.3		4.8		5.5	
3	006260IN	1.157	1	3.3	6.0	Insufficient	4.7	Insufficient	5.1	Insufficient	5.1	Insufficient
3	006261IN	2.614	6	19.5	14.2		11.2		12.3		11.6	
3	006273IN	1.085	1	3.3	4.6	Insufficient	3.2		3.7	Insufficient	4.4	Insufficient
3	006582IN	1.782	1	3.3	7.1	Insufficient	5.2	Insufficient	5.8	Insufficient	6.8	Insufficient
3	006587IN	3.366	8	26.0	11.8		8.5		9.6		11.9	
3	007700IN	1.947	7	22.8	7.9		6.0		6.6		7.5	
3	007706IN	1.418	4	13.0	6.2		4.6		5.1		5.8	
3	007711IN	1.996	10	32.5	8.5		6.2		7.0		8.0	
3	007712IN	1.720	0	0.0	6.7	Insufficient	5.0	Insufficient	5.6	Insufficient	6.5	Insufficient
3	007713IN	2.128	2	6.5	8.9	Insufficient	6.5	Insufficient	7.3	Insufficient	8.5	Insufficient
3	007780IN	0.671	1	3.3	2.4		1.6		1.9		2.5	
3	007793IN	1.730	1	3.3	6.4	Insufficient	4.7	Insufficient	5.3	Insufficient	6.4	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
3	007794IN	2.004	3	9.8	11.2	Insufficient	8.9		9.7		9.0	
3	007848IN	1.555	1	3.3	6.2	Insufficient	4.2	Insufficient	4.9	Insufficient	6.1	Insufficient
3	007862IN	7.293	5	16.3	26.6	Insufficient	19.9	Insufficient	22.1	Insufficient	26.1	Insufficient
3	007867IN	1.617	1	3.3	5.7	Insufficient	3.9	Insufficient	4.5	Insufficient	6.0	Insufficient
3	007884IN	3.688	4	13.0	14.6	Insufficient	10.7		12.0		14.2	Insufficient
3	007886IN	5.501	4	13.0	20.7	Insufficient	15.4	Insufficient	17.2	Insufficient	20.4	Insufficient
3	007889IN	2.056	4	13.0	9.0		6.8		7.5		8.3	
3	007929IN	4.267	3	9.8	17.6	Insufficient	13.3	Insufficient	14.8	Insufficient	16.6	Insufficient
3	007990IN	2.890	2	6.5	8.5	Insufficient	5.9		6.8	Insufficient	9.5	Insufficient
3	007991IN	1.069	1	3.3	3.8	Insufficient	2.6		3.0		4.0	Insufficient
3	008218IN	1.080	1	3.3	4.5	Insufficient	3.2		3.7	Insufficient	4.3	Insufficient
3	008221IN	2.691	3	9.8	10.3	Insufficient	7.5		8.4		10.2	Insufficient
3	008235IN	1.245	2	6.5	4.4		3.2		3.6		4.5	
3	008237IN	0.840	2	6.5	3.2		2.3		2.6		3.2	
3	008257IN	2.055	5	16.3	8.2		6.0		6.8		7.9	
3	008268IN	1.046	4	13.0	4.2		3.1		3.5		4.0	
3	008272IN	1.094	2	6.5	4.5		3.3		3.7		4.3	
4	000111CB	3.487	3	9.8	17.2	Insufficient	13.2	Insufficient	14.6	Insufficient	14.9	Insufficient
4	000123CB	2.221	3	9.8	6.5		4.6		5.2		7.0	
4	000124CB	3.042	5	16.3	12.5		9.2		10.3		11.9	
4	000133CB	2.423	3	9.8	9.4		6.9		7.8		9.3	
4	000138CB	1.637	4	13.0	7.9		5.9		6.6		6.9	
4	000149CB	1.073	4	13.0	4.9		3.6		4.0		4.4	
4	000152CB	1.900	4	13.0	7.0		5.0		5.7		7.1	
4	000158CB	4.990	3	9.8	18.6	Insufficient	13.6	Insufficient	15.3	Insufficient	18.6	Insufficient
4	000397CB	2.650	3	9.8	9.9	Insufficient	6.8		7.9		10.1	Insufficient
4	000398CB	4.390	8	26.0	17.6		12.7		14.4		17.2	
4	000401CB	2.454	9	29.3	10.1		7.1		8.1		9.8	
4	000403CB	1.570	5	16.3	7.3		5.3		6.0		6.5	
4	000409CB	0.842	4	13.0	4.0		2.9		3.3		3.5	
4	000410CB	1.198	6	19.5	5.2		3.6		4.2		4.9	
4	000584CB	6.121	6	19.5	20.3	Insufficient	14.7		16.6		21.2	Insufficient
4	000587CB	1.457	8	26.0	6.4		4.8		5.3		5.9	
4	000590CB	0.795	3	9.8	4.2		3.2		3.5		3.5	
4	000594CB	1.054	3	9.8	4.4		3.2		3.6		4.2	
4	000718ND	1.730	7	22.8	7.5		5.2		6.0		7.0	
4	000723ND	4.824	3	9.8	15.5	Insufficient	10.8	Insufficient	12.4	Insufficient	16.8	Insufficient
4	001135ND	5.416	5	16.3	21.8	Insufficient	16.5	Insufficient	18.3	Insufficient	20.6	Insufficient
4	001943SMH	2.138	2	6.5	7.8	Insufficient	5.8		6.5		7.7	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
4	001944SMH	4.287	3	9.8	18.2	Insufficient	13.7	Insufficient	15.2	Insufficient	17.0	Insufficient
4	001971SMH	2.330	0	0.0	8.5	Insufficient	6.1	Insufficient	6.9	Insufficient	8.7	Insufficient
4	001987SMH	1.742	5	16.3	7.9		5.9		6.6		7.2	
4	002011SMH	5.124	4	13.0	19.0	Insufficient	13.0	Insufficient	15.1	Insufficient	19.5	Insufficient
4	002012SMH	1.777	5	16.3	8.9		6.7		7.5		7.6	
4	002015SMH	5.263	0	0.0	13.9	Insufficient	8.6	Insufficient	10.4	Insufficient	17.4	Insufficient
4	002022SMH	2.416	1	3.3	7.9	Insufficient	5.6	Insufficient	6.4	Insufficient	8.4	Insufficient
4	002024SMH	4.819	4	13.0	17.9	Insufficient	12.0		14.1	Insufficient	18.4	Insufficient
4	002616SMH	2.164	4	13.0	9.3		6.8		7.7		8.8	
4	002622SMH	1.157	0	0.0	5.6	Insufficient	3.9	Insufficient	4.5	Insufficient	4.8	Insufficient
4	002627SMH	2.175	3	9.8	9.3		6.7		7.6		8.8	
4	002629SMH	4.133	3	9.8	15.6	Insufficient	11.2	Insufficient	12.7	Insufficient	15.6	Insufficient
4	002632SMH	2.319	8	26.0	10.2		7.2		8.3		9.5	
4	002633SMH	5.052	6	19.5	18.6		13.0		14.9		19.0	
4	002640SMH	1.893	5	16.3	9.8		7.3		8.2		8.2	
4	003415SMH	1.994	8	26.0	8.5		6.4		7.1		7.9	
4	003421SMH	1.560	1	3.3	5.7	Insufficient	4.1	Insufficient	4.7	Insufficient	5.8	Insufficient
4	003424SMH	0.940	7	22.8	4.4		3.2		3.6		3.9	
4	003435SMH	5.062	1	3.3	15.9	Insufficient	11.1	Insufficient	12.8	Insufficient	17.5	Insufficient
4	003442SMH	3.151	3	9.8	13.8	Insufficient	9.9	Insufficient	11.3	Insufficient	12.8	Insufficient
4	003444SMH	1.152	6	19.5	5.9		4.4		5.0		5.0	
4	005578IN	1.142	5	16.3	5.3		3.9		4.4		4.8	
4	005597IN	1.064	6	19.5	5.1		3.8		4.3		4.5	
4	005600IN	8.839	2	6.5	26.1	Insufficient	18.1	Insufficient	20.8	Insufficient	29.5	Insufficient
4	005616IN	0.682	2	6.5	3.3		2.4		2.7		2.9	
4	005621IN	2.268	3	9.8	9.8	Insufficient	6.9		7.9		9.2	
4	005630IN	4.220	2	6.5	13.9	Insufficient	9.2	Insufficient	10.9	Insufficient	15.3	Insufficient
4	005634IN	2.125	6	19.5	9.3		6.5		7.5		8.7	
4	006190IN	3.605	1	3.3	12.0	Insufficient	8.9	Insufficient	9.9	Insufficient	12.3	Insufficient
4	006197IN	2.479	0	0.0	14.6	Insufficient	10.6	Insufficient	12.0	Insufficient	13.7	Insufficient
4	006201IN	1.302	1	3.3	4.8	Insufficient	3.4	Insufficient	3.9	Insufficient	4.9	Insufficient
4	006204IN	2.526	3	9.8	12.0	Insufficient	9.0		10.0	Insufficient	10.6	Insufficient
4	006548IN	3.048	3	9.8	10.9	Insufficient	8.0		9.0		11.0	Insufficient
4	006552IN	1.488	1	3.3	6.6	Insufficient	4.8	Insufficient	5.4	Insufficient	6.1	Insufficient
4	006553IN	1.116	6	19.5	5.2		3.9		4.4		4.7	
4	006566IN	1.219	2	6.5	4.5		3.1		3.5		4.6	
4	006567IN	2.402	2	6.5	10.0	Insufficient	7.3	Insufficient	8.2	Insufficient	9.5	Insufficient
4	006568IN	0.966	3	9.8	4.5		3.4		3.8		4.0	
4	006594IN	0.997	1	3.3	3.3	Insufficient	2.5		2.8		3.3	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
4	006623IN	2.340	3	9.8	7.9		5.6		6.4		8.4	
4	006640IN	1.947	2	6.5	8.5	Insufficient	5.9		6.8	Insufficient	7.9	Insufficient
4	006645IN	0.739	4	13.0	3.6		2.6		3.0		3.1	
4	006647IN	0.972	4	13.0	5.0		3.7		4.2		4.2	
4	006654IN	0.517	1	3.3	2.7		2.0		2.2		2.2	
4	006656IN	1.141	4	13.0	5.5		3.9		4.5		4.8	
4	007630IN	4.902	7	22.8	17.9		12.7		14.5		18.3	
4	007631IN	2.660	3	9.8	10.3	Insufficient	7.5		8.5		10.1	Insufficient
4	007898IN	1.033	1	3.3	4.9	Insufficient	3.7	Insufficient	4.1	Insufficient	4.4	Insufficient
4	007910IN	1.983	6	19.5	9.2		6.7		7.6		8.3	
4	007939IN	1.384	10	32.5	6.4		4.6		5.3		5.7	
4	007940IN	7.996	4	13.0	25.5	Insufficient	16.5	Insufficient	19.6	Insufficient	28.7	Insufficient
4	007944IN	2.185	4	13.0	10.2		7.3		8.3		9.1	
4	007958IN	6.066	2	6.5	25.5	Insufficient	19.1	Insufficient	21.3	Insufficient	23.9	Insufficient
5	000414CB	1.617	4	13.0	5.7		4.0		4.6		5.9	
5	000415CB	1.271	4	13.0	4.8		3.4		3.9		4.8	
5	000423CB	2.061	7	22.8	8.0		5.6		6.4		8.0	
5	000424CB	1.193	2	6.5	5.0		3.5		4.1		4.8	
5	000428CB	3.244	3	9.8	10.7	Insufficient	7.6		8.7		11.4	Insufficient
5	000454CB	1.839	5	16.3	7.5		5.2		6.0		7.3	
5	000456CB	4.576	4	13.0	16.2	Insufficient	11.7		13.2	Insufficient	16.7	Insufficient
5	000462CB	3.223	3	9.8	11.2	Insufficient	7.6		8.8		11.9	Insufficient
5	000470CB	0.888	5	16.3	4.4		3.3		3.7		3.8	
5	000472CB	4.504	5	16.3	13.8		9.7		11.1		15.3	
5	000750ND	3.399	6	19.5	11.9		8.1		9.4		12.6	
5	002613SMH	2.133	8	26.0	9.4		6.9		7.8		8.7	
5	002644SMH	1.626	3	9.8	8.1		6.0		6.8		7.0	
5	002646SMH	3.874	8	26.0	14.0		10.2		11.5		14.2	
5	002649SMH	12.153	8	26.0	35.6	Insufficient	23.2		27.4	Insufficient	41.6	Insufficient
5	002650SMH	2.390	7	22.8	10.4		7.3		8.4		9.7	
5	002876SMH	2.737	1	3.3	10.5	Insufficient	7.2	Insufficient	8.4	Insufficient	10.6	Insufficient
5	002879SMH	1.756	11	35.8	8.3		6.0		6.8		7.3	
5	002885SMH	3.817	7	22.8	14.6		10.1		11.7		14.8	
5	003025SMH	0.640	8	26.0	3.5		2.7		3.0		2.8	
5	003029SMH	3.559	4	13.0	14.2	Insufficient	10.1		11.6		13.9	Insufficient
5	005655IN	3.848	8	26.0	14.3		10.1		11.5		14.5	
5	005679IN	1.519	3	9.8	6.3		4.4		5.1		6.1	
5	005681IN	1.725	3	9.8	7.3		5.2		5.9		6.9	
5	005691IN	0.718	2	6.5	2.9		2.1		2.4		2.9	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
5	005703IN	2.190	3	9.8	10.5	Insufficient	7.7		8.7		9.2	
5	005719IN	2.763	1	3.3	9.7	Insufficient	6.1	Insufficient	7.4	Insufficient	10.4	Insufficient
5	007653IN	1.751	6	19.5	7.9		5.7		6.5		7.2	
5	007656IN	3.920	3	9.8	15.0	Insufficient	10.0	Insufficient	11.8	Insufficient	15.2	Insufficient
5	007675IN	13.549	16	52.0	53.4	Insufficient	37.9		43.3		52.4	Insufficient
5	Timber_183	3.187	0	0.0	10.6	Insufficient	6.8	Insufficient	8.1	Insufficient	11.7	Insufficient
5	Timber_193	2.335	0	0.0	9.0	Insufficient	5.8	Insufficient	7.0	Insufficient	9.1	Insufficient
5	Timber_226	5.124	0	0.0	17.0	Insufficient	10.7	Insufficient	12.9	Insufficient	18.7	Insufficient
5	Timber_266	2.355	0	0.0	8.3	Insufficient	5.2	Insufficient	6.3	Insufficient	8.9	Insufficient
5	Timber_315	9.749	0	0.0	25.6	Insufficient	16.0	Insufficient	19.2	Insufficient	32.0	Insufficient
5	Timber_358	2.287	1	3.3	8.1	Insufficient	5.3	Insufficient	6.3	Insufficient	8.6	Insufficient
5	Timber_397	3.383	4	13.0	13.3	Insufficient	9.2		10.6		13.2	Insufficient
5	Timber_405	4.928	0	0.0	15.4	Insufficient	10.0	Insufficient	11.9	Insufficient	17.5	Insufficient
5	Timber_550	5.413	4	13.0	19.1	Insufficient	12.9		15.0	Insufficient	20.2	Insufficient
5	Timber_552	1.756	3	9.8	8.0		5.6		6.5		7.2	
5	Timber_614	9.396	3	9.8	28.9	Insufficient	19.4	Insufficient	22.6	Insufficient	32.5	Insufficient
5	Timber_729	7.443	0	0.0	26.3	Insufficient	17.7	Insufficient	20.7	Insufficient	27.8	Insufficient
5	Timber_847	4.763	5	16.3	18.6	Insufficient	12.8		14.8		18.5	Insufficient
6	005397IN	3.497	6	19.5	13.1		9.6		10.8		13.0	
6	005399IN	0.544	1	3.3	2.5		1.8		2.0		2.2	
6	005400IN	0.434	0	0.0	2.1	Insufficient	1.6	Insufficient	1.8	Insufficient	1.9	Insufficient
6	005403IN	0.351	4	13.0	1.7		1.2		1.4		1.5	
6	005405IN	2.414	2	6.5	10.0	Insufficient	7.3	Insufficient	8.3	Insufficient	9.5	Insufficient
6	005409IN	1.957	5	16.3	7.9		5.7		6.5		7.7	
6	005411IN	4.208	7	22.8	16.4		11.6		13.3		16.2	
6	005415IN	1.460	3	9.8	7.0		5.1		5.8		6.1	
6	005418IN	1.837	0	0.0	7.3	Insufficient	5.1	Insufficient	5.9	Insufficient	7.2	Insufficient
6	005431IN	4.192	18	58.5	14.9		10.5		12.0		15.4	
6	005434IN	1.429	4	13.0	6.2		4.6		5.2		5.8	
6	005438IN	0.209	4	13.0	1.2		0.9		1.0		0.9	
6	005446IN	5.971	7	22.8	25.9	Insufficient	19.7		21.8		23.8	Insufficient
6	005449IN	0.816	2	6.5	4.6		3.7		4.0		3.7	
6	005453IN	2.207	5	16.3	11.7		9.1		10.0		9.7	
6	005456IN	1.732	2	6.5	6.9	Insufficient	4.9		5.6		6.8	Insufficient
6	005457IN	3.454	1	3.3	12.7	Insufficient	8.9	Insufficient	10.2	Insufficient	13.0	Insufficient
6	005458IN	0.827	3	9.8	3.8		2.8		3.2		3.4	
6	005475IN	0.241	3	9.8	1.3		1.0		1.1		1.1	
6	005481IN	1.601	4	13.0	9.0		7.1		7.8		7.2	
6	005483IN	3.261	1	3.3	19.0	Insufficient	15.5	Insufficient	16.7	Insufficient	15.0	Insufficient

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
6	005486IN	0.110	3	9.8	0.7		0.5		0.6		0.5	
6	005490IN	1.591	10	32.5	9.3		7.5		8.1		7.3	
6	005499IN	3.663	7	22.8	21.1		17.1		18.5		16.7	
6	005503IN	0.874	1	3.3	5.0	Insufficient	4.1	Insufficient	4.4	Insufficient	4.0	Insufficient
6	005504IN	2.172	5	16.3	8.1		5.6		6.5		8.3	
6	005506IN	2.129	1	3.3	7.9	Insufficient	5.5	Insufficient	6.3	Insufficient	8.1	Insufficient
6	005507IN	1.094	1	3.3	4.5	Insufficient	3.2		3.7	Insufficient	4.3	Insufficient
6	005508IN	3.454	6	19.5	12.4		8.8		10.0		12.7	
6	005511IN	10.057	2	6.5	32.9	Insufficient	24.1	Insufficient	27.1	Insufficient	34.3	Insufficient
6	005513IN	2.177	3	9.8	8.3		6.0		6.8		8.3	
6	005514IN	0.078	2	6.5	0.4		0.3		0.4		0.3	
6	005516IN	2.015	3	9.8	7.8		5.3		6.2		7.8	
6	005517IN	3.014	5	16.3	13.1		10.0		11.0		11.9	
6	005519IN	2.517	3	9.8	10.6	Insufficient	7.8		8.8		10.0	Insufficient
6	005545IN	2.355	4	13.0	9.1		6.4		7.3		9.1	
6	005548IN	1.497	3	9.8	4.5		3.1		3.6		5.2	
6	005549IN	1.785	7	22.8	6.6		4.7		5.3		6.7	
6	005555IN	0.319	1	3.3	1.7		1.3		1.4		1.4	
6	005563IN	1.229	8	26.0	5.2		3.7		4.2		4.9	
6	005658IN	4.516	2	6.5	14.6	Insufficient	10.0	Insufficient	11.6	Insufficient	16.0	Insufficient
6	005659IN	1.136	1	3.3	3.9	Insufficient	2.7		3.1		4.2	Insufficient
6	005661IN	1.999	4	13.0	8.4		5.9		6.8		8.0	
6	005662IN	2.020	2	6.5	9.2	Insufficient	6.4		7.4	Insufficient	8.3	Insufficient
6	005665IN	1.429	0	0.0	5.5	Insufficient	3.8	Insufficient	4.4	Insufficient	5.5	Insufficient
6	007487IN	2.198	3	9.8	9.6		7.1		7.9		8.9	
6	007497IN	2.580	8	26.0	9.0		6.3		7.2		9.4	
6	007500IN	0.256	5	16.3	1.2		0.8		1.0		1.1	
6	007503IN	2.299	1	3.3	9.5	Insufficient	6.8	Insufficient	7.7	Insufficient	9.1	Insufficient
6	007505IN	5.649	2	6.5	20.0	Insufficient	14.3	Insufficient	16.2	Insufficient	20.7	Insufficient
6	007508IN	1.534	3	9.8	6.3		4.4		5.1		6.1	
6	007510IN	1.177	0	0.0	5.2	Insufficient	3.8	Insufficient	4.3	Insufficient	4.8	Insufficient
6	007514IN	1.303	6	19.5	4.8		3.4		3.8		4.9	
6	007525IN	3.679	12	39.0	18.3		14.2		15.6		15.7	
6	007539IN	4.677	9	29.3	18.5		13.7		15.3		18.0	
6	007542IN	1.546	0	0.0	6.2	Insufficient	4.3	Insufficient	5.0	Insufficient	6.1	Insufficient
6	007543IN	7.245	8	26.0	29.6	Insufficient	21.3		24.1		28.6	Insufficient
6	007559IN	2.109	5	16.3	10.5		7.9		8.8		9.0	
6	007562IN	3.946	6	19.5	14.0		9.6		11.1		14.7	
6	007563IN	1.261	2	6.5	6.2		4.6		5.2		5.4	

TABLE 1

Detailed Inlet Capacity Results for Hooffs Run

					Scenario 1 Existing IDF, Existing Boundary Condition		Scenario 2 Updated IDF, Existing Boundary Condition		Scenario 3 Projected Year 2100 IDF and Boundary Condition		Scenario 4 June 2006 Event and Boundary Condition	
Sub-shed	Model Load Point	Total Drainage Area (ac)	Total Throat Count	Total Inlet Capacity (cfs)	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity	Peak Runoff (cfs)	Inlet Capacity
6	007568IN	5.501	9	29.3	21.8		15.3		17.6		21.5	
6	007571IN	2.695	2	6.5	9.8	Insufficient	6.8	Insufficient	7.9	Insufficient	10.1	Insufficient
6	007572IN	2.999	0	0.0	11.9	Insufficient	8.6	Insufficient	9.8	Insufficient	11.6	Insufficient
6	007576IN	4.051	6	19.5	13.5		9.5		10.8		14.4	
6	007578IN	1.240	4	13.0	7.0		5.6		6.1		5.6	
6	007582IN	2.910	1	3.3	14.1	Insufficient	10.8	Insufficient	11.9	Insufficient	12.3	Insufficient
6	007584IN	0.455	0	0.0	2.5	Insufficient	2.0	Insufficient	2.2	Insufficient	2.0	Insufficient
6	007585IN	0.727	2	6.5	3.4		2.4		2.8		3.0	
6	007587IN	1.905	2	6.5	9.4	Insufficient	7.2	Insufficient	8.0	Insufficient	8.1	Insufficient
6	007592IN	2.386	5	16.3	10.0		7.1		8.1		9.5	
6	007605IN	2.449	21	68.3	9.7		6.7		7.8		9.6	
6	007607IN	1.942	6	19.5	7.8		5.4		6.2		7.6	
6	007610IN	1.586	0	0.0	6.1	Insufficient	4.1	Insufficient	4.8	Insufficient	6.1	Insufficient
6	007612IN	2.957	0	0.0	11.9	Insufficient	8.4	Insufficient	9.6	Insufficient	11.6	Insufficient
6	007613IN	4.422	1	3.3	14.3	Insufficient	10.4	Insufficient	11.7	Insufficient	15.0	Insufficient
6	007617IN	1.795	1	3.3	8.0	Insufficient	5.7	Insufficient	6.5	Insufficient	7.4	Insufficient

Attachment G
Detailed Model Results:
10-Year, 24-Hour Design Storm Event Based on Existing IDF Curve

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	000604STMP	000658IN	000246SMH	48	1.5	22.4	18.7	0	0.1	-	1.8	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000605STMP	000246SMH	000029CB	51	1.5	29.0	17.5	0.1	0.1	2.0	1.7	-	-	0.0	0.0	0	0	Surcharged
1	000650STMP	000029CB	000660IN	96	1.5	28.9	16.1	0.1	0	4.2	-	-	-	0.0	0.0	0	0	Surcharged
1	000651STMP	000660IN	000002ND	112	1.75	34.2	16.4	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000652STMP	000661IN	000660IN	37	1.25	5.5	10.1	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000654STMP	000657IN	000658IN	111	1.25	8.3	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000655STMP	000653IN	000658IN	292	1.5	14.2	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004691STMP	001541SMH	004855IN	166	2.5	23.9	10.7	0	0.2	-	1.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004912STMP	004838IN	001535SMH	17	1.5	10.9	6.4	0.3	0.5	1.4	Flooded	0.2	Flooded	0.0	0.2	0	454	Insufficient Freeboard
1	004913STMP	004796IN	004794IN	157	2.5	4.7	3.2	0	0	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004915STMP	004850IN	004852IN	86	2	18.9	6.0	0.3	0.4	1.9	1.7	0.4	0.2	0.0	0.0	0	0	Insufficient Freeboard
1	004916STMP	004847IN	001535SMH	54	1.5	7.9	4.4	0.4	0.5	2.0	Flooded	1.0	Flooded	0.0	0.2	0	454	Insufficient Freeboard
1	004918STMP	004855IN	001540SMH	22	2.5	25.7	8.7	0.2	0.2	1.9	2.4	-	0.8	0.0	0.0	0	0	Surcharged
1	004919STMP	004831IN	004830IN	55	2	27.7	9.3	0.2	0.2	Flooded	2.9	Flooded	1.3	0.1	0.0	806	0	Flooded
1	004920STMP	004862IN	004859IN	45	1.5	11.1	6.2	0.2	0.2	Flooded	4.2	Flooded	0.7	0.1	0.0	82	0	Flooded
1	004927STMP	001542SMH	001541SMH	87	2.5	19.3	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005047STMP	004893IN	001551SMH	65	1.5	9.0	9.1	0	0.2	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005048STMP	004897IN	000626ND	47	2.5	-1.4	1.2	0.3	0.2	1.6	2.6	-	-	0.0	0.0	0	0	Surcharged
1	005050STMP	004902IN	001558SMH	11	1.5	10.8	6.1	0.3	0.2	1.0	1.7	-	-	0.0	0.0	0	0	Surcharged
1	006194STMP	004959IN	001647SMH	11	1.25	10.5	8.3	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006196STMP	001647SMH	001617SMH	134	2	10.5	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006222STMP	001608SMH	001633SMH	32	1.25	7.2	6.0	0.9	1.2	2.9	3.2	1.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	006225STMP	001636SMH	001611SMH	146	1.5	17.0	9.5	1.2	0.5	Flooded	3.3	Flooded	1.3	0.8	0.0	5459	0	Flooded
1	006226STMP	001637SMH	001636SMH	64	1.5	15.4	8.6	1.2	1.2	Flooded	Flooded	Flooded	Flooded	1.0	0.8	6522	5459	Flooded
1	006228STMP	001638SMH	001637SMH	76	1.5	15.6	8.7	1.2	1.2	Flooded	Flooded	Flooded	Flooded	0.5	1.0	2188	6522	Flooded
1	006229STMP	001612SMH	001638SMH	14	1.25	8.2	8.8	1.1	1.2	Flooded	Flooded	Flooded	Flooded	0.7	0.5	2537	2188	Flooded
1	006230STMP	001639SMH	001640SMH	29	1.25	8.1	6.3	0.8	0.8	7.5	Flooded	0.4	Flooded	0.0	0.7	0	2665	Insufficient Freeboard
1	006232STMP	001611SMH	001633SMH	125	1.5	17.1	9.6	0.5	1.2	3.5	3.7	1.3	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	006234STMP	001633SMH	001609SMH	93	1.5	22.1	12.3	1.2	0.9	3.7	2.2	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
1	006235STMP	001665SMH	001642SMH	159	5	137.9	8.3	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006241STMP	001642SMH	001643SMH	225	5	160.0	8.2	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006245STMP	004970IN	001642SMH	50	1.25	9.7	12.8	0	0.1	-	0.3	2.0	-	0.0	0.0	0	0	Sufficient Capacity
1	006246STMP	004971IN	004976IN	102	1.25	9.1	7.3	0.3	0.1	Flooded	1.6	Flooded	1.3	0.1	0.0	49	0	Flooded
1	006247STMP	004972IN	001643SMH	47	1.25	4.0	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006248STMP	001643SMH	000640ND	239	3.667 x 6	163.5	7.4	0	0.4	0.7	0.8	-	-	0.0	0.0	0	0	Surcharged
1	006390STMP	001679SMH	001680SMH	107	2.8333 x 4.333	24.6	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006391STMP	005014IN	001679SMH	121	1.25	4.7	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006397STMP	001682SMH	005006IN	62	3	41.0	7.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006398STMP	005006IN	001683SMH	66	3	41.0	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006399STMP	001683SMH	005007IN	40	3.5	49.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006401STMP	001684SMH	001685SMH	38	3.5	54.1	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006402STMP	005013IN	001684SMH	125	1.25	4.6	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006408STMP	001661SMH	001689SMH	14	1.5	21.2	11.9	0	0	1.1	0.3	-	-	0.0	0.0	0	0	Surcharged
1	006409STMP	001687SMH	001688SMH	113	3.5	65.4	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006412STMP	001688SMH	001689SMH	36	4.5	65.5	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006414STMP	001689SMH	001690SMH	121	4.5	123.4	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006415STMP	000647ND	001689SMH	174	3.5	37.9	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006416STMP	001690SMH	000306IO	296	5	133.5	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006421STMP	004939IN	001639SMH	53	1.25	8.1	10.7	0.7	0.8	Flooded	6.3	Flooded	0.4	0.0	0.0	10	0	Flooded
1	006422STMP	004940IN	004939IN	50	1.25	8.2	7.6	0.6	0.7	Flooded	Flooded	Flooded	Flooded	0.0	0.0	0	10	Flooded
1	006423STMP	001591SMH	001592SMH	147	4	117.3	9.3	0	0	0.1	0.2	-	-	0.0	0.0	0	0	Surcharged
1	006424STMP	001616SMH	001591SMH	131	4	104.1	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006426STMP	001592SMH	001593SMH	154	4	117.3	9.2	0	0	0.4	-	-	-	0.0	0.0	0	0	Surcharged
1	006428STMP	001593SMH	000342IO	62	5 x 6.5	124.6	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006474STMP	001595SMH	001591SMH	76	1.5	13.6	14.1	0	0	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006479STMP	001596SMH	001597SMH	12	3	28.3	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006481STMP	001597SMH	001586SMH	180	3	28.2	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006493STMP	004951IN	001606SMH	11	1.25	7.1	5.7	0.4	0.4	Flooded	1.9	Flooded	0.2	0.3	0.0	841	0	Flooded
1	006494STMP	001606SMH	001607SMH	26	1.25	7.1	6.5	0.4	0.4	2.0	2.1	0.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
1	006495STMP	001607SMH	001608SMH	93	1.25	7.1	6.4	0.4	0.9	2.1	2.9	0.6	1.4	0.0	0.0	0	0	Insufficient Freeboard
1	006497STMP	001635SMH	001649SMH	273	2	33.4	12.7	0	0.2	-	0.3	-	0.7	0.0	0.0	0	0	Sufficient Capacity
1	006498STMP	001609SMH	001635SMH	95	2	33.5	10.6	0.9	0	1.8	-	-	-	0.0	0.0	0	0	Surcharged
1	006501STMP	001614SMH	001612SMH	22	1.25	8.8	7.1	1	1.1	Flooded	Flooded	Flooded	Flooded	0.1	0.7	101	2537	Flooded
1	006505STMP	001617SMH	001616SMH	99	4	100.8	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006507STMP	001589SMH	001645SMH	39	2	38.0	12.0	0.4	0	3.1	1.9	-	-	0.0	0.0	0	0	Surcharged
1	006817STMP	001538SMH	004794IN	67	2	24.9	7.9	0.3	0	1.1	0.7	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
1	006855STMP	001535SMH	004845IN	49	1.5	15.9	8.9	0.5	0.3	Flooded	1.5	Flooded	1.3	0.2	0.0	454	0	Flooded
1	006857STMP	001539SMH	004843IN	100	2.5	48.1	9.7	0.2	0.2	Flooded	Flooded	Flooded	Flooded	0.1	0.0	578	1	Flooded
1	006858STMP	004843IN	004009SMH	194	3	57.7	8.1	0.2	0.1	Flooded	2.8	Flooded	1.0	0.0	0.0	1	0	Flooded
1	006864STMP	004798IN	004796IN	28	1.25	4.5	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006866STMP	004792IN	004794IN	26	1.5	14.8	8.3	0.1	0	0.8	0.4	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	006869STMP	004830IN	001540SMH	65	2	27.8	8.8	0.2	0.2	2.9	3.3	1.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	006870STMP	001540SMH	001539SMH	125	2.5	46.1	9.3	0.2	0.2	2.9	Flooded	0.8	Flooded	0.0	0.1	0	578	Insufficient Freeboard
1	006871STMP	004809IN	001541SMH	233	2	4.8	7.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006873STMP	001545SMH	001568SMH	44	2	64.5	20.1	0.6	0	Flooded	1.2	Flooded	-	0.2	0.0	2712	0	Flooded
1	006877STMP	004859IN	004831IN	284	1.5	11.0	6.1	0.2	0.2	4.6	Flooded	0.7	Flooded	0.0	0.1	0	806	Insufficient Freeboard
1	006886STMP	004839IN	004838IN	98	1.25	10.8	8.7	0.4	0.3	Flooded	1.6	Flooded	0.2	0.4	0.0	2699	0	Flooded
1	006903STMP	001558SMH	001557SMH	21	3.5	54.8	-5.7	0.2	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
1	006906STMP	001557SMH	001556SMH	246	4	62.5	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908A	004794IN	000607ND	311	3.5	44.1	4.6	0	0.2	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908B	000607ND	001558SMH	23	3.5	44.1	4.5	0.2	0.2	0.2	0.2	-	-	0.0	0.0	0	0	Surcharged
1	006918STMP	004808IN	001575SMH	98	2	7.7	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006919STMP	001575SMH	001542SMH	76	2.5	7.7	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006925STMP	001574SMH	004808IN	114	1.75	7.7	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942A	001568SMH	000615ND	187	5	65.3	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942B	000615ND	001665SMH	280	5	79.1	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006953STMP	001556SMH	009001IN	285	4.5	77.7	6.0	0	0.1	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006959STMP	001584SMH	004925IN	51	3	76.3	10.7	0.4	0.3	1.0	0.4	-	1.5	0.0	0.0	0	0	Surcharged
1	006967STMP	004925IN	004926IN	70	3	76.4	10.4	0.3	0	0.4	-	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
1	006970STMP	004926IN	001582SMH	29	3	81.5	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006972STMP	001582SMH	001583SMH	75	3	81.5	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006973STMP	001583SMH	004928IN	99	4	81.6	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006975STMP	004928IN	004931IN	73	4	89.6	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006978STMP	004931IN	000341IO	63	4	89.7	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006980STMP	004933IN	001585SMH	15	1.25	7.4	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006982STMP	001585SMH	001596SMH	31	1.25	7.3	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006983STMP	001586SMH	001584SMH	86	3	65.3	11.1	0	0.4	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006984STMP	000338IO	001586SMH	43	3	33.3	20.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006994STMP	001676SMH	001677SMH	83	2	13.7	5.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006995STMP	001677SMH	001678SMH	72	2.8333 x 4.333	19.9	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006998STMP	001678SMH	001679SMH	34	2.8333 x 4.333	19.9	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006999STMP	001648SMH	001638SMH	170	1.5	14.5	8.3	0.5	1.2	2.7	Flooded	0.7	Flooded	0.0	0.5	0	2188	Insufficient Freeboard
1	007000STMP	001649SMH	001650SMH	48	2	33.4	13.7	0.2	0.4	0.3	Flooded	0.7	Flooded	0.0	0.2	0	317	Insufficient Freeboard
1	007001STMP	001650SMH	001652SMH	189	2	37.9	13.9	0.4	0.5	Flooded	2.1	Flooded	-	0.2	0.0	317	0	Flooded
1	007002STMP	001651SMH	001650SMH	10	1.25	12.0	-9.7	0.5	0.4	Flooded	Flooded	Flooded	Flooded	0.3	0.2	946	317	Flooded
1	007003STMP	006001IN	001651SMH	35	1.25	11.1	10.6	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.3	2192	946	Flooded
1	007004STMP	001652SMH	001589SMH	68	2	37.9	13.1	0.5	0.4	2.1	2.8	-	-	0.0	0.0	0	0	Surcharged
1	007005STMP	001653SMH	001645SMH	35	4	-34.3	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007006STMP	001640SMH	001653SMH	415	0.833	4.3	7.7	0.8	0	Flooded	1.8	Flooded	-	0.7	0.0	2665	0	Flooded
1	007035STMP	004479IN	000640ND	274	2	15.7	7.2	0	0.4	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007194STMP	001657SMH	001648SMH	14	1.5	14.6	8.1	0.5	0.5	3.1	2.7	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
1	007195STMP	001658SMH	001657SMH	142	1.5	13.2	7.4	0.3	0.5	2.7	3.0	-	0.3	0.0	0.0	0	0	Surcharged
1	007196STMP	001660SMH	001658SMH	76	1.5	13.2	7.4	0.3	0.3	2.7	2.5	-	-	0.0	0.0	0	0	Surcharged
1	007200STMP	004977IN	004972IN	71	1.25	4.1	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007205A	000079CP	000640ND	18	4 x 7	310.0	11.1	0	0.4	0.9	0.7	-	-	0.0	0.0	0	0	Surcharged
1	007205B	000640ND	000080CP	53	4 x 7	486.3	17.4	0.4	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
1	007211STMP	004985IN	001665SMH	127	3	41.6	9.4	0	0	-	1.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007213STMP	004987IN	000344IO	184	2	33.3	10.7	0.7	0	Flooded	-	Flooded	1.4	0.5	0.0	2523	0	Flooded
1	007214STMP	004988IN	004987IN	45	2	36.3	12.4	0.6	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.5	6555	2523	Flooded
1	007215STMP	004976IN	004981IN	127	1.25	9.0	7.2	0.1	0.1	1.9	1.1	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
1	007216STMP	004981IN	004982IN	62	1.5	9.0	-5.1	0.1	0.1	1.1	0.7	-	-	0.0	0.0	0	0	Surcharged
1	007217STMP	004982IN	001661SMH	182	1.5	9.1	5.8	0.1	0	0.7	1.0	-	-	0.0	0.0	0	0	Surcharged
1	007234STMP	001675SMH	004998IN	18	1.5	9.0	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007236STMP	004998IN	005000IN	34	1.5	9.0	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007237STMP	005000IN	001676SMH	38	2	9.0	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007238STMP	005001IN	001676SMH	14	1.25	4.8	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007267STMP	004469IN	004470IN	51	1.75	13.2	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007269STMP	004470IN	001694SMH	39	2.5	41.3	16.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007270STMP	004474IN	004470IN	244	2.5	28.2	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007271STMP	001694SMH	000302IO	21	2.5	47.1	15.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007272STMP	004475IN	001694SMH	189	1.75	5.8	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007274STMP	004472IN	004474IN	54	1.25	10.6	8.6	0.5	0	Flooded	-	Flooded	-	0.4	0.0	852	0	Flooded
1	007275STMP	004476IN	004474IN	245	2	12.7	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007276STMP	004477IN	004476IN	49	1.25	12.7	10.2	0.5	0	Flooded	-	Flooded	-	0.5	0.0	3235	0	Flooded
1	007718A	003261SMH	000927ND	63	1.5	15.8	11.7	0.2	0.3	2.1	3.2	1.2	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	007718B	000927ND	000926ND	65	1.5	15.8	10.7	0.3	0.6	3.2	4.5	1.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	007718C	000926ND	003262SMH	35	1.5	15.8	8.8	0.6	0.8	4.5	Flooded	0.8	Flooded	0.0	0.1	0	91	Insufficient Freeboard
1	008525STMP	007859IN	000909ND	20	1.25	18.0	14.6	0.2	0	Flooded	2.4	Flooded	-	0.2	0.0	531	0	Flooded
1	008702STMP	006006IN	000896ND	27	1.25	7.3	15.0	0	0	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956A	000960ND	000961ND	41	6.5 x 21	761.8	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956B	000961ND	000958ND	117	6.5 x 21	763.0	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956C	000958ND	000963ND	65	6.5 x 21	762.6	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956D	000963ND	000964ND	161	6.5 x 21	767.2	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956E	000964ND	000897ND	143	6.5 x 21	775.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	008956F	000897ND	000903ND	61	6.5 x 21	778.1	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956G	000903ND	003230SMH	29	6.5 x 21	778.5	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008972STMP	006019IN	001657SMH	104	1.5	5.7	3.3	0.4	0.5	2.4	3.1	-	0.3	0.0	0.0	0	0	Surcharged
1	008994STMP	003291SMH	000912ND	29	0.833	6.2	15.1	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008996STMP	003294SMH	003292SMH	41	1	4.4	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008997STMP	003292SMH	000913ND	12	1	4.3	5.5	0	0	0.7	1.1	-	-	0.0	0.0	0	0	Surcharged
1	009002STMP	003279SMH	003280SMH	267	1.5	12.6	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009003STMP	003280SMH	003281SMH	352	1.5	24.4	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009004STMP	003281SMH	003282SMH	127	2	38.5	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009005STMP	003282SMH	003283SMH	204	2	38.5	18.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006A	003283SMH	000910ND	27	3	47.1	17.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006B	000910ND	006053IN	72	3	47.1	18.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009007STMP	006053IN	003285SMH	89	3	57.7	19.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008A	003285SMH	000911ND	55	3	57.7	19.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008B	000911ND	003289SMH	275	3	57.7	19.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009A	003289SMH	000912ND	162	3	70.9	19.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009B	000913ND	003273SMH	266	3	81.2	15.2	0	2	-	Flooded	-	Flooded	0.0	2.0	0	48195	Sufficient Capacity
1	009009C	000912ND	000913ND	182	3	77.0	19.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009010STMP	003293SMH	003263SMH	76	2	31.3	11.3	1.3	2.4	Flooded	Flooded	Flooded	Flooded	0.5	2.0	2962	43874	Flooded
1	009011STMP	003262SMH	003293SMH	177	2	35.5	11.2	0.8	1.3	Flooded	Flooded	Flooded	Flooded	0.1	0.5	91	2962	Flooded
1	009515STMP	003234SMH	003226SMH	32	2.5	54.2	17.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009623STMP	003263SMH	003273SMH	6	2	17.8	5.6	2.4	2	Flooded	Flooded	Flooded	Flooded	2.0	2.0	43874	48195	Flooded
1	009724STMP	003233SMH	003232SMH	93	1.5	7.1	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009725STMP	006027IN	003233SMH	12	1.5	7.0	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009726STMP	006023IN	006025IN	182	1.5	17.3	9.6	1	1	Flooded	Flooded	Flooded	Flooded	1.0	1.0	13740	1921	Flooded
1	009727STMP	006022IN	006023IN	371	1.25	13.6	11.3	0.3	1	Flooded	Flooded	Flooded	Flooded	0.3	1.0	1134	13740	Flooded
1	009728A	000895ND	000904ND	113	6.5 x 17	629.1	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728B	000904ND	000896ND	14	6.5 x 17	628.2	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728C	000896ND	003231SMH	119	6.5 x 17	632.2	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729A	003231SMH	000905ND	25	6.5 x 17	638.3	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729B	000905ND	003227SMH	119	6.5 x 17	633.2	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730A	003227SMH	000906ND	33	6.5 x 17	632.2	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730B	000906ND	003229SMH	97	6.5 x 17	633.0	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009731STMP	003230SMH	003228SMH	151	6.5 x 21	780.1	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732A	003228SMH	000909ND	22	6.5 x 21	789.6	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732B	000909ND	000293CP	403	6.5 x 21	792.9	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734A	003229SMH	001645SMH	194	6.5 x 17	636.4	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734B	001645SMH	000292CP	98	6.5 x 17	680.6	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009848STMP	006052IN	003283SMH	25	1	8.7	10.9	0.6	0	Flooded	-	Flooded	-	0.4	0.0	887	0	Flooded
1	009910A	003274SMH	000929ND	46	2.5	42.4	8.6	2.6	2.6	Flooded	4.4	Flooded	0.0	1.3	0.0	1847	0	Flooded
1	009910B	000929ND	003278SMH	140	2.5	43.7	8.8	2.6	2.6	4.5	Flooded	0.0	Flooded	0.0	1.5	0	5217	Insufficient Freeboard
1	009911STMP	006089IN	003274SMH	26	1	5.0	9.6	0.5	2.6	Flooded	Flooded	Flooded	Flooded	0.5	1.3	800	1847	Flooded
1	009935STMP	006100IN	006136IN	44	2.25	48.6	12.1	1.6	1.9	3.4	Flooded	-	Flooded	0.0	0.3	0	2033	Surcharged
1	009937STMP	003275SMH	003273SMH	67	1	7.5	9.4	2.5	2	Flooded	Flooded	Flooded	Flooded	2.5	2.0	12139	48195	Flooded
1	009944STMP	003226SMH	003386SMH	44	3	58.1	18.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009945STMP	003386SMH	003387SMH	10	3	57.9	12.9	0	0.1	-	0.6	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009946STMP	003387SMH	000976ND	34	3	57.7	8.6	0.1	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
1	010129STMP	003225SMH	003234SMH	48	2.5	54.1	18.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010130STMP	006015IN	003225SMH	38	1.25	3.9	13.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010141STMP	003224SMH	003223SMH	14	2	7.1	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010142STMP	003223SMH	000897ND	22	2	7.1	6.5	0	0	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010144STMP	003232SMH	003224SMH	79	2	7.1	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010146STMP	003284SMH	006053IN	9	1	10.8	13.6	0.2	0	Flooded	0.3	Flooded	-	0.2	0.0	156	0	Flooded
1	010148STMP	003286SMH	003287SMH	123	0.833	5.4	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010149A	003239SMH	000922ND	81	0.667	-4.0	-10.2	1.6	4.4	Flooded	Flooded	Flooded	Flooded	1.2	2.4	3873	152	Flooded
1	010149B	000922ND	003286SMH	109	0.667	5.4	13.9	4.4	0	Flooded	-	Flooded	-	2.4	0.0	152	0	Flooded
1	010150STMP	003287SMH	003284SMH	238	1	11.5	16.3	0	0.2	-	Flooded	-	Flooded	0.0	0.2	0	156	Sufficient Capacity
1	010167STMP	006086IN	003274SMH	107	1.75	4.2	2.7	1.7	2.6	2.0	Flooded	-	Flooded	0.0	1.3	0	1847	Surcharged
1	010168STMP	003273SMH	003264SMH	150	2	43.8	13.7	2	2.6	Flooded	Flooded	Flooded	Flooded	2.0	2.6	48195	56057	Flooded
1	010169STMP	003264SMH	003274SMH	109	1.75	40.4	16.4	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.6	1.3	56057	1847	Flooded
1	010173STMP	003277SMH	003274SMH	51	2.5	7.0	5.2	2.5	2.6	Flooded	Flooded	Flooded	Flooded	1.5	1.3	2846	1847	Flooded
1	010174STMP	006109IN	003277SMH	97	1	2.5	4.2	2.1	2.5	Flooded	Flooded	Flooded	Flooded	0.6	1.5	557	2846	Flooded
1	010176A	003278SMH	000938ND	31	2.5	46.2	9.3	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.5	0.5	5217	29	Flooded
1	010176B	000938ND	003301SMH	40	2.5	47.0	9.5	2.6	2.7	Flooded	Flooded	Flooded	Flooded	0.5	1.0	29	1388	Flooded
1	010177STMP	006110IN	000938ND	6	1	2.2	4.0	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.5	0.5	2725	29	Flooded
1	010178STMP	003302SMH	006111IN	175	2	20.9	6.6	1.6	2	3.0	3.4	1.2	0.7	0.0	0.0	0	0	Insufficient Freeboard
1	010179STMP	006112IN	003302SMH	30	2	20.9	7.8	1.1	1.6	2.6	3.0	0.3	1.2	0.0	0.0	0	0	Insufficient Freeboard
1	010180STMP	006113IN	006112IN	13	1.75	20.9	9.4	1.1	1.1	Flooded	2.7	Flooded	0.3	0.3	0.0	413	0	Flooded
1	010181STMP	006025IN	006113IN	217	1.75	17.7	7.3	1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	0.3	1921	413	Flooded
1	010183STMP	006115IN	003303SMH	44	2 x 3	16.6	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010185STMP	003303SMH	003305SMH	73	2 x 3	16.6	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010189STMP	003305SMH	000962ND	24	2 x 3	16.6	9.6	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010190STMP	006118IN	002913ND	43	1.25	11.3	10.0	0.2	0	0.3	2.2	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	010191STMP	006119IN	006118IN	165	1.25	11.2	9.0	0.3	0.2	Flooded	0.2	Flooded	2.0	0.2	0.0	611	0	Flooded
1	010194STMP	003309SMH	003310SMH	67	1	4.7	5.8	2.9	2.6	Flooded	Flooded	Flooded	Flooded	0.4	1.3	558	4579	Flooded
1	010195STMP	003301SMH	003310SMH	23	2.5	50.6	-10.2	2.7	2.6	Flooded	Flooded	Flooded	Flooded	1.0	1.3	1388	4579	Flooded
1	010196STMP	003310SMH	003311SMH	87	2.5	48.2	9.7	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.3	0.9	4579	950	Flooded
1	010197STMP	003311SMH	003312SMH	113	2.5	48.5	9.8	2.6	2.6	Flooded	3.7	Flooded	1.2	0.9	0.0	950	0	Flooded
1	010198STMP	006111IN	003312SMH	32	2.5	20.9	4.2	2	2.6	2.9	3.2	0.7	1.2	0.0	0.0	0	0	Insufficient Freeboard
1	010199STMP	003312SMH	000959ND	46	2.5	62.3	12.6	2.6	0	3.7	0.9	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
1	010211STMP	006131IN	003313SMH	13	1	7.8	9.9	0.2	0	1.5	2.8	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	010216STMP	006133IN	003311SMH	61	1	4.0	6.1	1	2.6	1.0	Flooded	0.3	Flooded	0.0	0.9	0	950	Insufficient Freeboard
1	010217STMP	006134IN	000941ND	36	1	3.2	9.9	0	0	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010218STMP	003322SMH	003317SMH	100	2 x 3.167	40.2	6.7	0	0	-	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
1	010219STMP	003317SMH	000946ND	48	2 x 3.167	40.2	9.1	0	0	-	0.4	-	-	0.0	0.0	0	0	Surcharged
1	010222STMP	006136IN	006137IN	244	2.5	41.5	8.4	1.9	2.4	Flooded	Flooded	Flooded	Flooded	0.3	2.1	2033	36472	Flooded
1	010223STMP	006137IN	003318SMH	40	2.5	34.9	7.0	2.4	2.4	Flooded	Flooded	Flooded	Flooded	2.1	2.0	36472	24149	Flooded
1	010227STMP	003318SMH	003320SMH	109	1.5	20.4	11.3	2.4	0	Flooded	0.7	Flooded	-	2.0	0.0	24149	0	Flooded
1	010228STMP	006138IN	003320SMH	109	1.5	14.6	8.2	0.3	0	1.8	0.3	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010230STMP	003320SMH	003321SMH	148	2 x 3.167	32.3	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Surcharged
1	010231STMP	003321SMH	003322SMH	64	2 x 3.167	32.6	6.5	0	0	-	-	-	1.8	0.0	0.0	0	0	Surcharged
1	010235STMP	003325SMH	003324SMH	47	1.25	11.7	-9.4	1.7	1.2	Flooded	2.9	Flooded	0.5	0.7	0.0	1511	0	Flooded
1	010236STMP	003324SMH	003372SMH	143	1.5	11.8	6.6	1.2	1.2	2.7	Flooded	0.5	Flooded	0.0	0.6	0	1424	Insufficient Freeboard
1	010238STMP	003371SMH	003325SMH	92	1.25	10.3	8.2	1.2	1.7	Flooded	Flooded	Flooded	Flooded	1.0	0.7	9957	1511	Flooded
1	010243STMP	006143IN	000963ND	126	1	6.0	7.4	0.5	0	3.9	2.4	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010246A	003372SMH	000948ND	46	1.5	14.5	-8.1	1.2	1.2	Flooded	Flooded	Flooded	Flooded	0.6	0.5	1424	18	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010246B	000948ND	003373SMH	103	1.5	14.1	-7.9	1.2	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.3	18	1161	Flooded
1	010248STMP	003373SMH	003374SMH	24	1.5	22.4	13.1	0.6	0.7	Flooded	Flooded	Flooded	Flooded	0.3	0.3	1161	367	Flooded
1	010249A	003374SMH	000957ND	3	2	22.1	7.0	0.7	0.7	Flooded	2.1	Flooded	1.7	0.3	0.0	367	0	Flooded
1	010249B	000957ND	003376SMH	254	2	22.0	7.0	0.7	0.6	2.2	0.9	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010251STMP	003376SMH	003375SMH	19	2	21.9	7.0	0.6	0.6	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged
1	010252STMP	003375SMH	000960ND	53	2	21.9	7.0	0.6	0	1.1	1.4	-	-	0.0	0.0	0	0	Surcharged
1	010254STMP	006149IN	000961ND	53	1	2.0	3.8	0	0	-	2.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010261STMP	006152IN	000964ND	86	1.25	12.4	10.0	0.3	0	Flooded	2.2	Flooded	-	0.2	0.0	165	0	Flooded
1	010267STMP	006157IN	006015IN	115	1.25	3.9	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010268STMP	003382SMH	003225SMH	13	2.5	32.3	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010269STMP	006016IN	003382SMH	36	2.5	23.1	14.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010456STMP	003495SMH	006052IN	91	1	10.5	16.6	0	0.6	-	Flooded	-	Flooded	0.0	0.4	0	887	Sufficient Capacity
1	010457STMP	008054IN	003495SMH	94	1	10.5	14.1	0.3	0	Flooded	-	Flooded	-	0.3	0.0	965	0	Flooded
1	010459STMP	003496SMH	003280SMH	119	1	12.0	14.8	0.5	0	Flooded	0.2	Flooded	-	0.2	0.0	318	0	Flooded
1	014020STMP	004845IN	004850IN	174	2.5	18.8	4.1	0.3	0.3	1.2	1.4	1.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
1	014021STMP	004008SMH	001538SMH	12	2	25.0	7.9	0.4	0.3	1.4	1.1	0.8	0.6	0.0	0.0	0	0	Insufficient Freeboard
1	014022A	009001IN	000626ND	34	4.5	77.8	4.7	0.1	0.2	0.5	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014022B	000626ND	002901ND	57	4.5	88.7	5.3	0.2	0.2	0.6	0.8	-	-	0.0	0.0	0	0	Surcharged
1	014022C	002900ND	000575IO	38	4.5	310.6	18.8	0.2	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
1	014022D	002901ND	002900ND	8	4.5	206.0	12.4	0.2	0.2	0.8	0.5	-	-	0.0	0.0	0	0	Surcharged
1	014023STMP	004009SMH	004010SMH	271	4	58.1	6.5	0.1	0.2	1.8	2.9	1.0	0.5	0.0	0.0	0	0	Insufficient Freeboard
1	014024STMP	004010SMH	004011SMH	39	4	100.4	8.0	0.2	0.2	3.2	3.1	0.5	1.9	0.0	0.0	0	0	Insufficient Freeboard
1	014025STMP	004011SMH	004012SMH	88	4	100.4	-7.9	0.2	0.3	4.0	3.3	1.9	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	014026STMP	004012SMH	004013SMH	481	4	101.0	8.0	0.3	0.2	3.3	1.3	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
1	014027STMP	004013SMH	004014SMH	131	4 x 6	120.6	-5.0	0.2	0.2	1.8	1.2	-	-	0.0	0.0	0	0	Surcharged
1	014028STMP	004014SMH	004015SMH	67	4 x 6	121.0	5.0	0.2	0.2	1.2	1.3	-	-	0.0	0.0	0	0	Surcharged
1	014029STMP	004015SMH	004016SMH	51	4 x 6	121.2	5.0	0.2	0.2	1.3	1.5	-	-	0.0	0.0	0	0	Surcharged
1	014030STMP	004016SMH	004019SMH	104	4 x 6	121.5	5.1	0.2	0.2	1.5	1.4	-	-	0.0	0.0	0	0	Surcharged
1	014031STMP	002902ND	004017SMH	262	4 x 6	101.4	7.6	0	0.2	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014032STMP	004017SMH	004018SMH	41	4 x 6	101.3	-4.2	0.2	0.2	1.0	0.9	-	-	0.0	0.0	0	0	Surcharged
1	014033STMP	004018SMH	004020SMH	120	4 x 6	104.8	4.4	0.2	0.2	0.9	1.1	-	-	0.0	0.0	0	0	Surcharged
1	014034STMP	004019SMH	001554SMH	161	4 x 6	121.8	5.1	0.2	0.2	1.4	1.2	-	-	0.0	0.0	0	0	Surcharged
1	014035STMP	004020SMH	001555SMH	104	4 x 6	104.8	-4.4	0.2	0.2	1.1	1.0	-	-	0.0	0.0	0	0	Surcharged
1	014036STMP	001554SMH	002901ND	82	4 x 6	121.9	5.1	0.2	0.2	1.2	1.3	-	-	0.0	0.0	0	0	Surcharged
1	014037STMP	001555SMH	002900ND	83	4 x 6	104.8	4.4	0.2	0.2	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged
1	014902STMP	001680SMH	001682SMH	116	2.8333 x 4.333	41.0	4.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014903STMP	005007IN	004006SMH	57	3.5	49.6	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014904STMP	004006SMH	001684SMH	120	3.5	49.7	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014905STMP	001685SMH	001687SMH	116	3.5	65.3	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014906STMP	004852IN	004008SMH	19	2	25.0	7.9	0.4	0.4	1.7	1.4	0.2	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	014926STMP	001551SMH	001557SMH	54	1.5	8.9	5.6	0.2	0	0.9	1.9	-	-	0.0	0.0	0	0	Surcharged
1	014931A	000959ND	002913ND	153	6.5 x 17	613.8	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931B	002913ND	000962ND	36	6.5 x 17	619.3	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931C	000962ND	000895ND	173	6.5 x 17	627.9	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935A	003313SMH	000946ND	205	5 x 16	712.6	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935B	000946ND	000960ND	184	5 x 16	741.1	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936A	003313SMH	000945ND	192	5 x 13	553.1	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936B	000945ND	000941ND	136	5 x 13	550.5	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	014936C	000941ND	000959ND	67	5 x 13	551.9	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014942STMP	000976ND	001545SMH	1083	4 x 5	80.4	10.3	0	0.6	-	Flooded	-	Flooded	0.0	0.2	0	2712	Sufficient Capacity
1	014944STMP	001901CB	001902CB	57	1	9.2	12.6	0.1	0.1	0.9	1.1	-	1.9	0.0	0.0	0	0	Surcharged
1	014945STMP	001902CB	004901SMH	323	1	8.7	12.2	0.1	0	1.1	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
1	014946STMP	004901SMH	004902SMH	79	1.5	8.7	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014948STMP	004902SMH	009912IN	99	3	33.2	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014949STMP	002917ND	009911IN	331	2.5	84.5	21.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014950STMP	009911IN	004903SMH	199	4	94.6	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014951STMP	004818IN	004903SMH	101	1.5	7.1	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014952STMP	004903SMH	001569SMH	70	3	101.7	15.9	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014953STMP	001569SMH	002902ND	480	4	101.9	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014954STMP	000002ND	004904SMH	217	1.75	34.1	16.1	0	0.1	0.2	1.2	-	-	0.0	0.0	0	0	Surcharged
1	014955STMP	004904SMH	009912IN	93	1.75	40.2	16.7	0.1	0	1.2	-	-	-	0.0	0.0	0	0	Surcharged
1	014956STMP	009912IN	002917ND	265	3	84.6	21.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007414STMP	002413SMH	002423SMH	59	1.25	5.9	11.8	0	0.4	-	4.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007415STMP	005209IN	002413SMH	6	0.833	5.9	10.8	0.1	0	Flooded	-	Flooded	-	0.0	0.0	10	0	Flooded
2	007417STMP	005210IN	005211IN	32	1	10.8	-13.1	1.1	0.4	Flooded	4.7	Flooded	-	0.4	0.0	2391	0	Flooded
2	007761STMP	005995IN	003133SMH	43	1.25	11.5	9.2	0.9	1	Flooded	Flooded	Flooded	Flooded	0.9	0.8	4990	4875	Flooded
2	007771STMP	005211IN	002423SMH	17	2	10.8	8.3	0.4	0.4	3.7	4.3	-	-	0.0	0.0	0	0	Surcharged
2	007772A	002416SMH	0001028ND	33	1.5	24.9	13.9	0.3	0.3	3.8	3.1	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
2	007772B	0001028ND	002419SMH	18	1.5	24.7	13.8	0.3	0.2	3.1	2.1	-	-	0.0	0.0	0	0	Surcharged
2	007785STMP	005224IN	002423SMH	110	1.25	4.5	7.3	0.1	0.4	0.6	3.0	-	-	0.0	0.0	0	0	Surcharged
2	007866STMP	007225IN	007224IN	48	1.25	6.6	5.3	3.6	3.7	Flooded	Flooded	Flooded	Flooded	1.7	2.0	2383	5697	Flooded
2	007867STMP	002459SMH	007224IN	167	1.25	4.4	3.9	2.2	3.7	Flooded	Flooded	Flooded	Flooded	1.8	2.0	6841	5697	Flooded
2	007868STMP	007224IN	007226IN	31	1.25	9.1	7.3	3.7	3.8	Flooded	Flooded	Flooded	Flooded	2.0	2.0	5697	4390	Flooded
2	007869STMP	007226IN	007227IN	109	1.25	8.6	6.9	3.8	4	Flooded	Flooded	Flooded	Flooded	2.0	1.8	4390	2334	Flooded
2	007870STMP	007227IN	003062SMH	33	1.25	8.6	6.9	4	4.9	Flooded	Flooded	Flooded	Flooded	1.8	3.8	2334	21216	Flooded
2	008279STMP	005855IN	000773ND	20	1	6.6	8.3	1.6	1.7	Flooded	Flooded	Flooded	Flooded	0.7	0.0	1585	71	Flooded
2	008289STMP	005862IN	000812ND	12	1	8.3	10.3	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.6	1.0	5388	322	Flooded
2	008324STMP	003163SMH	003107SMH	196	2	25.3	8.1	1.8	1.9	Flooded	Flooded	Flooded	Flooded	0.7	1.8	5533	22234	Flooded
2	008327STMP	003168SMH	000493CB	225	1.25	10.3	8.2	2.3	1.8	Flooded	3.2	Flooded	0.3	1.8	0.0	10423	0	Flooded
2	008333STMP	005927IN	003159SMH	112	1.25	9.7	8.4	0	0.9	1.2	1.9	-	0.9	0.0	0.0	0	0	Surcharged
2	008334STMP	005928IN	003109SMH	47	1	12.7	16.1	0.5	0	Flooded	-	Flooded	-	0.5	0.0	2267	0	Flooded
2	008335STMP	003109SMH	000793ND	112	1.5	12.7	15.2	0	0.6	-	Flooded	-	Flooded	0.0	0.2	0	19	Sufficient Capacity
2	008339STMP	000496CB	000829ND	126	1.25	8.7	7.0	1.3	1	Flooded	4.0	Flooded	0.0	0.6	0.0	668	0	Flooded
2	008345STMP	003117SMH	003118SMH	210	2.25	27.4	7.3	0.3	0.3	0.9	1.2	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	008366STMP	003123SMH	003143SMH	22	1.25	10.1	8.2	0.8	0.8	2.1	1.9	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	008395STMP	005846IN	000773ND	87	1.25	8.0	6.4	1.7	1.7	Flooded	Flooded	Flooded	Flooded	1.2	0.0	1474	71	Flooded
2	008396STMP	005847IN	005843IN	35	1	3.9	5.0	1.3	1.3	Flooded	Flooded	Flooded	Flooded	1.2	1.2	1389	1509	Flooded
2	008402STMP	000485CB	003089SMH	28	1	5.3	6.7	1.4	25.5	Flooded	Flooded	Flooded	Flooded	1.0	1.2	844	4673	Flooded
2	008403STMP	003148SMH	003089SMH	204	1	5.8	7.3	2.3	25.5	3.7	Flooded	0.8	Flooded	0.0	1.2	0	4673	Insufficient Freeboard
2	008405STMP	005876IN	000831ND	24	1	3.8	5.5	0.7	1.9	Flooded	Flooded	Flooded	Flooded	0.7	0.7	1397	8	Flooded
2	008408STMP	000487CB	003090SMH	19	1.25	3.0	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008409STMP	003090SMH	000816ND	706	2	17.9	8.1	0	0	-	1.9	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008410STMP	000488CB	003090SMH	10	1.25	15.2	12.4	1.2	0	0.7	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008413STMP	005881IN	000826ND	40	1	6.7	11.1	0	0	-	2.1	1.4	-	0.0	0.0	0	0	Sufficient Capacity
2	008500STMP	005980IN	005981IN	27	2	43.8	13.9	0.5	0.5	3.3	2.6	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
2	008501STMP	003124SMH	005980IN	10	2	44.0	-13.9	1.3	0.5	Flooded	2.4	Flooded	1.4	0.2	0.0	443	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008502STMP	003144SMH	003124SMH	31	2	44.1	13.9	1	1.3	5.3	Flooded	1.7	Flooded	0.0	0.2	0	443	Insufficient Freeboard
2	008505STMP	005981IN	003129SMH	61	2.25	43.5	16.6	0.5	0.9	2.4	5.2	-	-	0.0	0.0	0	0	Surcharged
2	008507STMP	005983IN	005984IN	63	1.5	17.5	10.1	0.1	0.1	0.5	0.6	-	-	0.0	0.0	0	0	Surcharged
2	008508STMP	003128SMH	005983IN	68	1.25	12.8	-10.3	0.8	0.1	2.7	0.7	-	-	0.0	0.0	0	0	Surcharged
2	008511STMP	000514CB	000827ND	113	1.25	7.2	5.9	0.2	0	1.0	2.0	-	-	0.0	0.0	0	0	Surcharged
2	008514STMP	000515CB	007743IN	51	1.25	13.6	10.8	1.4	2.1	Flooded	5.3	Flooded	0.5	1.4	0.0	5173	0	Flooded
2	008515STMP	007743IN	000516CB	42	1.25	13.3	-10.7	2.1	1.4	5.4	3.8	0.5	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	008516STMP	000516CB	000801ND	194	1.5	13.3	7.5	1.4	1.2	3.5	5.8	1.1	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	008517STMP	003105SMH	003152SMH	40	1.25	9.2	7.4	1.2	0	1.5	0.9	0.8	1.6	0.0	0.0	0	0	Insufficient Freeboard
2	008527STMP	003462SMH	003456SMH	22	3	35.8	6.8	5.5	6.1	3.1	4.8	1.3	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	008528STMP	003457SMH	003458SMH	43	4	35.7	2.8	5.5	5.5	3.1	3.3	-	-	0.0	0.0	0	0	Surcharged
2	008529STMP	003458SMH	003459SMH	60	4	35.6	-2.8	5.5	5.4	3.3	2.0	-	-	0.0	0.0	0	0	Surcharged
2	008530STMP	003463SMH	003462SMH	66	3	35.8	7.8	5.5	5.5	2.8	3.1	1.1	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	008531STMP	008004IN	003463SMH	78	3	23.9	5.6	5.4	5.5	2.4	2.6	0.2	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	008532STMP	003464SMH	003463SMH	39	2	15.1	6.2	5.5	5.5	2.9	3.0	0.5	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	008533STMP	000633CB	003439SMH	29	1	6.5	-8.1	6.5	6.5	Flooded	Flooded	Flooded	Flooded	6.0	5.6	6105	8284	Flooded
2	008534A	003465SMH	0001033ND	383	2	20.6	6.5	5.3	5.5	Flooded	Flooded	Flooded	Flooded	4.7	5.0	8442	23	Flooded
2	008534B	0001033ND	003440SMH	31	2	20.8	6.6	5.5	5.6	Flooded	Flooded	Flooded	Flooded	5.0	5.3	23	19921	Flooded
2	008536STMP	008024IN	003472SMH	10	2	17.8	5.6	5.3	5.3	Flooded	Flooded	Flooded	Flooded	5.2	4.9	43590	23229	Flooded
2	008537STMP	003474SMH	008024IN	225	2	24.2	7.6	5.1	5.3	5.7	Flooded	-	Flooded	0.0	5.2	0	43590	Surcharged
2	008538STMP	003475SMH	003473SMH	160	4	19.5	-1.9	4.9	3.5	3.4	1.5	-	-	0.0	0.0	0	0	Surcharged
2	008539STMP	003473SMH	003474SMH	59	4	25.5	7.3	3.5	5.1	1.5	3.7	-	-	0.0	0.0	0	0	Surcharged
2	008540STMP	003479SMH	003475SMH	43	4	19.7	-1.6	5.1	4.9	4.0	3.5	-	-	0.0	0.0	0	0	Surcharged
2	008544STMP	005984IN	007978IN	44	2	24.6	7.6	0.1	0	0.1	0.1	-	-	0.0	0.0	0	0	Surcharged
2	008545STMP	003131SMH	003129SMH	46	2	19.6	10.2	0	0.9	2.1	5.3	-	-	0.0	0.0	0	0	Surcharged
2	008546STMP	003130SMH	003131SMH	39	2	19.6	9.5	0.3	0	1.5	2.1	-	-	0.0	0.0	0	0	Surcharged
2	008547STMP	005988IN	003130SMH	38	2	19.6	7.8	0	0.3	1.2	1.3	-	-	0.0	0.0	0	0	Surcharged
2	008550STMP	005991IN	005988IN	22	2	12.4	-3.9	0.3	0	1.5	1.2	-	-	0.0	0.0	0	0	Surcharged
2	008553STMP	005992IN	005991IN	55	1.5	12.2	10.2	0.1	0.3	0.1	2.0	-	-	0.0	0.0	0	0	Surcharged
2	008554STMP	003132SMH	005992IN	98	1.25	12.0	-9.7	0.7	0.1	3.6	0.4	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
2	008556STMP	005994IN	003132SMH	40	1.25	12.0	9.6	0.5	0.7	Flooded	3.6	Flooded	1.1	0.3	0.0	919	0	Flooded
2	008557STMP	003134SMH	003144SMH	212	2.25	36.2	10.7	0.9	1	2.2	5.0	1.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	008558STMP	007718IN	003134SMH	83	2	28.3	10.5	0.8	0.9	1.9	2.4	0.3	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	008560STMP	003137SMH	007718IN	30	2	28.5	-9.0	0.9	0.8	Flooded	1.9	Flooded	0.3	0.4	0.0	1434	0	Flooded
2	008563STMP	007721IN	003137SMH	16	1.5	21.3	11.9	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.7	0.4	4221	1434	Flooded
2	008566STMP	003138SMH	007721IN	27	1.5	20.8	11.7	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.7	7507	4221	Flooded
2	008567STMP	007736IN	000796ND	36	1.5	8.0	11.7	0	0	-	3.2	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008627STMP	000509CB	000787ND	8	1	7.6	9.5	0.5	0.3	3.1	1.9	0.3	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	008629STMP	007729IN	003145SMH	13	1	7.2	-9.0	0.9	0.8	Flooded	Flooded	Flooded	Flooded	0.8	0.5	3779	1389	Flooded
2	008630STMP	003145SMH	003123SMH	98	1.25	10.1	8.2	0.8	0.8	Flooded	2.1	Flooded	0.6	0.5	0.0	1389	0	Flooded
2	008632STMP	005935IN	003147SMH	96	4	112.1	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008633STMP	003118SMH	003119SMH	41	2.5	29.0	8.0	0.3	0.5	1.0	2.5	-	-	0.0	0.0	0	0	Surcharged
2	008634STMP	003129SMH	003119SMH	201	2.5	61.0	12.3	0.9	0.5	5.2	2.9	-	-	0.0	0.0	0	0	Surcharged
2	008635STMP	003143SMH	003138SMH	277	1.5	13.1	7.7	0.8	0.9	1.9	Flooded	0.8	Flooded	0.0	0.8	0	7507	Insufficient Freeboard
2	008636STMP	003119SMH	003112SMH	201	4	89.2	7.0	0.5	0.5	1.4	1.6	-	-	0.0	0.0	0	0	Surcharged
2	008766STMP	003454SMH	003465SMH	181	1.5	11.8	6.6	0.2	5.3	0.9	Flooded	-	Flooded	0.0	4.7	0	8442	Surcharged
2	008784STMP	005868IN	000813ND	70	1.25	12.4	12.3	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.2	11692	575	Flooded
2	008787STMP	000484CB	003089SMH	23	1.25	8.1	6.5	1.2	25.5	Flooded	Flooded	Flooded	Flooded	1.0	1.2	1930	4673	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008817STMP	005785IN	002906SMH	45	1.5	11.6	18.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008829STMP	002908SMH	002906SMH	179	1.25	13.1	10.6	0	0	2.1	-	-	-	0.0	0.0	0	0	Surcharged
2	008899STMP	007843IN	000883ND	41	1	4.8	8.4	0	0.5	Flooded	7.7	Flooded	0.6	0.0	0.0	1	0	Flooded
2	008915A	002909SMH	000759ND	22	1.25	8.0	-6.4	0.6	0.4	3.3	2.7	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008915B	000759ND	002908SMH	13	1.25	8.0	-6.5	0.4	0	2.7	2.1	-	-	0.0	0.0	0	0	Surcharged
2	008916STMP	005792IN	002909SMH	12	1.25	8.0	6.4	0.3	0.6	3.5	3.3	1.5	1.9	0.0	0.0	0	0	Insufficient Freeboard
2	008920STMP	003133SMH	003134SMH	46	1.25	11.5	9.3	1	0.9	Flooded	3.1	Flooded	1.5	0.8	0.0	4875	0	Flooded
2	008938STMP	003072SMH	003086SMH	164	1.5	32.0	22.7	0	0.3	-	Flooded	-	Flooded	0.0	0.1	0	252	Sufficient Capacity
2	008941STMP	002919SMH	003072SMH	207	1.5	23.3	23.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008943STMP	003063SMH	002919SMH	83	1.5	23.3	13.6	0.3	0	2.9	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008981STMP	006028IN	000890ND	35	1	7.8	9.8	1.5	1	Flooded	Flooded	Flooded	Flooded	0.8	0.0	969	284	Flooded
2	009074STMP	000537IO	003070SMH	79	1.5	22.0	20.3	0	0	-	-	1.0	-	0.0	0.0	0	0	Sufficient Capacity
2	009075STMP	005820IN	003071SMH	21	1.5	21.8	21.2	0	0.8	-	Flooded	-	Flooded	0.0	0.4	0	2132	Sufficient Capacity
2	009076STMP	003071SMH	003084SMH	228	2	25.6	8.0	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.4	0.3	2132	1112	Flooded
2	009223STMP	005793IN	005792IN	190	1.25	7.9	6.4	0.3	0.3	Flooded	2.7	Flooded	1.5	0.2	0.0	343	0	Flooded
2	009228STMP	002906SMH	002912SMH	157	1.5	24.6	22.1	0	0.2	-	0.4	-	1.9	0.0	0.0	0	0	Sufficient Capacity
2	009229STMP	002912SMH	002913SMH	6	1.5	24.7	14.3	0.2	0	0.4	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	009230STMP	002913SMH	002910SMH	78	1.5	24.7	18.5	0	0.7	-	Flooded	-	Flooded	0.0	0.6	0	3309	Sufficient Capacity
2	009231STMP	002910SMH	002914SMH	27	1.5	19.2	15.1	0.7	0.9	Flooded	Flooded	Flooded	Flooded	0.6	0.7	3309	3930	Flooded
2	009234STMP	002914SMH	002915SMH	83	1.5	16.4	12.6	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.7	0.9	3930	7013	Flooded
2	009235STMP	002915SMH	002916SMH	44	1.75	23.4	-9.6	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.9	0.9	7013	4551	Flooded
2	009236STMP	002916SMH	002917SMH	174	1.25	23.4	18.6	0.9	0.8	Flooded	2.8	Flooded	-	0.9	0.0	4551	0	Flooded
2	009238STMP	005775IN	003066SMH	208	1.5	4.1	8.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009245STMP	000128CP	000129CP	76	5 x 8	669.0	18.6	0	0	-	-	1.8	-	0.0	0.0	0	0	Sufficient Capacity
2	009249STMP	005813IN	003063SMH	37	1.5	23.3	13.0	0.3	0.3	Flooded	2.9	Flooded	0.9	0.1	0.0	55	0	Flooded
2	009251STMP	003064SMH	005813IN	184	1.5	4.1	7.8	0	0.3	-	Flooded	-	Flooded	0.0	0.1	0	55	Sufficient Capacity
2	009252STMP	003065SMH	003064SMH	93	1.5	4.1	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009253STMP	003066SMH	003065SMH	55	1.5	4.1	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009254STMP	002917SMH	003068SMH	100	1.25	24.1	20.9	0.8	0.3	2.8	3.8	-	-	0.0	0.0	0	0	Surcharged
2	009258STMP	003067SMH	003158SMH	160	2	24.0	11.0	0.3	0	3.5	4.4	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	009259STMP	003068SMH	003067SMH	40	2	24.2	9.5	0.3	0.3	3.4	3.5	-	0.8	0.0	0.0	0	0	Surcharged
2	009263STMP	003069SMH	003071SMH	99	1.5	8.8	7.2	0.6	0.8	Flooded	Flooded	Flooded	Flooded	0.2	0.4	61	2132	Flooded
2	009264STMP	003070SMH	005820IN	45	1.5	21.8	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009286STMP	003083SMH	003082SMH	28	2	46.1	14.5	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.4	0.7	2949	12009	Flooded
2	009287STMP	003082SMH	005833IN	44	2	51.5	16.1	0.8	0.4	Flooded	Flooded	Flooded	Flooded	0.7	0.3	12009	12488	Flooded
2	009288STMP	003084SMH	003083SMH	6	2	28.6	9.0	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.3	0.4	1112	2949	Flooded
2	009289STMP	003085SMH	003083SMH	9	1.5	22.7	12.6	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.6	0.4	4396	2949	Flooded
2	009290A	003086SMH	000767ND	50	1.5	30.5	18.3	0.3	0.8	Flooded	Flooded	Flooded	Flooded	0.1	0.4	252	16	Flooded
2	009290B	000767ND	003085SMH	35	1.5	25.5	16.7	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.4	0.6	16	4396	Flooded
2	009300A	000130CP	000764ND	21	5.5 x 8	930.1	21.1	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.3	77412	1239	Flooded
2	009300B	000764ND	000765ND	3	5.5 x 8	931.7	21.1	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.3	0.3	1239	527	Flooded
2	009300C	000765ND	000766ND	44	5.5 x 8	928.0	21.0	0.6	0.5	Flooded	Flooded	Flooded	Flooded	0.3	0.2	527	153	Flooded
2	009300D	000766ND	005833IN	73	5.5 x 8	911.2	20.7	0.5	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.3	153	12488	Flooded
2	009304STMP	005843IN	005846IN	25	1.25	7.7	6.2	1.3	1.7	Flooded	Flooded	Flooded	Flooded	1.2	1.2	1509	1474	Flooded
2	009307STMP	005885IN	000825ND	37	1.5	5.2	6.4	0	0	-	1.6	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009309STMP	003091SMH	000823ND	53	1.25	3.7	8.0	0	0	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009315STMP	005891IN	003093SMH	46	2.5	95.2	19.1	2	2.3	RIM	Flooded	RIM	Flooded	0.0	1.9	0	22609	Insufficient Freeboard
2	009317STMP	003093SMH	000821ND	9	2.5	83.6	16.8	2.3	0	Flooded	0.7	Flooded	-	1.9	0.0	22609	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009320A	003095SMH	000817ND	14	5 x 10	861.0	21.7	0	0	0.5	-	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
2	009320B	000817ND	000816ND	24	5 x 10	869.8	23.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009320C	000816ND	000815ND	11	5 x 10	903.5	29.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009326STMP	005899IN	000777ND	24	1	5.8	7.4	0.7	1.4	1.2	6.4	0.5	0.1	0.0	0.0	0	0	Insufficient Freeboard
2	009330STMP	003097SMH	000776ND	13	1.5	10.1	5.7	0	1.3	2.6	5.5	0.5	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	009331STMP	005903IN	003097SMH	82	1.25	6.9	5.8	0.2	0	0.8	2.8	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009338STMP	003098SMH	003099SMH	15	2.25	30.2	7.5	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.7	1.7	11737	9920	Flooded
2	009341STMP	005909IN	003101SMH	12	2	38.3	14.4	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.5	1.5	2554	2174	Flooded
2	009342STMP	003100SMH	005909IN	66	2	38.1	12.0	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.5	1.5	3343	2554	Flooded
2	009343STMP	003160SMH	003100SMH	170	2	38.7	12.2	1.7	1.7	Flooded	Flooded	Flooded	Flooded	1.7	1.5	48485	3343	Flooded
2	009345STMP	003101SMH	003103SMH	44	2.25	55.4	13.7	1.9	1.9	Flooded	5.7	Flooded	1.0	1.5	0.0	2174	0	Flooded
2	009346A	003099SMH	000768ND	212	2.25	30.5	7.6	1.8	1.9	Flooded	5.8	Flooded	0.1	1.7	0.0	9920	0	Flooded
2	009346B	000768ND	003101SMH	96	2.25	30.6	7.6	1.9	1.9	5.8	Flooded	0.1	Flooded	0.0	1.5	0	2174	Insufficient Freeboard
2	009348STMP	003102SMH	003103SMH	35	2	33.2	10.5	1.9	1.9	5.4	5.9	0.8	1.0	0.0	0.0	0	0	Insufficient Freeboard
2	009359STMP	005921IN	003106SMH	6	1	4.4	8.8	0	0	-	0.4	0.8	1.1	0.0	0.0	0	0	Sufficient Capacity
2	009360STMP	003106SMH	000779ND	11	1.5	8.0	4.5	0	1.2	2.0	5.0	1.1	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	009361STMP	003104SMH	003105SMH	207	1.25	8.4	6.8	1.2	1.2	Flooded	1.5	Flooded	0.8	1.1	0.0	2090	0	Flooded
2	009362STMP	003107SMH	003108SMH	98	2	27.7	8.7	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.7	22234	6778	Flooded
2	009363STMP	008027IN	003479SMH	15	1.5	20.4	16.7	0.8	5.1	Flooded	6.2	Flooded	-	0.3	0.0	689	0	Flooded
2	009364STMP	003476SMH	008027IN	268	1.5	13.9	7.8	3.8	0.8	3.3	Flooded	0.1	Flooded	0.0	0.3	0	689	Insufficient Freeboard
2	009365STMP	006034IN	000885ND	41	0.833	5.3	10.8	0.4	0	Flooded	6.7	Flooded	0.4	0.4	0.0	626	0	Flooded
2	009366STMP	000512CB	003148SMH	98	1	5.7	7.2	2.3	2.3	Flooded	3.7	Flooded	0.8	1.9	0.0	3322	0	Flooded
2	009369STMP	003141SMH	003147SMH	25	3.5 x 7	106.5	-4.4	0.2	0	1.1	0.2	-	-	0.0	0.0	0	0	Surcharged
2	009421STMP	005934IN	000829ND	107	1	5.5	6.9	1.7	1	Flooded	4.2	Flooded	0.0	1.6	0.0	7883	0	Flooded
2	009422STMP	000788ND	005935IN	70	3.5	74.9	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009423STMP	005936IN	005935IN	265	3	34.9	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009430STMP	003111SMH	003112SMH	19	1.25	7.5	8.3	0.2	0.5	0.6	3.1	-	-	0.0	0.0	0	0	Surcharged
2	009431A	003112SMH	000792ND	41	4	104.7	8.3	0.5	0.6	1.6	1.9	-	1.9	0.0	0.0	0	0	Surcharged
2	009431B	000792ND	000791ND	9	4	106.3	8.3	0.6	0.6	1.9	1.4	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	009431C	000791ND	000790ND	44	4	104.9	8.1	0.6	0.6	1.4	1.5	-	-	0.0	0.0	0	0	Surcharged
2	009431D	000790ND	003141SMH	46	4	104.3	8.1	0.6	0.2	1.5	0.6	-	-	0.0	0.0	0	0	Surcharged
2	009443STMP	000787ND	003111SMH	143	1.25	7.5	6.1	0.3	0.2	1.6	0.5	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	009444STMP	005946IN	003142SMH	53	1.25	11.5	9.2	0.5	0.4	Flooded	2.5	Flooded	0.6	0.4	0.0	1551	0	Flooded
2	009456STMP	005957IN	003114SMH	13	1	6.1	7.8	0.5	0.4	Flooded	0.6	Flooded	0.2	0.4	0.0	616	0	Flooded
2	009457STMP	003114SMH	003116SMH	28	1	6.2	7.8	0.4	0.3	0.7	1.6	0.2	0.0	0.0	0.0	0	0	Insufficient Freeboard
2	009462STMP	003115SMH	003116SMH	14	2	18.2	5.8	0.4	0.3	Flooded	1.0	Flooded	0.0	0.1	0.0	154	0	Flooded
2	009463STMP	003142SMH	003115SMH	251	1.5	11.1	6.3	0.4	0.4	2.2	Flooded	0.6	Flooded	0.0	0.1	0	154	Insufficient Freeboard
2	009464A	003116SMH	000781ND	29	2	22.2	7.4	0.3	0.4	1.1	1.1	0.0	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	009464B	000781ND	000780ND	37	2	22.2	7.3	0.4	0.4	1.1	1.2	1.2	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	009464C	000780ND	003117SMH	66	2	22.2	7.0	0.4	0.3	1.2	1.1	1.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	009469STMP	006035IN	000887ND	42	1	5.9	10.7	0	0	-	2.2	1.0	-	0.0	0.0	0	0	Sufficient Capacity
2	009481STMP	005833IN	000811ND	1757	5 x 8	684.0	20.0	0.4	2	Flooded	Flooded	Flooded	Flooded	0.3	1.4	12488	1804	Flooded
2	009625STMP	007751IN	000816ND	29	1	9.1	11.4	1	0	Flooded	2.9	Flooded	-	0.9	0.0	3296	0	Flooded
2	009634STMP	007745IN	000800ND	34	1.25	3.3	10.2	0.5	1.2	0.2	6.5	0.6	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	009743STMP	003199SMH	000546IO	74	4	286.2	14.8	1.1	0	RIM	3.7	RIM	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	009854A	007963IN	0001032ND	45	1	7.1	8.9	1.6	2	Flooded	Flooded	Flooded	Flooded	1.2	1.1	6416	13	Flooded
2	009854B	0001032ND	003437SMH	275	1	4.6	5.8	2	3.1	Flooded	Flooded	Flooded	Flooded	1.1	2.7	13	7935	Flooded
2	009870STMP	003368SMH	003464SMH	107	2	11.8	4.3	5.4	5.5	3.0	2.9	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009871STMP	003369SMH	003370SMH	13	1.75	3.8	7.9	1.5	3.4	0.4	2.4	0.1	0.1	0.0	0.0	0	0	Insufficient Freeboard
2	009873STMP	003459SMH	007994IN	37	2	35.6	11.2	5.4	6.2	4.0	Flooded	-	Flooded	0.0	4.8	0	20326	Surcharged
2	009875STMP	003478SMH	003476SMH	32	1.5	13.4	-7.5	3.9	3.8	Flooded	3.3	Flooded	0.1	0.4	0.0	615	0	Flooded
2	009877STMP	008030IN	003477SMH	14	1	3.6	6.4	0.8	3.5	Flooded	3.4	Flooded	0.0	0.5	0.0	725	0	Flooded
2	009878STMP	003477SMH	003476SMH	34	1	3.5	4.4	3.5	3.8	3.4	3.8	0.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
2	009918STMP	003265SMH	006094IN	134	1.5	19.7	11.0	0.3	0.1	Flooded	2.3	Flooded	-	0.1	0.0	30	0	Flooded
2	009919STMP	006093IN	003265SMH	65	1.25	10.6	14.4	0	0.3	-	Flooded	1.7	Flooded	0.0	0.1	0	30	Sufficient Capacity
2	009920STMP	006154IN	006093IN	42	1.25	10.6	8.3	0.1	0	0.2	-	1.4	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	009967STMP	008017IN	0001036ND	87	0.667	-2.8	7.6	23.9	1.6	Flooded	Flooded	Flooded	Flooded	3.1	0.2	7692	15	Flooded
2	009968STMP	008019IN	0001037ND	22	2	23.2	7.3	0.2	1.3	6.3	Flooded	0.2	Flooded	0.0	0.1	0	5	Insufficient Freeboard
2	010015STMP	000543CB	003201SMH	26	0.833	10.1	18.1	0.5	0.4	Flooded	1.2	Flooded	-	0.4	0.0	1291	0	Flooded
2	010020STMP	003201SMH	003202SMH	315	1.5	10.2	6.4	0.4	0.6	3.0	4.6	-	1.6	0.0	0.0	0	0	Surcharged
2	010024STMP	000544CB	003202SMH	18	1	12.4	15.5	0.5	0.6	Flooded	5.2	Flooded	1.6	0.4	0.0	1587	0	Flooded
2	010025STMP	003202SMH	003204SMH	12	1.5	21.3	11.9	0.6	0.5	4.7	4.0	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	010026STMP	006044IN	003203SMH	8	1.25	6.2	8.9	0.4	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.1	104	70	Flooded
2	010027STMP	003203SMH	003204SMH	191	1.25	6.1	5.2	0.4	0.5	Flooded	4.3	Flooded	-	0.1	0.0	70	0	Flooded
2	010028STMP	003204SMH	003205SMH	691	2	26.0	8.2	0.5	0.6	3.6	Flooded	-	Flooded	0.0	0.6	0	6906	Surcharged
2	010031STMP	003205SMH	006036IN	247	2.25	36.3	9.0	0.6	2.9	Flooded	Flooded	Flooded	Flooded	0.6	0.3	6906	776	Flooded
2	010032STMP	006036IN	002911ND	4	2.25	47.8	11.9	2.9	0	Flooded	2.7	Flooded	2.0	0.3	0.0	776	0	Flooded
2	010058A	003472SMH	0001038ND	129	2	18.5	5.8	5.3	5.3	Flooded	Flooded	Flooded	Flooded	4.9	4.6	23229	20	Flooded
2	010058B	0001038ND	003465SMH	70	2	18.8	5.9	5.3	5.3	Flooded	Flooded	Flooded	Flooded	4.6	4.7	20	8442	Flooded
2	010060STMP	008007IN	003466SMH	29	1	-3.3	-4.0	5.5	5.5	Flooded	Flooded	Flooded	Flooded	5.0	5.1	21872	25914	Flooded
2	010061STMP	003468SMH	003466SMH	200	2	37.1	11.6	0.3	5.5	7.1	Flooded	1.1	Flooded	0.0	5.1	0	25914	Insufficient Freeboard
2	010062STMP	008008IN	003466SMH	65	1.25	4.4	4.4	5.4	5.5	Flooded	Flooded	Flooded	Flooded	1.9	5.1	3101	25914	Flooded
2	010067STMP	008012IN	003468SMH	36	1.75	9.4	6.1	1.4	0.3	3.7	4.6	1.3	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	010068STMP	002419SMH	003468SMH	267	2	24.0	7.7	0.2	0.3	1.6	3.7	-	1.1	0.0	0.0	0	0	Surcharged
2	010072STMP	008015IN	003469SMH	85	1.75	-20.9	-8.5	1.6	4.1	Flooded	5.6	Flooded	0.7	1.5	0.0	35832	0	Flooded
2	010073STMP	003469SMH	0001035ND	11	1.75	-20.9	-8.5	4.1	4.2	5.6	Flooded	0.7	Flooded	0.0	0.1	0	6	Insufficient Freeboard
2	010075STMP	000493CB	003163SMH	81	1.5	12.1	10.9	1.8	1.8	3.0	Flooded	0.3	Flooded	0.0	0.7	0	5533	Insufficient Freeboard
2	010077A	003150SMH	000804ND	32	2	17.3	5.4	1.8	1.8	5.0	5.2	0.3	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	010077B	000804ND	003098SMH	266	2	24.8	7.8	1.8	1.8	5.2	Flooded	1.2	Flooded	0.0	1.7	0	11737	Insufficient Freeboard
2	010079B	000814ND	003161SMH	20	5 x 10	857.0	-17.1	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.8	1.2	104	42439	Flooded
2	010079C	000813ND	000812ND	17	5 x 10	860.9	-17.1	1.9	1.8	Flooded	Flooded	Flooded	Flooded	1.2	1.0	575	322	Flooded
2	010079D	000812ND	000814ND	7	5 x 10	858.3	-17.1	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.0	0.8	322	104	Flooded
2	010079E	000811ND	000810ND	15	5 x 10	871.1	-17.3	2	1.9	Flooded	Flooded	Flooded	Flooded	1.4	1.3	1804	668	Flooded
2	010079F	000810ND	000813ND	9	5 x 10	866.6	-17.2	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.3	1.2	668	575	Flooded
2	010079G	000809ND	000811ND	106	5 x 10	448.0	-9.0	2.4	2	Flooded	Flooded	Flooded	Flooded	1.6	1.4	1296	1804	Flooded
2	010081A	000815ND	000818ND	11	5 x 15	467.5	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081B	000825ND	000828ND	28	5 x 15	484.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081C	000828ND	000826ND	22	5 x 15	486.5	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081D	000826ND	007760IN	106	5 x 15	498.5	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081E	000819ND	000825ND	218	5 x 15	470.9	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081F	000818ND	000819ND	28	5 x 15	494.9	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082A	003164SMH	000830ND	53	4 x 7	226.3	6.5	0	0	-	-	1.6	-	0.0	0.0	0	0	Sufficient Capacity
2	010082B	000829ND	003199SMH	353	4 x 7	253.3	5.9	1	1.1	1.2	RIM	0.0	RIM	0.0	0.0	0	0	Insufficient Freeboard
2	010082C	000830ND	000829ND	452	4 x 7	224.7	6.2	0	1	-	1.2	-	0.0	0.0	0.0	0	0	Sufficient Capacity
2	010108STMP	003060SMH	003061SMH	18	1.5	12.5	7.0	3.9	4	Flooded	Flooded	Flooded	Flooded	2.6	3.1	6692	6217	Flooded
2	010110STMP	003061SMH	003062SMH	43	1.5	8.8	4.9	4	4.9	Flooded	Flooded	Flooded	Flooded	3.1	3.8	6217	21216	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010111STMP	003062SMH	003195SMH	31	1.5	9.3	-5.2	4.9	4.6	Flooded	Flooded	Flooded	Flooded	3.8	3.5	21216	12518	Flooded
2	010112STMP	003195SMH	000874ND	74	1.5	9.3	-5.2	4.6	4.1	Flooded	Flooded	Flooded	Flooded	3.5	2.8	12518	20	Flooded
2	010125STMP	000539CB	003197SMH	34	1.25	7.7	6.3	0.1	1.1	2.5	2.9	0.7	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	010126STMP	000538CB	003197SMH	47	1.25	13.5	10.9	0.1	1.1	1.7	3.1	1.3	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	010127STMP	003197SMH	000882ND	406	2.5	22.0	5.6	1.1	1.3	2.3	Flooded	1.5	Flooded	0.0	0.2	0	9172	Insufficient Freeboard
2	010202STMP	006122IN	000939ND	42	0.833	5.2	9.4	0.9	0	Flooded	3.5	Flooded	-	0.9	0.0	2429	0	Flooded
2	010203STMP	006123IN	002912ND	92	2	10.8	6.1	0	0	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010208STMP	006128IN	000940ND	32	1.25	7.2	6.1	0.1	0	0.2	2.8	-	-	0.0	0.0	0	0	Surcharged
2	010264STMP	003381SMH	006154IN	59	1.25	10.6	8.6	0.1	0.1	0.7	0.2	0.6	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010414STMP	008032IN	003478SMH	11	1	4.4	5.5	1.2	3.9	Flooded	Flooded	Flooded	Flooded	0.8	0.4	2574	615	Flooded
2	010415STMP	003486SMH	003478SMH	87	1.25	10.8	8.7	4	3.9	4.7	Flooded	0.3	Flooded	0.0	0.4	0	615	Insufficient Freeboard
2	010416STMP	008033IN	003479SMH	178	2	-11.2	-3.5	6.2	5.1	Flooded	5.7	Flooded	-	4.4	0.0	64092	0	Flooded
2	010430STMP	003483SMH	003472SMH	152	1.25	11.5	9.1	5.2	5.3	Flooded	Flooded	Flooded	Flooded	0.6	4.9	5026	23229	Flooded
2	010436STMP	008046IN	003486SMH	54	1.25	10.8	10.0	3.1	4	Flooded	4.6	Flooded	0.3	0.8	0.0	2840	0	Flooded
2	010437STMP	003487SMH	008033IN	199	2	12.2	3.8	5.2	6.2	4.9	Flooded	-	Flooded	0.0	4.4	0	64092	Surcharged
2	010439STMP	003488SMH	003490SMH	41	1	6.1	7.9	0.5	0	0.9	-	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
2	010440STMP	008048IN	003488SMH	26	1	6.1	-7.6	55.3	0.5	4.2	0.9	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	010441STMP	008049IN	008048IN	62	1	6.2	7.7	0.6	55.3	Flooded	4.2	Flooded	0.8	0.5	0.0	1686	0	Flooded
2	010444STMP	003489SMH	003487SMH	23	2	12.2	3.9	2.1	5.2	3.0	4.8	-	-	0.0	0.0	0	0	Surcharged
2	010448STMP	003490SMH	003489SMH	9	2	6.1	9.5	0	2.1	-	3.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010449STMP	007994IN	0001039ND	82	2	37.5	11.7	6.2	0.4	Flooded	2.1	Flooded	-	4.8	0.0	20326	0	Flooded
2	010450STMP	006094IN	003460SMH	231	2	23.9	8.8	0.1	0.6	1.9	Flooded	-	Flooded	0.0	0.0	0	51	Surcharged
2	010451STMP	003460SMH	0001039ND	72	2.25	47.9	11.9	0.6	0.4	Flooded	1.9	Flooded	-	0.0	0.0	51	0	Flooded
2	010460STMP	003470SMH	008019IN	119	2	23.3	7.3	0.5	0.2	Flooded	6.3	Flooded	0.2	0.1	0.0	81	0	Flooded
2	010465A	000634CB	0001037ND	56	2	6.0	5.3	0.3	1.3	1.7	Flooded	0.2	Flooded	0.0	0.1	0	5	Insufficient Freeboard
2	010465B	0001037ND	0001036ND	67	2	27.9	8.7	1.3	1.6	Flooded	Flooded	Flooded	Flooded	0.1	0.2	5	15	Flooded
2	010465C	0001036ND	0001035ND	214	2	25.0	7.8	1.6	4.2	Flooded	Flooded	Flooded	Flooded	0.2	0.1	15	6	Flooded
2	010465D	0001035ND	003468SMH	92	2	18.7	5.9	4.2	0.3	Flooded	7.1	Flooded	1.1	0.1	0.0	6	0	Flooded
2	010466STMP	008023IN	003470SMH	49	1	8.8	11.0	0.6	0.5	Flooded	Flooded	Flooded	Flooded	0.5	0.1	3740	81	Flooded
2	010467STMP	003471SMH	003470SMH	115	2	18.7	5.8	0.6	0.5	6.8	Flooded	1.9	Flooded	0.0	0.1	0	81	Insufficient Freeboard
2	010468STMP	002423SMH	003471SMH	60	2	18.7	9.9	0.4	0.6	4.8	6.8	-	1.9	0.0	0.0	0	0	Surcharged
2	010469STMP	003151SMH	000817ND	13	3	26.2	5.0	0	0	0.6	1.7	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	010470STMP	003152SMH	003151SMH	28	2.5	17.5	9.6	0	0	-	1.1	1.6	1.7	0.0	0.0	0	0	Sufficient Capacity
2	010474STMP	003149SMH	003150SMH	13	1.5	17.3	10.0	1.7	1.8	5.1	5.5	0.5	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	010475STMP	000518CB	000804ND	21	1	10.3	12.6	1.7	1.8	Flooded	6.2	Flooded	1.2	1.3	0.0	13973	0	Flooded
2	010476A	007761IN	000796ND	67	5 x 15	556.3	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476B	000796ND	000797ND	227	5 x 15	583.5	16.0	0	1.2	-	2.1	-	1.2	0.0	0.0	0	0	Sufficient Capacity
2	010476C	000797ND	000798ND	7	5 x 15	594.5	10.5	1.2	1.2	2.1	2.2	1.2	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	010476D	000798ND	000131CP	79	5 x 15	613.0	10.5	1.2	0	2.2	3.0	1.2	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	010477STMP	000519CB	003156SMH	17	1	5.7	7.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.6	2.5	14451	14538	Flooded
2	010478STMP	003156SMH	003167SMH	147	1	6.1	7.7	2.6	1.5	Flooded	Flooded	Flooded	Flooded	2.5	0.8	14538	4854	Flooded
2	010479STMP	003157SMH	003167SMH	21	2	44.9	14.3	1.1	1.5	Flooded	Flooded	Flooded	Flooded	0.9	0.8	11389	4854	Flooded
2	010480STMP	003167SMH	003160SMH	168	2	45.0	14.1	1.5	1.7	Flooded	Flooded	Flooded	Flooded	0.8	1.7	4854	48485	Flooded
2	010481STMP	003159SMH	003167SMH	22	1.25	11.4	15.6	0.9	1.5	2.0	Flooded	0.9	Flooded	0.0	0.8	0	4854	Insufficient Freeboard
2	010482A	003158SMH	000793ND	246	2	38.3	14.6	0	0.6	4.4	Flooded	-	Flooded	0.0	0.2	0	19	Surcharged
2	010482B	000793ND	003157SMH	277	2	50.7	15.8	0.6	1.1	Flooded	Flooded	Flooded	Flooded	0.2	0.9	19	11389	Flooded
2	010483STMP	003103SMH	005891IN	711	3.5	77.7	8.0	1.9	2	4.6	RIM	1.0	RIM	0.0	0.0	0	0	Insufficient Freeboard
2	010484A	003108SMH	000794ND	172	2	33.1	10.4	1.9	1.9	Flooded	5.4	Flooded	1.2	1.7	0.0	6778	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010484B	000794ND	003102SMH	20	2	33.2	10.5	1.9	1.9	5.5	5.3	1.2	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	010567A	007760IN	000827ND	15	5 x 15	515.2	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010567B	000827ND	007761IN	129	5 x 15	541.8	13.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010568STMP	007754IN	000797ND	7	1	2.8	11.8	0	1.2	-	6.1	1.1	1.2	0.0	0.0	0	0	Sufficient Capacity
2	010570STMP	007765IN	003145SMH	223	1.25	8.6	6.9	0.3	0.8	4.9	Flooded	0.3	Flooded	0.0	0.5	0	1389	Insufficient Freeboard
2	010572A	003089SMH	000831ND	179	1.5	12.8	-7.1	25.5	1.9	Flooded	Flooded	Flooded	Flooded	1.2	0.7	4673	8	Flooded
2	010572B	000831ND	000488CB	59	1.5	15.2	-8.6	1.9	1.2	Flooded	0.5	Flooded	1.9	0.7	0.0	8	0	Flooded
2	010573A	003161SMH	000769ND	81	5 x 10	847.3	16.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.2	0.0	42439	709	Flooded
2	010573B	000779ND	003095SMH	70	5 x 10	860.8	17.2	1.2	0	1.5	0.4	0.9	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	010573C	000778ND	000777ND	30	5 x 10	856.7	17.1	1.5	1.4	Flooded	2.4	Flooded	0.1	0.0	0.0	15	0	Flooded
2	010573D	000777ND	000776ND	29	5 x 10	857.8	17.1	1.4	1.3	2.4	2.0	0.1	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	010573E	000776ND	000779ND	78	5 x 10	859.6	17.2	1.3	1.2	2.0	1.5	0.9	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	010573F	000775ND	000778ND	25	5 x 10	856.7	17.1	1.6	1.5	2.9	Flooded	0.3	Flooded	0.0	0.0	9	15	Insufficient Freeboard
2	010573G	000774ND	000775ND	155	5 x 10	855.7	17.1	1.6	1.6	Flooded	2.9	Flooded	0.3	0.0	0.0	24	9	Flooded
2	010573H	000773ND	000774ND	32	5 x 10	855.7	17.1	1.7	1.6	Flooded	Flooded	Flooded	Flooded	0.0	0.0	71	24	Flooded
2	010573I	000772ND	000773ND	31	5 x 10	847.3	16.9	1.7	1.7	Flooded	Flooded	Flooded	Flooded	0.0	0.0	296	71	Flooded
2	010573J	000771ND	000772ND	25	5 x 10	847.3	16.9	1.7	1.7	Flooded	Flooded	Flooded	Flooded	0.0	0.0	116	296	Flooded
2	010573K	000770ND	000771ND	74	5 x 10	848.4	16.9	1.8	1.7	4.5	Flooded	0.1	Flooded	0.0	0.0	3	116	Insufficient Freeboard
2	010573L	000769ND	000770ND	6	5 x 10	847.3	16.9	1.8	1.8	Flooded	4.5	Flooded	0.1	0.0	0.0	709	3	Flooded
2	010574A	003147SMH	000789ND	131	3.5 x 7	214.7	9.7	0	0.3	0.2	0.3	-	-	0.0	0.0	0	0	Surcharged
2	010574B	000789ND	003164SMH	131	3.5 x 7	214.5	9.7	0.3	0	0.3	0.3	-	1.6	0.0	0.0	0	0	Surcharged
2	010575STMP	000834ND	003149SMH	210	1.5	17.3	9.5	0.8	1.7	Flooded	5.1	Flooded	0.5	0.6	0.0	21	0	Flooded
2	010625STMP	003437SMH	003369SMH	28	0.833	3.7	6.8	3.1	1.5	Flooded	1.1	Flooded	0.1	2.7	0.0	7935	0	Flooded
2	010626STMP	003439SMH	003438SMH	10	1	7.6	9.5	6.5	5.5	Flooded	Flooded	Flooded	Flooded	5.6	5.4	8284	22174	Flooded
2	010627STMP	003466SMH	003438SMH	107	2	22.0	6.9	5.5	5.5	Flooded	Flooded	Flooded	Flooded	5.1	5.4	25914	22174	Flooded
2	010628STMP	003438SMH	003448SMH	39	2	17.9	5.5	5.5	5.5	Flooded	Flooded	Flooded	Flooded	5.4	5.4	22174	30699	Flooded
2	010635STMP	003440SMH	003448SMH	30	2	23.4	7.4	5.6	5.5	Flooded	Flooded	Flooded	Flooded	5.3	5.4	19921	30699	Flooded
2	010636STMP	003448SMH	003368SMH	102	2	32.7	10.3	5.5	5.4	Flooded	2.7	Flooded	0.2	5.4	0.0	30699	0	Flooded
2	010641STMP	007977IN	005983IN	65	1.25	4.7	6.4	0	0.1	-	0.5	1.9	-	0.0	0.0	0	0	Sufficient Capacity
2	010642STMP	007978IN	005936IN	169	3	29.2	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010643STMP	007992IN	007978IN	24	2	4.8	1.5	0	0	0.0	0.2	-	-	0.0	0.0	0	0	Surcharged
2	010646STMP	003456SMH	004003SMH	13	3	35.8	5.0	6.1	7.5	4.9	5.9	1.2	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	010647A	003450SMH	0001034ND	35	4	35.7	5.1	5.4	5.5	2.2	2.5	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
2	010647B	0001034ND	003457SMH	82	4	35.7	3.7	5.5	5.5	2.5	3.1	-	-	0.0	0.0	0	0	Surcharged
2	014016STMP	003370SMH	003368SMH	46	3	3.8	2.7	3.4	5.4	1.1	2.0	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	014018STMP	003368SMH	008004IN	61	2.5	23.8	5.8	5.4	5.4	2.5	2.5	0.2	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	014019STMP	004003SMH	003450SMH	25	4	35.8	-2.8	7.5	5.4	5.1	1.9	1.1	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	014922A	000815ND	000820ND	46	5 x 15	447.2	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922B	000824ND	007760IN	148	5 x 15	541.3	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922C	000823ND	000824ND	28	5 x 15	533.0	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922D	000822ND	000823ND	101	5 x 15	530.7	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922E	000821ND	000822ND	39	5 x 15	531.9	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922F	000820ND	000821ND	54	5 x 15	458.4	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014923STMP	007760IN	007761IN	146	5 x 15	554.9	13.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924A	007761IN	000795ND	46	5 x 15	550.7	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924B	000795ND	000801ND	262	5 x 15	574.8	15.9	0	1.2	-	2.3	-	1.1	0.0	0.0	0	0	Sufficient Capacity
2	014924C	000801ND	000799ND	10	5 x 15	590.7	10.3	1.2	1.2	2.3	2.4	1.1	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	014924D	000799ND	000800ND	37	5 x 15	601.7	10.1	1.2	1.2	2.4	2.8	1.2	1.2	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	014924E	000800ND	000290CP	23	5 x 15	609.7	9.1	1.2	0	2.8	3.0	1.2	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	014928STMP	0001039ND	000788ND	160	3 x 3	74.9	8.3	0.4	0	1.1	-	-	-	0.0	0.0	0	0	Surcharged
2	014930A	000291CP	000882ND	4	5 x 13	858.6	13.2	1.2	1.3	Flooded	Flooded	Flooded	Flooded	1.2	0.2	260841	9172	Flooded
2	014930B	000882ND	000880ND	16	5 x 13	858.6	13.2	1.3	1.2	Flooded	Flooded	Flooded	Flooded	0.2	0.0	9172	19	Flooded
2	014930C	000880ND	000881ND	16	5 x 13	853.4	13.1	1.2	0.8	Flooded	3.5	Flooded	0.6	0.0	0.0	19	0	Flooded
2	014930D	000881ND	000883ND	114	5 x 13	860.1	13.2	0.8	0.5	3.5	3.7	0.6	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	014930E	000883ND	003200SMH	207	5 x 13	866.3	13.3	0.5	0.1	3.7	Flooded	0.6	Flooded	0.0	0.0	0	413	Insufficient Freeboard
2	014932A	000132CP	007842IN	106	5 x 16	978.7	12.2	1.2	1.3	Flooded	Flooded	Flooded	Flooded	1.2	0.9	165693	51327	Flooded
2	014932B	007842IN	006101IN	96	5 x 16	983.6	12.3	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.9	0.8	51327	68574	Flooded
2	014932C	006101IN	007844IN	17	5 x 16	979.5	12.2	1.3	1.2	Flooded	Flooded	Flooded	Flooded	0.8	0.7	68574	44106	Flooded
2	014932D	007844IN	006029IN	86	5 x 16	980.8	12.2	1.2	1.1	Flooded	Flooded	Flooded	Flooded	0.7	0.7	44106	119242	Flooded
2	014932E	006029IN	000890ND	12	5 x 16	1125.0	14.0	1.1	1	Flooded	Flooded	Flooded	Flooded	0.7	0.0	119242	284	Flooded
2	014932F	000890ND	000884ND	17	5 x 16	1110.2	13.9	1	0.9	Flooded	Flooded	Flooded	Flooded	0.0	0.1	284	3543	Flooded
2	014932G	000884ND	006032IN	3	5 x 16	1106.2	13.8	0.9	0.5	Flooded	Flooded	Flooded	Flooded	0.1	0.0	3543	451	Flooded
2	014932H	006032IN	003200SMH	22	5 x 16	1108.8	13.9	0.5	0.1	Flooded	Flooded	Flooded	Flooded	0.0	0.0	451	413	Flooded
2	014933A	003200SMH	000885ND	95	5 x 16	877.7	11.0	0.1	0	Flooded	2.5	Flooded	0.4	0.0	0.0	413	0	Flooded
2	014933B	000885ND	000886ND	145	5 x 16	840.6	10.5	0	0	2.5	1.4	0.4	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	014933C	000886ND	003206SMH	60	5 x 16	840.1	10.5	0	0	1.4	0.8	0.4	1.0	0.0	0.0	0	0	Insufficient Freeboard
2	014933D	003206SMH	000887ND	41	5 x 16	844.8	10.6	0	0	0.8	0.0	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	014933E	000887ND	000893ND	43	5 x 16	801.6	10.6	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
2	014933F	000893ND	006037IN	110	5 x 16	743.2	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933G	006037IN	000939ND	52	5 x 16	739.0	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933H	000939ND	003313SMH	328	5 x 16	718.1	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934A	003200SMH	002910ND	95	5 x 13	763.9	11.7	0.1	0	Flooded	2.5	Flooded	0.1	0.0	0.0	413	0	Flooded
2	014934B	002910ND	002911ND	289	5 x 13	705.9	10.8	0	0	2.5	-	0.1	2.0	0.0	0.0	0	0	Insufficient Freeboard
2	014934C	002911ND	002912ND	172	5 x 13	613.8	10.2	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
2	014934D	002912ND	000940ND	193	5 x 13	583.9	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934E	000940ND	003313SMH	142	5 x 13	588.4	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014940STMP	000874ND	008046IN	152	1.25	9.3	-7.4	4.1	3.1	Flooded	Flooded	Flooded	Flooded	2.8	0.8	20	2840	Flooded
3	008354STMP	000505CB	003120SMH	13	1	12.6	15.5	2.4	1.9	Flooded	Flooded	Flooded	Flooded	2.4	1.8	28940	77875	Flooded
3	008355STMP	003120SMH	003122SMH	203	2.5	55.8	11.2	1.9	1.8	Flooded	Flooded	Flooded	Flooded	1.8	1.6	77875	51666	Flooded
3	008358STMP	005975IN	003122SMH	38	1	9.0	14.0	2	1.8	Flooded	Flooded	Flooded	Flooded	1.9	1.6	3956	51666	Flooded
3	008361STMP	000507CB	003121SMH	33	1	4.3	5.3	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	1.0	2517	2203	Flooded
3	008362STMP	003121SMH	000807ND	47	1	4.3	5.4	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.0	0.3	2203	27	Flooded
3	008420A	000574CB	000918ND	10	1	2.9	3.7	0.7	0.7	Flooded	1.9	Flooded	0.1	0.3	0.0	46	0	Flooded
3	008420B	000918ND	003398SMH	11	1	3.2	4.0	0.7	0.7	1.9	1.9	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	008426STMP	003398SMH	000919ND	30	1.25	4.6	3.7	0.7	0.7	1.7	2.0	0.2	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	008428STMP	000577CB	000919ND	17	1	6.0	7.6	0.7	0.7	Flooded	2.2	Flooded	0.4	0.6	0.0	1890	0	Flooded
3	008429STMP	000919ND	003079SMH	218	1.5	7.1	5.2	0.7	0	1.7	2.9	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
3	008435STMP	003400SMH	002914ND	19	2.5	-48.7	-9.7	3.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	0.0	4301	126	Flooded
3	008436STMP	003401SMH	002915ND	22	2.5	45.0	9.1	3.5	1.8	Flooded	Flooded	Flooded	Flooded	1.0	0.0	3236	92	Flooded
3	008437STMP	003402SMH	000994ND	150	4 x 12	354.3	8.7	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	678	541	Flooded
3	008642STMP	006170IN	006172IN	27	1.75	7.4	5.7	3.4	3.5	1.1	Flooded	0.7	Flooded	0.0	3.2	0	7942	Insufficient Freeboard
3	008643STMP	006171IN	006170IN	145	1.25	7.4	6.0	0.6	3.4	Flooded	1.3	Flooded	0.7	0.5	0.0	1602	0	Flooded
3	008644A	006172IN	000847ND	74	2	7.5	2.4	3.5	3.5	Flooded	2.3	Flooded	0.5	3.2	0.0	7942	0	Flooded
3	008644B	000847ND	003383SMH	162	2	7.4	2.4	3.5	3.6	2.3	Flooded	0.5	Flooded	0.0	3.5	0	16791	Insufficient Freeboard
3	008648A	003218SMH	000915ND	71	3.25 x 5	64.5	5.8	2.9	3	RIM	Flooded	RIM	Flooded	0.0	1.7	0	405	Insufficient Freeboard
3	008648B	000915ND	000902ND	212	3.25 x 5	61.5	5.6	3	3.2	Flooded	Flooded	Flooded	Flooded	1.7	1.5	405	388	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	008648C	000902ND	003217SMH	81	3.25 x 5	61.8	5.2	3.2	3.3	Flooded	RIM	Flooded	RIM	1.5	0.0	388	0	Flooded
3	008706A	003407SMH	000950ND	11	3.25 x 5	68.3	-5.3	3.3	3.2	RIM	Flooded	RIM	Flooded	0.0	1.9	0	1961	Insufficient Freeboard
3	008706B	000950ND	000949ND	25	3.25 x 5	68.5	-5.3	3.2	3.2	Flooded	Flooded	Flooded	Flooded	1.9	1.9	1961	3318	Flooded
3	008706C	000949ND	003406SMH	173	3.25 x 5	71.8	-5.6	3.2	1.8	Flooded	Flooded	Flooded	Flooded	1.9	0.0	3318	117	Flooded
3	008711STMP	007700IN	003077SMH	172	1.25	7.3	5.9	2.1	1.6	2.1	3.5	0.6	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	008718STMP	007706IN	007707IN	104	0.667	2.0	5.6	2.7	2.6	Flooded	Flooded	Flooded	Flooded	2.2	1.6	4823	2414	Flooded
3	008719STMP	007707IN	007711IN	182	0.667	2.2	6.1	2.6	0.8	Flooded	Flooded	Flooded	Flooded	1.6	0.7	2414	757	Flooded
3	008753A	003408SMH	000953ND	23	3.25 x 5	66.2	5.1	3.4	3.4	RIM	Flooded	RIM	Flooded	0.0	1.7	0	796	Insufficient Freeboard
3	008753B	000953ND	000952ND	109	3.25 x 5	66.1	5.1	3.4	3.4	Flooded	Flooded	Flooded	Flooded	1.7	1.8	796	3004	Flooded
3	008753C	000952ND	000951ND	105	3.25 x 5	66.0	5.1	3.4	3.4	Flooded	Flooded	Flooded	Flooded	1.8	2.0	3004	2361	Flooded
3	008753D	000951ND	003407SMH	11	3.25 x 5	65.9	5.1	3.4	3.3	Flooded	RIM	Flooded	RIM	2.0	0.0	2361	0	Flooded
3	008754STMP	003217SMH	003408SMH	362	3.25 x 5	66.4	5.1	3.3	3.4	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	008755A	003409SMH	000978ND	156	4 x 12	353.7	8.8	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	745	555	Flooded
3	008755B	000978ND	003434SMH	88	4 x 12	360.6	8.1	1.8	1.9	Flooded	Flooded	Flooded	Flooded	0.0	0.0	555	411	Flooded
3	008756STMP	000971ND	003409SMH	42	4 x 12	357.8	8.8	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	484	745	Flooded
3	008904A	000595CB	0001045ND	121	2	14.4	9.0	0	1.6	-	Flooded	-	Flooded	0.0	0.0	0	14	Sufficient Capacity
3	008904B	0001045ND	000596CB	135	2	18.1	7.7	1.6	1.7	Flooded	Flooded	Flooded	Flooded	0.0	0.0	14	65	Flooded
3	008907STMP	006217IN	0001045ND	17	1	6.2	-7.7	1.8	1.6	Flooded	Flooded	Flooded	Flooded	1.4	0.0	9204	14	Flooded
3	008909STMP	000524IO	003367SMH	289	1.25	16.0	14.9	0	1.3	-	Flooded	1.1	Flooded	0.0	1.3	0	19833	Sufficient Capacity
3	008910STMP	000596CB	003436SMH	52	2	31.0	9.7	1.7	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	65	339	Flooded
3	008948A	003175SMH	000876ND	48	3	29.4	4.1	3.7	3.7	1.5	1.5	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
3	008948B	000876ND	003177SMH	119	3	29.3	4.1	3.7	3.7	1.5	1.5	-	-	0.0	0.0	0	0	Surcharged
3	008949A	003186SMH	000853ND	5	3	25.0	3.8	3.6	3.6	Flooded	1.3	Flooded	1.3	1.3	0.0	351	0	Flooded
3	008949B	000853ND	003175SMH	145	3	15.8	2.4	3.6	3.7	1.4	1.5	1.3	1.6	0.0	0.0	0	0	Insufficient Freeboard
3	008963STMP	000572CB	003397SMH	62	1	6.4	8.1	1.4	1.4	Flooded	3.0	Flooded	0.5	1.3	0.0	4183	0	Flooded
3	008965STMP	006234IN	000990ND	142	1	2.6	3.3	2.4	3.1	Flooded	4.9	Flooded	0.6	2.4	0.0	9483	0	Flooded
3	008976A	003384SMH	000846ND	33	2	12.6	4.0	3.7	3.7	Flooded	Flooded	Flooded	Flooded	3.3	2.2	12476	9	Flooded
3	008976B	000846ND	004007SMH	215	2	12.0	3.8	3.7	3.7	Flooded	Flooded	Flooded	Flooded	2.2	2.1	9	13174	Flooded
3	008978A	003385SMH	000833ND	131	1	3.7	4.7	15.9	16.2	Flooded	Flooded	Flooded	Flooded	15.2	3.3	17381	14	Flooded
3	008978B	000833ND	003384SMH	15	1	5.5	6.8	16.2	3.7	Flooded	Flooded	Flooded	Flooded	3.3	3.3	14	12476	Flooded
3	009270A	007711IN	000763ND	35	1.5	6.0	3.9	0.8	2.2	Flooded	5.6	Flooded	0.0	0.7	0.0	757	0	Flooded
3	009270B	000763ND	003397SMH	207	1.5	5.5	3.4	2.2	1.4	5.7	6.4	0.0	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009271STMP	003079SMH	003078SMH	46	3	39.5	9.0	0	1	1.8	2.0	-	-	0.0	0.0	0	0	Surcharged
3	009272STMP	007712IN	003079SMH	24	1	6.7	9.3	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
3	009273STMP	003080SMH	003081SMH	34	2.5	42.8	8.6	2.1	2.1	Flooded	Flooded	Flooded	Flooded	0.8	1.1	2586	8633	Flooded
3	009274STMP	007713IN	003080SMH	25	1.25	8.3	10.4	1.6	2.1	Flooded	Flooded	Flooded	Flooded	1.2	0.8	5249	2586	Flooded
3	009275STMP	003081SMH	000808ND	111	2.5	44.2	8.9	2.1	2.6	Flooded	Flooded	Flooded	Flooded	1.1	0.3	8633	27	Flooded
3	009276STMP	000481CB	003166SMH	39	1.25	6.2	5.0	1.8	2.8	Flooded	Flooded	Flooded	Flooded	0.4	0.0	761	9	Flooded
3	009279STMP	003078SMH	003080SMH	297	2.25	39.5	12.0	1	2.1	2.9	Flooded	-	Flooded	0.0	0.8	0	2586	Surcharged
3	009479A	003185SMH	000842ND	28	1.5	11.2	6.3	2.8	3.2	Flooded	Flooded	Flooded	Flooded	0.9	0.8	1337	3	Flooded
3	009479B	000842ND	003184SMH	101	1.5	14.0	7.8	3.2	3.6	Flooded	Flooded	Flooded	Flooded	0.8	1.4	3	6589	Flooded
3	009482STMP	003169SMH	003352SMH	37	2	37.3	-11.8	3.8	4.2	RIM	2.7	RIM	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	009483STMP	003170SMH	003169SMH	16	1.5	11.9	-6.6	4.3	3.8	4.1	RIM	0.2	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009485STMP	007766IN	003170SMH	12	1.25	10.9	8.7	4.2	4.3	4.3	4.1	0.8	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	009486STMP	007794IN	007766IN	155	1.5	10.9	6.1	3.7	4.2	Flooded	3.8	Flooded	0.8	0.1	0.0	15	0	Flooded
3	009491STMP	003182SMH	003172SMH	168	3	26.4	3.7	3.8	3.7	Flooded	RIM	Flooded	RIM	3.0	0.0	5178	0	Flooded
3	009517A	003172SMH	000837ND	39	3.5	26.4	2.7	3.7	3.7	RIM	1.7	RIM	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	009517B	000837ND	003169SMH	287	3.5	26.6	2.7	3.7	3.8	1.8	RIM	0.1	RIM	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009518STMP	003183SMH	003173SMH	169	2	7.2	2.5	4	4.1	Flooded	Flooded	Flooded	Flooded	2.1	3.6	1070	9997	Flooded
3	009519A	003173SMH	000836ND	26	2	9.9	3.1	4.1	4.2	Flooded	Flooded	Flooded	Flooded	3.6	1.6	9997	2	Flooded
3	009519B	002908ND	003170SMH	131	2	9.6	3.0	4.2	4.3	Flooded	3.6	Flooded	0.2	1.2	0.0	2	0	Flooded
3	009519C	000836ND	002908ND	156	2	9.3	2.9	4.2	4.2	Flooded	Flooded	Flooded	Flooded	1.6	1.2	2	2	Flooded
3	009525STMP	000525CB	000837ND	26	1	4.7	5.9	3.5	3.7	Flooded	4.3	Flooded	0.1	2.4	0.0	5524	0	Flooded
3	009541STMP	006235IN	000990ND	34	1.5	10.0	6.6	1.8	3.1	Flooded	4.4	Flooded	0.6	0.2	0.0	226	0	Flooded
3	009542A	003331SMH	000990ND	37	3.25 x 5	53.9	4.8	3.1	3.1	RIM	0.9	RIM	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	009542B	000990ND	000988ND	99	3.25 x 5	54.3	4.8	3.1	3.2	0.9	1.1	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
3	009543A	003332SMH	000987ND	77	3.25 x 5	53.5	4.9	3	3	RIM	0.8	RIM	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009543B	000987ND	003331SMH	97	3.25 x 5	53.7	4.9	3	3.1	0.8	RIM	0.5	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009550STMP	003334SMH	000991ND	6	1.25	6.9	5.7	3.9	2.9	2.8	4.2	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009552STMP	000529CB	000842ND	33	1	5.0	6.2	0.9	3.2	3.3	Flooded	0.2	Flooded	0.0	0.8	0	3	Insufficient Freeboard
3	009555STMP	000530CB	003185SMH	27	1	6.1	7.6	1.3	2.8	Flooded	Flooded	Flooded	Flooded	0.8	0.9	1715	1337	Flooded
3	009557STMP	003190SMH	003185SMH	264	1.25	5.8	5.3	1.9	2.8	2.3	Flooded	-	Flooded	0.0	0.9	0	1337	Surcharged
3	009563A	003191SMH	000843ND	104	2	23.1	7.3	3.8	3.8	Flooded	2.3	Flooded	1.0	2.5	0.0	8580	0	Flooded
3	009563B	000843ND	003186SMH	5	2	23.1	7.3	3.8	3.6	2.7	Flooded	1.0	Flooded	0.0	1.3	0	351	Insufficient Freeboard
3	009566STMP	000853ND	003187SMH	24	2	13.3	4.2	3.6	3.8	2.4	Flooded	1.3	Flooded	0.0	2.4	0	1252	Insufficient Freeboard
3	009567STMP	003188SMH	003189SMH	39	2	10.7	3.4	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.8	3.6	26325	13081	Flooded
3	009570A	003187SMH	000844ND	205	2	13.3	4.2	3.8	3.8	Flooded	Flooded	Flooded	Flooded	2.4	2.8	1252	15	Flooded
3	009570B	000844ND	003188SMH	10	2	10.8	3.4	3.8	3.8	Flooded	Flooded	Flooded	Flooded	2.8	3.8	15	26325	Flooded
3	009578STMP	007889IN	003405SMH	56	1.75	13.4	6.2	1.7	2.4	Flooded	Flooded	Flooded	Flooded	0.7	1.3	5588	4775	Flooded
3	009579STMP	003405SMH	000936ND	56	1.75	16.7	6.9	2.4	1.9	Flooded	Flooded	Flooded	Flooded	1.3	0.0	4775	37	Flooded
3	009580A	003406SMH	002916ND	153	4 x 7	273.3	10.2	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	117	212	Flooded
3	009580B	002916ND	002914ND	21	4 x 7	294.4	10.7	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	212	126	Flooded
3	009580C	002915ND	003402SMH	36	4 x 7	357.3	14.0	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	92	678	Flooded
3	009580D	002914ND	002915ND	4	4 x 7	324.1	11.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	126	92	Flooded
3	009688C	000936ND	003406SMH	22	4 x 7	225.7	8.1	1.9	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	37	117	Flooded
3	009692STMP	006169IN	003213SMH	39	1.25	5.7	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009693STMP	000476CB	006169IN	198	1.25	5.7	17.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009694STMP	003214SMH	003216SMH	282	2.5	24.5	5.0	3.6	3.8	2.8	Flooded	-	Flooded	0.0	3.3	0	17359	Surcharged
3	009695STMP	003214SMH	003215SMH	282	2.5	25.4	5.1	3.6	3.8	2.8	Flooded	-	Flooded	0.0	3.5	0	16120	Surcharged
3	009696STMP	000994ND	000971ND	84	4 x 12	355.6	8.7	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	541	484	Flooded
3	009702STMP	003367SMH	003208SMH	292	1.25	16.8	13.3	1.3	0	Flooded	-	Flooded	-	1.3	0.0	19833	0	Flooded
3	009704STMP	003429SMH	003430SMH	33	0.833	2.8	8.8	2.1	2.2	1.3	Flooded	0.7	Flooded	0.0	2.2	0	12890	Insufficient Freeboard
3	009705STMP	003430SMH	000974ND	71	0.833	5.8	10.5	2.2	2.8	Flooded	Flooded	Flooded	Flooded	2.2	2.7	12890	30	Flooded
3	009706STMP	000974ND	003428SMH	93	0.833	4.6	8.3	2.8	15.4	Flooded	Flooded	Flooded	Flooded	2.7	8.5	30	4971	Flooded
3	009707STMP	003431SMH	000977ND	163	1	3.3	4.3	0.5	0	Flooded	0.1	Flooded	-	0.5	0.0	272	0	Flooded
3	009710STMP	006207IN	003432SMH	31	1	4.4	5.7	0.3	0	Flooded	-	Flooded	-	0.1	0.0	84	0	Flooded
3	009713A	003432SMH	000977ND	18	2	10.9	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009713B	000977ND	000595CB	26	2	14.1	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009714STMP	006212IN	003432SMH	10	1	6.5	8.2	0.5	0	Flooded	-	Flooded	-	0.4	0.0	388	0	Flooded
3	009717STMP	006230IN	006231IN	43	1	9.4	6.4	0.5	2.7	Flooded	3.5	Flooded	-	0.5	0.0	2472	0	Flooded
3	009718STMP	006231IN	000989ND	15	2	9.4	4.9	2.7	3.2	2.5	4.1	-	-	0.0	0.0	0	0	Surcharged
3	009719STMP	003329SMH	001001ND	69	3.25 x 5	58.2	-4.7	3.2	3.1	1.2	1.0	-	-	0.0	0.0	0	0	Surcharged
3	009720A	003330SMH	000988ND	12	3.25 x 5	-22.7	4.6	1.7	3.2	-	1.1	-	-	0.0	0.0	0	0	Surcharged
3	009720B	000989ND	003329SMH	54	3.25 x 5	55.3	4.7	3.2	3.2	1.1	1.2	-	-	0.0	0.0	0	0	Surcharged
3	009720C	000988ND	000989ND	46	3.25 x 5	54.7	4.7	3.2	3.2	1.1	1.1	-	-	0.0	0.0	0	0	Surcharged
3	009722STMP	000601CB	003330SMH	17	1.25	6.4	9.7	0	1.7	0.3	2.9	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009737A	003383SMH	000832ND	67	2	7.7	2.4	3.6	3.7	Flooded	Flooded	Flooded	Flooded	3.5	2.5	16791	7	Flooded
3	009737B	000832ND	003384SMH	22	2	7.6	2.4	3.7	3.7	Flooded	Flooded	Flooded	Flooded	2.5	3.3	7	12476	Flooded
3	009749STMP	000622CB	000980ND	45	1.25	12.3	9.7	2.8	1.8	Flooded	Flooded	Flooded	Flooded	0.6	0.4	2066	514	Flooded
3	009753A	006224IN	000981ND	66	1	5.4	6.8	3.8	3.9	Flooded	4.3	Flooded	0.1	3.4	0.0	16918	0	Flooded
3	009753B	000981ND	003327SMH	20	1	5.4	6.9	3.9	3.8	4.3	Flooded	0.1	Flooded	0.0	1.6	0	2949	Insufficient Freeboard
3	009754STMP	006223IN	000999ND	44	1	-8.1	-9.8	3.5	1.8	Flooded	Flooded	Flooded	Flooded	2.7	1.1	26085	2866	Flooded
3	009766STMP	007779IN	003178SMH	12	2	-13.5	4.3	4	3.7	Flooded	Flooded	Flooded	Flooded	3.7	3.6	19236	12744	Flooded
3	009767STMP	003178SMH	003179SMH	18	2	16.3	5.2	3.7	3.7	Flooded	Flooded	Flooded	Flooded	3.6	3.6	12744	13098	Flooded
3	009768A	000845ND	003179SMH	132	2	11.0	3.5	3.9	3.7	Flooded	Flooded	Flooded	Flooded	2.5	3.6	6	13098	Flooded
3	009768B	000849ND	000845ND	33	2	10.9	3.5	3.9	3.9	Flooded	Flooded	Flooded	Flooded	2.6	2.5	8	6	Flooded
3	009768C	003189SMH	000849ND	111	2	10.9	3.5	3.8	3.9	Flooded	Flooded	Flooded	Flooded	3.6	2.6	13081	8	Flooded
3	009770STMP	003179SMH	003180SMH	71	3	25.6	3.5	3.7	3.7	Flooded	Flooded	Flooded	Flooded	3.6	3.6	13098	13293	Flooded
3	009772STMP	007780IN	000839ND	9	1.5	4.4	2.8	3.9	4	Flooded	Flooded	Flooded	Flooded	3.1	2.4	4189	19	Flooded
3	009773STMP	003180SMH	003181SMH	128	3	25.8	3.7	3.7	3.8	Flooded	Flooded	Flooded	Flooded	3.6	2.9	13293	3988	Flooded
3	009774STMP	003181SMH	003182SMH	18	3	26.4	-3.7	3.8	3.8	Flooded	Flooded	Flooded	Flooded	2.9	3.0	3988	5178	Flooded
3	009775STMP	003184SMH	003181SMH	46	1.5	15.4	8.6	3.6	3.8	Flooded	Flooded	Flooded	Flooded	1.4	2.9	6589	3988	Flooded
3	009776STMP	003177SMH	003178SMH	256	3	29.3	4.1	3.7	3.7	1.5	Flooded	-	Flooded	0.0	3.6	0	12744	Surcharged
3	009780STMP	003192SMH	003191SMH	61	2	26.0	8.2	3.7	3.8	Flooded	Flooded	Flooded	Flooded	2.5	2.5	13822	8580	Flooded
3	009781STMP	000543IO	003192SMH	66	2	25.2	7.9	3.6	3.7	Flooded	Flooded	Flooded	Flooded	2.7	2.5	48983	13822	Flooded
3	009786STMP	003193SMH	003041SMH	61	1	5.4	6.8	2.1	2.1	Flooded	4.7	Flooded	0.1	2.0	0.0	3807	0	Flooded
3	009788STMP	007793IN	003194SMH	32	1	3.3	8.8	1.2	1.7	Flooded	2.0	Flooded	0.5	1.2	0.0	3070	0	Flooded
3	009791STMP	000621CB	003356SMH	57	1	4.0	5.2	1.6	2.2	Flooded	6.2	Flooded	0.2	0.9	0.0	1086	0	Flooded
3	009792STMP	003342SMH	003356SMH	222	2	10.5	3.4	2.1	2.2	Flooded	5.1	Flooded	0.2	0.5	0.0	1435	0	Flooded
3	009795STMP	003397SMH	003079SMH	397	2	30.5	9.6	1.4	0	6.0	2.8	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
3	009796STMP	003356SMH	003397SMH	519	2	19.9	6.3	2.2	1.4	5.2	5.9	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009805A	003358SMH	001007ND	73	1.75	13.1	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009805B	001007ND	003359SMH	40	1.75	13.1	13.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009812STMP	003359SMH	003360SMH	58	1.5	13.1	10.9	0	0.6	-	1.1	-	1.9	0.0	0.0	0	0	Sufficient Capacity
3	009813STMP	003360SMH	003364SMH	29	2	40.6	12.9	0.6	0.2	1.5	0.6	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	009814STMP	000626CB	003363SMH	10	1.5	5.4	4.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009817STMP	001908SMH	001909SMH	266	2	16.7	5.2	4.1	4.2	Flooded	6.1	Flooded	1.0	3.7	0.0	25682	0	Flooded
3	009818STMP	008220IN	001910SMH	25	2	35.5	-11.1	3.7	3.9	5.2	4.6	-	-	0.0	0.0	0	0	Surcharged
3	009819STMP	002674SMH	008220IN	214	2	25.3	7.9	3.8	3.7	6.8	5.1	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
3	009820STMP	008221IN	008220IN	31	1.25	10.3	9.4	0.4	3.7	1.1	2.3	-	-	0.0	0.0	0	0	Surcharged
3	009846STMP	006182IN	003385SMH	91	1	2.6	3.3	15.4	15.9	Flooded	Flooded	Flooded	Flooded	15.3	15.2	18075	17381	Flooded
3	009847STMP	003394SMH	003385SMH	127	1.25	5.5	4.4	15.4	15.9	Flooded	Flooded	Flooded	Flooded	11.6	15.2	9015	17381	Flooded
3	009851STMP	003353SMH	003354SMH	128	1.5	4.9	2.8	2.1	2.1	Flooded	3.7	Flooded	0.1	1.8	0.0	2635	0	Flooded
3	009852STMP	0001031ND	003361SMH	855	2.5	21.1	16.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009863STMP	007989IN	003446SMH	33	1	5.5	8.0	1	3.8	1.8	3.2	1.2	1.0	0.0	0.0	0	0	Insufficient Freeboard
3	009864STMP	007990IN	007989IN	41	1	5.5	7.0	0.8	1	Flooded	1.1	Flooded	1.2	0.8	0.0	2143	0	Flooded
3	009865STMP	001909SMH	003446SMH	23	2.25	16.8	4.2	4.2	3.8	5.9	5.9	1.0	1.0	0.0	0.0	0	0	Insufficient Freeboard
3	009866STMP	003446SMH	003447SMH	101	2.25	17.4	4.3	3.8	4.2	6.0	Flooded	1.0	Flooded	0.0	2.4	0	6932	Insufficient Freeboard
3	009867STMP	003447SMH	003051SMH	55	2.25	20.1	5.0	4.2	4.2	Flooded	Flooded	Flooded	Flooded	2.4	3.5	6932	25998	Flooded
3	009868STMP	007991IN	003447SMH	115	1.25	3.8	3.1	3.8	4.2	3.0	Flooded	0.4	Flooded	0.0	2.4	0	6932	Insufficient Freeboard
3	009869A	003051SMH	000802ND	374	2.25	26.0	6.4	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.5	3.6	25998	30	Flooded
3	009869B	000802ND	003339SMH	6	2.25	28.4	7.1	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.6	3.9	30	59371	Flooded
3	009952STMP	007848IN	003209SMH	119	1	5.7	7.6	0.2	0.6	Flooded	1.7	Flooded	-	0.2	0.0	104	0	Flooded
3	009953STMP	003209SMH	003210SMH	63	1	5.7	7.1	0.6	1	2.5	1.7	-	1.1	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009954STMP	003210SMH	003427SMH	78	1.5	22.0	17.2	1	1.4	1.8	Flooded	1.1	Flooded	0.0	1.4	0	9272	Insufficient Freeboard
3	009958A	003427SMH	000995ND	317	1.5	23.2	12.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.7	9272	11	Flooded
3	009958B	000995ND	003212SMH	19	1.5	24.6	13.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.7	11	5155	Flooded
3	009959STMP	003211SMH	003427SMH	55	1	7.0	13.0	1.1	1.4	Flooded	Flooded	Flooded	Flooded	0.5	1.4	1413	9272	Flooded
3	010078A	003122SMH	000805ND	28	5 x 10	418.6	11.5	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.6	0.4	51666	17	Flooded
3	010078B	000808ND	003166SMH	27	5 x 10	442.4	8.8	2.6	2.8	Flooded	Flooded	Flooded	Flooded	0.3	0.0	27	9	Flooded
3	010078C	000807ND	000806ND	19	5 x 10	420.1	10.1	1.9	2	Flooded	Flooded	Flooded	Flooded	0.3	0.3	27	33	Flooded
3	010078D	000806ND	000808ND	132	5 x 10	420.3	9.4	2	2.6	Flooded	Flooded	Flooded	Flooded	0.3	0.3	33	27	Flooded
3	010078E	000805ND	000807ND	28	5 x 10	419.3	10.8	1.9	1.9	Flooded	Flooded	Flooded	Flooded	0.4	0.3	17	27	Flooded
3	010079A	003166SMH	000809ND	103	5 x 10	442.6	-8.8	2.8	2.4	Flooded	Flooded	Flooded	Flooded	0.0	1.6	9	1296	Flooded
3	010080STMP	003165SMH	003122SMH	158	5 x 10	392.6	10.5	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.4	1.6	33426	51666	Flooded
3	010085STMP	003207SMH	003210SMH	210	1.5	16.8	18.8	0	1	-	1.5	-	1.1	0.0	0.0	0	0	Sufficient Capacity
3	010086STMP	003208SMH	003207SMH	23	1.5	16.8	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010087STMP	003194SMH	000856ND	46	1	3.1	3.8	1.7	2.1	4.5	4.7	0.5	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	010088A	003041SMH	000856ND	22	1	5.4	6.7	2.1	2.1	4.7	4.7	0.1	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	010088B	000856ND	003190SMH	130	1	5.8	7.2	2.1	1.9	4.7	2.5	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
3	010133A	003215SMH	000888ND	82	2.5	22.1	4.5	3.8	3.8	Flooded	2.9	Flooded	0.4	3.5	0.0	16120	0	Flooded
3	010133B	000889ND	003392SMH	23	2.5	24.6	5.0	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.3	3.5	34	26363	Flooded
3	010133C	000888ND	000848ND	64	2.5	22.6	4.6	3.8	3.8	2.9	Flooded	0.4	Flooded	0.0	2.8	0	18	Insufficient Freeboard
3	010133D	000848ND	000889ND	195	2.5	22.8	4.6	3.8	3.8	Flooded	Flooded	Flooded	Flooded	2.8	3.3	18	34	Flooded
3	010134STMP	003216SMH	003393SMH	364	2.5	25.2	5.1	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.3	3.3	17359	30568	Flooded
3	010139STMP	006178IN	000915ND	12	1	-6.1	-7.6	4.6	3	Flooded	Flooded	Flooded	Flooded	3.8	1.7	33657	405	Flooded
3	010140STMP	001001ND	003218SMH	118	3.25 x 5	64.6	-5.0	3.1	2.9	1.0	RIM	-	RIM	0.0	0.0	0	0	Surcharged
3	010226STMP	006183IN	003385SMH	72	1.25	2.2	2.6	15.3	15.9	Flooded	Flooded	Flooded	Flooded	15.3	15.2	17646	17381	Flooded
3	010271STMP	003389SMH	003401SMH	175	2.5	33.2	6.7	3.8	3.5	Flooded	Flooded	Flooded	Flooded	1.9	1.0	11936	3236	Flooded
3	010272STMP	003390SMH	003400SMH	175	2.5	33.5	6.8	4	3.8	Flooded	Flooded	Flooded	Flooded	2.0	1.1	12230	4301	Flooded
3	010273STMP	000562CB	000899ND	8	1.5	8.6	4.8	2.6	3.5	Flooded	Flooded	Flooded	Flooded	2.1	2.0	4447	31	Flooded
3	010279STMP	000564CB	003394SMH	8	1	3.3	4.2	15.3	15.4	Flooded	Flooded	Flooded	Flooded	11.6	11.6	12031	9015	Flooded
3	010280STMP	007862IN	000564CB	26	0.833	4.8	8.7	13.1	15.3	Flooded	Flooded	Flooded	Flooded	11.5	11.6	33907	12031	Flooded
3	010282STMP	000566CB	003428SMH	38	1	3.1	3.9	14.2	15.4	Flooded	Flooded	Flooded	Flooded	6.9	8.5	3555	4971	Flooded
3	010286STMP	003428SMH	003394SMH	47	1.25	5.4	4.3	15.4	15.4	Flooded	Flooded	Flooded	Flooded	8.5	11.6	4971	9015	Flooded
3	010288STMP	007867IN	003429SMH	135	0.833	2.8	5.2	1.7	2.1	Flooded	1.3	Flooded	0.7	1.3	0.0	2890	0	Flooded
3	010289STMP	003392SMH	003390SMH	381	2.5	27.2	5.5	3.8	4	Flooded	Flooded	Flooded	Flooded	3.5	2.0	26363	12230	Flooded
3	010290STMP	003393SMH	003389SMH	381	2.5	28.0	5.7	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.3	1.9	30568	11936	Flooded
3	010291A	006188IN	000901ND	264	2	13.4	4.2	2.7	3.3	Flooded	Flooded	Flooded	Flooded	2.7	1.9	31384	21	Flooded
3	010291B	000901ND	000900ND	23	2	13.8	4.4	3.3	3.4	Flooded	Flooded	Flooded	Flooded	1.9	2.0	21	21	Flooded
3	010291C	000900ND	000899ND	30	2	15.7	5.0	3.4	3.5	Flooded	Flooded	Flooded	Flooded	2.0	2.0	21	31	Flooded
3	010291D	000899ND	003395SMH	151	2	17.9	5.6	3.5	3.8	Flooded	Flooded	Flooded	Flooded	2.0	1.9	31	11255	Flooded
3	010292STMP	004007SMH	003388SMH	233	2	14.9	4.7	3.7	3.9	Flooded	Flooded	Flooded	Flooded	2.1	1.7	13174	4640	Flooded
3	010293A	003388SMH	000916ND	6	2	16.8	5.3	3.9	3.9	Flooded	Flooded	Flooded	Flooded	1.7	1.7	4640	1889	Flooded
3	010293B	000916ND	003402SMH	89	2	21.0	6.6	3.9	1.8	Flooded	Flooded	Flooded	Flooded	1.7	0.0	1889	678	Flooded
3	010296A	003396SMH	000917ND	31	1.5	6.9	5.3	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.7	0.5	952	27	Flooded
3	010296B	000917ND	003397SMH	220	1.5	6.7	3.7	1.5	1.4	Flooded	6.2	Flooded	0.5	0.5	0.0	27	0	Flooded
3	010299STMP	006240IN	003334SMH	166	1.25	6.9	5.6	4.2	3.9	Flooded	2.8	Flooded	0.2	3.9	0.0	41840	0	Flooded
3	010301A	003335SMH	000991ND	90	3.25 x 5	46.1	5.5	2	2.9	0.3	0.5	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	010301B	000991ND	003332SMH	85	3.25 x 5	53.2	5.2	2.9	3	0.5	RIM	0.5	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	010302STMP	003336SMH	003335SMH	7	2.25	45.8	-11.4	4.5	2	Flooded	3.0	Flooded	0.4	3.5	0.0	13025	0	Flooded
3	010303STMP	003337SMH	003336SMH	39	2.25	44.8	11.2	4.2	4.5	Flooded	Flooded	Flooded	Flooded	3.9	3.5	39878	13025	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010306STMP	000607CB	003337SMH	5	1	4.0	5.0	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.5	3.9	6317	39878	Flooded
3	010307STMP	006239IN	003335SMH	45	1	5.3	6.7	1	2	Flooded	1.3	Flooded	0.4	1.0	0.0	4145	0	Flooded
3	010308STMP	003338SMH	003335SMH	147	1	4.5	5.6	3.1	2	Flooded	4.3	Flooded	0.4	0.2	0.0	223	0	Flooded
3	010309STMP	007929IN	000608CB	108	1.25	9.9	9.6	1.8	1.8	Flooded	2.1	Flooded	0.7	1.8	0.0	12527	0	Flooded
3	010310STMP	006593IN	007929IN	175	1.25	5.5	4.5	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.5	1.8	5096	12527	Flooded
3	010331STMP	001992SMH	003339SMH	145	2.25	28.2	7.0	4.2	4.2	Flooded	Flooded	Flooded	Flooded	2.5	3.9	5524	59371	Flooded
3	010332STMP	003339SMH	003337SMH	296	2.25	35.1	8.7	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.9	3.9	59371	39878	Flooded
3	010334STMP	006241IN	006240IN	80	1.25	3.9	3.5	3.2	4.2	Flooded	Flooded	Flooded	Flooded	1.6	3.9	1510	41840	Flooded
3	010335STMP	000608CB	006240IN	164	1.25	9.8	7.9	1.8	4.2	2.5	Flooded	0.7	Flooded	0.0	3.9	0	41840	Insufficient Freeboard
3	010337STMP	003434SMH	003436SMH	171	4 x 12	353.4	7.6	1.9	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.0	411	339	Flooded
3	010338STMP	003327SMH	000999ND	30	1	-6.9	-8.3	3.8	1.8	Flooded	Flooded	Flooded	Flooded	1.6	1.1	2949	2866	Flooded
3	010343STMP	006245IN	000996ND	58	0.833	4.7	11.9	3	1.8	Flooded	Flooded	Flooded	Flooded	3.0	1.6	20508	19605	Flooded
3	010347STMP	006273IN	003354SMH	29	1.25	8.9	7.2	2.1	2.1	Flooded	3.9	Flooded	0.1	2.1	0.0	15485	0	Flooded
3	010371STMP	000618CB	003355SMH	9	1.25	3.1	5.0	1.9	2.1	2.2	3.9	1.6	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	010372STMP	003354SMH	003355SMH	137	1.5	9.1	-5.1	2.1	2.1	3.7	3.7	0.1	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	010373STMP	003355SMH	003344SMH	52	1.5	9.3	5.2	2.1	2.1	3.7	4.0	1.7	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	010380STMP	000620CB	003356SMH	28	1	6.1	7.6	1.6	2.2	Flooded	5.5	Flooded	0.2	1.3	0.0	4113	0	Flooded
3	010382STMP	003077SMH	003356SMH	36	1.25	7.3	7.3	1.6	2.2	3.9	5.3	0.4	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	010398STMP	000628CB	003361SMH	19	1.25	11.6	9.4	0	0	2.0	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	010402STMP	003361SMH	003362SMH	30	2.5	32.7	18.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010403STMP	003362SMH	003363SMH	102	2.5	32.7	17.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404A	003363SMH	001017ND	68	3	38.0	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404B	001017ND	003365SMH	35	3	38.1	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010405STMP	003364SMH	003365SMH	108	2	40.6	13.2	0.2	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
3	010407STMP	003365SMH	003366SMH	166	3	78.5	16.6	0	0.6	-	Flooded	-	Flooded	0.0	0.6	0	13647	Sufficient Capacity
3	010408A	003366SMH	001013ND	195	3	82.5	13.2	0.6	1.7	Flooded	Flooded	Flooded	Flooded	0.6	1.0	13647	80	Flooded
3	010408B	001013ND	003120SMH	303	3	79.2	11.1	1.7	1.9	Flooded	Flooded	Flooded	Flooded	1.0	1.8	80	77875	Flooded
3	010409A	003213SMH	001009ND	63	1.75	5.7	13.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010409B	001009ND	003358SMH	174	1.75	5.7	13.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010410A	003212SMH	001010ND	287	1.75	29.1	11.9	1.4	1.4	Flooded	2.3	Flooded	1.1	0.7	0.0	5155	0	Flooded
3	010410B	001010ND	003360SMH	72	1.75	29.2	12.1	1.4	0.6	2.3	1.7	1.1	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	010411A	007886IN	001015ND	80	1.25	9.2	7.4	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.6	12487	697	Flooded
3	010411B	001015ND	000971ND	159	1.25	9.0	7.3	1.9	1.8	Flooded	Flooded	Flooded	Flooded	1.6	0.0	697	484	Flooded
3	010412A	003436SMH	000980ND	15	5 x 10	354.9	8.8	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.0	0.4	339	514	Flooded
3	010412B	000983ND	003328SMH	16	5 x 10	365.7	8.7	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	1.0	2855	7473	Flooded
3	010412C	000999ND	000982ND	33	5 x 10	364.9	9.0	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	1.1	2866	2469	Flooded
3	010412D	000982ND	000983ND	129	5 x 10	365.2	8.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	1.1	2469	2855	Flooded
3	010412E	000980ND	000999ND	130	5 x 10	352.5	8.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.4	1.1	514	2866	Flooded
3	010455STMP	000639CB	000802ND	20	0.833	7.0	12.6	4.4	4.2	Flooded	Flooded	Flooded	Flooded	4.1	3.6	16145	30	Flooded
3	010472STMP	007748IN	000809ND	16	1.25	14.7	13.3	1.8	2.4	Flooded	Flooded	Flooded	Flooded	1.8	1.6	26347	1296	Flooded
3	010576STMP	006246IN	000996ND	36	1.25	12.2	9.7	2.8	1.8	Flooded	Flooded	Flooded	Flooded	1.8	1.6	6020	19605	Flooded
3	010578A	003328SMH	000997ND	18	5 x 10	366.2	8.7	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.0	0.9	7473	1838	Flooded
3	010578B	001004ND	003340SMH	14	5 x 10	387.7	9.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.8	1.1	4689	28276	Flooded
3	010578C	000997ND	000984ND	21	5 x 10	366.5	8.8	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.9	1.4	1838	7370	Flooded
3	010578D	000996ND	001004ND	151	5 x 10	385.9	9.5	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.6	0.8	19605	4689	Flooded
3	010578E	000984ND	000996ND	125	5 x 10	366.9	8.9	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.4	1.6	7370	19605	Flooded
3	010580STMP	006247IN	001004ND	16	1.25	12.8	10.2	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.5	0.8	3803	4689	Flooded
3	010581STMP	006248IN	006247IN	47	1.25	8.3	8.6	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.6	1.5	6112	3803	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010582STMP	007884IN	006248IN	237	1.25	7.7	6.3	1.6	1.7	Flooded	Flooded	Flooded	Flooded	1.2	1.6	6751	6112	Flooded
3	010584A	003340SMH	001003ND	15	5 x 10	388.3	10.1	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.1	0.7	28276	5047	Flooded
3	010584B	001003ND	006250IN	69	5 x 10	389.3	10.3	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.7	1.2	5047	35304	Flooded
3	010586A	006250IN	000998ND	72	5 x 10	390.3	10.3	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.2	0.7	35304	9505	Flooded
3	010586B	000998ND	003165SMH	41	5 x 10	391.2	10.3	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.7	1.4	9505	33426	Flooded
3	010596STMP	003341SMH	003342SMH	47	2	13.4	4.2	2.1	2.1	Flooded	Flooded	Flooded	Flooded	0.0	0.5	12	1435	Flooded
3	010597STMP	003343SMH	003341SMH	274	1.75	9.4	4.1	2.1	2.1	3.9	Flooded	1.7	Flooded	0.0	0.0	0	12	Insufficient Freeboard
3	010601STMP	003344SMH	003343SMH	82	1.75	9.5	3.9	2.1	2.1	3.7	3.9	1.7	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	010602STMP	003345SMH	003344SMH	146	1.25	3.6	5.2	1.5	2.1	Flooded	4.1	Flooded	1.7	0.8	0.0	934	0	Flooded
3	010603STMP	006260IN	003345SMH	17	1	3.6	6.5	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.0	0.8	2468	934	Flooded
3	010605STMP	003347SMH	003214SMH	346	3.5	40.1	4.8	3.6	3.6	1.7	1.7	-	-	0.0	0.0	0	0	Surcharged
3	010606STMP	006261IN	001001ND	125	2	14.3	8.4	0	3.1	-	4.0	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010613STMP	003348SMH	003347SMH	300	3.5	40.7	6.2	3.1	3.6	0.8	1.7	-	-	0.0	0.0	0	0	Surcharged
3	010614STMP	003350SMH	003348SMH	73	3	42.1	9.1	0	3.1	0.6	1.3	-	-	0.0	0.0	0	0	Surcharged
3	010617STMP	003351SMH	003350SMH	40	2.5	37.1	9.2	3.2	0	1.1	1.1	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618A	003352SMH	001000ND	29	2	37.2	11.8	4.2	4.1	2.7	2.2	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618B	001000ND	003351SMH	11	2	37.2	11.8	4.1	3.2	2.2	1.5	-	1.8	0.0	0.0	0	0	Surcharged
3	010879STMP	008268IN	008269IN	32	1.25	4.3	5.9	0.4	0.5	3.5	3.9	0.6	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	010880STMP	008273IN	008269IN	176	2	9.9	5.3	0.4	0.5	2.2	3.6	0.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	010882STMP	002692SMH	008273IN	23	1.25	7.7	6.3	0.4	0.4	2.3	2.6	0.2	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	010884STMP	008272IN	008273IN	58	1.25	4.6	3.7	0.4	0.4	Flooded	2.9	Flooded	0.4	0.2	0.0	360	0	Flooded
3	011123STMP	001904SMH	001906SMH	269	1.75	12.7	5.2	3.9	3.9	Flooded	Flooded	Flooded	Flooded	2.1	3.8	9814	27375	Flooded
3	011124STMP	001905SMH	001904SMH	23	1.75	18.9	7.7	3.9	3.9	Flooded	Flooded	Flooded	Flooded	2.2	2.1	14662	9814	Flooded
3	011125STMP	001912SMH	001905SMH	256	1.75	8.2	4.4	3.6	3.9	3.2	Flooded	1.7	Flooded	0.0	2.2	0	14662	Insufficient Freeboard
3	011130STMP	001906SMH	001908SMH	17	2	9.4	3.0	3.9	4.1	Flooded	Flooded	Flooded	Flooded	3.8	3.7	27375	25682	Flooded
3	011131STMP	008218IN	001907SMH	24	1.25	4.5	6.6	3.8	4	2.5	Flooded	0.2	Flooded	0.0	3.8	0	28690	Insufficient Freeboard
3	011132STMP	008219IN	001907SMH	32	3	26.6	3.7	4	4	Flooded	Flooded	Flooded	Flooded	3.4	3.8	13026	28690	Flooded
3	011133STMP	001910SMH	008219IN	245	3	35.5	5.0	3.9	4	3.7	Flooded	-	Flooded	0.0	3.4	0	13026	Surcharged
3	011134STMP	001907SMH	001908SMH	18	2	16.3	5.1	4	4.1	Flooded	Flooded	Flooded	Flooded	3.8	3.7	28690	25682	Flooded
3	011144STMP	008256IN	008255IN	59	2	18.1	5.7	0.5	0.5	6.5	6.8	0.7	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	011145STMP	008269IN	008256IN	211	2	12.2	5.3	0.5	0.5	3.9	6.2	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	011146STMP	008257IN	008256IN	28	1.25	8.2	9.4	0.4	0.5	3.0	3.8	0.6	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	011517STMP	008237IN	008236IN	26	1.25	3.2	8.5	0.2	0.5	0.8	2.7	-	1.2	0.0	0.0	0	0	Surcharged
3	011535STMP	001942SMH	001992SMH	158	2	23.7	7.4	4.1	4.2	5.1	Flooded	0.1	Flooded	0.0	2.5	0	5524	Insufficient Freeboard
3	011536STMP	006582IN	006593IN	27	1.5	9.2	-5.2	1.7	1.7	Flooded	Flooded	Flooded	Flooded	1.4	1.5	2563	5096	Flooded
3	011633STMP	001961SMH	001942SMH	245	2	19.7	6.2	3.9	4.1	Flooded	5.0	Flooded	0.1	1.8	0.0	10193	0	Flooded
3	011634STMP	001975SMH	001947SMH	263	2	18.9	5.9	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.2	1.8	5464	9999	Flooded
3	011635STMP	001981SMH	001975SMH	251	2	14.5	4.6	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.0	1.2	4716	5464	Flooded
3	011637STMP	001982SMH	001981SMH	15	2	22.9	7.2	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.7	1.0	2098	4716	Flooded
3	011638STMP	006587IN	001982SMH	39	2	17.7	5.6	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.9	0.7	3398	2098	Flooded
3	011640STMP	001984SMH	006587IN	210	2	11.5	4.1	1.6	1.8	Flooded	Flooded	Flooded	Flooded	0.1	0.9	7	3398	Flooded
3	011831A	001913SMH	001110ND	63	1.5	8.3	4.6	3.7	3.7	4.1	Flooded	0.8	Flooded	0.0	0.2	0	0	Insufficient Freeboard
3	011831B	001110ND	001911SMH	68	1.5	8.3	4.6	3.7	3.7	Flooded	3.6	Flooded	1.3	0.2	0.0	0	0	Flooded
3	011833STMP	001911SMH	001912SMH	25	1.5	8.2	-4.6	3.7	3.6	3.6	3.4	1.3	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	011834STMP	001914SMH	001913SMH	11	1.5	8.3	-4.6	3.7	3.7	4.6	4.1	0.7	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	011835STMP	002673SMH	001914SMH	233	1.5	8.3	4.6	2.8	3.7	4.7	4.4	1.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	011911STMP	002693SMH	002692SMH	25	1.25	7.7	-6.2	0.3	0.4	2.5	2.3	0.0	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	011968STMP	001920SMH	002673SMH	38	1.25	8.4	7.0	2	2.8	4.5	4.6	0.7	1.3	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	011971STMP	008235IN	002674SMH	46	1.25	4.4	7.0	0.2	3.8	2.5	5.2	-	1.5	0.0	0.0	0	0	Surcharged
3	011972STMP	008236IN	002674SMH	56	2	20.8	6.5	0.5	3.8	6.7	6.7	1.2	1.5	0.0	0.0	0	0	Insufficient Freeboard
3	011973STMP	008255IN	008236IN	211	2	17.8	5.6	0.5	0.5	6.9	6.6	0.7	1.2	0.0	0.0	0	0	Insufficient Freeboard
3	012028STMP	001946SMH	001947SMH	123	1.5	8.1	5.5	1.6	1.9	1.0	Flooded	0.5	Flooded	0.0	1.8	0	9999	Insufficient Freeboard
3	012230STMP	000140CB	001975SMH	22	0.667	4.4	12.0	3.1	1.9	Flooded	Flooded	Flooded	Flooded	2.9	1.2	17926	5464	Flooded
3	012234STMP	000142CB	001975SMH	32	0.833	3.5	7.8	1.6	1.9	Flooded	Flooded	Flooded	Flooded	1.2	1.2	1248	5464	Flooded
3	014005STMP	001947SMH	001961SMH	30	2	21.3	6.7	1.9	3.9	Flooded	Flooded	Flooded	Flooded	1.8	1.8	9999	10193	Flooded
3	014015STMP	003395SMH	002916ND	55	2	-30.0	-9.4	3.8	1.8	Flooded	Flooded	Flooded	Flooded	1.9	0.0	11255	212	Flooded
3	014039A	007779IN	000839ND	56	2	7.4	-2.4	4	4	Flooded	Flooded	Flooded	Flooded	3.7	2.4	19236	19	Flooded
3	014039B	000839ND	003183SMH	151	2	7.3	-2.3	4	4	Flooded	Flooded	Flooded	Flooded	2.4	2.1	19	1070	Flooded
3	014927STMP	003171SMH	002908ND	100	1	5.6	7.6	2.5	4.2	Flooded	Flooded	Flooded	Flooded	2.5	1.2	17745	2	Flooded
4	007729STMP	000723ND	002632SMH	54	1.25	15.3	15.4	0.3	0.5	1.9	Flooded	0.9	Flooded	0.0	0.3	0	1051	Insufficient Freeboard
4	007730STMP	000722ND	002632SMH	33	1.25	20.1	16.2	0.7	0.5	Flooded	Flooded	Flooded	Flooded	0.3	0.3	8	1051	Flooded
4	007736STMP	005620IN	002633SMH	40	1	6.7	11.2	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.6	5968	13181	Flooded
4	007737STMP	005621IN	005620IN	100	0.833	7.3	14.9	0.4	1.6	Flooded	Flooded	Flooded	Flooded	0.4	1.4	1108	5968	Flooded
4	007740STMP	005623IN	002635SMH	29	1.25	11.8	9.5	1.7	0.6	Flooded	1.8	Flooded	0.2	1.6	0.0	8357	0	Flooded
4	007741STMP	002635SMH	002638SMH	128	2	41.2	14.4	0.6	0.7	3.7	Flooded	0.2	Flooded	0.0	0.6	0	2163	Insufficient Freeboard
4	008186STMP	000714ND	002615SMH	142	1.5	13.5	16.0	0	0.3	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008481STMP	007630IN	000504IO	56	1.25	14.3	12.0	0.4	0	Flooded	-	Flooded	-	0.4	0.0	1469	0	Flooded
4	008482STMP	007631IN	007632IN	26	0.833	5.1	10.0	1.1	1.1	Flooded	2.3	Flooded	0.2	1.0	0.0	5083	0	Flooded
4	008484STMP	007632IN	007633IN	10	0.833	5.1	9.2	1.1	1.1	2.3	2.2	0.2	1.0	0.0	0.0	0	0	Insufficient Freeboard
4	008485STMP	007633IN	000397CB	6	0.833	5.1	9.4	1.1	0.4	2.2	1.8	1.0	1.1	0.0	0.0	0	0	Insufficient Freeboard
4	008486STMP	000397CB	000714ND	33	1	13.5	17.5	0.4	0	1.6	-	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
4	008489STMP	002615SMH	002616SMH	65	1.5	13.5	11.7	0.3	0.4	1.8	Flooded	-	Flooded	0.0	0.2	0	514	Surcharged
4	008491STMP	002616SMH	000722ND	99	1.5	20.6	11.6	0.4	0.7	Flooded	Flooded	Flooded	Flooded	0.2	0.3	514	8	Flooded
4	008495A	000398CB	000715ND	9	1.5	17.6	9.9	0	0.1	0.9	0.2	-	-	0.0	0.0	0	0	Surcharged
4	008495B	000715ND	007639IN	14	1.5	17.6	9.9	0.1	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
4	008496STMP	007639IN	002617SMH	9	1.5	17.6	15.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008759STMP	000584CB	003410SMH	31	1.25	8.4	8.1	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.7	1.4	3394	2766	Flooded
4	008836STMP	002629SMH	002630SMH	36	1	12.6	15.4	0.5	0.5	Flooded	4.8	Flooded	0.9	0.4	0.0	2560	0	Flooded
4	008838STMP	000412CB	000727ND	19	1	4.9	9.2	0.4	0.5	Flooded	5.3	Flooded	0.2	0.1	0.0	22	0	Flooded
4	008839STMP	005597IN	000412CB	17	1	5.1	10.5	0.1	0.4	0.7	Flooded	0.8	Flooded	0.0	0.1	0	22	Insufficient Freeboard
4	008842STMP	005600IN	002631SMH	99	1.25	15.4	12.2	1.3	1.5	Flooded	Flooded	Flooded	Flooded	0.9	1.5	7920	12147	Flooded
4	008871STMP	005616IN	002635SMH	108	1.25	3.3	11.4	0	0.6	-	3.4	-	0.2	0.0	0.0	0	0	Sufficient Capacity
4	008908STMP	003357SMH	003435SMH	132	2	9.1	5.3	0.3	0.7	1.6	3.0	-	0.3	0.0	0.0	0	0	Surcharged
4	008919STMP	007898IN	000954ND	29	0.833	3.3	8.1	1.6	2	Flooded	Flooded	Flooded	Flooded	1.3	1.8	2187	4937	Flooded
4	008922STMP	000401CB	002618SMH	33	1	8.2	12.9	0.4	0.5	2.9	Flooded	0.1	Flooded	0.0	0.2	0	598	Insufficient Freeboard
4	008926A	002618SMH	000737ND	39	1.5	22.1	12.3	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.2	0.4	598	9	Flooded
4	008926B	000737ND	002619SMH	28	1.5	19.8	11.0	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.4	9	1512	Flooded
4	009103STMP	002617SMH	002618SMH	226	1.5	17.6	12.0	0	0.5	-	Flooded	-	Flooded	0.0	0.2	0	598	Sufficient Capacity
4	009120A	002619SMH	000717ND	17	1.75	25.4	10.4	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.4	1512	12	Flooded
4	009120B	000718ND	002620SMH	146	1.75	29.5	12.2	0.5	0	2.7	-	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	009120C	000717ND	000718ND	57	1.75	25.4	10.5	0.5	0.5	Flooded	2.7	Flooded	0.7	0.4	0.0	12	0	Flooded
4	009121A	000403CB	000716ND	21	1.25	7.2	5.8	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.0	0.4	0	9	Flooded
4	009121B	000716ND	002619SMH	15	1.25	7.2	5.7	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.4	9	1512	Flooded
4	009128A	002620SMH	000720ND	68	2	29.5	19.0	0	0.4	-	1.6	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009128B	000720ND	002622SMH	88	2	61.7	23.2	0.4	0.6	1.6	Flooded	-	Flooded	0.0	0.6	0	11134	Surcharged
4	009129STMP	002621SMH	000720ND	75	1.75	32.2	23.8	0	0.4	-	1.8	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	009130STMP	002626SMH	002621SMH	90	1.5	32.2	17.8	0.6	0	5.4	-	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
4	009131STMP	002622SMH	002623SMH	139	2	56.8	19.8	0.6	0.6	Flooded	3.5	Flooded	0.1	0.6	0.0	11134	0	Flooded
4	009132STMP	002623SMH	002624SMH	80	2	56.8	19.6	0.6	0.7	3.7	Flooded	0.1	Flooded	0.0	0.7	0	13134	Insufficient Freeboard
4	009134STMP	002624SMH	002625SMH	173	2	50.5	20.4	0.7	0.9	Flooded	Flooded	Flooded	Flooded	0.7	0.8	13134	12286	Flooded
4	009135STMP	002625SMH	007940IN	593	2	46.3	14.4	0.9	0	Flooded	5.8	Flooded	-	0.8	0.0	12286	0	Flooded
4	009136STMP	002627SMH	002626SMH	35	1.5	28.3	15.9	0.4	0.6	Flooded	5.1	Flooded	0.5	0.3	0.0	251	0	Flooded
4	009137STMP	000407CB	002626SMH	17	1.25	5.2	7.3	0.4	0.6	3.5	5.6	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	009138STMP	005578IN	000407CB	27	1	5.1	6.4	0.4	0.4	2.8	2.6	0.1	0.4	0.0	0.0	0	0	Insufficient Freeboard
4	009143STMP	002628SMH	002627SMH	361	1.5	21.4	14.1	0.3	0.4	2.3	Flooded	-	Flooded	0.0	0.3	0	251	Surcharged
4	009146STMP	000409CB	002628SMH	25	1	4.0	12.0	0	0.3	-	1.9	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009154STMP	000410CB	000719ND	18	1	5.1	7.7	0.4	0.6	Flooded	4.8	Flooded	0.5	0.2	0.0	87	0	Flooded
4	009155A	002630SMH	000727ND	25	1.25	12.6	10.2	0.5	0.5	4.6	5.1	0.9	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	009155B	000727ND	000719ND	121	1.25	14.5	11.9	0.5	0.6	5.1	4.6	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	009155C	000719ND	002628SMH	78	1.25	18.9	15.1	0.6	0.3	4.6	1.6	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
4	009159A	002632SMH	000729ND	215	1.75	36.7	16.0	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.3	0.4	1051	14	Flooded
4	009159B	000729ND	002635SMH	60	1.75	33.7	15.0	0.6	0.6	Flooded	3.9	Flooded	0.2	0.4	0.0	14	0	Flooded
4	009161STMP	002638SMH	002639SMH	88	2	47.0	19.2	0.7	0.8	Flooded	5.4	Flooded	0.6	0.6	0.0	2163	0	Flooded
4	009162STMP	005630IN	002638SMH	49	1.25	15.6	12.7	0.9	0.7	2.5	Flooded	0.7	Flooded	0.0	0.6	0	2163	Insufficient Freeboard
4	009165STMP	005633IN	000730ND	12	1.25	8.1	12.8	0.3	0.9	2.8	8.0	0.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009166STMP	005634IN	005633IN	28	1.25	8.2	9.3	0.3	0.3	1.8	2.3	0.1	0.4	0.0	0.0	0	0	Insufficient Freeboard
4	009170A	002640SMH	0001041ND	80	2	53.4	16.6	0.9	1	Flooded	6.5	Flooded	0.0	0.7	0.0	2380	0	Flooded
4	009170B	0001041ND	006640IN	371	2	55.6	17.3	1	0	7.9	-	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
4	009171A	002639SMH	000730ND	127	2	47.1	17.7	0.8	0.9	5.6	7.2	0.6	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009171B	000730ND	002640SMH	348	2	51.4	17.7	0.9	0.9	7.3	Flooded	0.3	Flooded	0.0	0.7	0	2380	Insufficient Freeboard
4	009396STMP	002633SMH	005623IN	286	1.25	9.8	7.9	1.6	1.7	Flooded	Flooded	Flooded	Flooded	1.6	1.6	13181	8357	Flooded
4	009494A	003413SMH	000955ND	86	1.75	9.1	3.7	3	3.6	Flooded	Flooded	Flooded	Flooded	2.6	2.6	10487	83	Flooded
4	009494B	000955ND	003412SMH	103	1.75	14.3	5.9	3.6	2	Flooded	Flooded	Flooded	Flooded	2.6	1.9	83	39274	Flooded
4	009498STMP	000973ND	003414SMH	250	2	10.6	3.7	2.6	3.2	0.8	Flooded	0.4	Flooded	0.0	2.7	0	9101	Insufficient Freeboard
4	009499STMP	003414SMH	003416SMH	70	2	10.4	3.3	3.2	3.4	Flooded	Flooded	Flooded	Flooded	2.7	2.8	9101	14158	Flooded
4	009503STMP	003415SMH	003416SMH	47	1.25	9.7	7.8	3.5	3.4	Flooded	Flooded	Flooded	Flooded	2.6	2.8	3925	14158	Flooded
4	009504A	003416SMH	000956ND	63	2	15.1	4.8	3.4	3.5	Flooded	Flooded	Flooded	Flooded	2.8	2.8	14158	158	Flooded
4	009504B	000956ND	003417SMH	33	2	24.4	7.7	3.5	3.5	Flooded	Flooded	Flooded	Flooded	2.8	2.0	158	5510	Flooded
4	009508STMP	003417SMH	000966ND	24	2	24.4	7.7	3.5	1.9	Flooded	Flooded	Flooded	Flooded	2.0	0.0	5510	2	Flooded
4	009509STMP	003420SMH	003418SMH	108	2.5	21.0	4.3	2.2	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.9	6016	20772	Flooded
4	009510STMP	003419SMH	006189IN	4	2	23.2	-7.3	2.5	2.1	Flooded	Flooded	Flooded	Flooded	1.9	1.8	15312	5139	Flooded
4	009511STMP	006197IN	000970ND	16	0.833	7.3	13.3	0.9	0.9	Flooded	0.5	Flooded	-	0.9	0.0	5674	0	Flooded
4	009514STMP	000594CB	003425SMH	52	1.25	4.3	-3.5	0	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
4	009656STMP	002017SMH	002018SMH	5	2	39.4	12.5	1.5	1.3	Flooded	Flooded	Flooded	Flooded	1.0	1.0	4397	3131	Flooded
4	009658A	002019SMH	002907ND	30	3	67.0	16.7	0	0.9	0.4	1.4	1.4	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	009658B	002907ND	002018SMH	185	3	123.3	19.1	0.9	1.3	1.8	Flooded	0.2	Flooded	0.0	1.0	0	3131	Insufficient Freeboard
4	009659A	006640IN	001171ND	20	2	28.1	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009659B	001171ND	006645IN	28	2	28.1	12.7	0	0.2	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009660STMP	006640IN	002019SMH	57	2	35.8	16.4	0	0	-	-	-	1.4	0.0	0.0	0	0	Sufficient Capacity
4	009688A	003412SMH	000954ND	19	4 x 7	244.6	8.7	2	2	Flooded	Flooded	Flooded	Flooded	1.9	1.8	39274	4937	Flooded
4	009688B	000954ND	000936ND	137	4 x 7	216.1	7.7	2	1.9	Flooded	Flooded	Flooded	Flooded	1.8	0.0	4937	37	Flooded
4	009689STMP	000587CB	003413SMH	36	1.25	5.8	-4.7	2.9	3	Flooded	Flooded	Flooded	Flooded	2.4	2.6	4885	10487	Flooded
4	009697STMP	006201IN	000973ND	49	1	3.0	3.9	2.7	2.6	Flooded	1.8	Flooded	0.4	2.2	0.0	3150	0	Flooded
4	009698STMP	003426SMH	000973ND	46	1.5	8.6	4.8	2.7	2.6	Flooded	1.3	Flooded	0.4	0.5	0.0	718	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	009699STMP	006202IN	003426SMH	16	1.25	8.6	7.0	2.5	2.7	Flooded	Flooded	Flooded	Flooded	0.5	0.5	1626	718	Flooded
4	009700STMP	006204IN	006202IN	60	1.25	12.0	9.6	2.3	2.5	2.5	Flooded	0.6	Flooded	0.0	0.5	0	1626	Insufficient Freeboard
4	009802STMP	007910IN	003357SMH	141	1.25	9.1	8.8	0	0.3	0.9	1.7	-	-	0.0	0.0	0	0	Surcharged
4	009904STMP	006594IN	001148ND	31	1.25	5.6	4.5	4	4.1	Flooded	Flooded	Flooded	Flooded	3.6	3.5	25021	26	Flooded
4	009996B	001152ND	001174ND	45	1	9.8	12.3	5.4	4	Flooded	Flooded	Flooded	Flooded	4.4	3.7	25	51	Flooded
4	010033STMP	006189IN	000966ND	15	2	24.1	7.6	2.1	1.9	Flooded	Flooded	Flooded	Flooded	1.8	0.0	5139	2	Flooded
4	010034A	003418SMH	000966ND	26	4 x 7	171.4	6.1	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.9	0.0	20772	2	Flooded
4	010034B	000966ND	003412SMH	168	4 x 7	170.5	6.8	1.9	2	Flooded	Flooded	Flooded	Flooded	0.0	1.9	2	39274	Flooded
4	010035STMP	006194IN	003420SMH	184	2.25	15.6	5.8	0	2.2	0.5	Flooded	-	Flooded	0.0	1.8	0	6016	Surcharged
4	010036STMP	003421SMH	003418SMH	225	4 x 7	172.1	6.1	1.9	1.9	Flooded	Flooded	Flooded	Flooded	0.3	1.9	10993	20772	Flooded
4	010037STMP	001968SMH	003421SMH	78	4 x 7	215.3	-7.8	1.8	1.9	Flooded	Flooded	Flooded	Flooded	0.2	0.3	4541	10993	Flooded
4	010038STMP	006190IN	003421SMH	282	1.5	8.0	4.5	2.1	1.9	Flooded	Flooded	Flooded	Flooded	2.0	0.3	6265	10993	Flooded
4	010041STMP	000590CB	000968ND	16	1	4.1	8.2	0.7	2	1.5	5.1	0.8	1.5	0.0	0.0	0	0	Insufficient Freeboard
4	010046A	003423SMH	000968ND	54	2	21.5	6.8	2	2	Flooded	4.1	Flooded	1.5	0.7	0.0	5718	0	Flooded
4	010046B	000968ND	003419SMH	207	2	24.5	7.7	2	2.5	4.1	Flooded	1.5	Flooded	0.0	1.9	0	15312	Insufficient Freeboard
4	010047A	003435SMH	000967ND	214	2	24.9	7.9	0.7	2	3.0	4.1	0.3	0.9	0.0	0.0	0	0	Insufficient Freeboard
4	010047B	000967ND	003423SMH	12	2	24.8	7.8	2	2	4.3	Flooded	0.9	Flooded	0.0	0.7	0	5718	Insufficient Freeboard
4	010048STMP	003410SMH	003423SMH	206	1.25	7.9	6.4	1.8	2	Flooded	Flooded	Flooded	Flooded	1.4	0.7	2766	5718	Flooded
4	010050STMP	003424SMH	006194IN	10	2.25	15.6	6.3	0.7	0	0.4	0.5	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
4	010053STMP	003425SMH	003424SMH	48	1.5	11.3	10.7	0	0.7	-	1.1	-	1.5	0.0	0.0	0	0	Sufficient Capacity
4	010054STMP	000970ND	003425SMH	13	1.25	7.3	5.8	0.9	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
4	010318A	003492SMH	0001040ND	33	2.25	57.0	14.3	1.3	1.3	0.9	0.5	0.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
4	010318B	0001040ND	004000SMH	46	2.25	57.0	14.3	1.3	0	0.8	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	010319STMP	007939IN	003492SMH	22	2.25	57.0	14.3	1.3	1.3	Flooded	0.8	Flooded	0.5	1.2	0.0	1235	0	Flooded
4	010323STMP	003493SMH	007939IN	119	2.25	56.2	14.0	1.3	1.3	Flooded	Flooded	Flooded	Flooded	1.1	1.2	5088	1235	Flooded
4	010324STMP	003494SMH	003493SMH	174	2.25	56.8	14.1	1.2	1.3	Flooded	Flooded	Flooded	Flooded	1.2	1.1	40164	5088	Flooded
4	010326STMP	007940IN	003494SMH	10	2	78.9	24.7	0	1.2	5.8	Flooded	-	Flooded	0.0	1.2	0	40164	Surcharged
4	010349STMP	007944IN	007948IN	31	1.25	18.2	14.6	1	1	Flooded	Flooded	Flooded	Flooded	1.0	0.5	6730	380	Flooded
4	010353STMP	007948IN	0001041ND	10	1.25	18.2	18.0	1	1	Flooded	8.6	Flooded	0.0	0.5	0.0	380	0	Flooded
4	010356STMP	003441SMH	003442SMH	146	1.75	11.3	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010358STMP	002631SMH	003441SMH	129	1	11.3	13.9	1.5	0	Flooded	-	Flooded	-	1.5	0.0	12147	0	Flooded
4	010359A	003442SMH	0001042ND	110	1.75	24.6	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010359B	0001042ND	003443SMH	16	1.75	24.6	10.2	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
4	010360STMP	003443SMH	002021SMH	346	2	55.2	21.0	0	0.3	-	Flooded	-	Flooded	0.0	0.3	0	3347	Sufficient Capacity
4	010361STMP	003444SMH	003443SMH	43	1.5	30.7	17.3	0.1	0	1.3	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
4	010366STMP	007955IN	003444SMH	26	1.5	25.1	17.7	0	0.1	0.5	1.1	1.7	1.2	0.0	0.0	0	0	Insufficient Freeboard
4	010368STMP	003445SMH	007955IN	35	1.5	25.5	14.4	0	0	0.6	-	1.7	1.7	0.0	0.0	0	0	Insufficient Freeboard
4	010370STMP	007958IN	003445SMH	178	1.5	25.5	17.6	0	0	-	0.3	-	1.7	0.0	0.0	0	0	Sufficient Capacity
4	011022STMP	000125CB	001966SMH	81	1	7.0	8.8	0.3	3.2	Flooded	Flooded	Flooded	Flooded	0.2	0.2	205	996	Flooded
4	011023STMP	006552IN	000125CB	27	1	6.3	9.4	0.2	0.3	Flooded	Flooded	Flooded	Flooded	0.2	0.2	130	205	Flooded
4	011258STMP	006645IN	002019SMH	9	2	31.6	9.9	0.2	0	0.1	-	-	1.4	0.0	0.0	0	0	Surcharged
4	011260STMP	002023SMH	001185ND	118	1.25	11.4	9.1	1.4	0.7	Flooded	Flooded	Flooded	Flooded	1.3	0.7	16043	71	Flooded
4	011261STMP	006647IN	002023SMH	71	1	4.9	6.7	1	1.4	1.2	Flooded	0.1	Flooded	0.0	1.3	0	16043	Insufficient Freeboard
4	011263STMP	006654IN	001185ND	115	1	2.6	5.6	0	0.7	-	Flooded	1.9	Flooded	0.0	0.7	0	71	Sufficient Capacity
4	011264STMP	006656IN	001186ND	63	2.5	25.1	7.8	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.7	0.7	18129	57	Flooded
4	011266STMP	002021SMH	002024SMH	49	2	48.4	15.1	0.3	0.3	Flooded	6.0	Flooded	0.8	0.3	0.0	3347	0	Flooded
4	011383A	001970SMH	001151ND	99	3	82.8	11.5	3.2	3.4	Flooded	Flooded	Flooded	Flooded	2.5	1.9	32877	9	Flooded
4	011383B	001151ND	001969SMH	19	3	82.5	11.5	3.4	3.4	Flooded	Flooded	Flooded	Flooded	1.9	2.3	9	12496	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	011385STMP	006553IN	000128CB	27	1	7.4	9.3	2.7	2.6	Flooded	Flooded	Flooded	Flooded	2.4	2.2	2839	3089	Flooded
4	011386STMP	000128CB	001151ND	41	1.25	11.0	8.9	2.6	3.4	Flooded	Flooded	Flooded	Flooded	2.2	1.9	3089	9	Flooded
4	011390A	001974SMH	001137ND	44	2	44.9	14.0	4.4	4.4	Flooded	Flooded	Flooded	Flooded	3.1	2.6	38732	54	Flooded
4	011390B	001137ND	001970SMH	126	2	45.1	14.1	4.4	3.2	Flooded	Flooded	Flooded	Flooded	2.6	2.5	54	32877	Flooded
4	011391STMP	001971SMH	001970SMH	33	3	84.5	12.1	2.9	3.2	Flooded	Flooded	Flooded	Flooded	2.6	2.5	104044	32877	Flooded
4	011392A	001973SMH	001135ND	8	2	11.4	3.6	3.1	3.1	Flooded	Flooded	Flooded	Flooded	1.6	2.2	8260	35	Flooded
4	011392B	001135ND	001944SMH	262	2	13.2	4.3	3.1	3.2	Flooded	Flooded	Flooded	Flooded	2.2	2.3	35	14173	Flooded
4	011441STMP	006540IN	001962SMH	204	2	20.2	6.4	2.7	3.3	Flooded	Flooded	Flooded	Flooded	1.6	2.8	629	12845	Flooded
4	011442STMP	001944SMH	001943SMH	237	1.75	16.3	6.7	3.2	3.3	Flooded	Flooded	Flooded	Flooded	2.3	2.7	14173	7398	Flooded
4	011443STMP	001962SMH	006548IN	52	2.5	29.0	-5.9	3.3	3.2	Flooded	Flooded	Flooded	Flooded	2.8	2.6	12845	8977	Flooded
4	011444A	006548IN	001131ND	276	2.5	29.7	6.0	3.2	3.4	Flooded	Flooded	Flooded	Flooded	2.6	1.8	8977	5	Flooded
4	011444B	001131ND	001963SMH	27	2.5	33.9	6.9	3.4	3.4	Flooded	Flooded	Flooded	Flooded	1.8	2.6	5	14760	Flooded
4	011447STMP	001963SMH	001965SMH	195	2.5	37.2	7.5	3.4	2.9	Flooded	RIM	Flooded	RIM	2.6	0.0	14760	0	Flooded
4	011449STMP	000123CB	001131ND	34	0.833	2.9	5.2	3	3.4	Flooded	Flooded	Flooded	Flooded	2.5	1.8	5758	5	Flooded
4	011450STMP	001966SMH	001965SMH	139	3	112.9	15.8	3.2	2.9	Flooded	RIM	Flooded	RIM	0.2	0.0	996	0	Flooded
4	011451STMP	001965SMH	001968SMH	127	4	128.8	10.2	2.9	1.8	RIM	Flooded	RIM	Flooded	0.0	0.2	0	4541	Insufficient Freeboard
4	011452STMP	001967SMH	001966SMH	49	3	112.9	15.8	3	3.2	Flooded	Flooded	Flooded	Flooded	0.2	0.2	853	996	Flooded
4	011453STMP	001969SMH	001967SMH	255	3	86.5	12.1	3.4	3	Flooded	Flooded	Flooded	Flooded	2.3	0.2	12496	853	Flooded
4	011454STMP	000124CB	001967SMH	34	1.5	17.8	10.0	0.2	3	Flooded	Flooded	Flooded	Flooded	0.0	0.2	11	853	Flooded
4	011632A	001988SMH	001136ND	275	2	26.4	8.2	4.1	4.5	Flooded	Flooded	Flooded	Flooded	3.7	3.0	38156	42	Flooded
4	011632B	001136ND	001974SMH	53	2	28.9	9.1	4.5	4.4	Flooded	Flooded	Flooded	Flooded	3.0	3.1	42	38732	Flooded
4	011671STMP	002015SMH	002014SMH	12	1.5	13.9	-8.2	0.5	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
4	011672A	002011SMH	001167ND	15	1.25	19.0	15.6	0.3	0	1.5	-	0.9	2.0	0.0	0.0	0	0	Insufficient Freeboard
4	011672B	001167ND	002014SMH	319	1.25	13.4	13.6	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
4	011674STMP	002013SMH	002012SMH	211	2	27.3	13.0	0	2.3	-	Flooded	-	Flooded	0.0	2.3	0	43242	Sufficient Capacity
4	011675STMP	006639IN	002016SMH	5	1.25 x 2	27.9	8.4	2.3	2.1	Flooded	Flooded	Flooded	Flooded	1.9	1.7	23723	37819	Flooded
4	011676STMP	002016SMH	002017SMH	81	2	39.3	12.4	2.1	1.5	Flooded	Flooded	Flooded	Flooded	1.7	1.0	37819	4397	Flooded
4	012008STMP	000111CB	006540IN	99	0.833	4.4	7.8	2.3	2.7	Flooded	Flooded	Flooded	Flooded	2.1	1.6	13749	629	Flooded
4	012010STMP	000112CB	001943SMH	4	0.833	5.5	9.8	3.2	3.3	Flooded	Flooded	Flooded	Flooded	3.0	2.7	8875	7398	Flooded
4	012049STMP	002018SMH	001971SMH	452	3	101.8	14.3	1.3	2.9	Flooded	Flooded	Flooded	Flooded	1.0	2.6	3131	104044	Flooded
4	012137A	002012SMH	001169ND	7	2	18.6	5.9	2.3	2.3	Flooded	Flooded	Flooded	Flooded	2.3	2.1	43242	29	Flooded
4	012137B	001169ND	006639IN	40	2	21.1	6.7	2.3	2.3	Flooded	Flooded	Flooded	Flooded	2.1	1.9	29	23723	Flooded
4	012138STMP	002014SMH	002013SMH	74	2	27.3	19.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	012188STMP	001943SMH	006540IN	41	1.75	18.2	-7.5	3.3	2.7	Flooded	Flooded	Flooded	Flooded	2.7	1.6	7398	629	Flooded
4	012190STMP	000133CB	001134ND	23	0.833	3.7	10.8	2.8	3.1	Flooded	Flooded	Flooded	Flooded	2.5	2.3	9262	48	Flooded
4	012193A	001983SMH	001134ND	261	1.75	12.7	5.2	2.7	3.1	4.3	Flooded	0.3	Flooded	0.0	2.3	0	48	Insufficient Freeboard
4	012193B	001134ND	001973SMH	15	1.75	11.0	4.5	3.1	3.1	Flooded	Flooded	Flooded	Flooded	2.3	1.6	48	8260	Flooded
4	012195STMP	000136CB	001974SMH	43	1.25	15.1	12.0	4	4.4	Flooded	Flooded	Flooded	Flooded	3.4	3.1	29982	38732	Flooded
4	012209A	001185ND	001174ND	587	2	44.4	14.1	0.7	4	Flooded	Flooded	Flooded	Flooded	0.7	3.7	71	51	Flooded
4	012209B	001174ND	002022SMH	44	2	39.2	12.2	4	4	Flooded	Flooded	Flooded	Flooded	3.7	3.9	51	57974	Flooded
4	012212STMP	002024SMH	001186ND	198	2	62.1	19.7	0.3	0.7	6.0	Flooded	0.8	Flooded	0.0	0.7	0	57	Insufficient Freeboard
4	012218STMP	006566IN	000134CB	23	0.833	3.9	7.8	2.9	3.2	Flooded	Flooded	Flooded	Flooded	2.8	2.4	3802	4425	Flooded
4	012219STMP	000134CB	001136ND	56	1.25	5.5	5.4	3.2	4.5	Flooded	Flooded	Flooded	Flooded	2.4	3.0	4425	42	Flooded
4	012220STMP	006567IN	000135CB	33	0.833	4.7	8.9	2.6	3	Flooded	Flooded	Flooded	Flooded	2.5	2.3	5105	6112	Flooded
4	012221STMP	000135CB	001137ND	41	1.25	8.9	7.1	3	4.4	Flooded	Flooded	Flooded	Flooded	2.3	2.6	6112	54	Flooded
4	012222STMP	000137CB	000136CB	25	0.833	8.9	15.9	4.3	4	Flooded	Flooded	Flooded	Flooded	4.1	3.4	18382	29982	Flooded
4	012223STMP	006568IN	000137CB	10	0.833	6.3	11.5	4.7	4.3	Flooded	Flooded	Flooded	Flooded	4.6	4.1	17287	18382	Flooded
4	012226STMP	000138CB	001136ND	45	0.667	3.8	10.7	5.9	4.5	Flooded	Flooded	Flooded	Flooded	5.5	3.0	10874	42	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	012247STMP	001987SMH	001983SMH	270	1.75	7.7	4.4	0	2.7	-	4.3	1.8	0.3	0.0	0.0	0	0	Sufficient Capacity
4	012248STMP	000152CB	001983SMH	31	0.833	4.1	7.8	1.1	2.7	Flooded	4.5	Flooded	0.3	0.8	0.0	1727	0	Flooded
4	012249STMP	000149CB	001983SMH	20	0.833	3.7	7.1	0.7	2.7	Flooded	4.5	Flooded	0.3	0.5	0.0	427	0	Flooded
4	012262A	002022SMH	001148ND	37	2	27.0	8.4	4	4.1	Flooded	Flooded	Flooded	Flooded	3.9	3.5	57974	26	Flooded
4	012262B	001148ND	001988SMH	20	2	26.5	8.3	4.1	4.1	Flooded	Flooded	Flooded	Flooded	3.5	3.7	26	38156	Flooded
4	012264STMP	000158CB	001152ND	37	0.667	4.2	-11.6	6.9	5.4	Flooded	Flooded	Flooded	Flooded	6.6	4.4	32247	25	Flooded
4	012280STMP	006623IN	001965SMH	76	0.833	4.6	8.4	1.2	2.9	Flooded	RIM	Flooded	RIM	1.2	0.0	3936	0	Flooded
4	012304STMP	001186ND	001185ND	187	2	50.9	15.9	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.7	0.7	57	71	Flooded
4	014000STMP	004000SMH	002907ND	82	2.25	57.2	22.9	0	0.9	-	2.5	-	0.2	0.0	0.0	0	0	Sufficient Capacity
5	007707A	002646SMH	000735ND	81	1.75	15.3	6.3	3.9	3.9	Flooded	Flooded	Flooded	Flooded	3.5	1.1	4020	1	Flooded
5	007707B	000735ND	000736ND	306	1.75	15.3	6.3	3.9	3.9	Flooded	Flooded	Flooded	Flooded	1.1	2.5	1	10	Flooded
5	007707C	000736ND	002647SMH	56	1.75	16.8	6.9	3.9	3.7	Flooded	Flooded	Flooded	Flooded	2.5	2.3	10	1971	Flooded
5	007710STMP	000428CB	000736ND	37	1.25	4.3	3.5	2.9	3.9	Flooded	Flooded	Flooded	Flooded	2.8	2.5	3922	10	Flooded
5	007713STMP	005655IN	007684IN	71	1.25	14.3	19.1	0	0	-	-	-	1.0	0.0	0.0	0	0	Sufficient Capacity
5	007742STMP	007531IN	002645SMH	31	1.25	7.5	8.4	1.4	3.1	1.0	Flooded	1.4	Flooded	0.0	0.8	0	1725	Insufficient Freeboard
5	007895STMP	000472CB	000754ND	10	1	4.3	6.7	2.9	3.9	Flooded	Flooded	Flooded	Flooded	2.4	1.8	6981	26	Flooded
5	007897STMP	000122CP	000123CP	20	1	11.6	14.8	0	0	3.2	3.4	-	-	0.0	0.0	0	0	Surcharged
5	007898A	000124CP	000755ND	20	5.35	615.1	26.5	0.3	0	0.5	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
5	007898B	000755ND	000125CP	37	5.35	634.9	29.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007899STMP	002877SMH	000755ND	4	1.5	22.2	12.4	0.9	0	Flooded	3.5	Flooded	-	0.3	0.0	514	0	Flooded
5	007900STMP	002885SMH	002877SMH	145	1.5	25.2	14.1	0.4	0.9	Flooded	Flooded	Flooded	Flooded	0.4	0.3	2632	514	Flooded
5	007916STMP	002879SMH	002881SMH	87	1.5	8.2	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007917STMP	005719IN	002880SMH	78	1.25	9.7	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007918STMP	002880SMH	002881SMH	28	1.25	9.7	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007919STMP	002881SMH	002882SMH	90	1.5	17.9	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007920STMP	002882SMH	002883SMH	101	1.5	17.9	16.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007921STMP	002883SMH	002884SMH	145	1.5	17.9	17.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007924STMP	002884SMH	002885SMH	93	1.5	17.9	14.8	0	0.4	-	Flooded	-	Flooded	0.0	0.4	0	2632	Sufficient Capacity
5	008306STMP	005679IN	000464CB	35	1	6.1	9.3	0.3	0.5	Flooded	Flooded	Flooded	Flooded	0.1	0.4	14	1468	Flooded
5	008307STMP	005681IN	000464CB	50	1	7.1	9.4	0.1	0.5	0.4	Flooded	0.1	Flooded	0.0	0.4	0	1468	Insufficient Freeboard
5	008308STMP	005680IN	003025SMH	70	1	10.1	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008311STMP	000464CB	005680IN	4	1	10.1	12.9	0.5	0	Flooded	-	Flooded	-	0.4	0.0	1468	0	Flooded
5	008315STMP	003025SMH	003028SMH	139	1.5	13.3	16.7	0	0.5	-	6.9	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008449STMP	005701IN	000527IO	116	1.75	31.2	15.5	0	0	-	3.0	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008450STMP	003035SMH	003034SMH	53	1.75	22.3	14.2	2.4	4	1.7	Flooded	0.2	Flooded	0.0	1.0	0	3853	Insufficient Freeboard
5	008451STMP	003036SMH	003035SMH	105	1.75	19.1	7.9	3.9	2.4	2.3	1.5	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
5	008452A	003034SMH	000750ND	102	1.75	21.9	9.0	4	4.1	Flooded	Flooded	Flooded	Flooded	1.0	2.4	3853	152	Flooded
5	008452B	000750ND	003039SMH	508	1.75	20.8	8.6	4.1	0	Flooded	-	Flooded	-	2.4	0.0	152	0	Flooded
5	008453STMP	003039SMH	003040SMH	339	1.75	20.8	18.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008454STMP	003040SMH	002876SMH	78	1.75	20.8	21.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008455STMP	002876SMH	005701IN	49	1.75	31.2	23.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008466STMP	007684IN	003033SMH	75	1.5	14.3	19.8	0	0	-	-	1.0	-	0.0	0.0	0	0	Sufficient Capacity
5	008474STMP	002650SMH	000510IO	48	1.75	40.5	16.7	0	0	2.4	-	-	-	0.0	0.0	0	0	Surcharged
5	008475STMP	000742ND	002650SMH	216	1.5	30.4	19.3	0.2	0	0.1	2.3	-	-	0.0	0.0	0	0	Surcharged
5	008570STMP	007675IN	007670IN	296	2	53.1	18.7	0	0.2	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008576STMP	000120CP	000121CP	97	5	494.3	28.4	0	0	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008581STMP	007680IN	000521IO	105	1.5	30.1	16.8	0.6	0	3.2	-	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
5	008585STMP	003033SMH	000522IO	92	1.25	13.9	12.1	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	008600STMP	003019SMH	000743ND	56	1.25	13.2	-10.5	0.5	0.3	Flooded	4.0	Flooded	1.0	0.3	0.0	1079	0	Flooded
5	008601A	000462CB	000743ND	37	1.25	11.0	13.6	0	0.3	1.9	4.0	1.0	1.0	0.0	0.0	0	0	Insufficient Freeboard
5	008601B	000743ND	000511IO	134	1.25	21.2	16.9	0.3	0	4.0	-	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
5	008676STMP	003026SMH	007653IN	15	1.25	10.4	8.4	0.2	0.2	1.5	1.4	-	-	0.0	0.0	0	0	Surcharged
5	008677STMP	007653IN	007655IN	37	1.25	18.2	14.7	0.2	0	1.5	-	-	-	0.0	0.0	0	0	Surcharged
5	008682STMP	007655IN	003028SMH	39	1.25	18.2	23.1	0	0.5	-	7.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008683STMP	005703IN	003027SMH	45	1.25	10.5	18.5	0	0.4	-	4.0	-	0.8	0.0	0.0	0	0	Sufficient Capacity
5	008684STMP	003028SMH	007656IN	99	1.5	31.5	17.3	0.5	0.6	6.9	Flooded	-	Flooded	0.0	0.6	0	11087	Surcharged
5	008685STMP	007656IN	007680IN	179	1.5	30.1	16.9	0.6	0.6	Flooded	3.1	Flooded	0.4	0.6	0.0	11087	0	Flooded
5	008694STMP	000470CB	003035SMH	29	1	3.7	4.6	2	2.4	Flooded	1.6	Flooded	0.2	0.5	0.0	411	0	Flooded
5	008799A	002613SMH	000725ND	53	1.25	9.9	8.0	3.1	3.4	Flooded	Flooded	Flooded	Flooded	1.7	2.7	6598	29	Flooded
5	008799B	000725ND	002643SMH	48	1.25	6.8	5.4	3.4	3.5	Flooded	Flooded	Flooded	Flooded	2.7	3.1	29	6596	Flooded
5	008804A	002584SMH	000712ND	72	1	8.0	10.4	1.1	1.1	Flooded	Flooded	Flooded	Flooded	0.9	0.4	1099	0	Flooded
5	008804B	000712ND	002613SMH	256	1	7.6	9.9	1.1	3.1	Flooded	Flooded	Flooded	Flooded	0.4	1.7	0	6598	Flooded
5	008851STMP	000414CB	000726ND	34	0.833	4.4	8.0	4	3.9	Flooded	Flooded	Flooded	Flooded	3.5	2.9	3396	8	Flooded
5	008868STMP	000453CB	007531IN	40	1.25	7.5	-6.0	0	1.4	1.8	1.0	-	1.4	0.0	0.0	0	0	Surcharged
5	009050STMP	000454CB	000453CB	32	1.25	7.5	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009055STMP	000456CB	002584SMH	21	1	8.5	10.6	1	1.1	Flooded	Flooded	Flooded	Flooded	0.9	0.9	4160	1099	Flooded
5	009094STMP	002649SMH	000742ND	51	1.25	30.5	24.0	0.3	0.2	Flooded	0.3	Flooded	-	0.1	0.0	104	0	Flooded
5	009108STMP	003029SMH	003019SMH	156	1.5	14.2	9.9	0.3	0.5	2.0	Flooded	1.8	Flooded	0.0	0.3	0	1079	Insufficient Freeboard
5	009116STMP	007669IN	000518IO	41	2	53.1	16.7	0	0	1.7	0.5	-	-	0.0	0.0	0	0	Surcharged
5	009117STMP	007670IN	007669IN	38	2	53.1	16.8	0.2	0	2.1	1.7	-	-	0.0	0.0	0	0	Surcharged
5	009176STMP	000424CB	000732ND	19	1	2.7	3.3	3.1	3.8	Flooded	Flooded	Flooded	Flooded	1.6	3.1	573	23	Flooded
5	009201STMP	005691IN	000471CB	28	1	2.9	4.5	0.5	0.9	0.4	0.7	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
5	009202STMP	000471CB	003036SMH	30	1	2.9	3.7	0.9	3.9	3.1	3.1	0.2	0.1	0.0	0.0	0	0	Insufficient Freeboard
5	009203A	002647SMH	000734ND	44	1.75	16.9	7.0	3.7	3.9	Flooded	Flooded	Flooded	Flooded	2.3	2.4	1971	24	Flooded
5	009203B	000754ND	000753ND	22	1.75	18.5	7.6	3.9	3.9	Flooded	Flooded	Flooded	Flooded	1.8	0.4	26	7	Flooded
5	009203C	000753ND	003036SMH	274	1.75	18.5	7.6	3.9	3.9	Flooded	2.3	Flooded	0.1	0.4	0.0	7	0	Flooded
5	009203D	000734ND	000754ND	195	1.75	16.9	7.0	3.9	3.9	Flooded	Flooded	Flooded	Flooded	2.4	1.8	24	26	Flooded
5	009213STMP	003027SMH	003026SMH	116	1.25	10.4	8.3	0.4	0.2	4.1	1.4	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
5	009397STMP	000415CB	002643SMH	27	1.25	6.4	5.2	3.2	3.5	Flooded	Flooded	Flooded	Flooded	2.9	3.1	3457	6596	Flooded
5	009402A	002643SMH	000732ND	87	1.5	10.4	6.2	3.5	3.8	Flooded	Flooded	Flooded	Flooded	3.1	3.1	6596	23	Flooded
5	009402B	000733ND	002646SMH	47	1.5	14.3	8.0	4	3.9	Flooded	Flooded	Flooded	Flooded	3.5	3.5	17	4020	Flooded
5	009402C	000732ND	000726ND	120	1.5	11.2	6.2	3.8	3.9	Flooded	Flooded	Flooded	Flooded	3.1	2.9	23	8	Flooded
5	009402D	000726ND	000733ND	136	1.5	11.7	6.5	3.9	4	Flooded	Flooded	Flooded	Flooded	2.9	3.5	8	17	Flooded
5	009404A	000731ND	000724ND	112	1.5	8.6	4.8	3.5	3.5	3.6	Flooded	0.6	Flooded	0.0	2.5	0	39	Insufficient Freeboard
5	009404B	000724ND	002643SMH	127	1.5	6.8	3.8	3.5	3.5	Flooded	Flooded	Flooded	Flooded	2.5	3.1	39	6596	Flooded
5	009415STMP	002644SMH	002645SMH	182	1.25	3.7	3.5	3	3.1	Flooded	Flooded	Flooded	Flooded	1.9	0.8	3662	1725	Flooded
5	009417STMP	002645SMH	000731ND	140	1.25	5.1	4.1	3.1	3.5	Flooded	3.8	Flooded	0.6	0.8	0.0	1725	0	Flooded
5	009418STMP	000423CB	000731ND	19	1	3.8	4.7	1.9	3.5	Flooded	4.1	Flooded	0.6	1.2	0.0	2342	0	Flooded
6	007127STMP	005483IN	005484IN	9	1	6.4	-8.1	2.4	1.8	Flooded	Flooded	Flooded	Flooded	2.4	1.8	13714	2984	Flooded
6	007128STMP	005484IN	005485IN	7	1	5.2	7.0	1.8	0	Flooded	-	Flooded	0.6	1.8	0.0	2984	0	Flooded
6	007129STMP	005485IN	005486IN	6	1	5.2	15.9	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	007130STMP	005486IN	002559SMH	29	1.5	5.2	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133A	000695ND	000694ND	185	2.5	0.0	0.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133B	000694ND	000689ND	60	2.5	9.0	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133C	000689ND	002559SMH	167	2.5	9.0	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007135STMP	005490IN	005491IN	7	1	4.4	-5.6	1.1	0.8	Flooded	Flooded	Flooded	Flooded	1.1	0.8	4357	751	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	007136STMP	005491IN	005492IN	6	1	3.9	-5.1	0.8	0	Flooded	-	Flooded	0.7	0.8	0.0	751	0	Flooded
6	007137STMP	005492IN	000445CB	17	1	3.9	14.3	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007186STMP	005403IN	000439CB	4	1	1.7	8.5	0	0.2	-	0.9	0.7	1.1	0.0	0.0	0	0	Sufficient Capacity
6	007187STMP	005405IN	005404IN	9	1	7.9	13.1	0.5	0.3	Flooded	2.4	Flooded	0.6	0.5	0.0	2935	0	Flooded
6	007189STMP	005408IN	005407IN	18	1	5.0	12.0	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	007190STMP	005407IN	002566SMH	5	1	5.0	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007191STMP	005409IN	005408IN	11	1	5.0	6.9	0.7	0	Flooded	-	Flooded	0.5	0.7	0.0	1973	0	Flooded
6	007193STMP	005411IN	005412IN	17	1	7.8	10.1	1.3	0	Flooded	-	Flooded	0.3	1.3	0.0	8807	0	Flooded
6	007380STMP	000446CB	002560SMH	36	2	3.9	5.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007381STMP	000445CB	000446CB	50	2	3.9	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007382STMP	002559SMH	002560SMH	58	2.5	14.1	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007386STMP	005499IN	005500IN	7	1	9.0	11.3	1.1	0.5	Flooded	0.1	Flooded	-	1.1	0.0	10267	0	Flooded
6	007387STMP	005500IN	000694ND	35	1	9.0	15.0	0.5	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
6	007388STMP	005502IN	000011PD	101	1	0.0	0.0	0	0.5	-	0.6	-	1.6	0.0	0.0	0	0	Sufficient Capacity
6	007389STMP	005503IN	002561SMH	43	2	9.7	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007390STMP	007526IN	005503IN	220	2	5.0	4.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007459STMP	002562SMH	002561SMH	237	1.25	6.5	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007460STMP	002561SMH	000011PD	22	2	15.9	15.5	0	0.5	-	1.6	-	1.6	0.0	0.0	0	0	Sufficient Capacity
6	007461STMP	005504IN	005505IN	90	1.25	8.1	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007462STMP	002563SMH	002537SMH	85	3.5	77.4	8.0	1.3	1.3	3.6	Flooded	1.4	Flooded	0.0	1.3	0	32076	Insufficient Freeboard
6	007463STMP	002564SMH	002563SMH	179	3.5	77.5	8.8	1.3	1.3	RIM	3.6	RIM	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	007464STMP	002553SMH	002564SMH	129	3.5	77.5	8.2	0.6	1.3	3.0	RIM	1.3	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	007466STMP	000448CB	000449CB	226	1	7.3	9.5	0.7	0.7	3.1	1.9	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
6	007467STMP	005506IN	000448CB	11	0.833	5.9	13.5	0.7	0.7	Flooded	3.2	Flooded	0.4	0.7	0.0	2997	0	Flooded
6	007468STMP	005507IN	000448CB	11	0.833	3.6	11.0	0.4	0.7	Flooded	3.2	Flooded	0.4	0.4	0.0	411	0	Flooded
6	007469STMP	005508IN	005509IN	61	1.25	12.0	9.6	0.3	0.3	Flooded	2.7	Flooded	-	0.1	0.0	73	0	Flooded
6	007470STMP	005509IN	002535SMH	43	1.25	11.9	9.6	0.3	0.2	2.7	2.2	-	-	0.0	0.0	0	0	Surcharged
6	007471STMP	002534SMH	002535SMH	30	2.5	35.0	13.5	0	0.2	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007472STMP	002587SMH	002534SMH	90	2.5	35.0	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007473STMP	007513IN	007512IN	32	1	4.8	6.8	0	0	-	-	0.1	0.6	0.0	0.0	0	0	Sufficient Capacity
6	007474STMP	007514IN	007513IN	40	1	4.8	7.7	0	0	-	-	0.3	0.1	0.0	0.0	0	0	Sufficient Capacity
6	007477STMP	007519IN	007518IN	11	1.5	9.1	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007599STMP	005399IN	000682ND	71	1	2.4	3.3	0.3	0.3	2.0	2.6	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	007600STMP	005400IN	005401IN	11	1	2.2	-3.5	0	0	-	-	0.2	0.6	0.0	0.0	0	0	Sufficient Capacity
6	007601STMP	005401IN	002565SMH	68	1	2.1	6.5	0	0	-	1.1	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	007602STMP	005402IN	002565SMH	42	2.5	40.8	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007603STMP	002566SMH	005402IN	221	2.5	40.8	8.7	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
6	007604STMP	000439CB	005404IN	31	1.25	2.2	4.3	0.2	0.3	0.7	2.2	1.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
6	007702STMP	000457CB	002585SMH	46	1	5.7	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007704STMP	007539IN	007538IN	9	0.833	5.7	10.6	2.4	0	Flooded	-	Flooded	0.4	2.3	0.0	15557	0	Flooded
6	007717STMP	005658IN	000508IO	19	1.75	40.3	24.5	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007719STMP	005659IN	005660IN	11	0.833	2.9	5.6	0.5	0	Flooded	-	Flooded	0.8	0.4	0.0	441	0	Flooded
6	007720STMP	005660IN	000738ND	5	0.833	2.9	10.6	0	0	-	6.6	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	007721STMP	000429CB	000738ND	21	2	6.1	7.1	0	0	-	5.4	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007722STMP	005661IN	000429CB	8	0.833	6.1	13.9	0.5	0	Flooded	-	Flooded	-	0.5	0.0	1084	0	Flooded
6	007723A	000506IO	000738ND	31	6.17 x 4.5	192.1	7.4	0	0	1.4	1.3	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	007723B	000738ND	000507IO	41	6.17 x 4.5	232.0	11.5	0	0	1.3	-	-	-	0.0	0.0	0	0	Surcharged
6	007728STMP	007487IN	007486IN	49	1	6.5	8.2	0.6	0.5	Flooded	1.0	Flooded	0.9	0.5	0.0	1784	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008061STMP	005412IN	000440CB	12	1	7.8	14.8	0	0.2	-	0.8	0.3	-	0.0	0.0	0	0	Sufficient Capacity
6	008063STMP	000440CB	002570SMH	22	1.25	8.1	9.3	0.2	0.3	0.6	1.5	-	1.3	0.0	0.0	0	0	Surcharged
6	008065STMP	005415IN	005416IN	10	1	5.1	7.1	0.4	0	Flooded	-	Flooded	0.5	0.4	0.0	912	0	Flooded
6	008066STMP	005416IN	002568SMH	15	1	5.1	12.1	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008067STMP	002568SMH	002569SMH	11	1.25	5.1	7.2	0	0	-	-	-	2.0	0.0	0.0	0	0	Sufficient Capacity
6	008069STMP	002569SMH	002570SMH	26	1.25	5.3	8.8	0	0.3	-	1.5	2.0	1.3	0.0	0.0	0	0	Sufficient Capacity
6	008070STMP	005418IN	005419IN	7	1	5.9	7.7	0.4	0	Flooded	-	Flooded	0.2	0.4	0.0	551	0	Flooded
6	008071STMP	002572SMH	002570SMH	122	1.5	18.4	11.2	0.5	0.3	1.5	1.2	1.3	1.3	0.0	0.0	0	0	Insufficient Freeboard
6	008072A	002570SMH	000679ND	40	2	31.6	12.9	0.3	0.5	0.7	1.3	1.3	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008072B	000679ND	002571SMH	59	2	36.6	13.8	0.5	1	1.3	1.7	0.9	0.4	0.0	0.0	0	0	Insufficient Freeboard
6	008073STMP	005419IN	000441CB	34	1	5.9	12.4	0	0.7	-	2.7	0.2	0.3	0.0	0.0	0	0	Sufficient Capacity
6	008074STMP	000441CB	000679ND	10	1	5.8	7.3	0.7	0.5	2.7	2.3	0.3	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008075STMP	002509SMH	002572SMH	107	1.5	18.5	11.3	0.4	0.5	1.7	1.5	-	1.3	0.0	0.0	0	0	Surcharged
6	008076STMP	007516IN	004906SMH	270	5	9.1	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008077STMP	007518IN	007516IN	96	1.5	9.1	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008086STMP	002510SMH	002509SMH	115	1.5	18.5	10.8	0.5	0.4	2.3	1.7	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
6	008088A	002512SMH	000680ND	28	1.5	19.1	10.7	1.1	1.1	4.3	3.7	0.0	0.3	0.0	0.0	0	0	Insufficient Freeboard
6	008088B	000680ND	002510SMH	86	1.5	18.7	10.5	1.1	0.5	3.7	2.3	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
6	008092STMP	005433IN	002512SMH	25	1.25	7.4	8.7	0.6	1.1	3.1	4.5	0.9	0.0	0.0	0.0	0	0	Insufficient Freeboard
6	008093STMP	005431IN	005432IN	7	1	7.4	9.5	1.4	0	Flooded	Flooded	Flooded	Flooded	1.4	0.0	8518	0	Flooded
6	008094STMP	005432IN	005433IN	5	1	7.4	15.6	0	0.6	Flooded	3.4	Flooded	0.9	0.0	0.0	0	0	Flooded
6	008095STMP	005434IN	005435IN	11	1	4.8	6.2	0.4	0	Flooded	-	Flooded	0.1	0.4	0.0	612	0	Flooded
6	008096STMP	005435IN	005436IN	7	1	4.8	7.3	0	0	-	-	0.1	0.5	0.0	0.0	0	0	Sufficient Capacity
6	008097STMP	005436IN	000443CB	18	1	4.8	14.5	0	0.5	-	3.0	0.5	1.2	0.0	0.0	0	0	Sufficient Capacity
6	008098STMP	005437IN	000443CB	19	1	1.2	6.4	0	0.5	-	3.0	0.8	1.2	0.0	0.0	0	0	Sufficient Capacity
6	008099STMP	005438IN	005437IN	6	1	1.2	-3.3	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	008102STMP	002513SMH	002512SMH	112	1.25	9.1	8.9	0.7	1.1	2.6	4.5	1.2	0.0	0.0	0.0	0	0	Insufficient Freeboard
6	008103STMP	005444IN	002513SMH	34	1	9.1	11.5	0.8	0.7	2.3	2.9	0.7	1.2	0.0	0.0	0	0	Insufficient Freeboard
6	008104STMP	005447IN	002514SMH	122	2.5	25.3	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008107STMP	005446IN	005445IN	6	1	8.6	11.0	2.4	0.6	Flooded	Flooded	Flooded	Flooded	2.4	0.6	21361	1072	Flooded
6	008108STMP	005445IN	005444IN	8	1	9.2	15.3	0.6	0.8	Flooded	2.3	Flooded	0.7	0.6	0.0	1072	0	Flooded
6	008110STMP	002511SMH	002507SMH	216	3	51.5	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008111STMP	002507SMH	002508SMH	37	3	51.7	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008112STMP	002508SMH	002524SMH	254	3	52.1	13.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008113STMP	000443CB	002512SMH	35	1.25	5.7	7.9	0.5	1.1	2.7	4.5	1.2	0.0	0.0	0.0	0	0	Insufficient Freeboard
6	008114STMP	002514SMH	002511SMH	111	3	51.1	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008116STMP	002515SMH	002514SMH	62	3	26.9	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008117STMP	002518SMH	002515SMH	358	3	26.8	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008118STMP	005448IN	005447IN	32	2	25.0	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008119STMP	005505IN	002516SMH	51	1.25	15.9	12.8	0	1.3	2.5	1.3	-	1.0	0.0	0.0	0	0	Surcharged
6	008120STMP	002516SMH	005448IN	14	1.25	15.9	12.9	1.3	0	1.4	-	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
6	008121STMP	002517SMH	005448IN	30	2	9.1	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008122STMP	000011PD	005505IN	58	1.5	-0.6	-3.5	0.5	0	4.9	3.0	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	008123STMP	002519SMH	002518SMH	435	3	26.7	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008124STMP	005449IN	002519SMH	28	1.25	4.6	10.9	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008125STMP	002521SMH	002520SMH	31	1.25	5.5	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008127STMP	005479IN	002521SMH	91	1.25	5.5	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008129STMP	005452IN	005451IN	49	1	5.8	-7.6	23.5	0	2.0	-	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008130STMP	005451IN	005454IN	81	1.25	5.8	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008131STMP	005453IN	005452IN	90	1	5.8	7.3	1.2	23.5	Flooded	2.0	Flooded	-	0.8	0.0	4211	0	Flooded
6	008132STMP	005454IN	002523SMH	103	1.5	5.8	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008133STMP	007578IN	007580IN	73	1	6.5	8.2	0.5	0.5	Flooded	2.4	Flooded	0.3	0.4	0.0	1977	0	Flooded
6	008135STMP	007580IN	007581IN	15	1.25	6.5	6.2	0.5	0.5	2.1	3.1	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
6	008136B	000681ND	002525SMH	49	1.25	9.3	14.0	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008137STMP	007581IN	007582IN	45	1.25	6.5	5.3	0.5	0.5	3.1	3.2	0.7	1.8	0.0	0.0	0	0	Insufficient Freeboard
6	008138STMP	002523SMH	007583IN	80	1.75	5.9	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008139STMP	007586IN	007583IN	216	1.25	9.4	9.2	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008140STMP	007583IN	007584IN	49	2	14.9	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008141STMP	007582IN	007584IN	181	1.5	16.4	9.1	0.5	0	3.0	0.3	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	008142STMP	007584IN	007585IN	107	2.5	33.7	9.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008143STMP	007585IN	002530SMH	83	2.5	36.9	8.7	0	0	-	-	-	1.2	0.0	0.0	0	0	Sufficient Capacity
6	008144STMP	007587IN	007586IN	12	1.25	9.4	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008145STMP	002524SMH	002527SMH	318	3	51.9	19.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008166STMP	007592IN	007593IN	9	1.25	9.3	-7.5	0.3	0.1	Flooded	0.1	Flooded	0.6	0.1	0.0	70	0	Flooded
6	008167STMP	007593IN	000681ND	21	1.25	9.3	7.6	0.1	0	0.1	-	0.6	1.1	0.0	0.0	0	0	Insufficient Freeboard
6	008170STMP	002525SMH	002526SMH	230	1.25	9.3	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008172STMP	002565SMH	002533SMH	308	2.5	42.7	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008173STMP	002532SMH	005404IN	137	2	12.1	6.3	0.2	0.3	0.6	1.4	-	0.6	0.0	0.0	0	0	Surcharged
6	008174STMP	002530SMH	002566SMH	269	2.5	36.5	8.2	0	0	-	0.0	1.2	-	0.0	0.0	0	0	Sufficient Capacity
6	008175STMP	005397IN	007597IN	7	1	6.4	-8.4	1.3	0	Flooded	-	Flooded	0.4	1.3	0.0	6742	0	Flooded
6	008176STMP	007597IN	000444CB	7	1	6.4	13.1	0	1.6	-	0.9	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008178STMP	000444CB	002528SMH	8	1.25	6.4	-5.4	1.6	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
6	008180STMP	002528SMH	002531SMH	73	1.5	6.4	7.7	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008183STMP	002531SMH	005456IN	109	2	6.6	4.9	0	0.1	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008184STMP	005456IN	002532SMH	137	2	11.9	5.5	0.1	0.2	0.2	0.6	-	-	0.0	0.0	0	0	Surcharged
6	008185STMP	002533SMH	002551SMH	303	2.5	42.5	10.3	0	0.1	-	0.2	-	1.4	0.0	0.0	0	0	Sufficient Capacity
6	008188STMP	005458IN	002553SMH	13	3	10.0	-1.9	1.3	0.6	3.7	1.5	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
6	008224STMP	005459IN	005458IN	29	1	1.3	5.4	0.3	1.3	0.6	5.7	1.1	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008225STMP	005475IN	005459IN	100	1	1.3	6.2	0	0.3	-	0.6	1.2	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008272STMP	002520SMH	002519SMH	11	3	23.4	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008273STMP	002560SMH	002520SMH	220	2.75	18.0	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008274STMP	002551SMH	002552SMH	13	3	42.4	7.0	0.1	0.8	2.7	2.9	1.4	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	008275STMP	002552SMH	002553SMH	45	3.5	73.1	10.0	0.8	0.6	2.4	3.0	1.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
6	008276STMP	005480IN	005479IN	131	1	5.5	-7.2	0.8	0	3.4	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008277STMP	005481IN	005480IN	38	1	5.5	6.9	0.6	0.8	Flooded	3.4	Flooded	1.2	0.5	0.0	1815	0	Flooded
6	008291STMP	002601SMH	002602SMH	94	2	29.3	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008295STMP	000385CB	002602SMH	16	1.25	8.6	9.0	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008320STMP	005662IN	000430CB	7	0.833	8.3	15.4	1.2	1.1	Flooded	Flooded	Flooded	Flooded	1.2	1.1	6307	11371	Flooded
6	008321STMP	000430CB	000741ND	9	1	11.5	16.3	1.1	1.2	Flooded	Flooded	Flooded	Flooded	1.1	0.7	11371	31	Flooded
6	008322STMP	000431CB	000740ND	37	1.25	10.5	10.8	0.6	0.7	3.5	Flooded	0.4	Flooded	0.0	0.5	0	15	Insufficient Freeboard
6	008441STMP	002605SMH	000499IO	56	5	178.0	20.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442A	002606SMH	000710ND	108	4	152.9	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442B	000710ND	002605SMH	19	4	152.9	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008443STMP	002607SMH	002605SMH	136	3	28.1	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008444STMP	000708ND	000500IO	30	1.25	14.6	18.4	0	0	-	1.0	1.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008602STMP	007559IN	007560IN	6	1	7.4	12.9	0.4	2.1	Flooded	1.8	Flooded	0.3	0.4	0.0	1324	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008603STMP	007560IN	000744ND	12	1	7.4	-9.4	2.1	0	1.8	-	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008604STMP	007562IN	007561IN	185	1.25	9.7	9.1	0.5	3.9	Flooded	2.8	Flooded	-	0.5	0.0	2145	0	Flooded
6	008639STMP	007498IN	005564IN	29	1.25	10.0	9.0	0.5	0.5	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged
6	008640STMP	007506IN	005564IN	75	1.25	3.6	6.8	0	0.5	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008656STMP	002585SMH	002586SMH	26	1.5	5.7	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008657STMP	002586SMH	002596SMH	128	1.5	10.9	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008658STMP	000459CB	002586SMH	43	1	6.2	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008660STMP	007542IN	000459CB	14	0.833	6.2	14.2	0	0	-	-	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008661STMP	002596SMH	002598SMH	123	1.5	10.9	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008663STMP	000460CB	002597SMH	30	1.25	15.0	17.2	0.2	0.3	0.7	2.5	-	-	0.0	0.0	0	0	Surcharged
6	008664STMP	007543IN	000460CB	12	1	14.9	19.6	1	0.2	Flooded	0.9	Flooded	-	1.0	0.0	12762	0	Flooded
6	008666STMP	007545IN	007546IN	40	1.25	6.2	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008667STMP	002599SMH	007545IN	134	1.25	6.2	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008668STMP	007546IN	002597SMH	12	1.25	6.2	11.7	0	0.3	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008672A	002597SMH	000703ND	56	1.5	29.3	17.2	0.3	0.3	2.3	1.7	-	-	0.0	0.0	0	0	Surcharged
6	008672B	000703ND	002601SMH	125	1.5	29.3	16.5	0.3	0	1.7	0.3	-	-	0.0	0.0	0	0	Surcharged
6	008673STMP	007563IN	002599SMH	105	1	6.2	11.9	0	0	-	-	1.0	-	0.0	0.0	0	0	Sufficient Capacity
6	008720STMP	007568IN	000385CB	26	0.833	8.5	15.4	1.4	0	Flooded	0.3	Flooded	-	1.4	0.0	13566	0	Flooded
6	008721STMP	002602SMH	003020SMH	19	2.25	37.2	14.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722A	003020SMH	000704ND	27	2.25	37.2	16.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722B	000704ND	000745ND	98	2.25	37.2	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008726STMP	000449CB	000388CB	96	1.25	7.3	6.2	0.7	0.8	1.7	1.9	-	1.4	0.0	0.0	0	0	Surcharged
6	008727STMP	000387CB	000388CB	52	1	10.3	12.9	1.4	0.8	Flooded	2.1	Flooded	1.4	0.6	0.0	829	0	Flooded
6	008728STMP	007571IN	000387CB	16	0.833	6.1	12.5	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.6	6756	829	Flooded
6	008729STMP	007572IN	000387CB	10	0.833	5.2	11.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.6	7669	829	Flooded
6	008730STMP	000388CB	000389CB	110	1.25	14.5	12.5	0.8	0.8	1.9	1.4	1.4	1.2	0.0	0.0	0	0	Insufficient Freeboard
6	008731A	000389CB	000706ND	100	1.25	14.3	13.7	0.8	0.8	1.4	2.2	1.2	0.1	0.0	0.0	0	0	Insufficient Freeboard
6	008731B	000706ND	000390CB	252	1.25	14.3	11.7	0.8	1.8	2.2	Flooded	0.1	Flooded	0.0	1.4	0	3265	Insufficient Freeboard
6	008734STMP	000390CB	002604SMH	46	1.25	14.6	11.7	1.8	1.6	Flooded	1.9	Flooded	0.9	1.4	0.0	3265	0	Flooded
6	008735STMP	007573IN	000390CB	12	0.833	6.6	14.8	1.5	1.8	Flooded	Flooded	Flooded	Flooded	1.4	1.4	1575	3265	Flooded
6	008736STMP	007574IN	007573IN	10	0.833	3.5	6.8	3.1	1.5	Flooded	Flooded	Flooded	Flooded	2.5	1.4	2185	1575	Flooded
6	008737STMP	007575IN	007574IN	5	0.833	2.9	-5.3	3.8	3.1	Flooded	Flooded	Flooded	Flooded	3.5	2.5	6213	2185	Flooded
6	008738STMP	007576IN	007575IN	7	0.833	3.9	7.0	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.7	3.5	13159	6213	Flooded
6	008739STMP	002604SMH	000708ND	45	1.25	14.6	12.2	1.6	0	1.9	-	0.9	1.5	0.0	0.0	0	0	Insufficient Freeboard
6	008771STMP	007503IN	007502IN	9	0.833	4.1	-7.6	1.5	0	Flooded	-	Flooded	0.3	1.5	0.0	5791	0	Flooded
6	008772STMP	007505IN	007504IN	8	0.833	5.6	10.3	3.1	0.4	Flooded	Flooded	Flooded	Flooded	3.1	0.1	20599	2	Flooded
6	008773STMP	007507IN	007506IN	8	0.833	3.6	12.5	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008774STMP	007508IN	007507IN	10	0.833	3.6	7.1	0.8	0	Flooded	-	Flooded	0.6	0.8	0.0	1982	0	Flooded
6	008775STMP	002545SMH	007509IN	63	2	25.9	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008776STMP	007509IN	007515IN	98	2.5	30.5	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008777STMP	007510IN	007509IN	10	0.833	5.2	12.4	0	0	-	0.6	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008779STMP	007512IN	002587SMH	40	1	4.8	12.8	0	0	-	0.4	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008791STMP	002608SMH	002606SMH	252	3.5	152.9	15.8	1.4	0	Flooded	0.0	Flooded	-	1.1	0.0	5638	0	Flooded
6	008792A	002610SMH	000711ND	7	3	9.3	4.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008792B	000711ND	002611SMH	305	3	18.0	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008857STMP	002591SMH	002590SMH	167	1.5	5.0	2.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008860STMP	007530IN	002591SMH	47	1.5	5.0	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008861STMP	005517IN	007530IN	194	1	5.0	6.4	1.4	0	Flooded	-	Flooded	-	1.4	0.0	7671	0	Flooded

TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008862STMP	005519IN	005518IN	19	1	6.5	8.2	0.7	0.7	Flooded	1.9	Flooded	1.6	0.6	0.0	2552	0	Flooded
6	008863STMP	005518IN	005520IN	184	1.25	6.5	-5.3	0.7	0	1.7	-	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	008864STMP	005520IN	002562SMH	53	1.25	6.5	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008876STMP	005547IN	005546IN	19	0.833	2.9	11.1	0	0	-	0.4	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008877STMP	005548IN	005547IN	14	0.833	2.9	-5.6	0.8	0	Flooded	-	Flooded	0.6	0.8	0.0	1275	0	Flooded
6	008878STMP	005549IN	002545SMH	278	2	25.9	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008882STMP	005554IN	005553IN	39	1.5	17.5	9.9	0.5	0.6	1.3	1.2	1.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
6	008883STMP	005556IN	005554IN	35	1.25	3.4	6.2	0.3	0.5	0.4	1.6	-	1.6	0.0	0.0	0	0	Surcharged
6	008884STMP	005564IN	005554IN	135	1.5	14.2	9.3	0.5	0.5	0.8	1.3	-	1.6	0.0	0.0	0	0	Surcharged
6	008885STMP	005555IN	005554IN	8	0.833	1.7	8.9	0	0.5	-	2.0	0.7	1.6	0.0	0.0	0	0	Sufficient Capacity
6	008887STMP	005558IN	005556IN	38	1	3.4	6.1	0.3	0.3	0.4	0.7	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	008888STMP	005561IN	005558IN	29	1	3.4	4.4	0.4	0.3	0.7	0.4	1.1	1.8	0.0	0.0	0	0	Insufficient Freeboard
6	008891STMP	005562IN	005561IN	12	0.833	3.4	9.9	0	0.4	-	0.8	0.4	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008892STMP	005563IN	005562IN	9	0.833	3.4	6.4	0.6	0	Flooded	-	Flooded	0.4	0.6	0.0	1110	0	Flooded
6	009032STMP	007486IN	007488IN	161	1	6.1	7.8	0.5	0	1.0	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	009033STMP	007488IN	002580SMH	60	1.25	6.1	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034A	002580SMH	000700ND	130	1.25	6.1	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034B	000700ND	002581SMH	28	1.25	6.1	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009037A	002581SMH	000744ND	317	1.5	10.0	13.8	0	0	-	-	-	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009037B	000744ND	000740ND	191	1.5	17.3	16.2	0	0.7	-	Flooded	0.8	Flooded	0.0	0.5	0	15	Sufficient Capacity
6	009037C	000740ND	000741ND	82	1.5	28.1	17.6	0.7	1.2	Flooded	Flooded	Flooded	Flooded	0.5	0.7	15	31	Flooded
6	009037D	000741ND	005658IN	322	1.5	25.7	14.5	1.2	0	Flooded	-	Flooded	-	0.7	0.0	31	0	Flooded
6	009038STMP	002582SMH	002581SMH	168	1	4.1	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009042STMP	002583SMH	002582SMH	30	1	4.1	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009043STMP	007493IN	002583SMH	14	1	4.1	10.3	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009044STMP	007495IN	007494IN	8	1	4.3	-5.5	1.4	0.5	Flooded	Flooded	Flooded	Flooded	1.5	0.5	4594	220	Flooded
6	009045STMP	007494IN	007493IN	10	1	4.1	-5.4	0.5	0	Flooded	-	Flooded	0.5	0.5	0.0	220	0	Flooded
6	009046STMP	007497IN	007496IN	75	1	5.9	8.0	0.6	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.6	1799	619	Flooded
6	009047STMP	007496IN	007495IN	118	1	5.7	7.1	0.7	1.4	Flooded	Flooded	Flooded	Flooded	0.6	1.5	619	4594	Flooded
6	009058STMP	002648SMH	000431CB	87	1.5	9.9	8.8	0	0.6	-	3.2	1.6	0.4	0.0	0.0	0	0	Sufficient Capacity
6	009059STMP	005512IN	000698ND	9	1.25	8.0	7.9	0	0	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009060STMP	005513IN	005512IN	8	0.833	8.0	15.6	0.1	0	Flooded	0.2	Flooded	-	0.1	0.0	14	0	Flooded
6	009061STMP	005515IN	002538SMH	6	1	8.5	10.7	2	1.3	Flooded	Flooded	Flooded	Flooded	1.8	1.1	12649	8175	Flooded
6	009062STMP	005516IN	005515IN	6	0.833	5.5	10.6	2	2	Flooded	Flooded	Flooded	Flooded	2.0	1.8	7298	12649	Flooded
6	009064STMP	002538SMH	005541IN	41	2.5	76.2	15.4	1.3	1.4	Flooded	Flooded	Flooded	Flooded	1.1	1.3	8175	17500	Flooded
6	009066STMP	002539SMH	002542SMH	264	2.5	59.9	15.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067A	002540SMH	000698ND	149	2.5	46.4	14.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067B	000698ND	002539SMH	19	2.5	54.4	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009068STMP	005514IN	002539SMH	33	0.833	0.4	4.6	0	0	-	1.0	0.9	-	0.0	0.0	0	0	Sufficient Capacity
6	009069STMP	002571SMH	002541SMH	61	2	36.6	17.0	1	1.3	1.7	Flooded	0.4	Flooded	0.0	1.0	0	7770	Insufficient Freeboard
6	009070STMP	002541SMH	000697ND	56	2	35.0	11.0	1.3	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.1	7770	709	Flooded
6	009073STMP	005544IN	002542SMH	20	1	6.6	10.5	0.5	0	0.2	1.0	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	009088STMP	007616IN	002611SMH	32	0.833	5.8	12.1	0.4	0	Flooded	-	Flooded	-	0.4	0.0	960	0	Flooded
6	009089STMP	007617IN	007616IN	20	0.833	7.1	13.9	0.2	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.4	183	960	Flooded
6	009090STMP	000432CB	000740ND	17	1.25	12.1	9.6	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.5	2279	15	Flooded
6	009091STMP	007561IN	002648SMH	18	1.25	9.7	-7.8	3.9	0	2.8	-	-	1.6	0.0	0.0	0	0	Surcharged
6	009179STMP	005545IN	005544IN	9	0.833	6.6	12.9	0.5	0.5	Flooded	0.4	Flooded	1.8	0.5	0.0	1218	0	Flooded
6	009180STMP	002542SMH	002543SMH	274	3	66.3	13.3	0	1.2	-	RIM	-	RIM	0.0	0.0	0	0	Sufficient Capacity

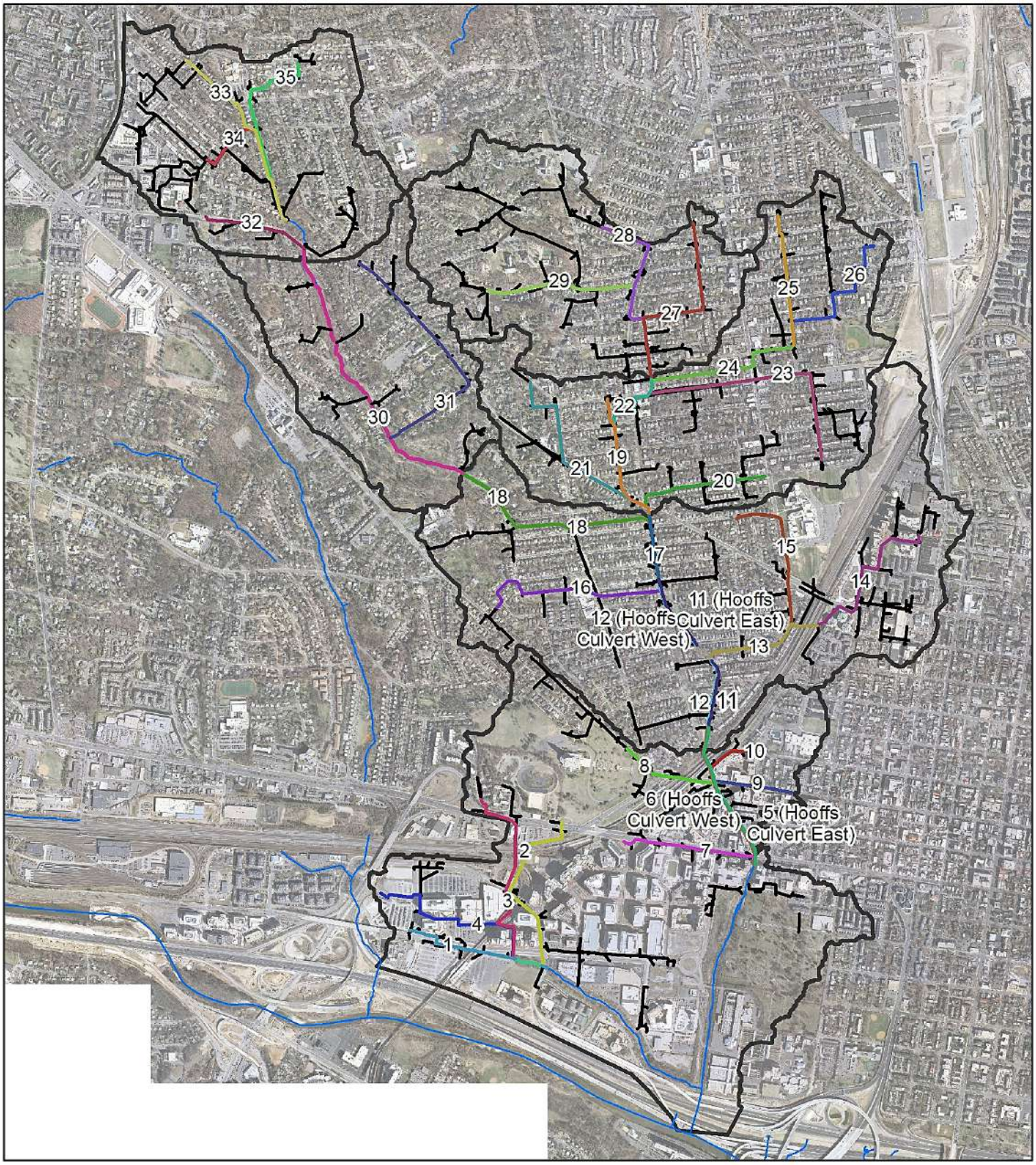
TABLE 1

Hooffs Run Scenario 1 (Existing IDF, Existing Boundary Condition) Detailed Hyraulic Model Results

		Junction FaciltiyID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	009181STMP	002543SMH	002544SMH	125	3.5	66.3	7.5	1.2	1.4	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	009182STMP	002612SMH	002609SMH	58	3	52.1	13.3	1.1	1.3	1.5	Flooded	-	Flooded	0.0	1.1	0	13681	Surcharged
6	009183STMP	005546IN	005549IN	26	2	20.4	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009184STMP	005553IN	005546IN	161	1.5	17.5	10.0	0.6	0	1.2	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	009185STMP	007501IN	007498IN	33	1.25	9.6	7.8	1.3	0.5	1.5	1.0	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
6	009186STMP	007499IN	007498IN	13	0.833	1.2	7.2	0	0.5	-	1.4	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	009187STMP	007500IN	007499IN	10	0.833	1.2	-3.3	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009188STMP	007504IN	007501IN	9	0.833	5.6	13.1	0.4	1.3	Flooded	2.0	Flooded	1.3	0.1	0.0	2	0	Flooded
6	009189STMP	007502IN	007501IN	5	0.833	4.1	10.6	0	1.3	-	2.0	0.3	1.3	0.0	0.0	0	0	Sufficient Capacity
6	009191STMP	005665IN	000432CB	6	0.833	7.5	15.3	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.7	0.6	2117	2279	Flooded
6	009192STMP	007524IN	007519IN	87	1	9.1	11.4	0.8	0	2.3	0.2	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	009193STMP	007525IN	007524IN	9	1	9.1	11.4	0.8	0.8	Flooded	1.9	Flooded	1.2	0.8	0.0	6711	0	Flooded
6	009195STMP	007528IN	007526IN	98	2	5.0	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009196STMP	002589SMH	007528IN	80	1.5	5.0	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009197STMP	007538IN	000457CB	16	0.833	5.7	14.3	0	0	-	-	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	009372STMP	002535SMH	002536SMH	16	2.5	46.4	9.4	0.2	0.3	0.9	0.9	-	-	0.0	0.0	0	0	Surcharged
6	009373STMP	002536SMH	002540SMH	202	2.5	46.4	9.8	0.3	0	0.9	-	-	-	0.0	0.0	0	0	Surcharged
6	009374STMP	005511IN	000450CB	34	0.833	6.7	13.5	4.4	4.5	Flooded	Flooded	Flooded	Flooded	4.4	4.0	38374	4436	Flooded
6	009376STMP	000450CB	002539SMH	26	0.833	5.7	10.3	4.5	0	Flooded	1.0	Flooded	-	4.0	0.0	4436	0	Flooded
6	009377STMP	002590SMH	002589SMH	61	1.5	5.0	-3.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009379STMP	002611SMH	002607SMH	47	3	23.7	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009380STMP	007604IN	002607SMH	21	0.833	4.7	15.0	0	0	-	0.6	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009381STMP	007605IN	007604IN	11	0.833	4.7	9.3	1.1	0	Flooded	-	Flooded	0.5	1.1	0.0	4699	0	Flooded
6	009382STMP	002544SMH	002608SMH	125	3.5	157.2	16.2	1.4	1.4	RIM	Flooded	RIM	Flooded	0.0	1.1	0	5638	Insufficient Freeboard
6	009383STMP	007606IN	002608SMH	13	1.25	6.5	5.5	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.8	1.1	1184	5638	Flooded
6	009385STMP	007607IN	007606IN	6	1	6.6	10.4	1.3	1.3	Flooded	Flooded	Flooded	Flooded	1.3	0.8	5083	1184	Flooded
6	009387STMP	007610IN	002544SMH	33	2.5	90.6	18.3	1.4	1.4	Flooded	RIM	Flooded	RIM	1.2	0.0	20172	0	Flooded
6	009388STMP	005541IN	007610IN	625	2.5	70.2	15.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.3	1.2	17500	20172	Flooded
6	009389STMP	002527SMH	002612SMH	47	3	52.1	18.6	0	1.1	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009390STMP	002609SMH	002544SMH	24	3	50.6	7.3	1.3	1.4	Flooded	RIM	Flooded	RIM	1.1	0.0	13681	0	Flooded
6	009391STMP	002526SMH	002610SMH	106	1.25	9.3	14.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009392STMP	007611IN	000711ND	5	1.25	8.8	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009393STMP	007612IN	007611IN	7	0.833	8.8	17.2	0.4	0	Flooded	0.1	Flooded	-	0.4	0.0	1284	0	Flooded
6	009394STMP	007613IN	007610IN	29	1	10.2	14.4	2.6	1.4	Flooded	Flooded	Flooded	Flooded	2.6	1.2	37913	20172	Flooded
6	014900STMP	005457IN	002552SMH	359	2	31.0	9.9	0.5	0.8	4.2	3.9	0.5	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	014901A	005404IN	000682ND	18	2	19.4	8.7	0.3	0.3	1.4	1.6	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	014901B	000682ND	005457IN	294	2	20.8	9.1	0.3	0.5	1.6	4.2	0.8	0.5	0.0	0.0	0	0	Insufficient Freeboard
6	014917STMP	002537SMH	000697ND	10	3	55.4	7.8	1.3	1.4	Flooded	Flooded	Flooded	Flooded	1.3	1.1	32076	709	Flooded
6	014918STMP	000697ND	002538SMH	9	3	84.5	11.8	1.4	1.3	Flooded	Flooded	Flooded	Flooded	1.1	1.1	709	8175	Flooded
6	014957STMP	007515IN	002587SMH	200	2.5	30.5	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014958STMP	000745ND	000738ND	338	2.25	37.2	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014959STMP	002598SMH	002597SMH	145	1.5	10.8	9.9	0	0.3	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014960STMP	004906SMH	004907SMH	21	2	9.1	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014961STMP	004907SMH	004908SMH	46	2	9.1	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014963STMP	004908SMH	004909SMH	77	2	9.1	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014964STMP	004909SMH	004910SMH	120	2	9.1	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014965STMP	004910SMH	002517SMH	26	2	9.1	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 2
Hooffs Run Scenario 1 Outfall Boundary Conditions: Existing Boundary Conditions

Node ID	Location	Boundary Condition
000080CP	Old Cameron Run	Computed Tide Coefficeints
000302IO	Old Cameron Run	Computed Tide Coefficeints
000306IO	Old Cameron Run	Computed Tide Coefficeints
000341IO	Hooffs Run	Computed Tide Coefficeints
000342IO	Hooffs Run	Computed Tide Coefficeints
Hooffs_632	Hooffs Run	Computed Tide Coefficeints



Legend

Profiles

	4	9	14	19	24	29	34
N/A	5	10	15	20	25	30	35
1	6	11	16	21	26	31	City of Alexandria Streams
2	7	12	17	22	27	32	
3	8	13	18	23	28	33	Hooffs Run Subwatersheds

Hooffs Run Profile Locations

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

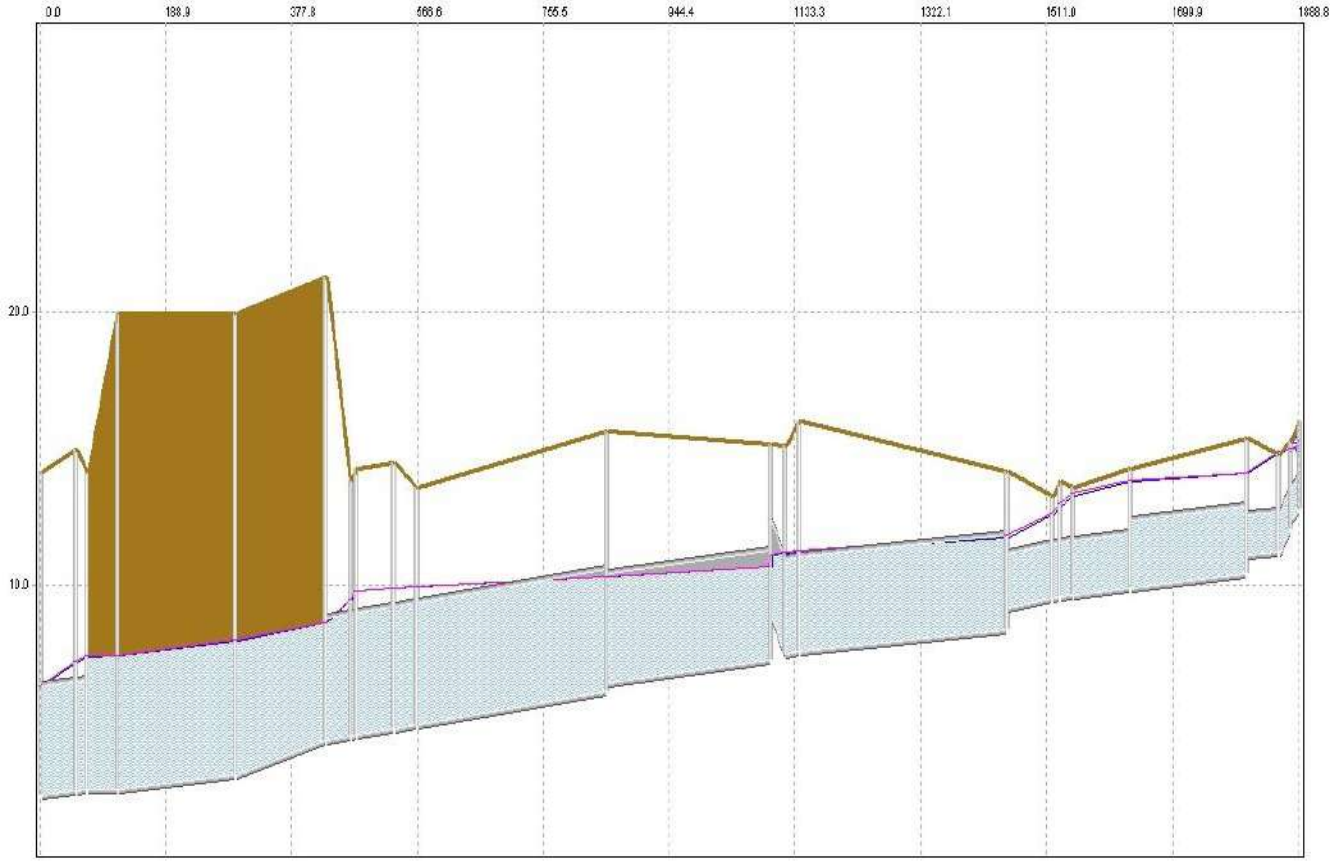
0 750 1,500 3,000
Feet

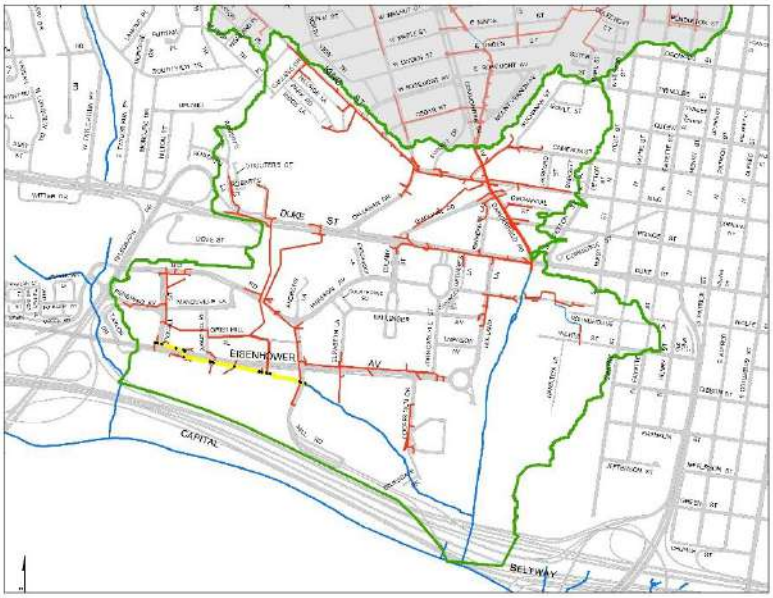
N

CH2MHILL

FIGURE 1

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 1 from 000080CP to 004837IN





Surface Flooding

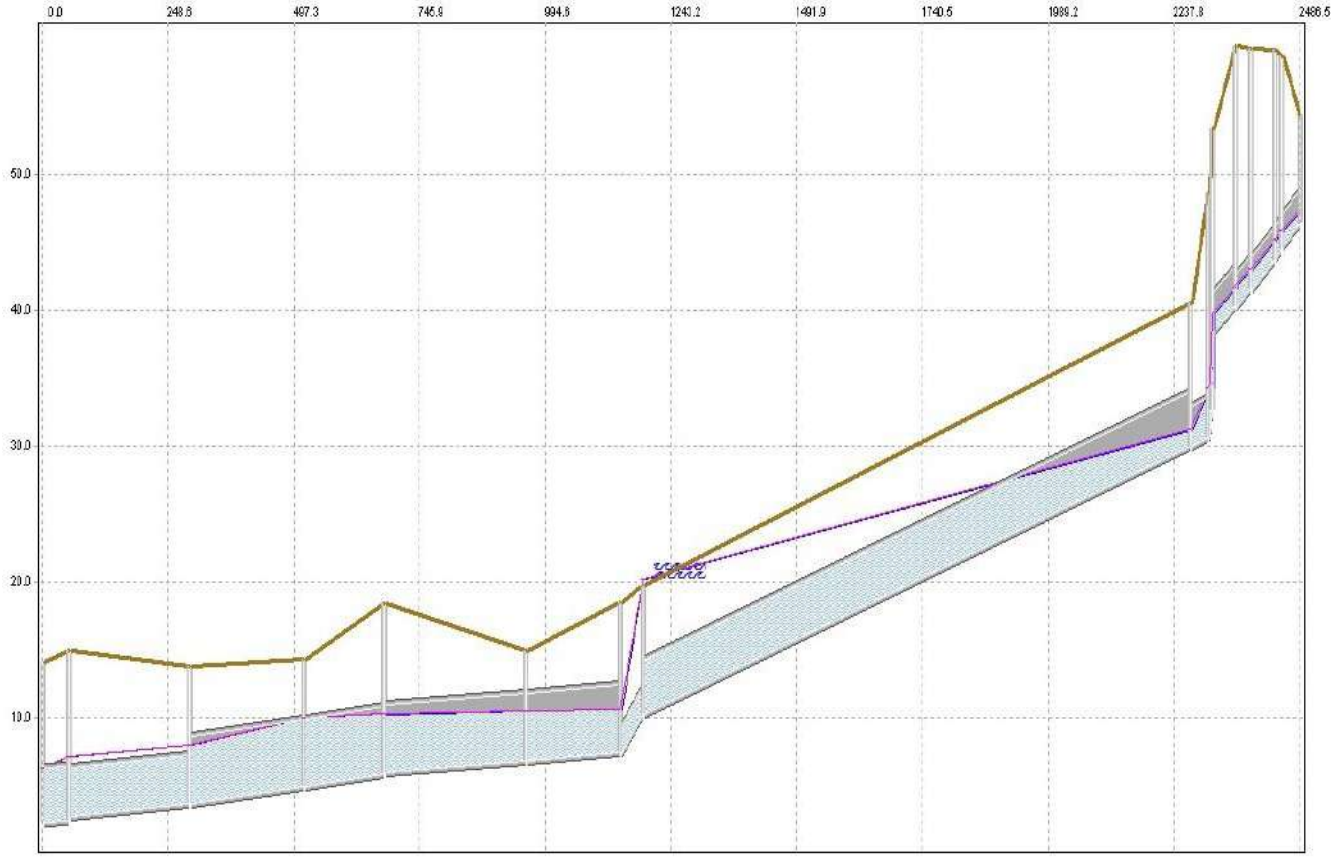
Peak Hydraulic Grade Line

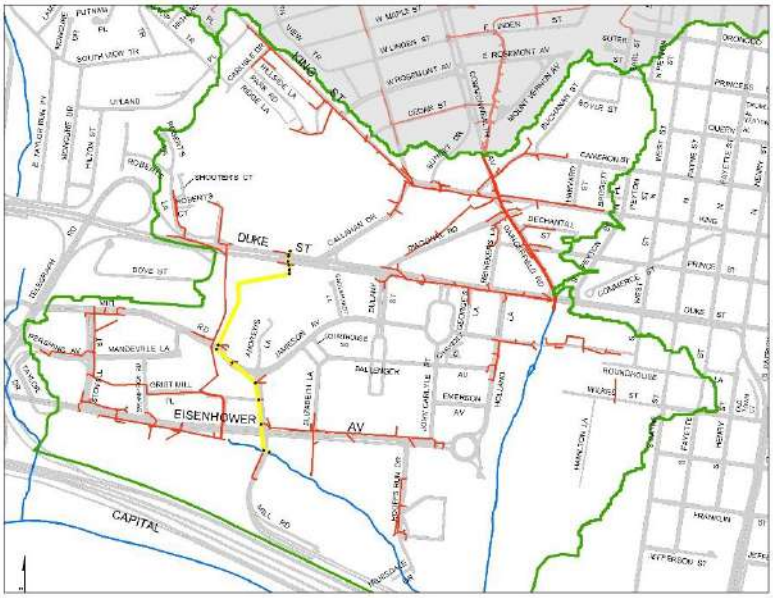
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 2

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 2 from 000080CP to 006016IN





Surface Flooding

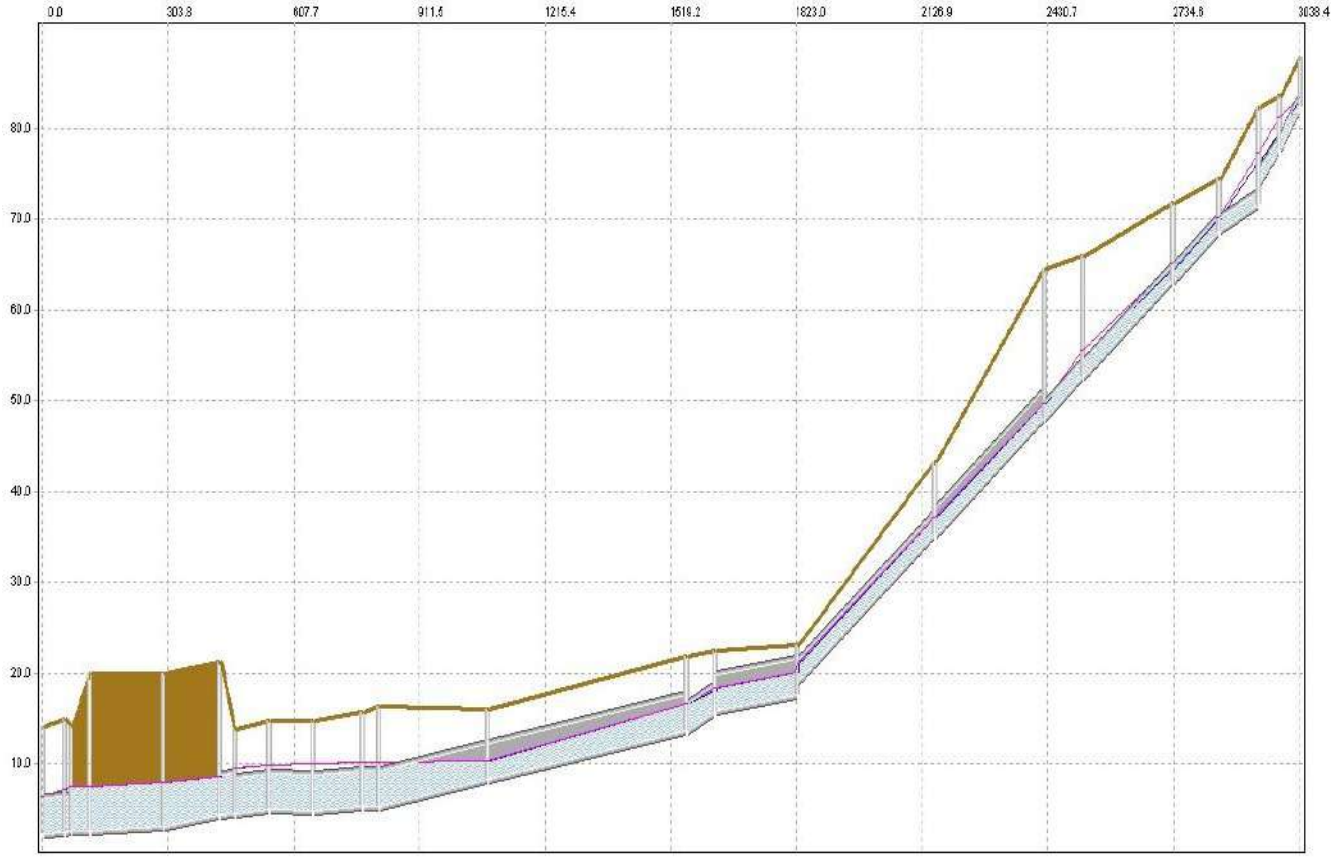
Peak Hydraulic Grade Line

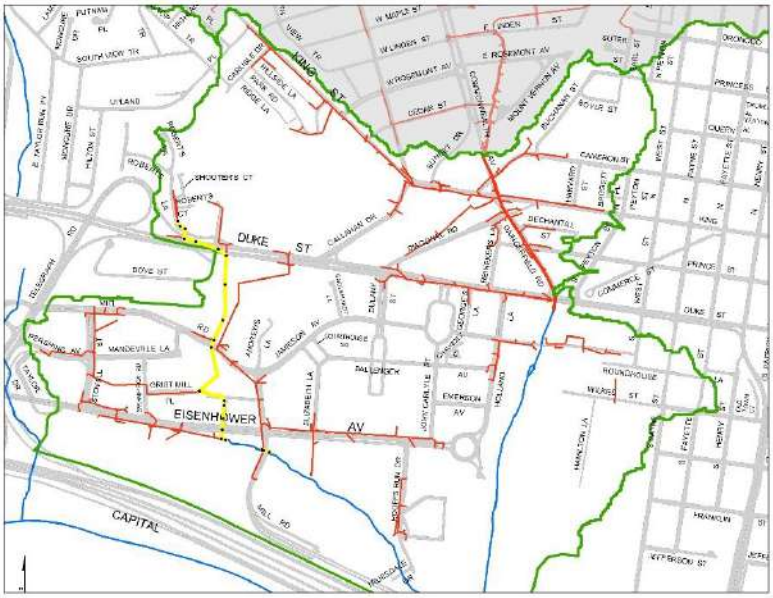
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 3

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 3 from 000080CP to 000658IN





Surface Flooding

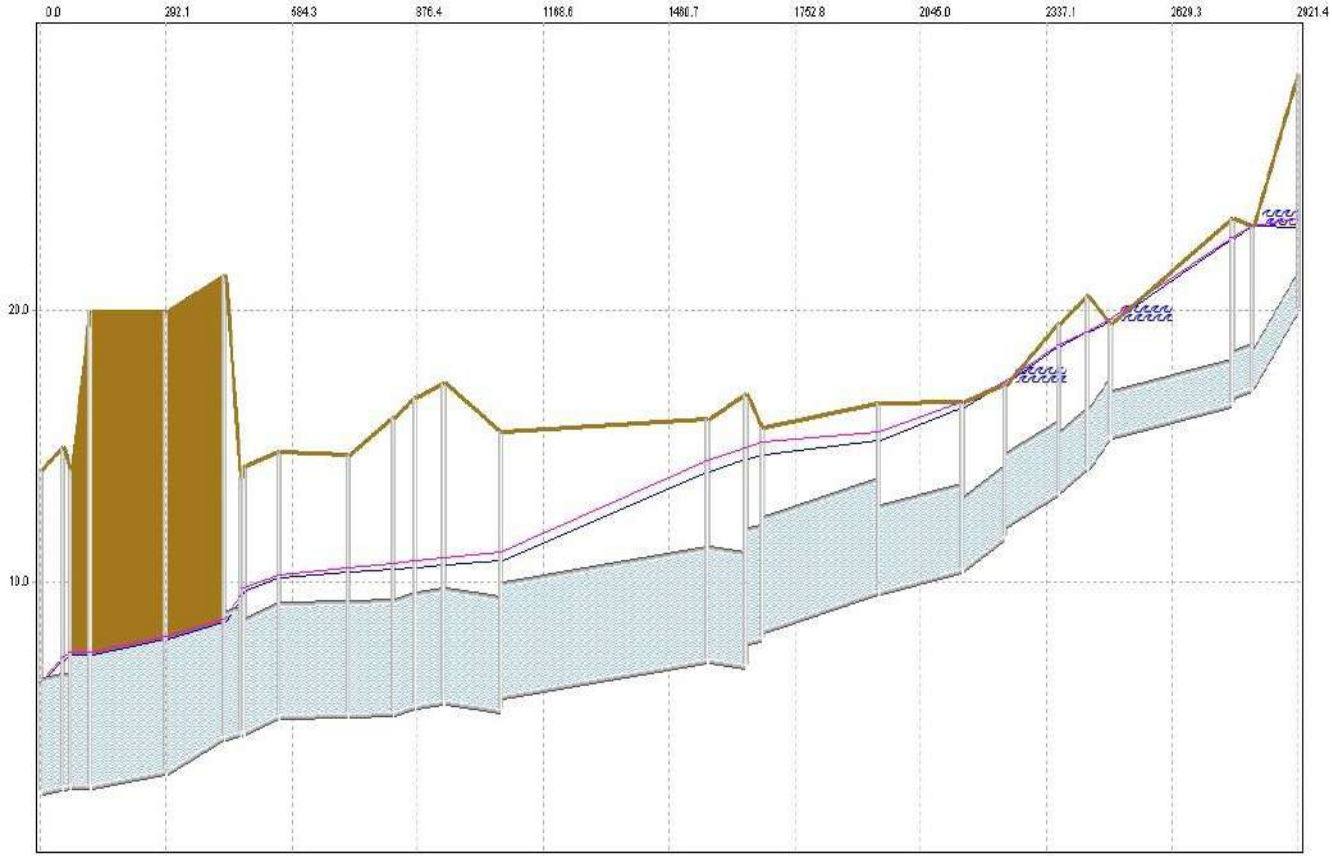
Peak Hydraulic Grade Line

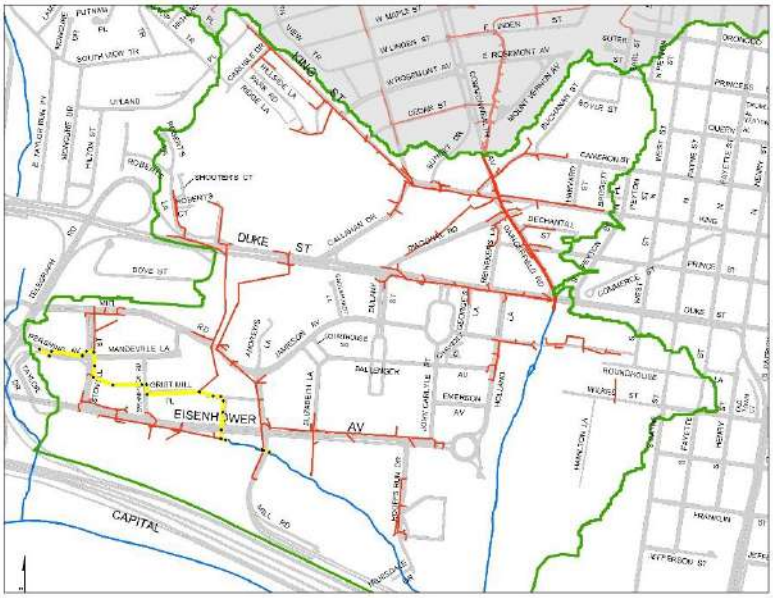
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 4

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 4 from 000080CP to 004860IN





Surface Flooding

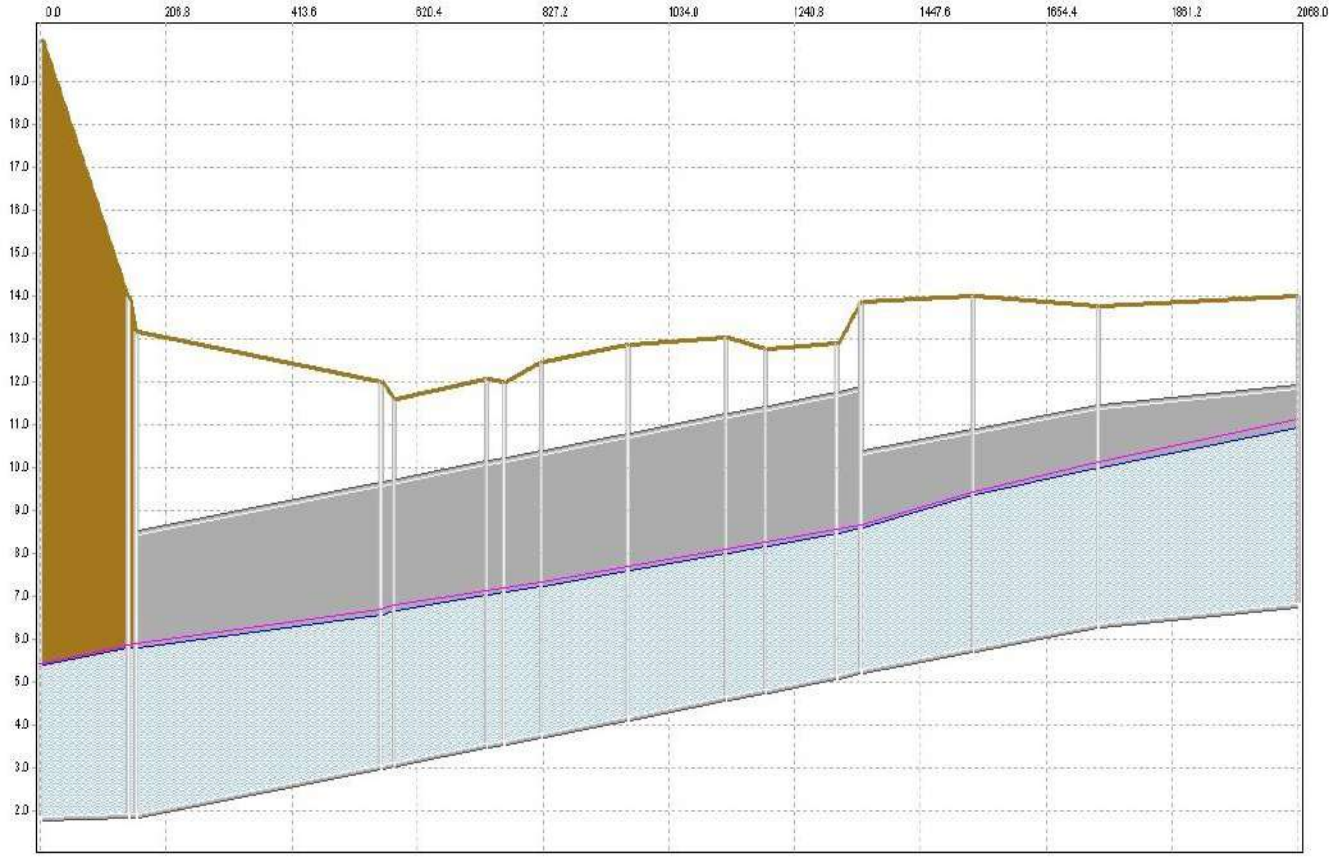
Peak Hydraulic Grade Line

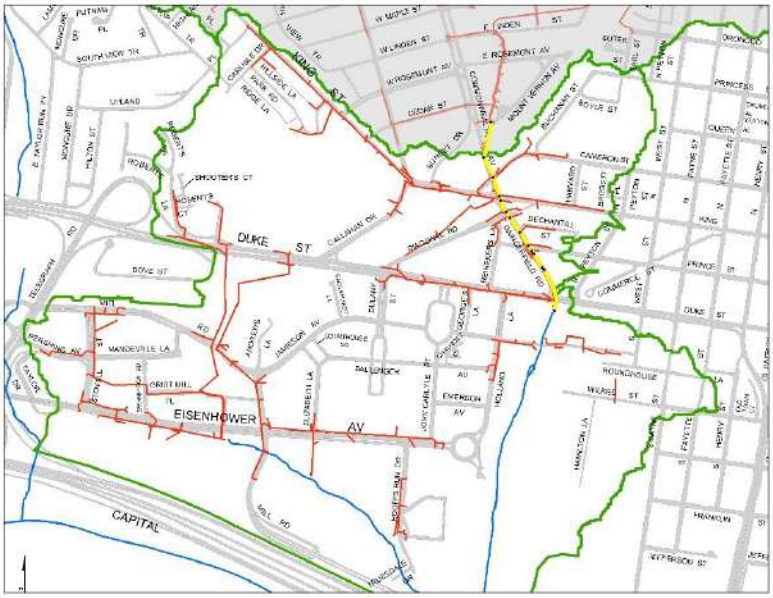
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 5

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 5 from 000293CP to 000939ND





Surface Flooding

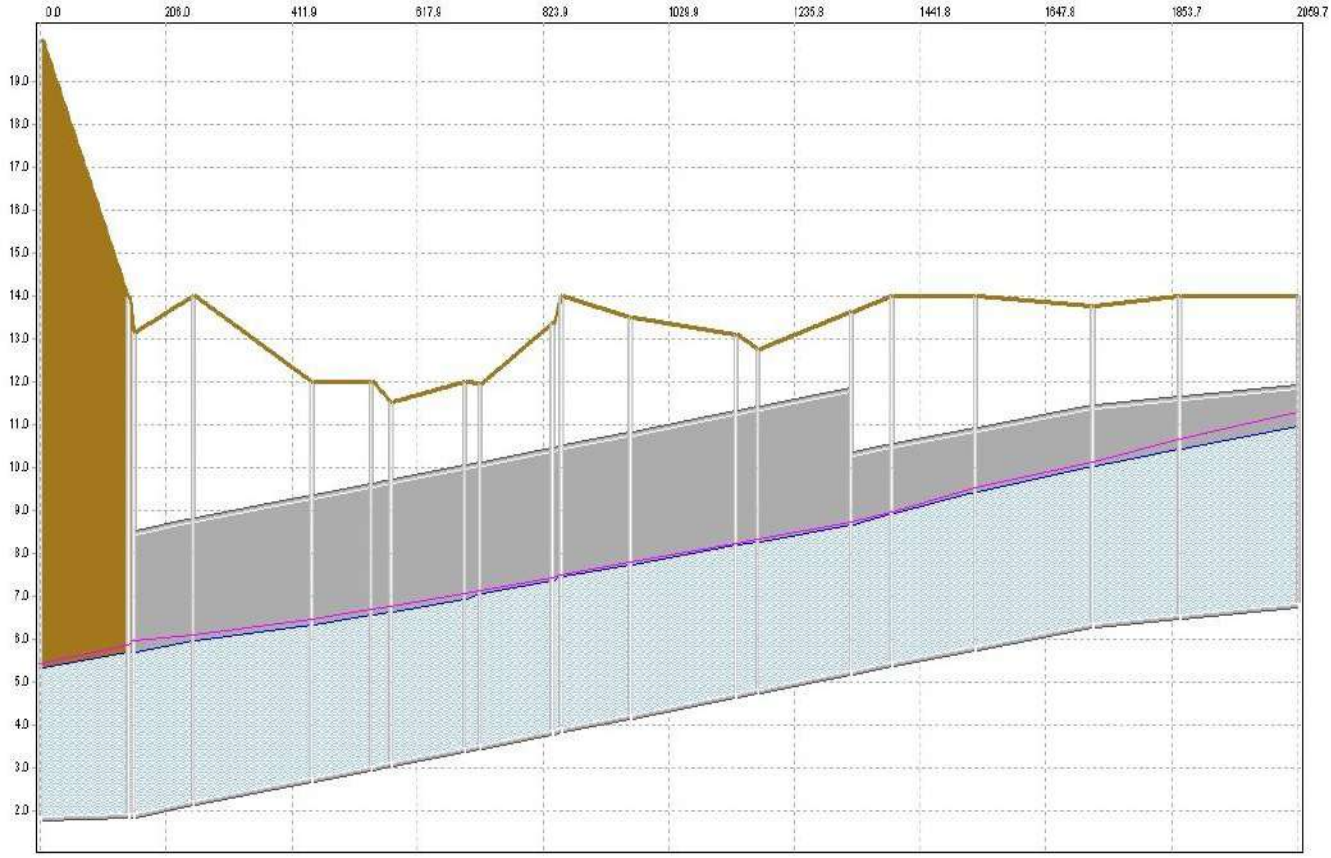
Peak Hydraulic Grade Line

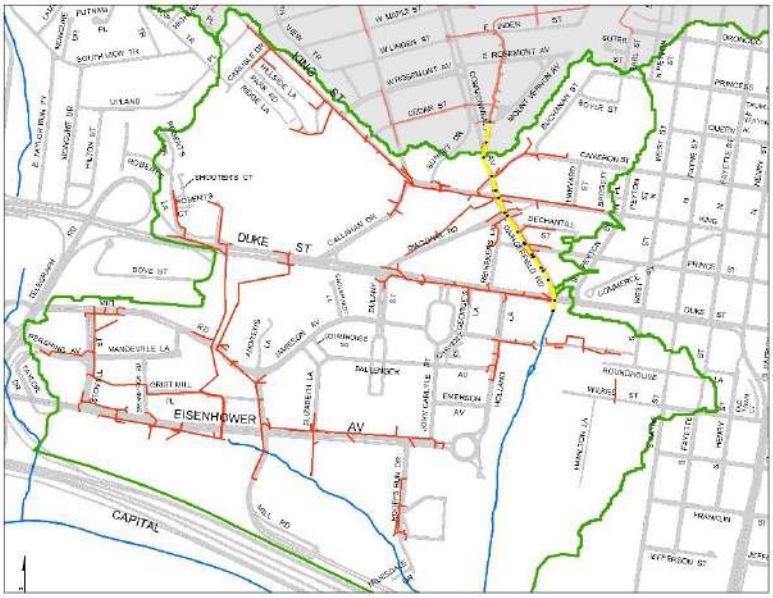
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 6

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 6 from 000292CP to 002912ND





Surface Flooding

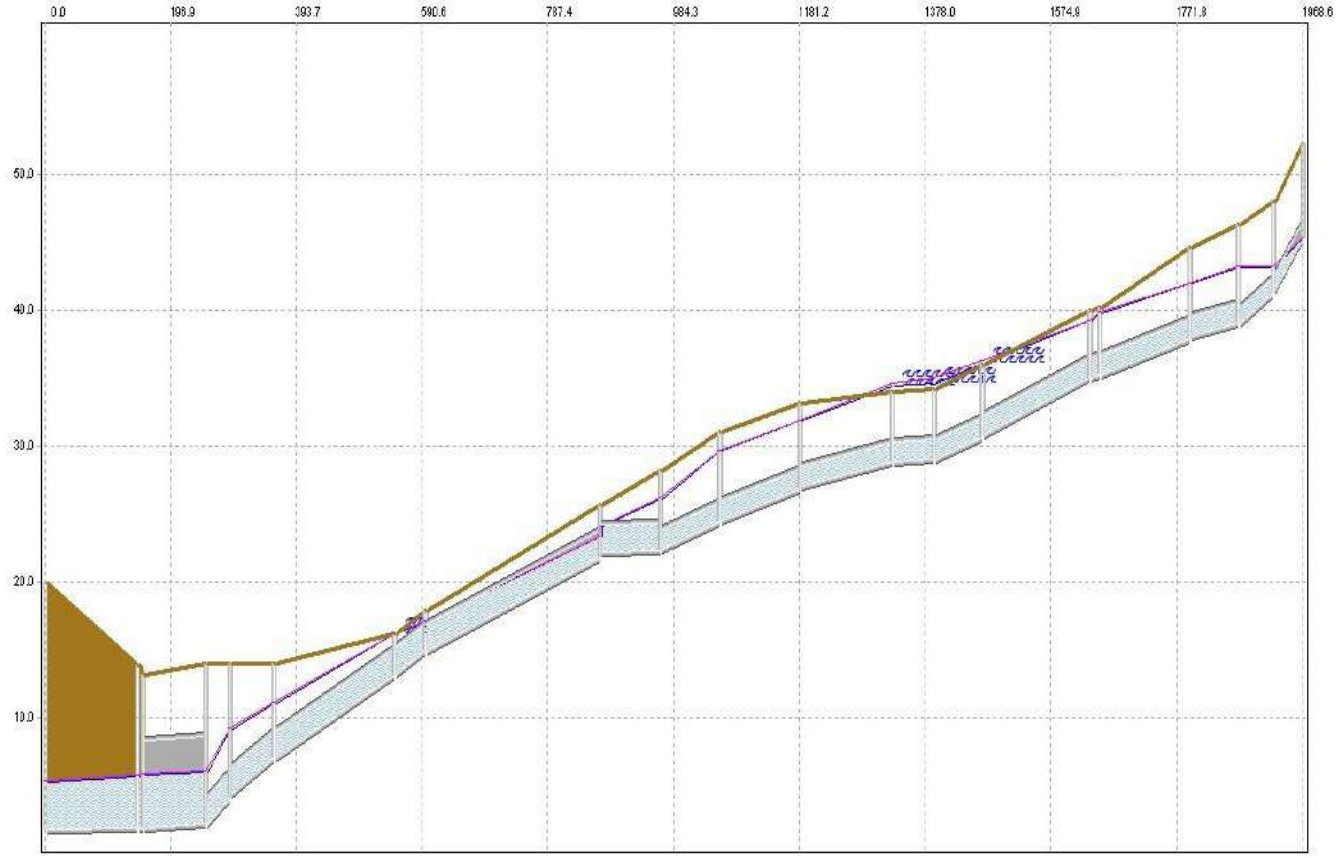
Peak Hydraulic Grade Line

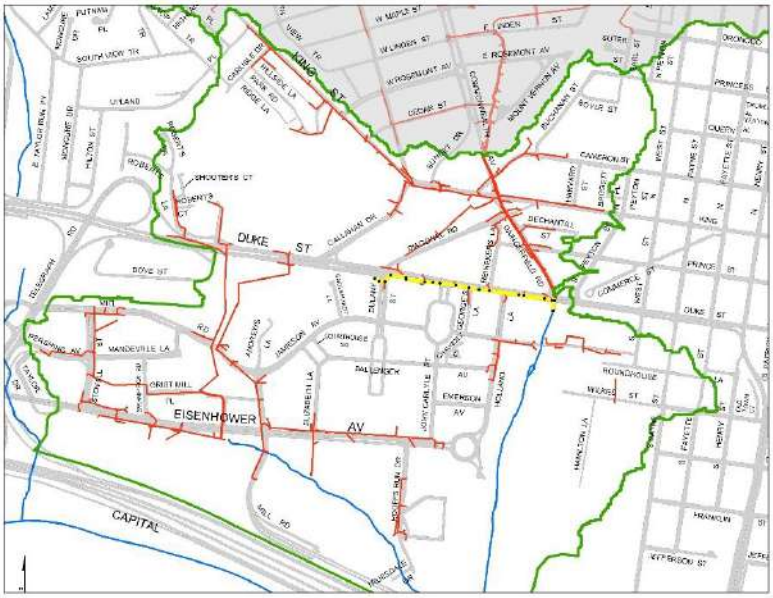
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 7

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 7 from 000292CP to 004975IN





Surface Flooding

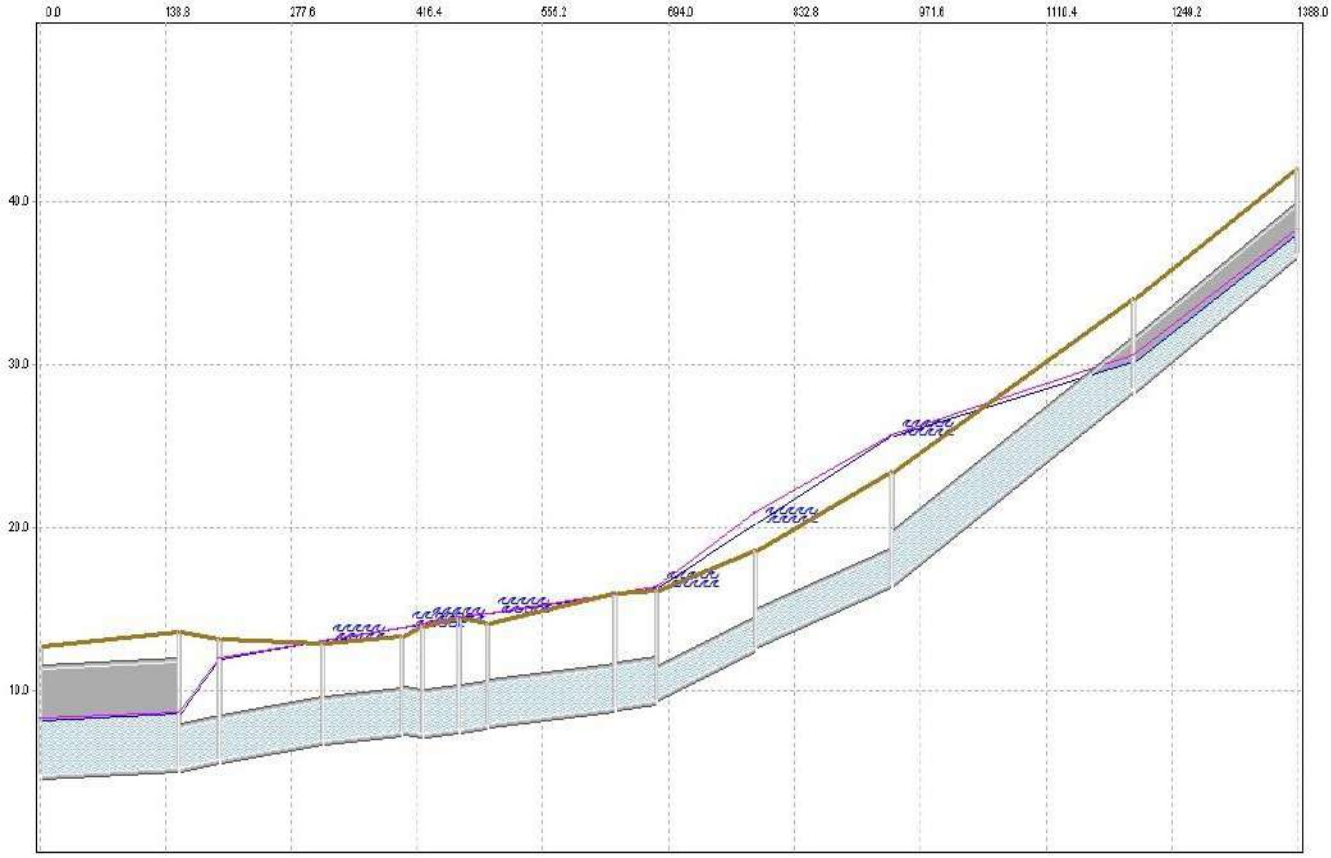
Peak Hydraulic Grade Line

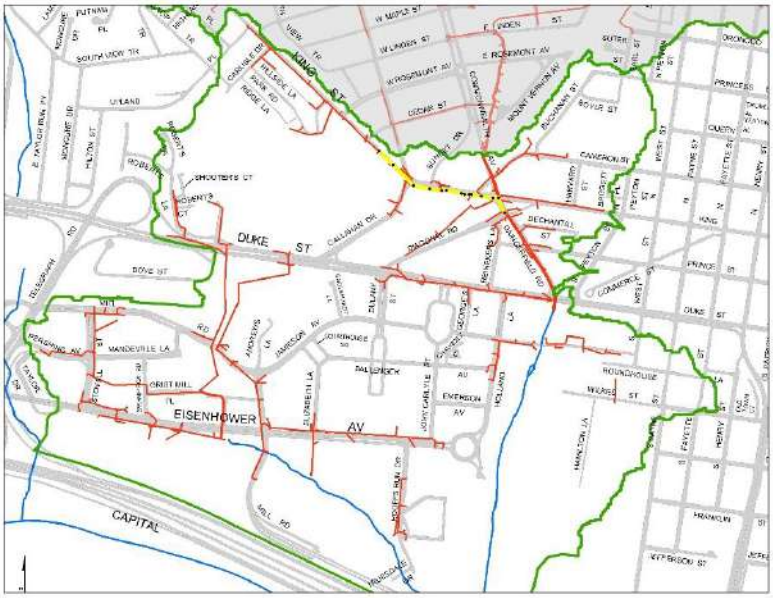
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 8

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 8 from 002913ND to 000912ND





Surface Flooding

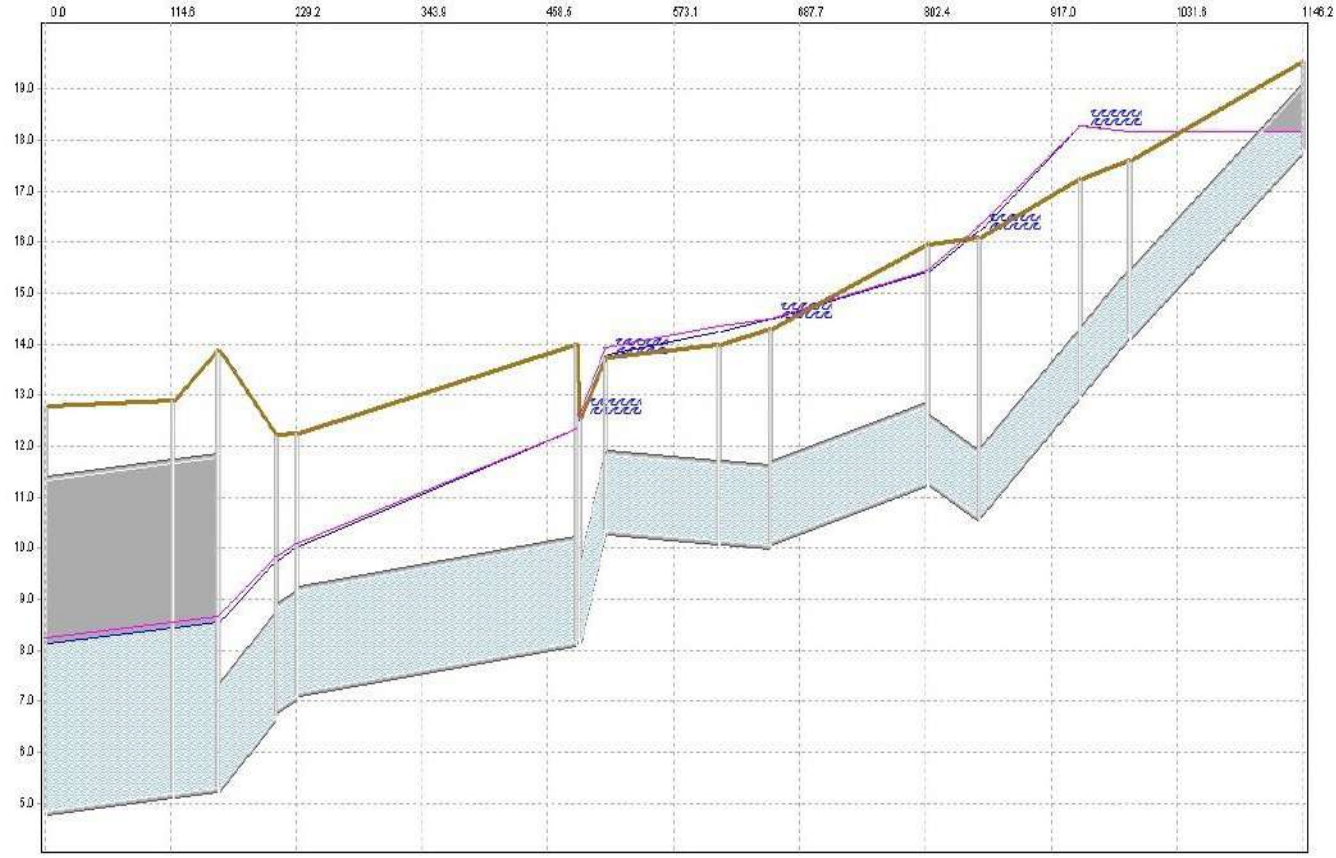
Peak Hydraulic Grade Line

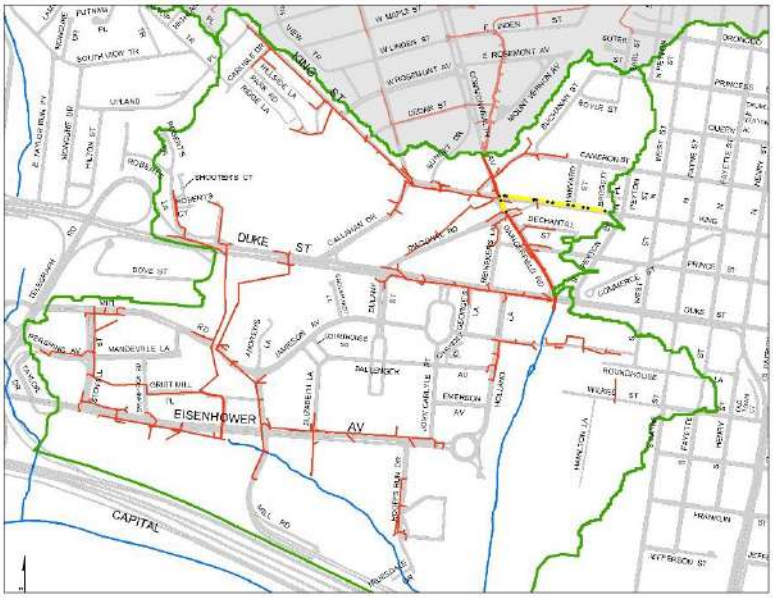
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 9

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 9 from 000958ND to 000944ND





Surface Flooding

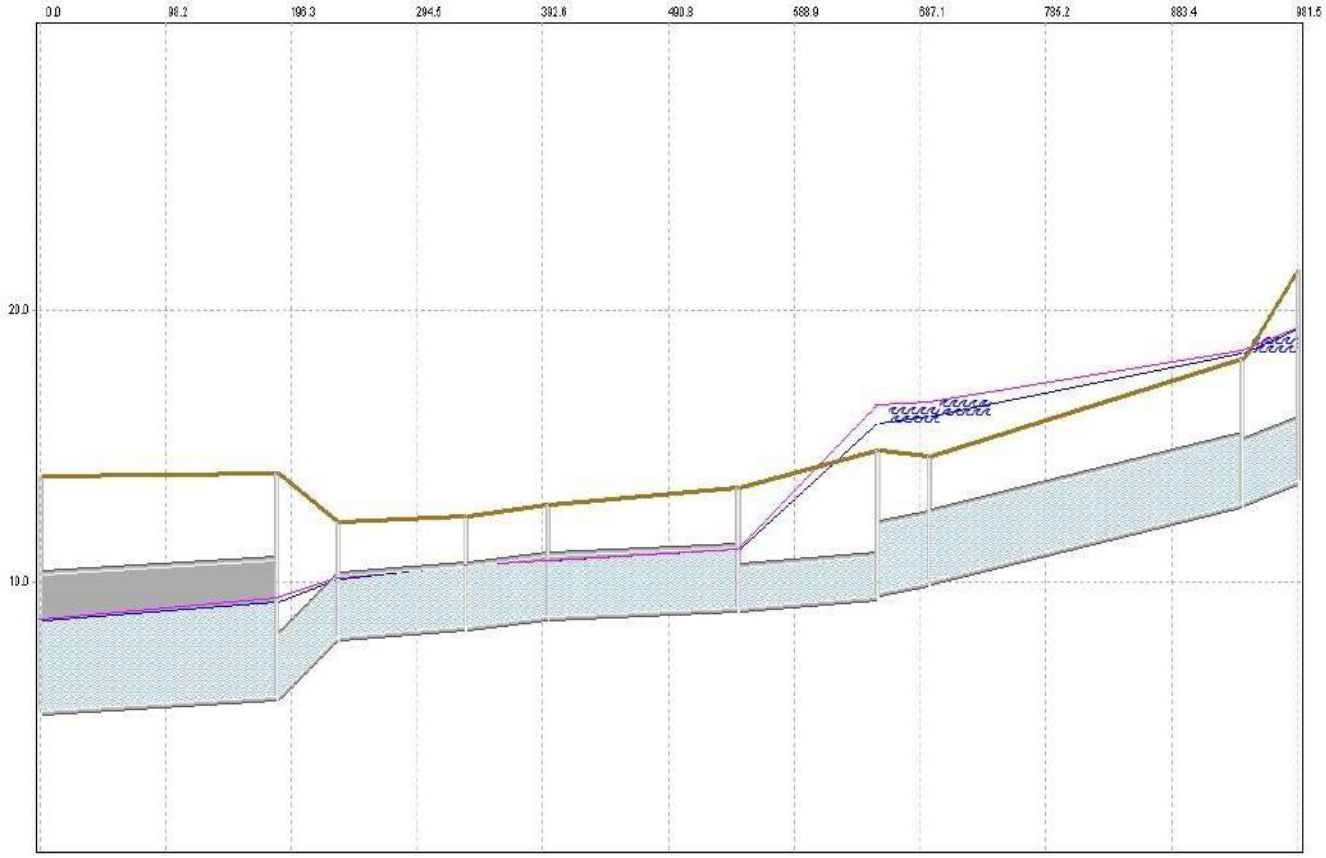
Peak Hydraulic Grade Line

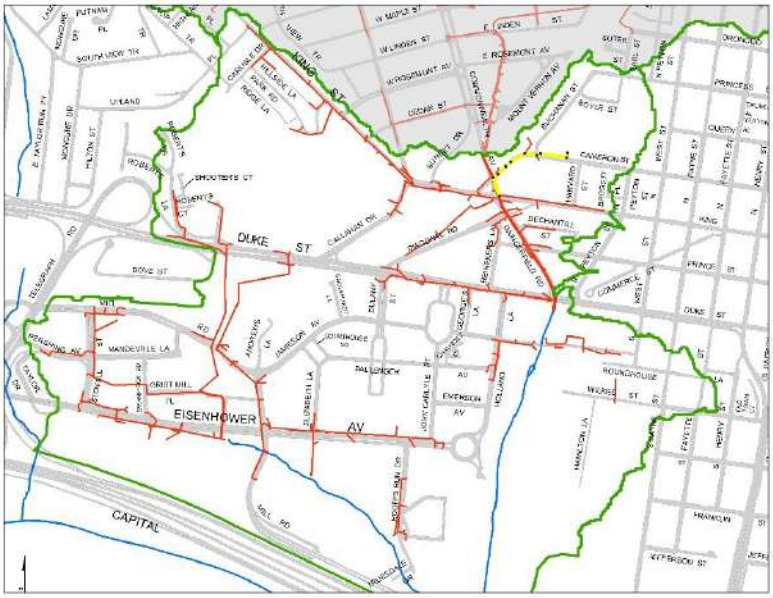
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 10

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 10 from 000960ND to 006100IN





Surface Flooding

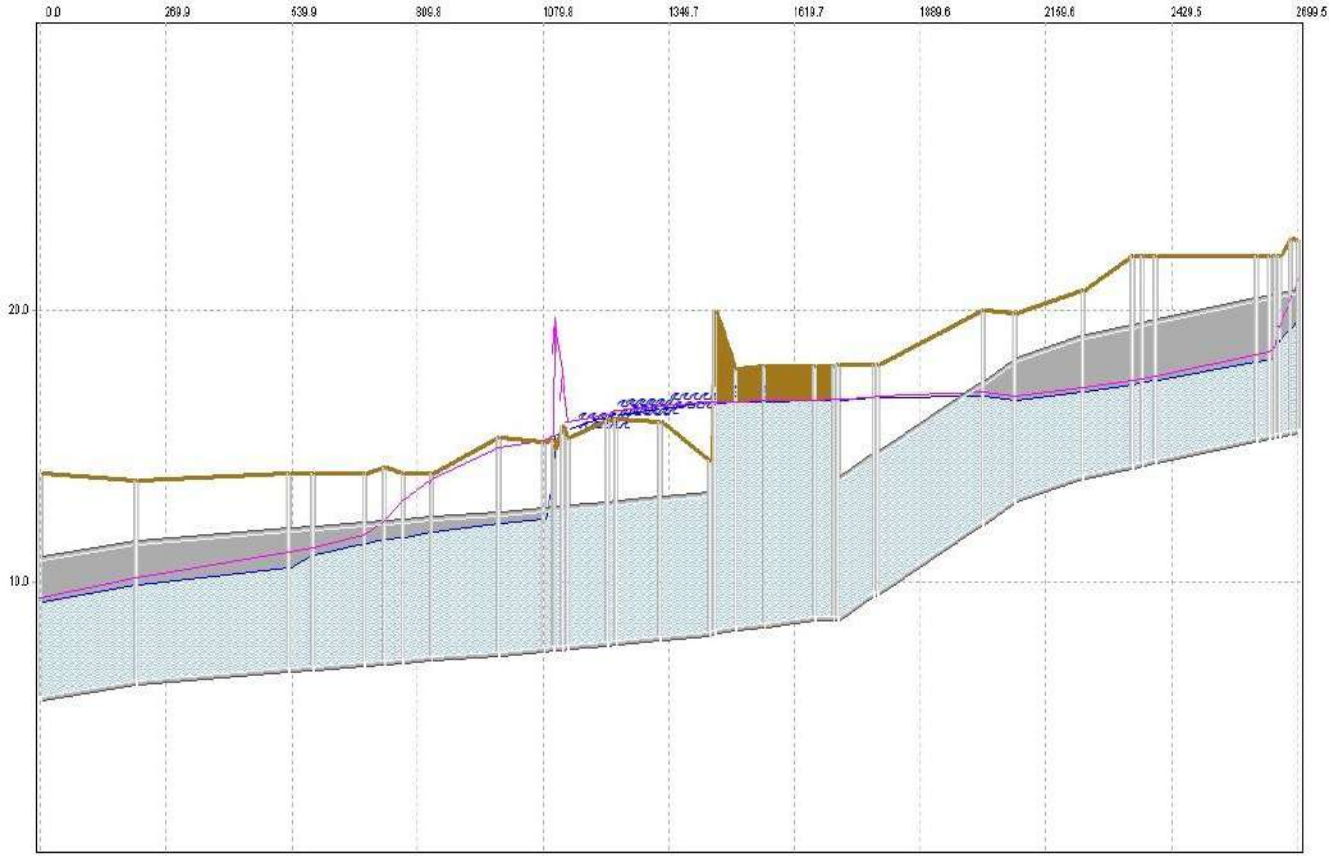
Peak Hydraulic Grade Line

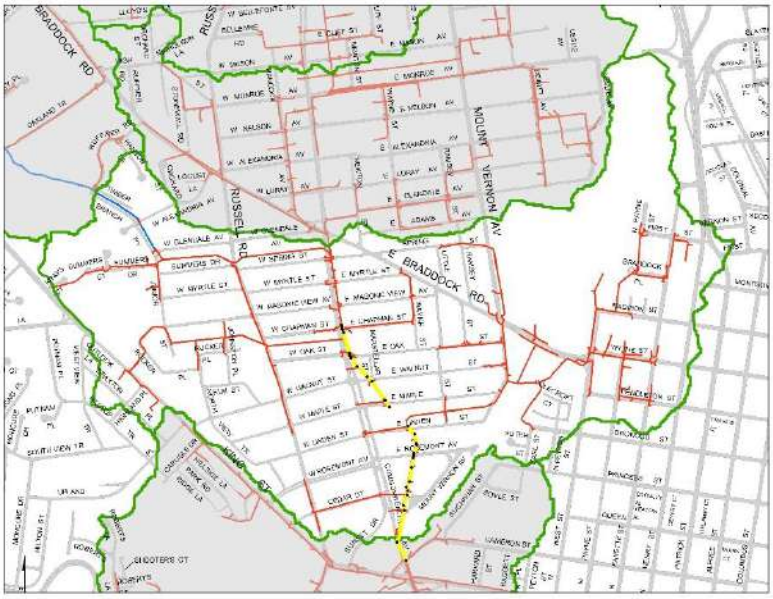
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 11

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 11 from 000946ND to 003095SMH





Surface Flooding

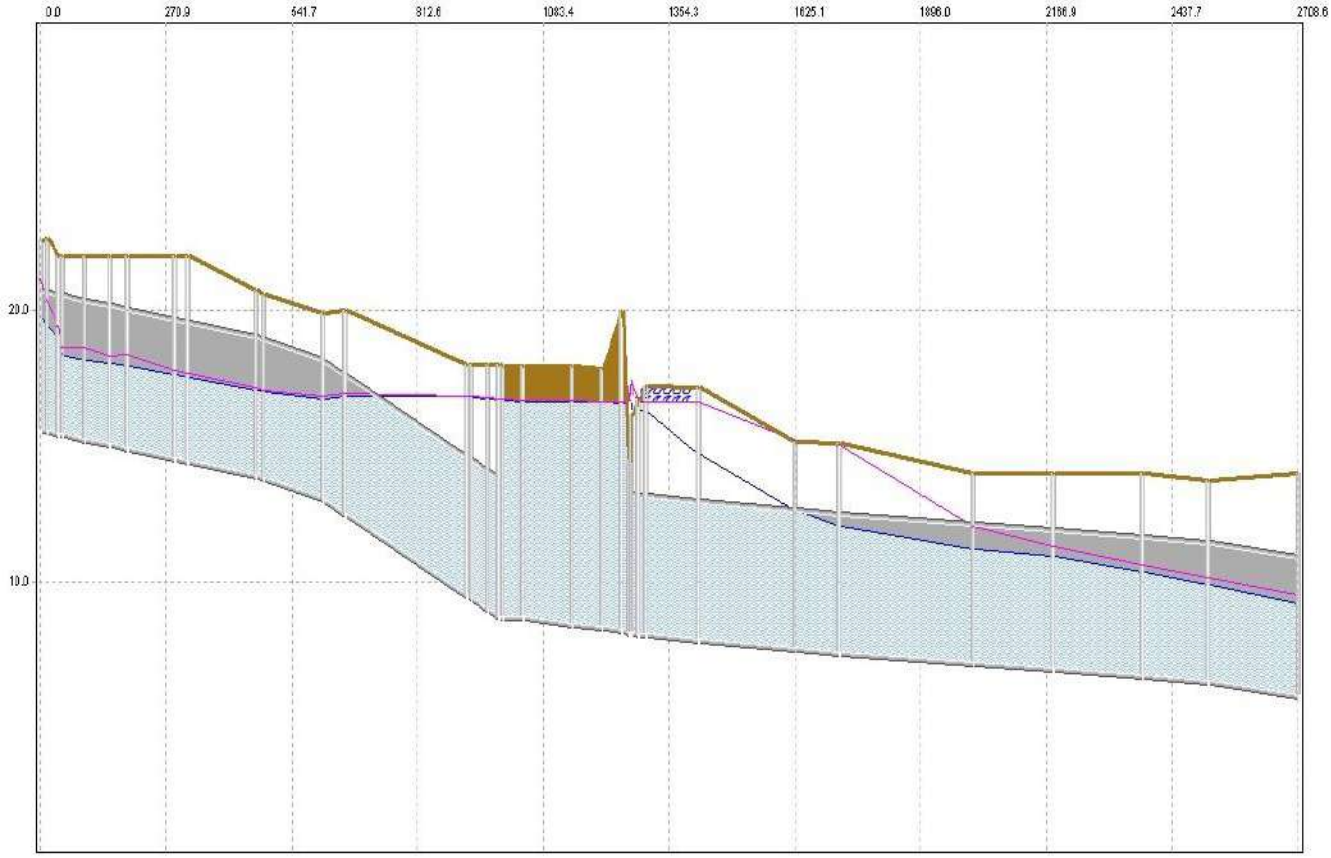
Peak Hydraulic Grade Line

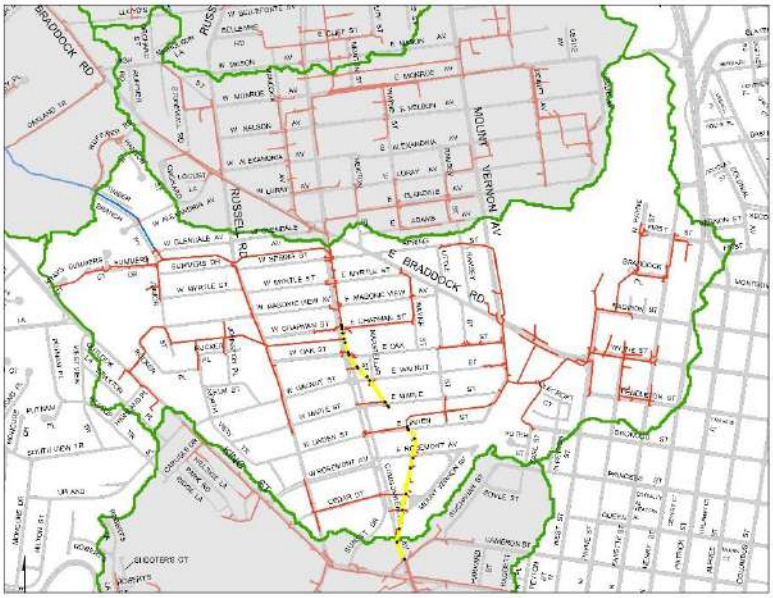
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 12

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 12 from 000945ND to 003095SMH





Surface Flooding

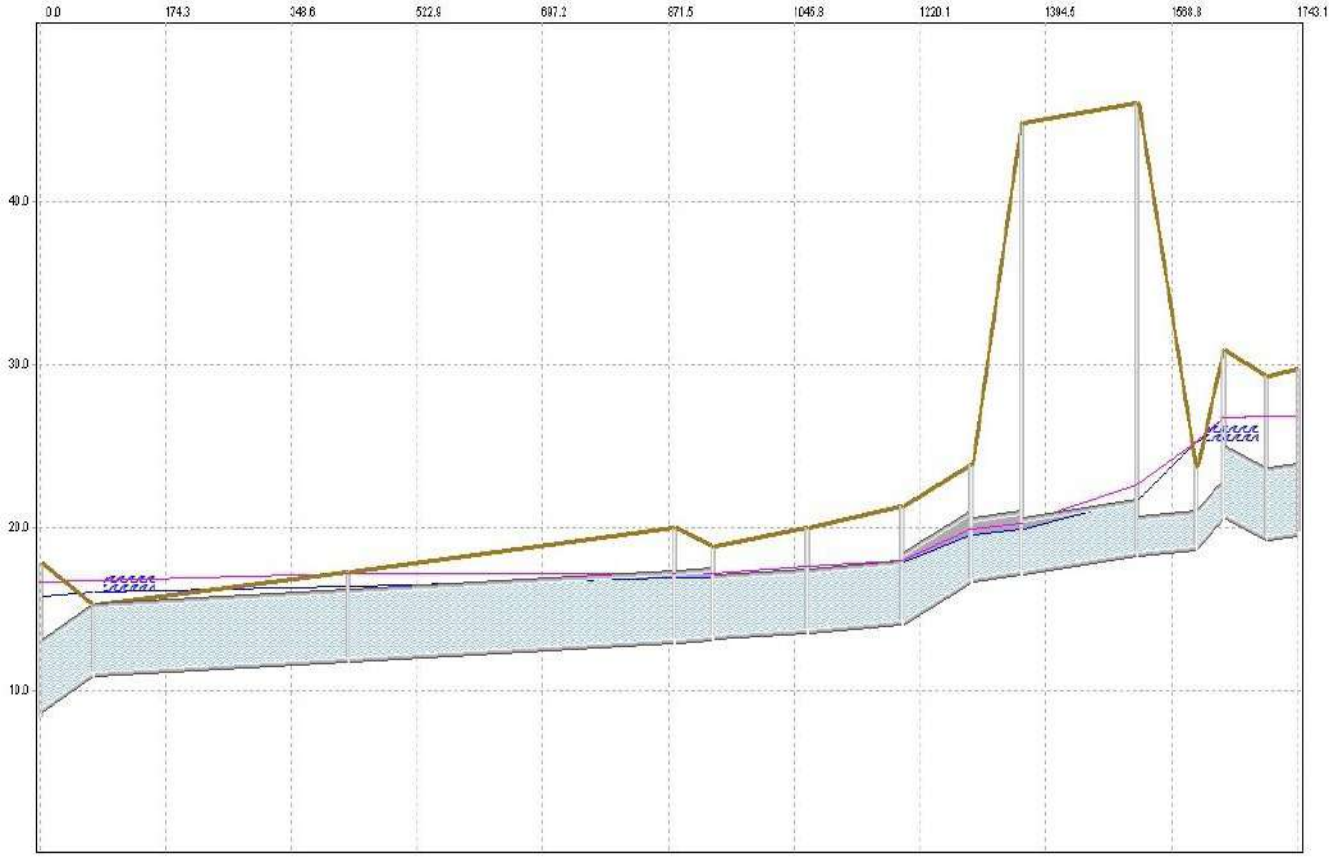
Peak Hydraulic Grade Line

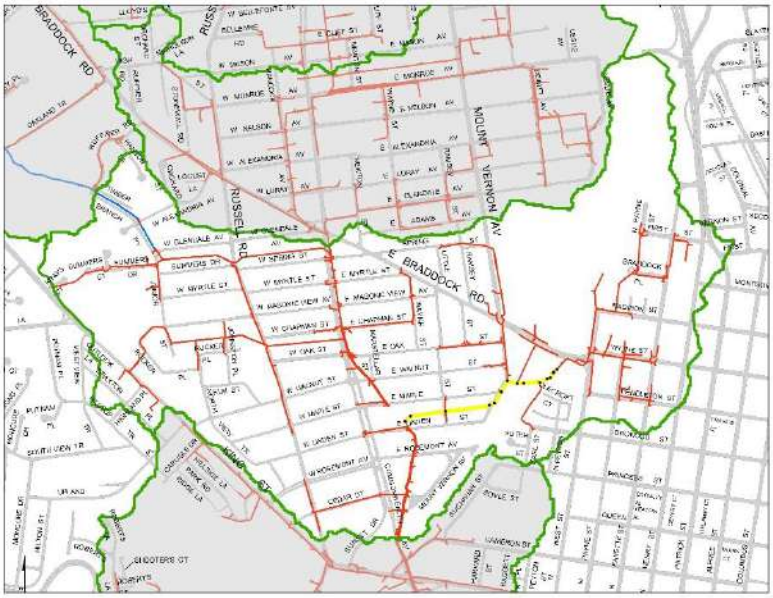
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 13

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 13 from 000546IOto 003457SMH





Surface Flooding

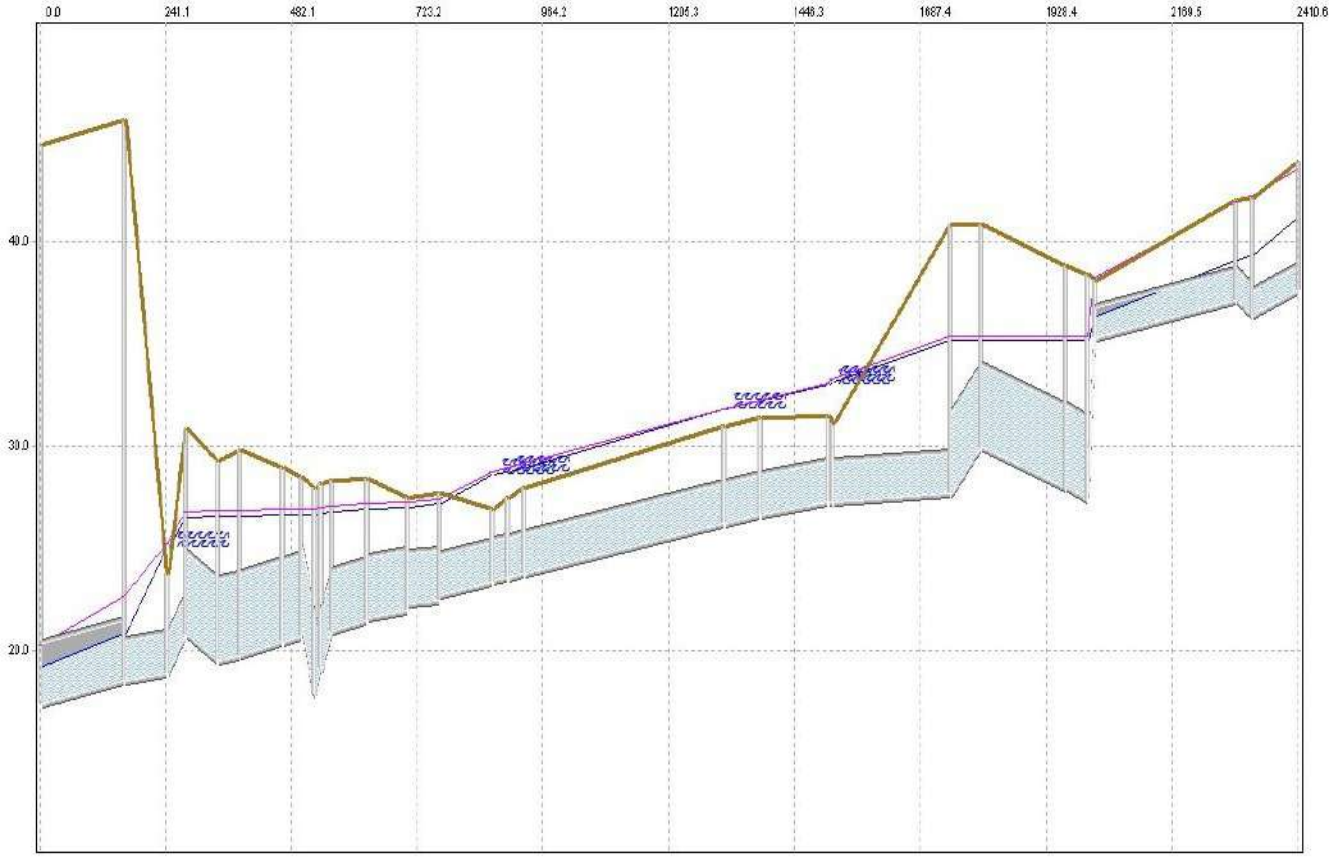
Peak Hydraulic Grade Line

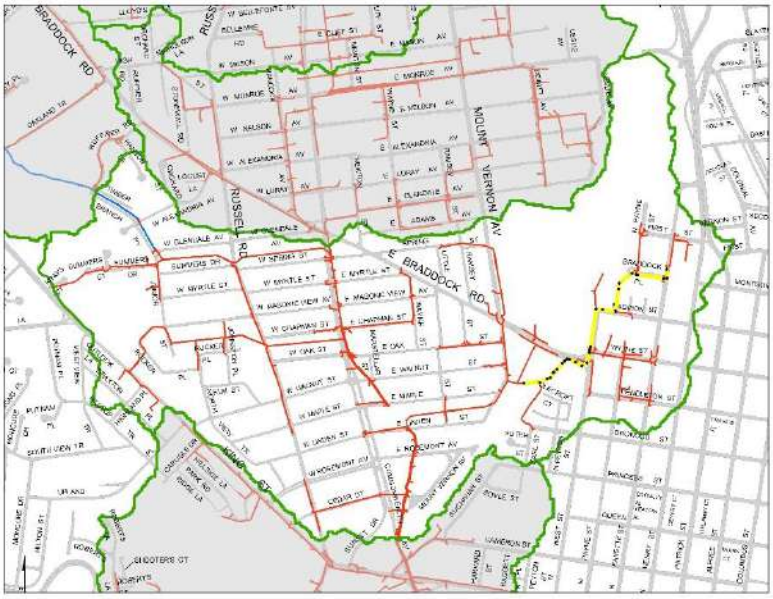
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 14

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 14 from 000788ND to 003486SMH





Surface Flooding

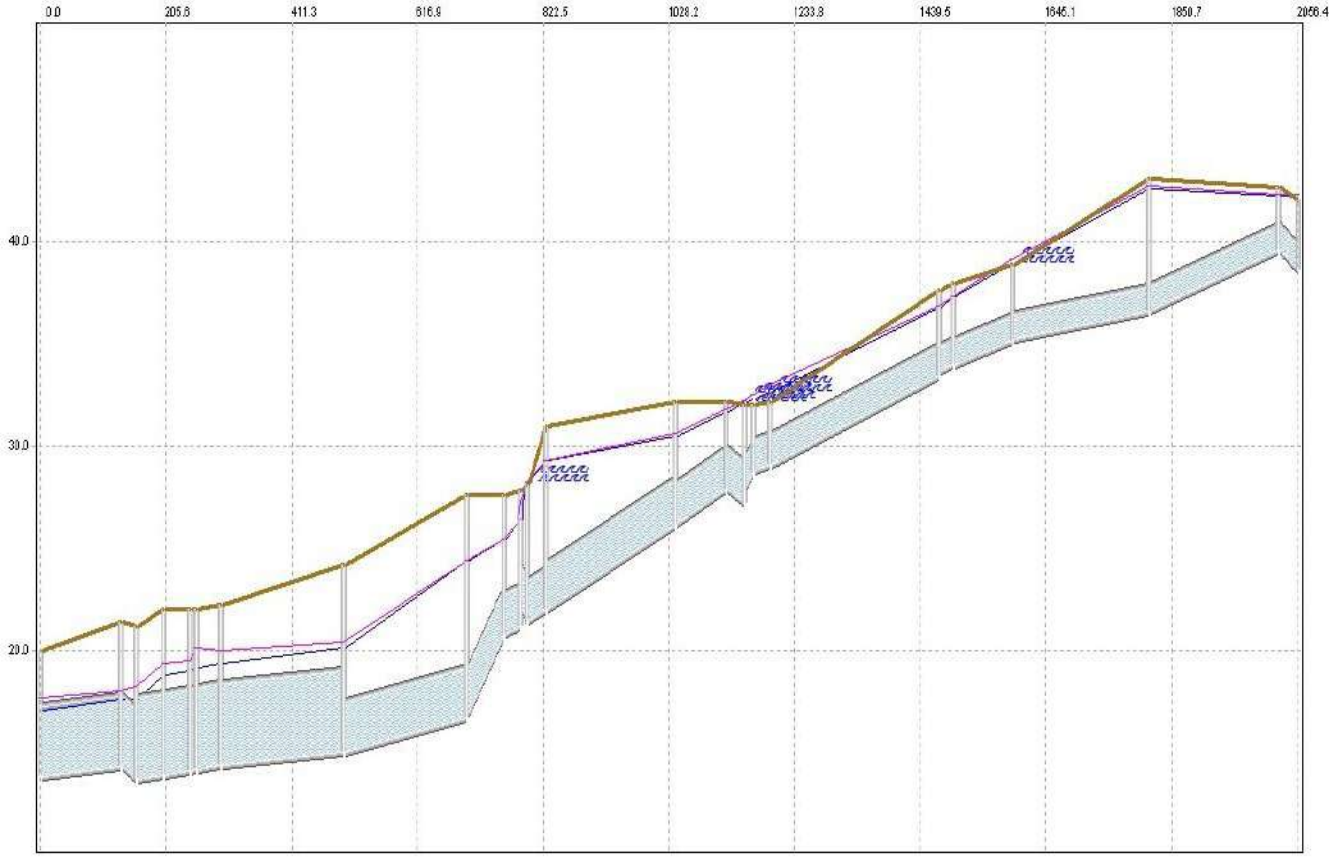
Peak Hydraulic Grade Line

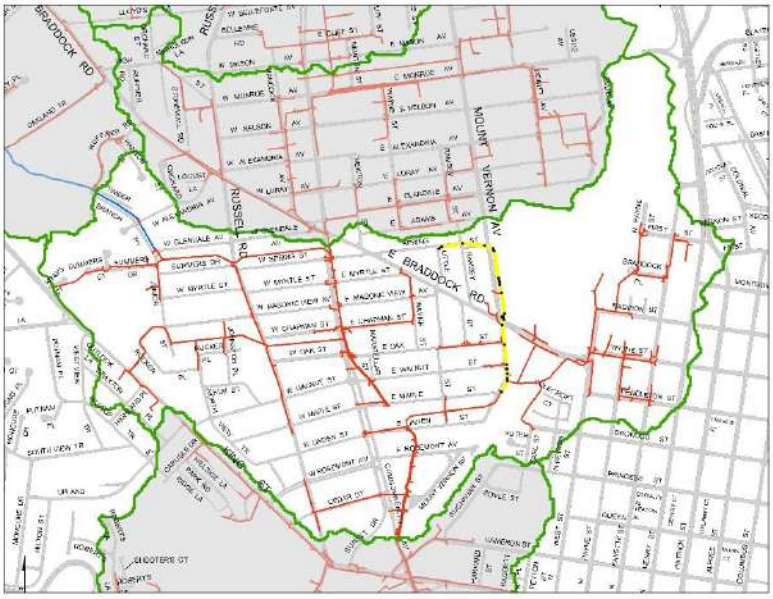
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 15

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 15 from 000789ND to 007762IN





Surface Flooding

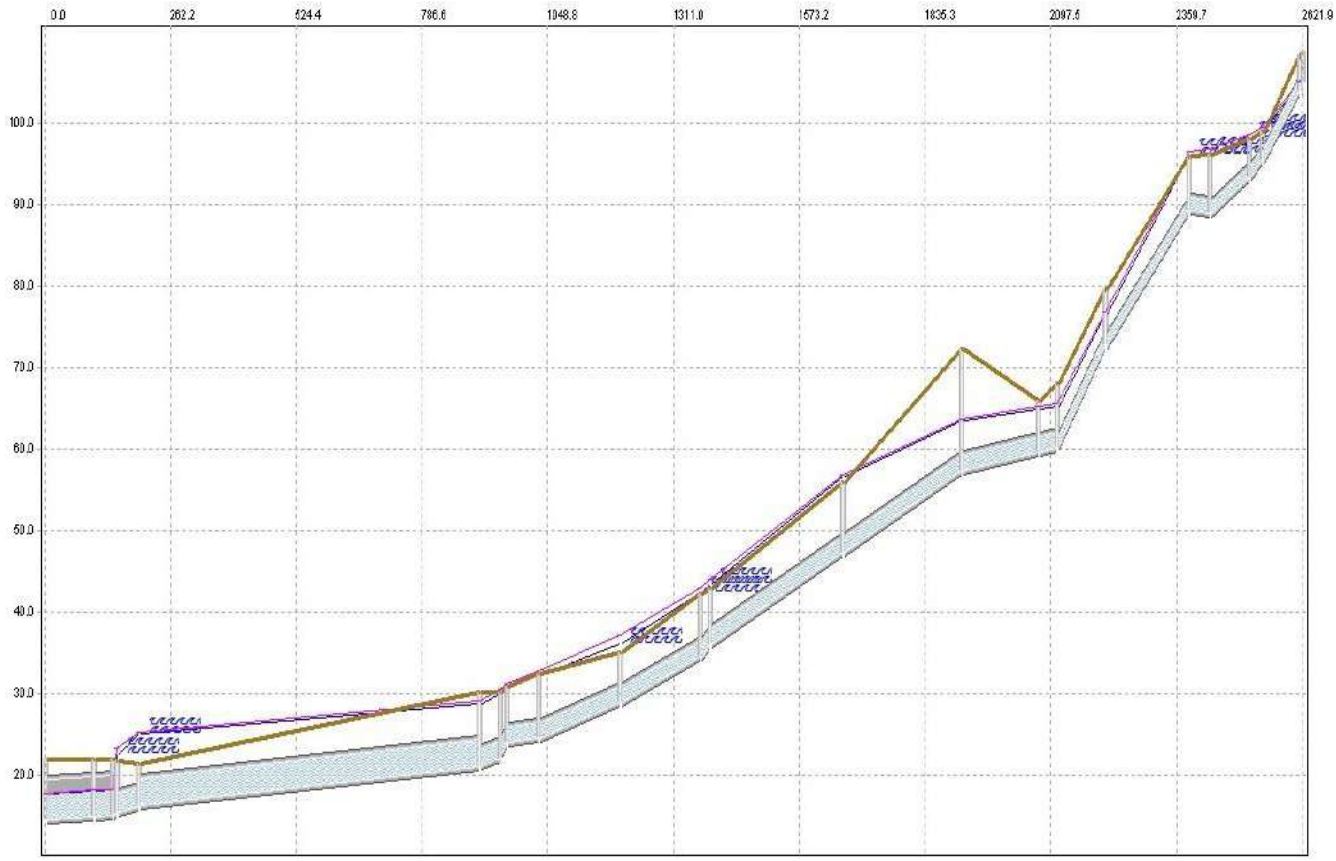
Peak Hydraulic Grade Line

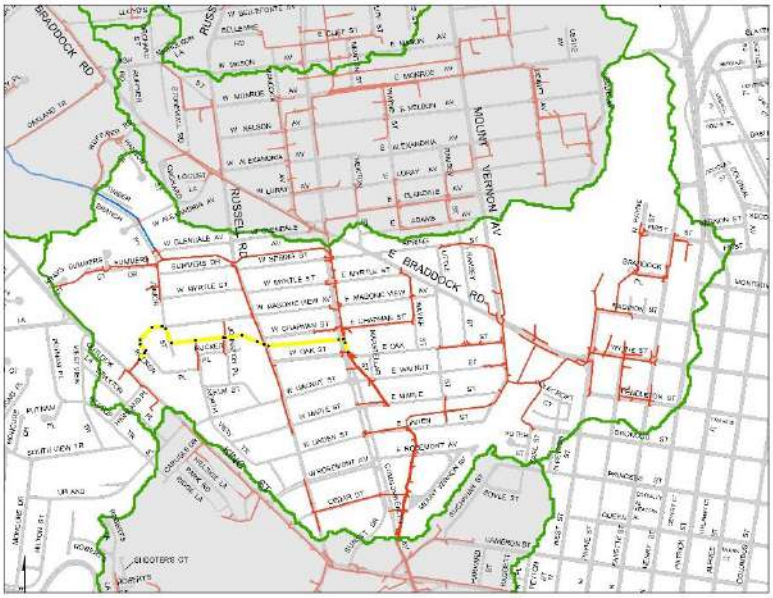
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 16

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 16 from 000823ND to 002912SMH





Surface Flooding

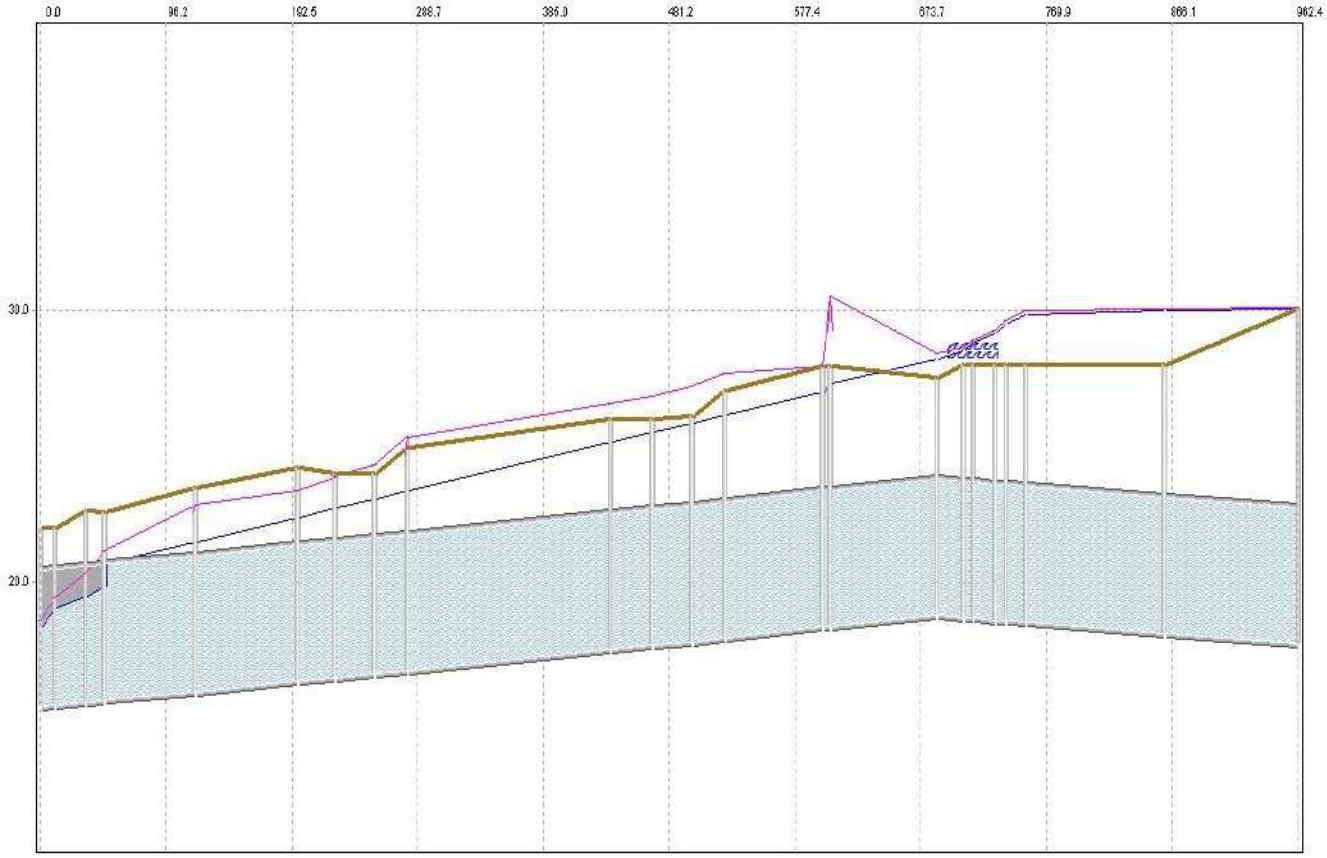
Peak Hydraulic Grade Line

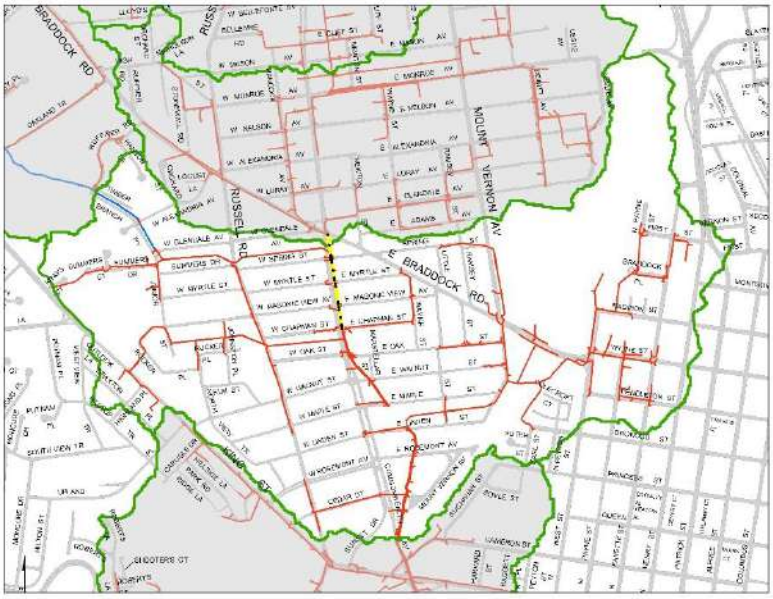
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 17

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 17 from 000815ND to 003166SMH





Surface Flooding

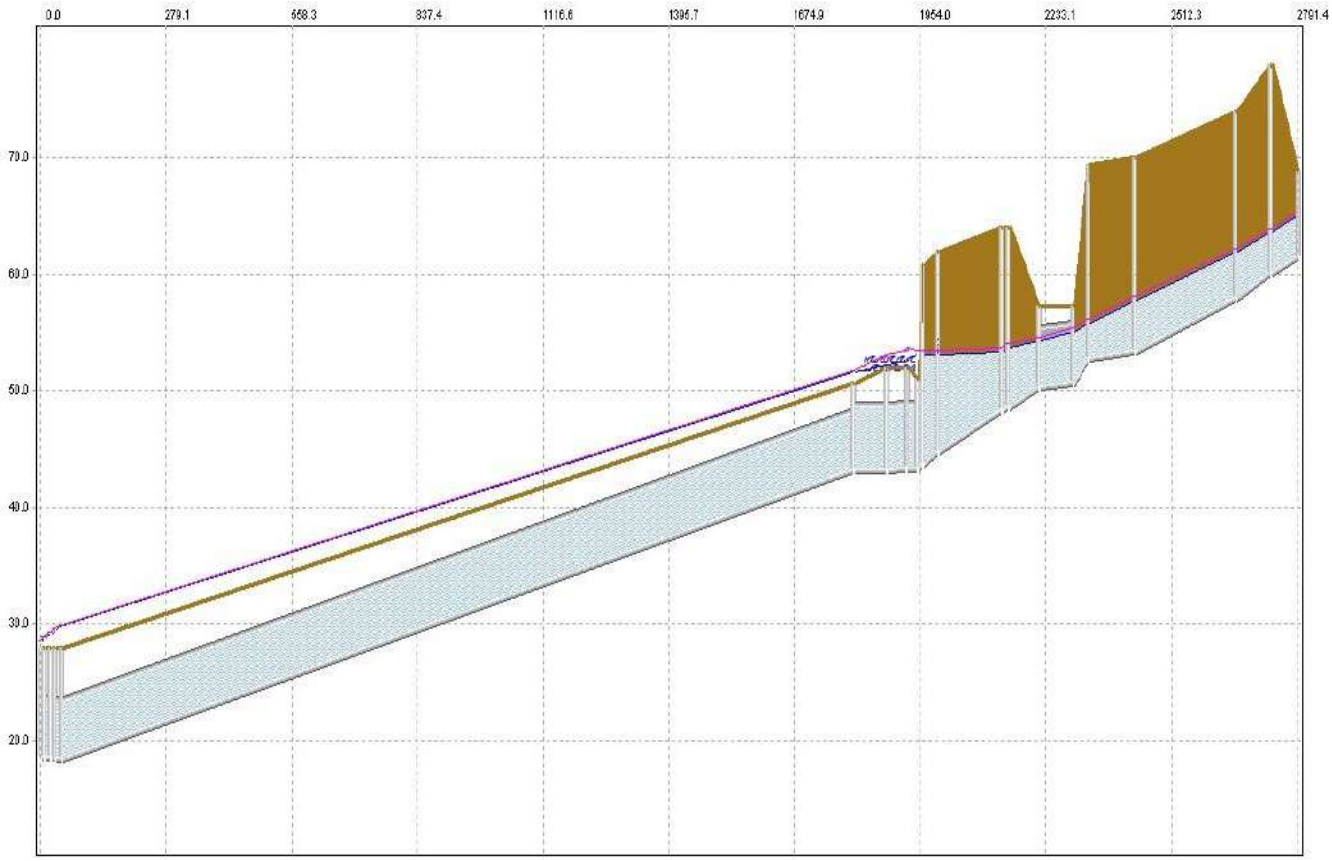
Peak Hydraulic Grade Line

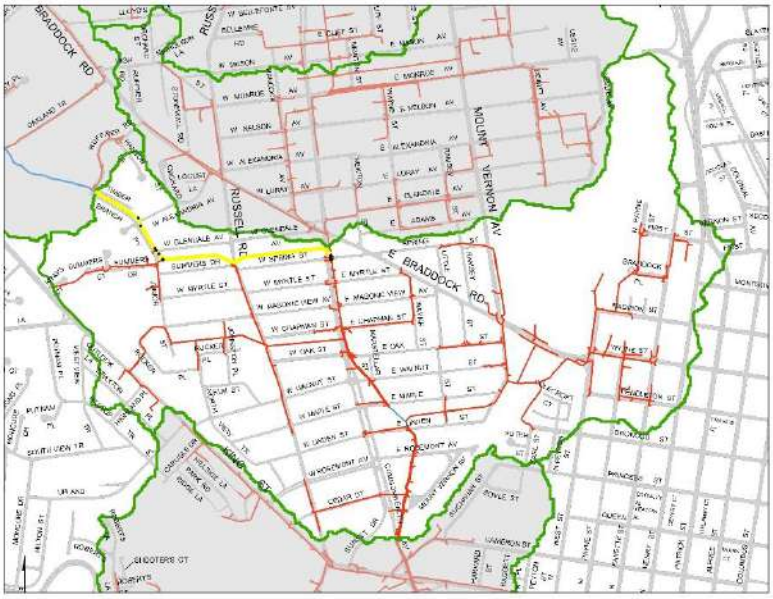
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 18

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 18 from 000814ND to 000125CP





Surface Flooding

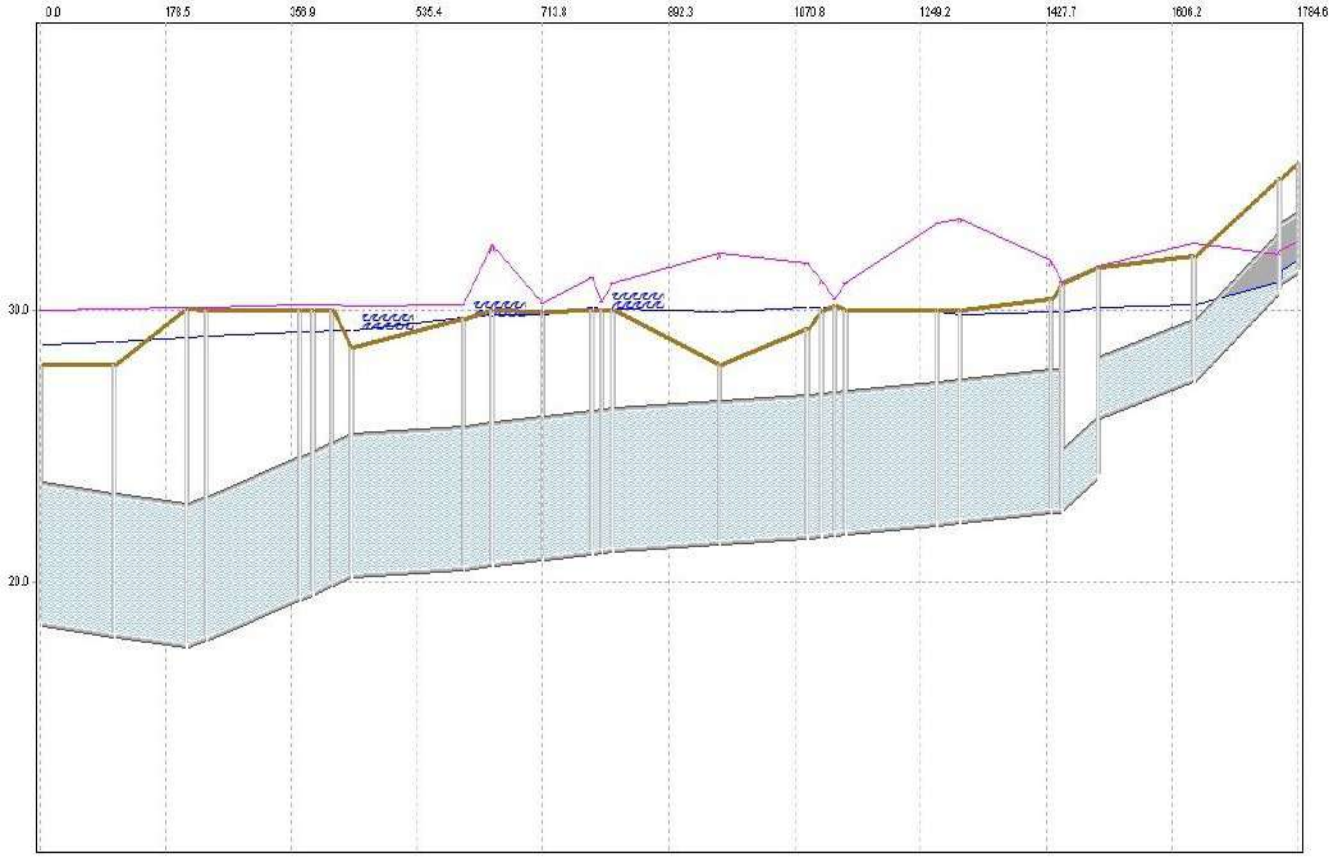
Peak Hydraulic Grade Line

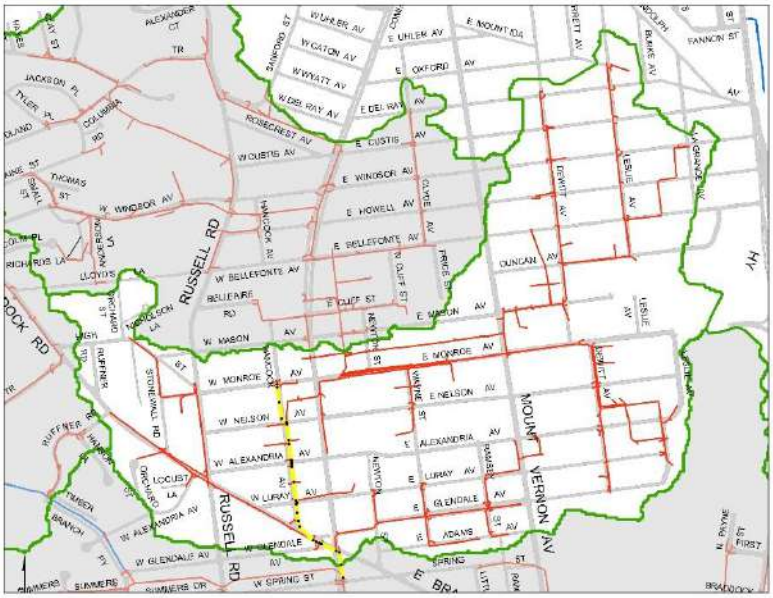
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 19

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 19 from 000811ND to 000977ND





Surface Flooding

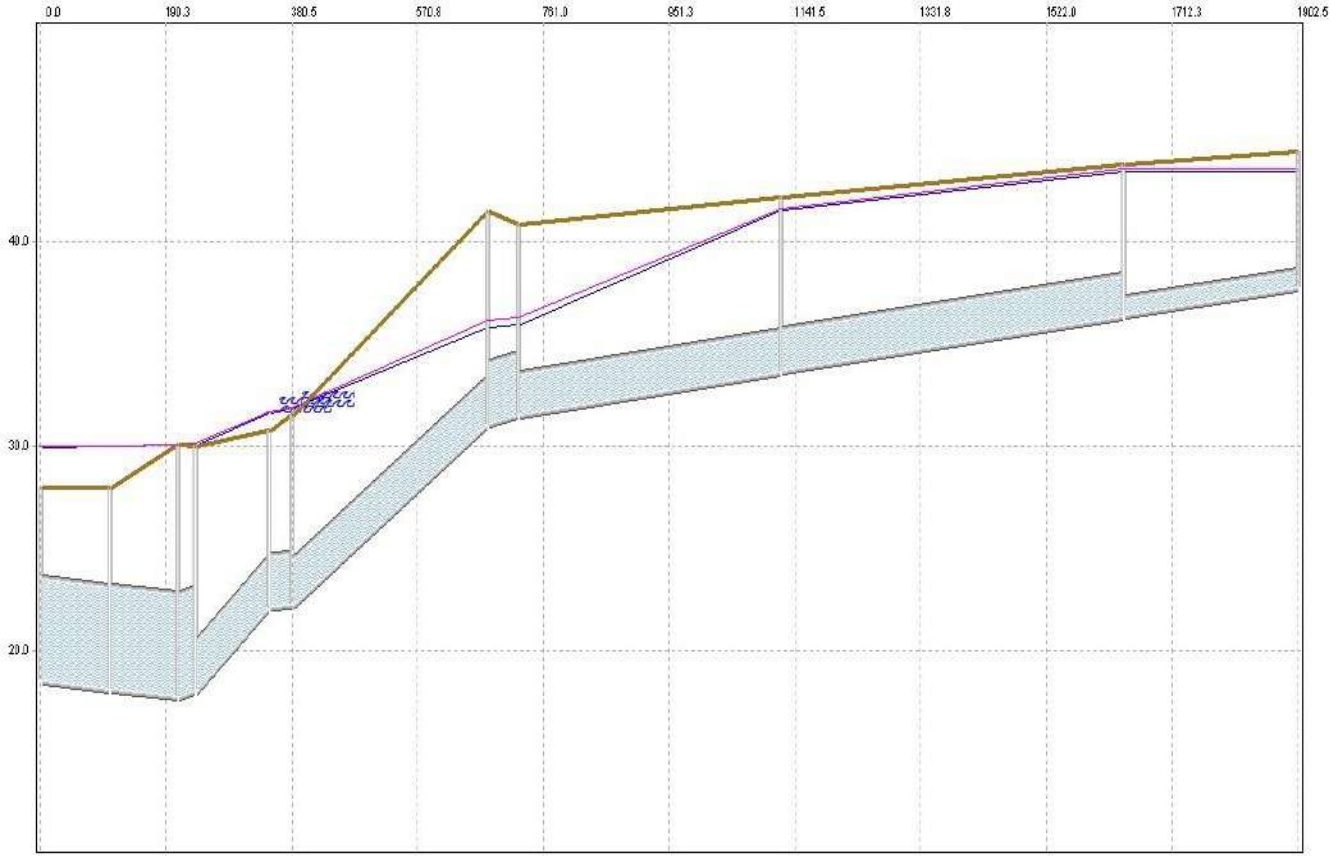
Peak Hydraulic Grade Line

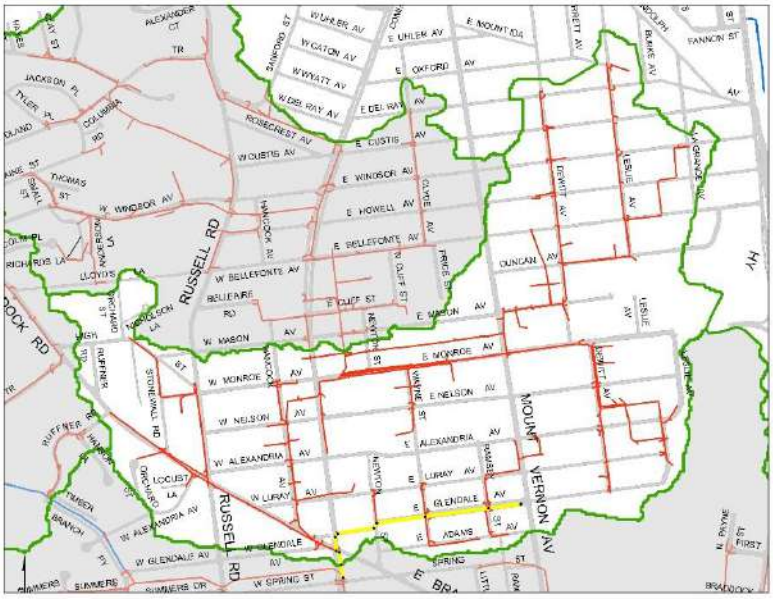
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 20

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 20 from 000811ND to 001005ND





Surface Flooding

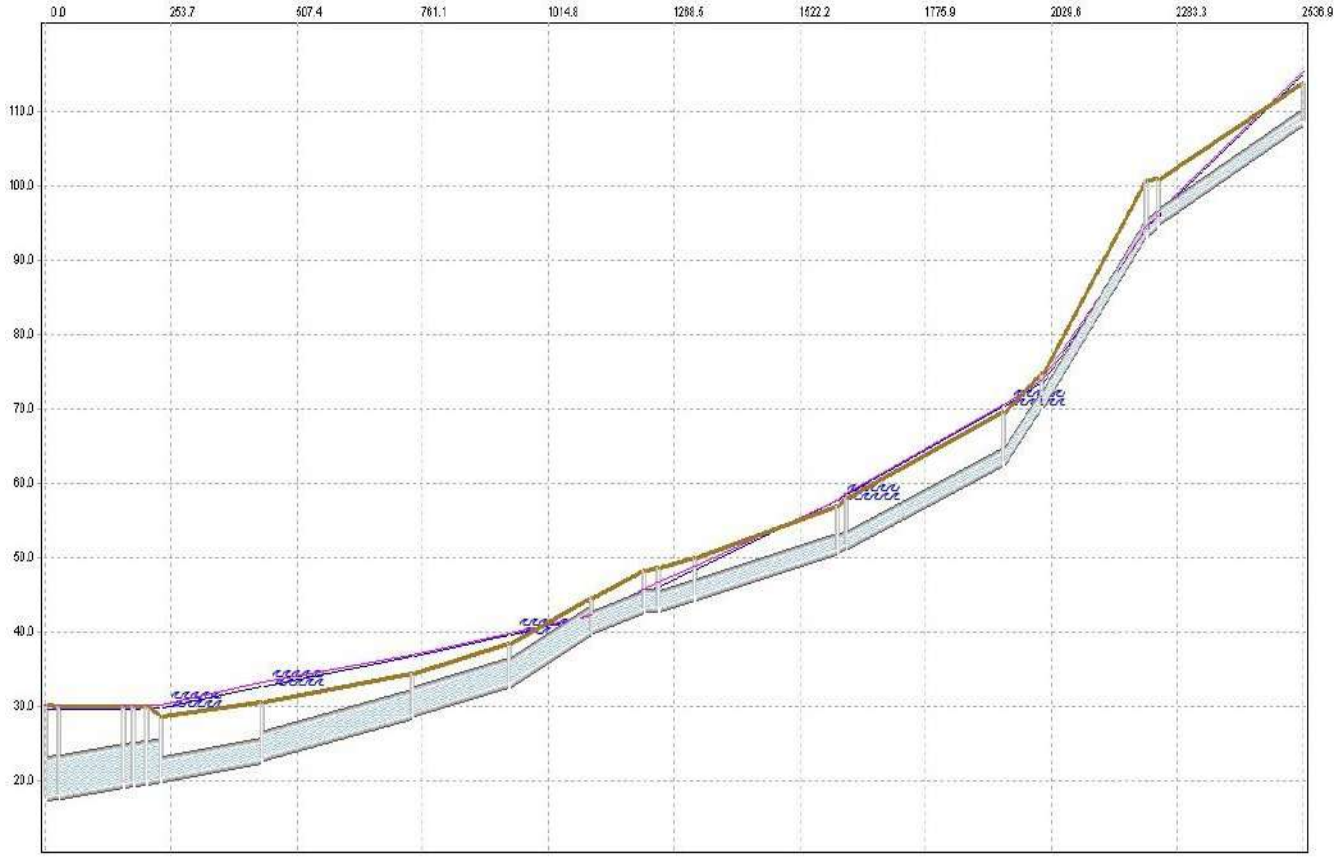
Peak Hydraulic Grade Line

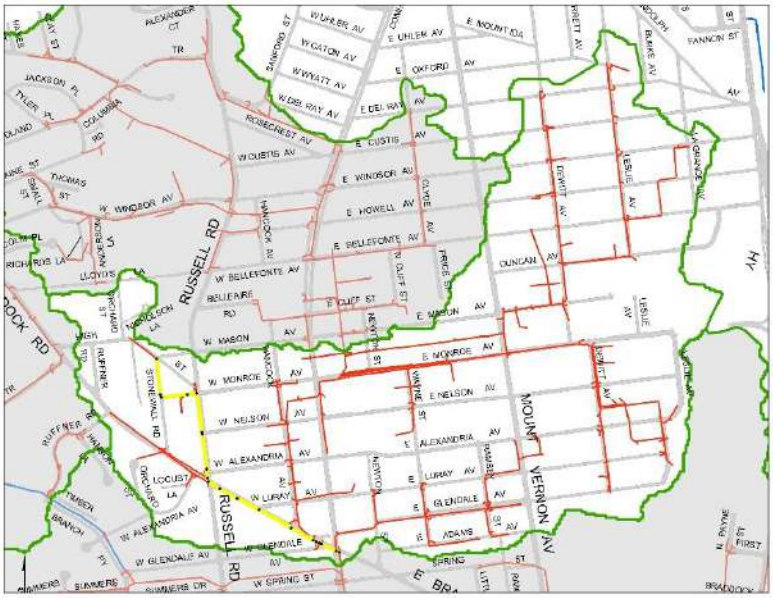
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 21

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 21 from 003166SMH to 003367SMH





Surface Flooding

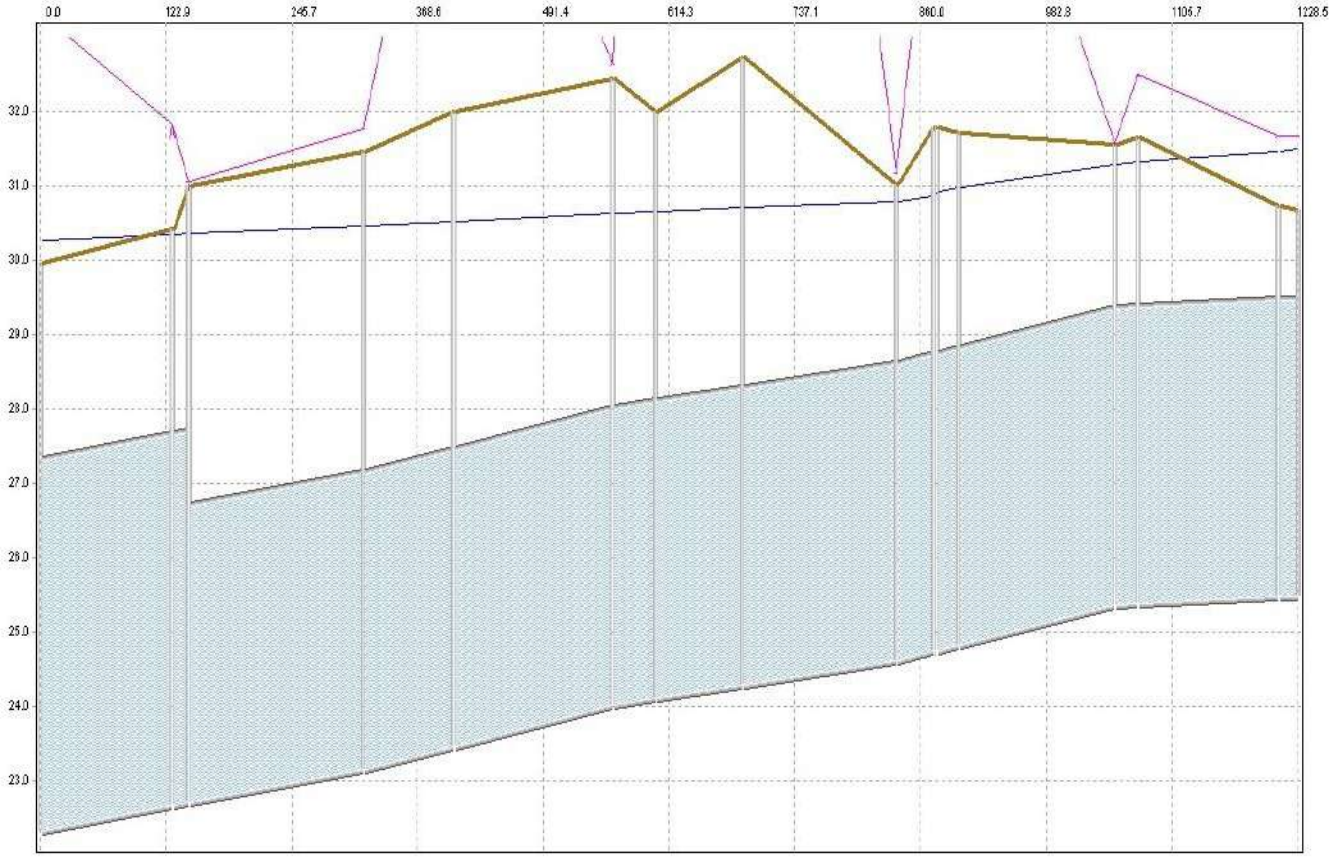
Peak Hydraulic Grade Line

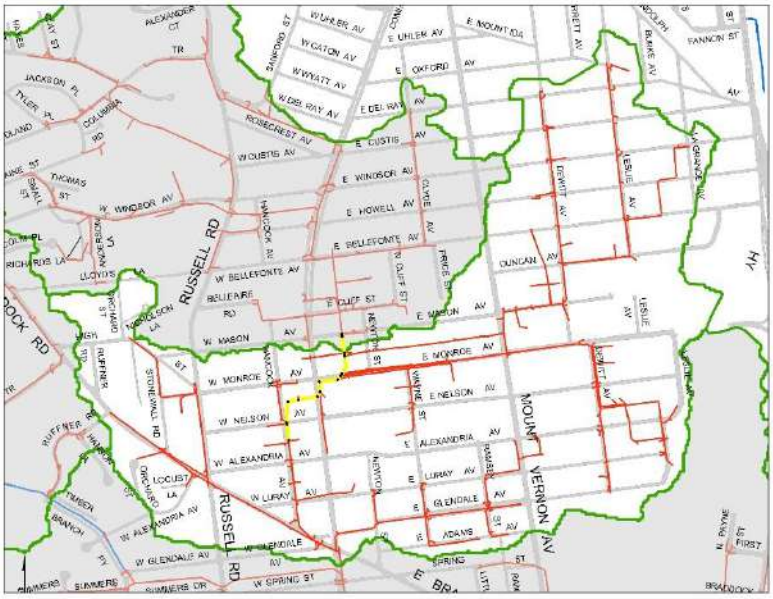
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 22

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 22 from 000999ND to 003412SMH





Surface Flooding

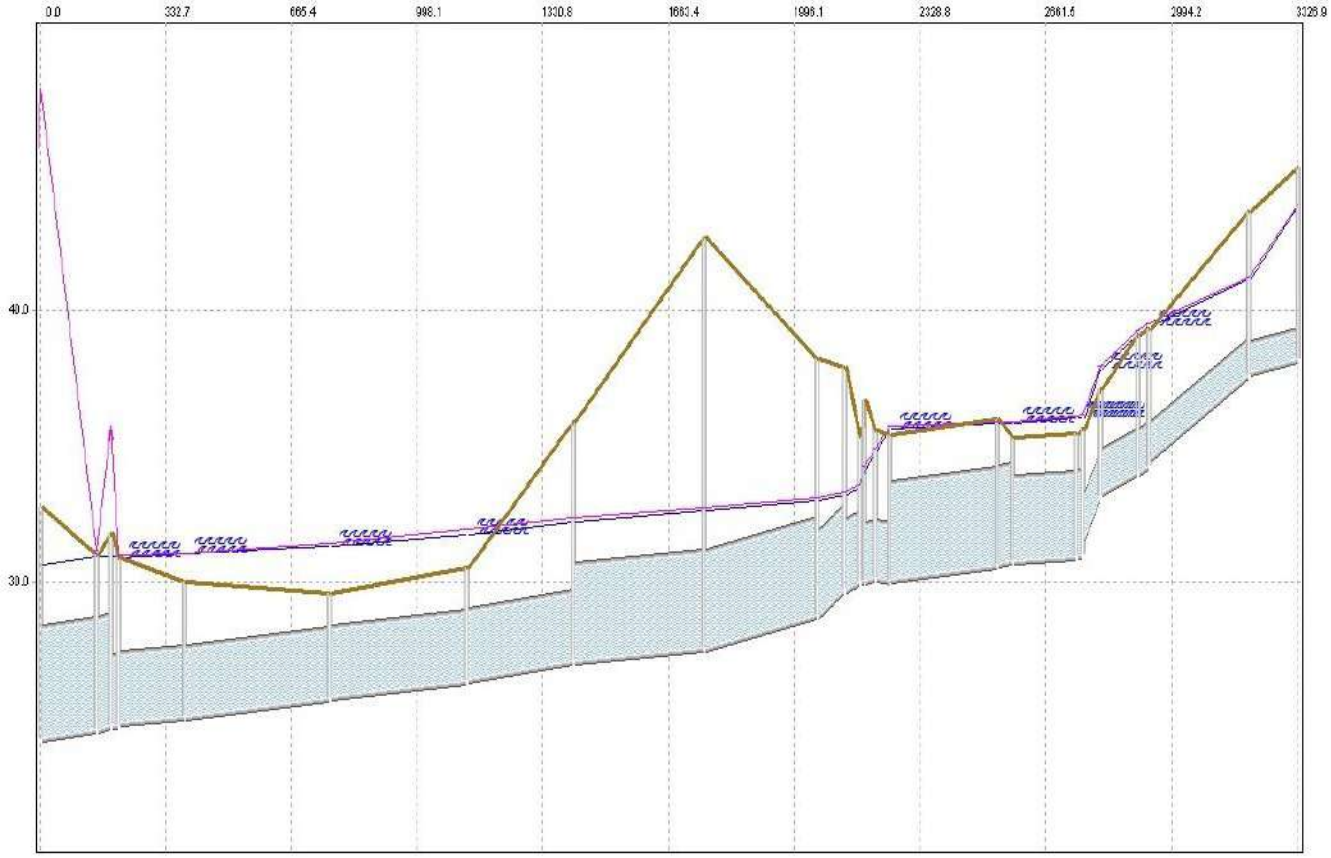
Peak Hydraulic Grade Line

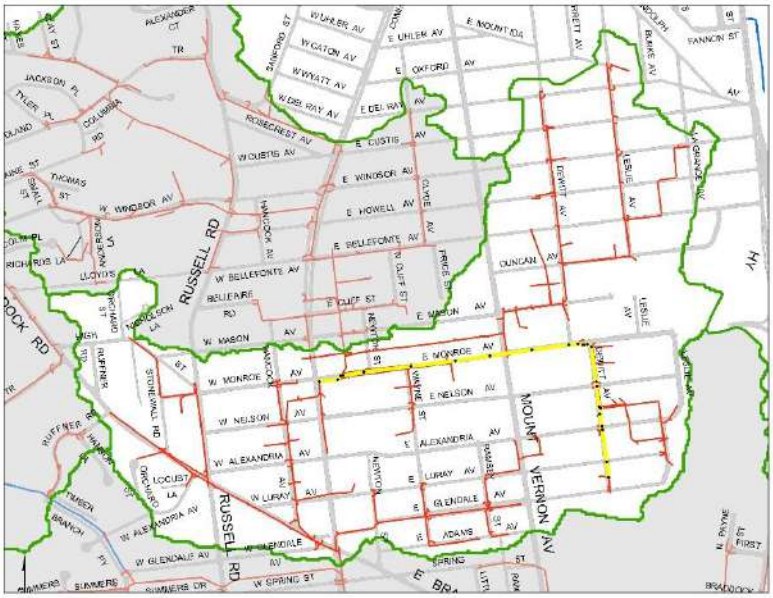
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 23

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 23 from 000994ND to 000856ND





Surface Flooding

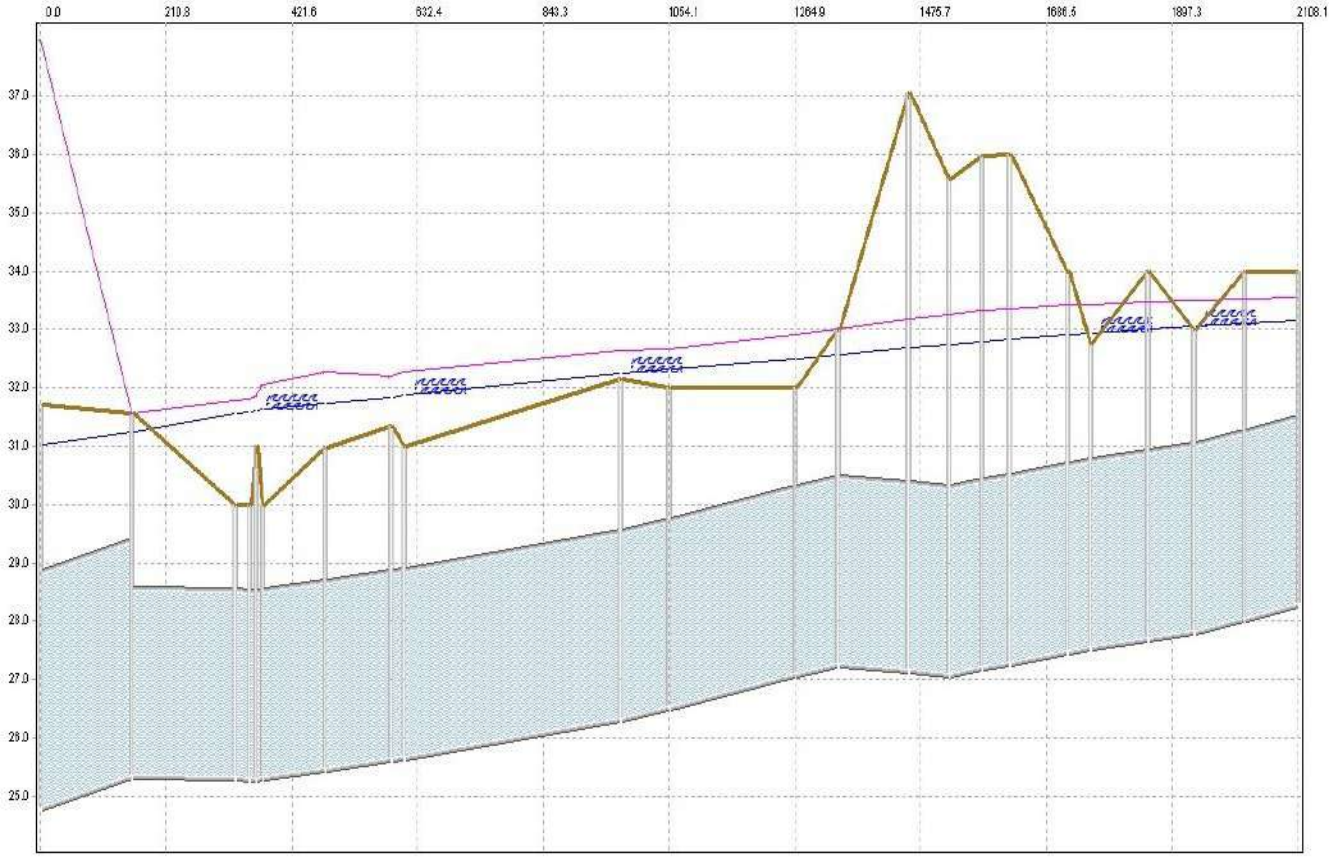
Peak Hydraulic Grade Line

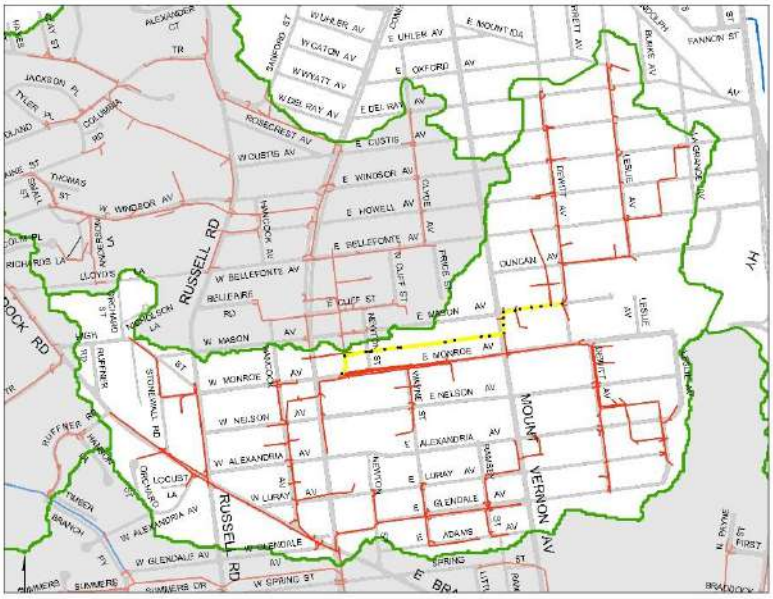
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 24

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 24 from 002916ND to 003335SMH





Surface Flooding

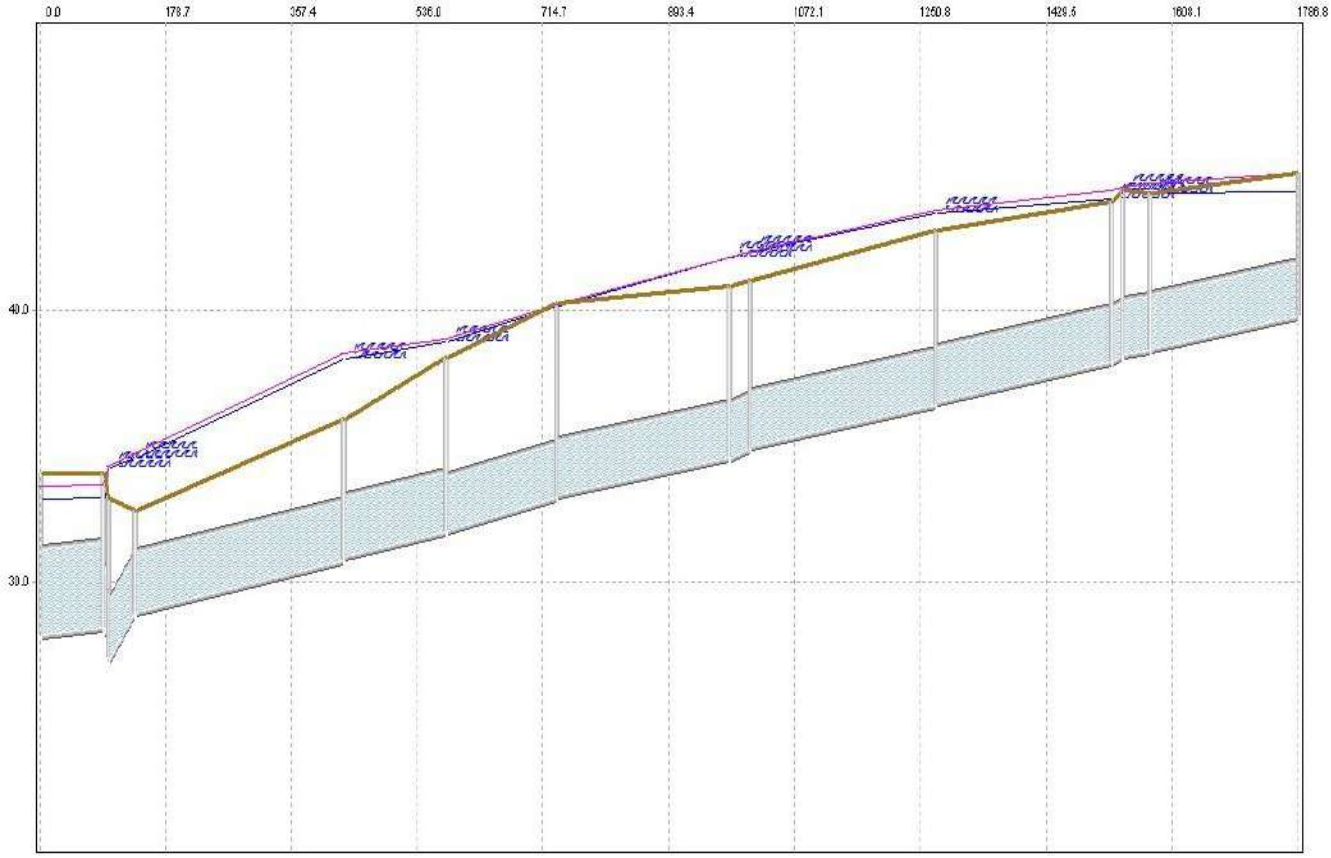
Peak Hydraulic Grade Line

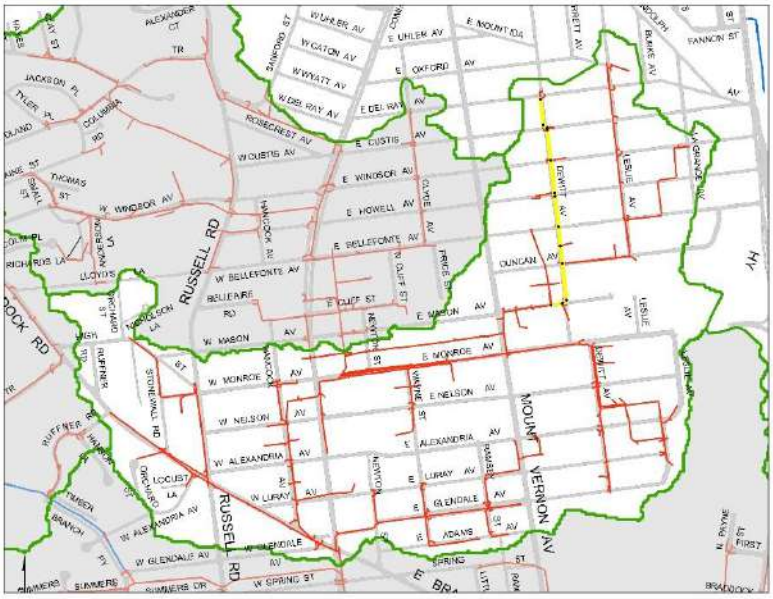
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 25

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 25 from 000991ND to 001984SMH





Surface Flooding

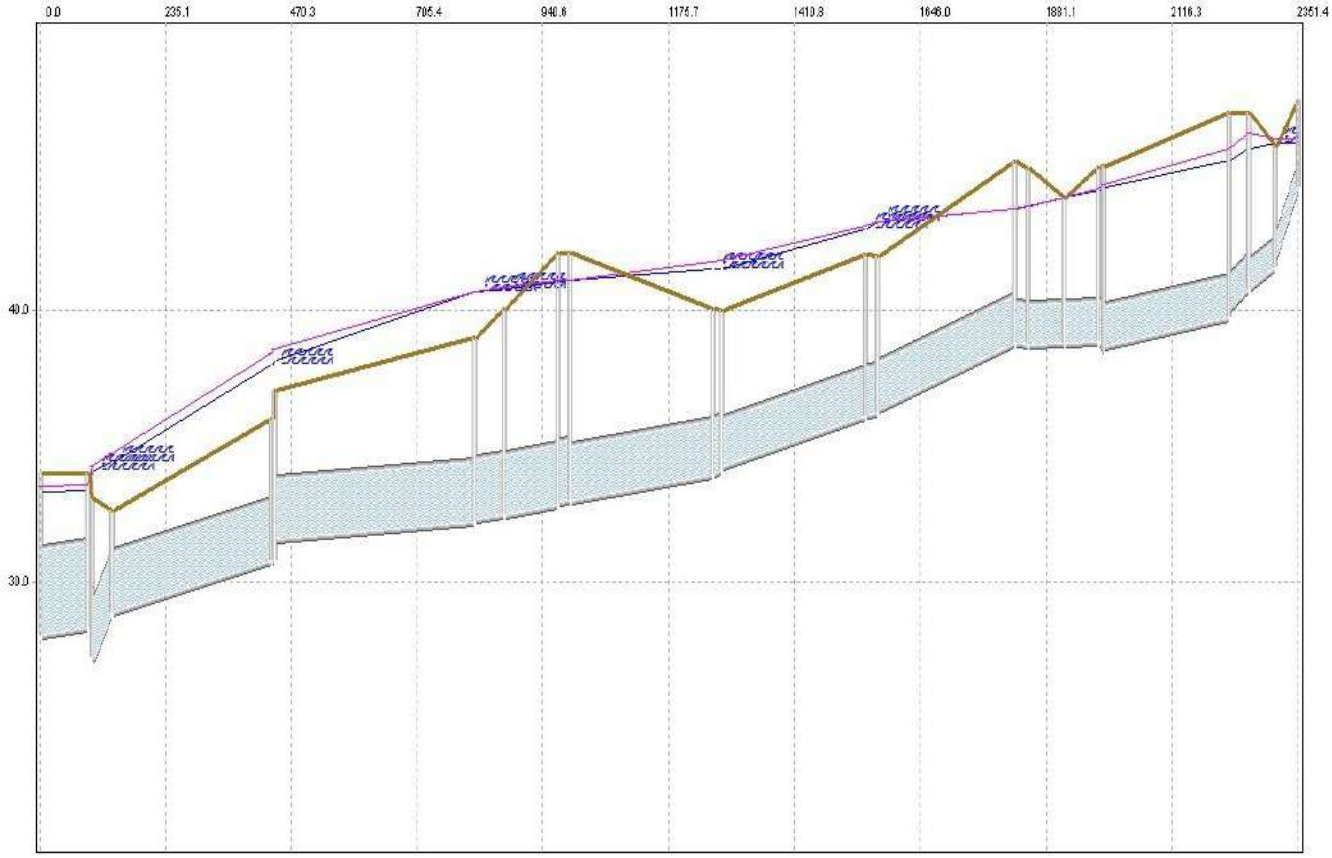
Peak Hydraulic Grade Line

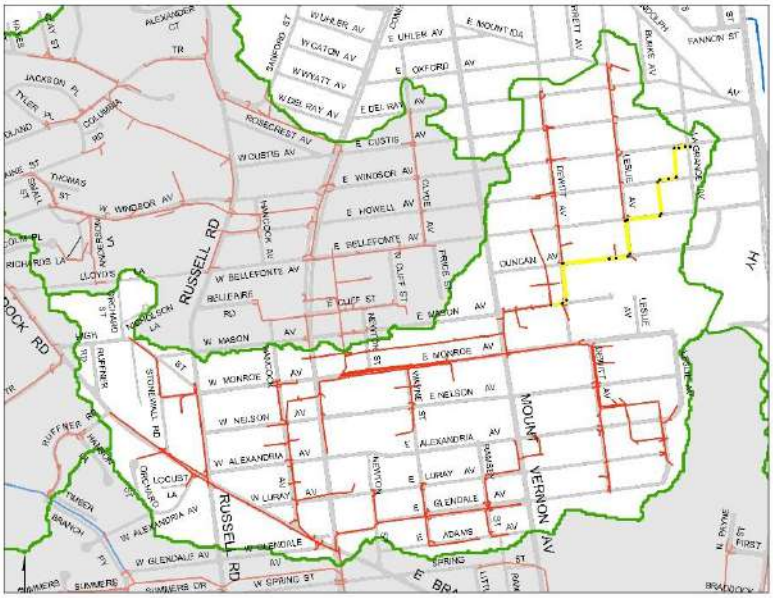
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 26

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 26 from 000991ND to 000107CB





Surface Flooding

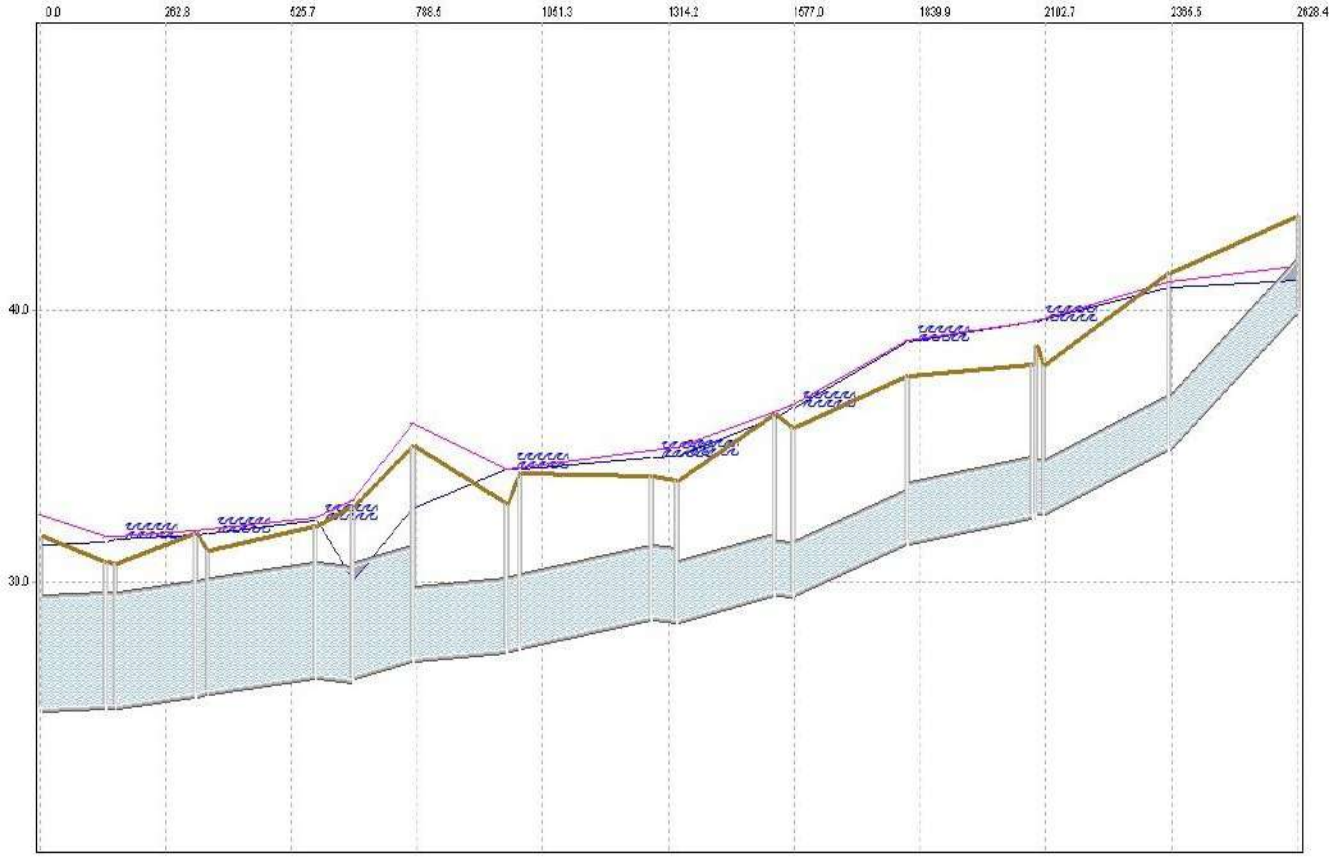
Peak Hydraulic Grade Line

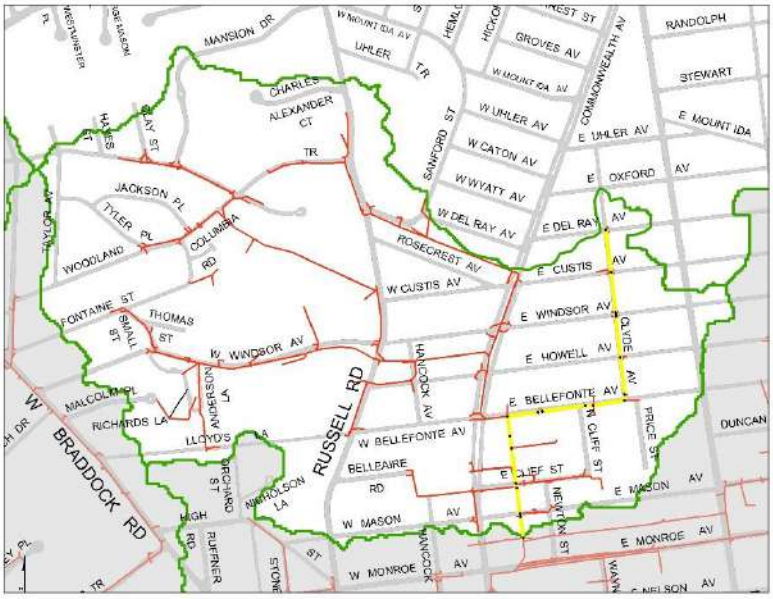
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 27

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 27 from 000936ND to 001987SMH





Surface Flooding

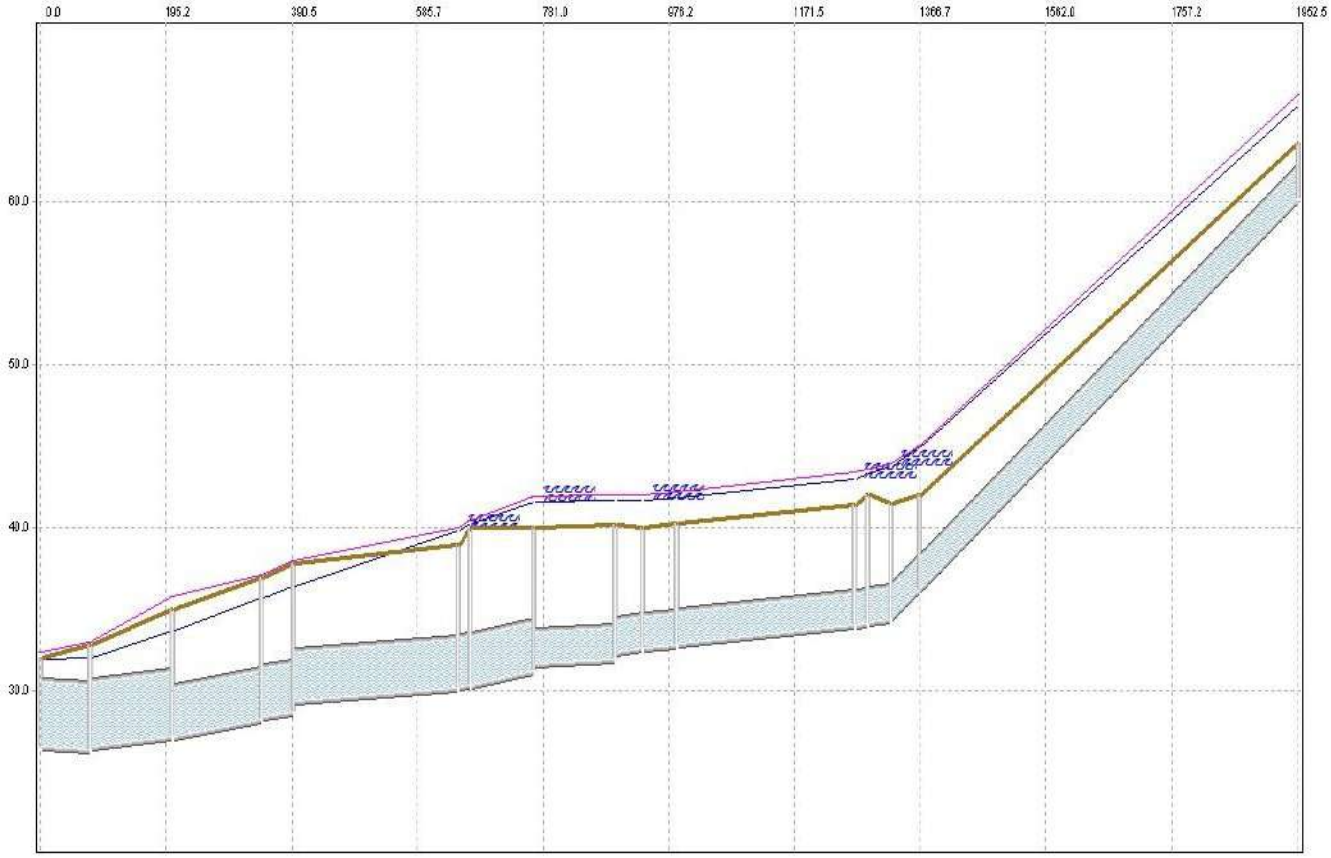
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 28

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 28 from 003421SMH to 001185ND



Surface Flooding

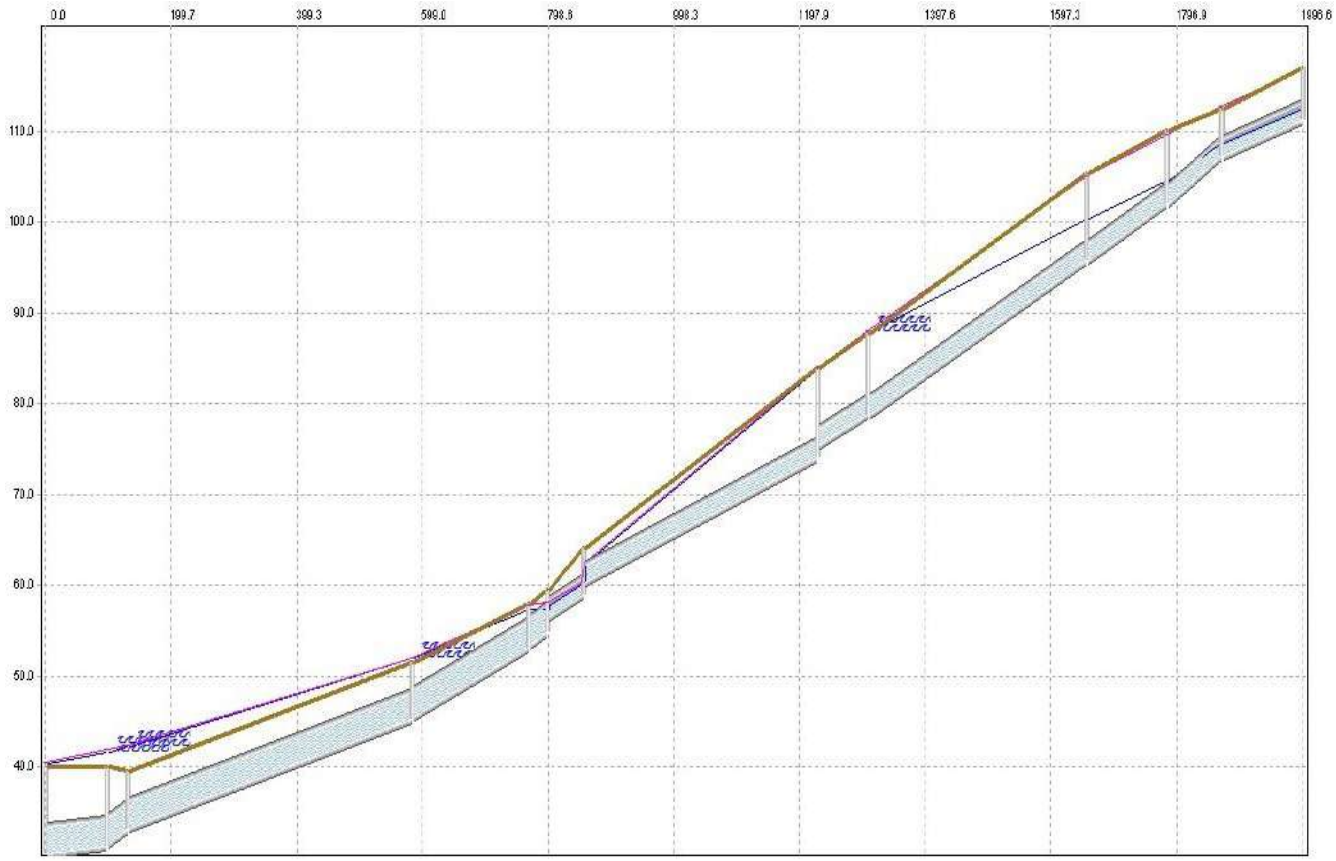
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 29

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 29 from 001151ND to 002635SMH



Surface Flooding

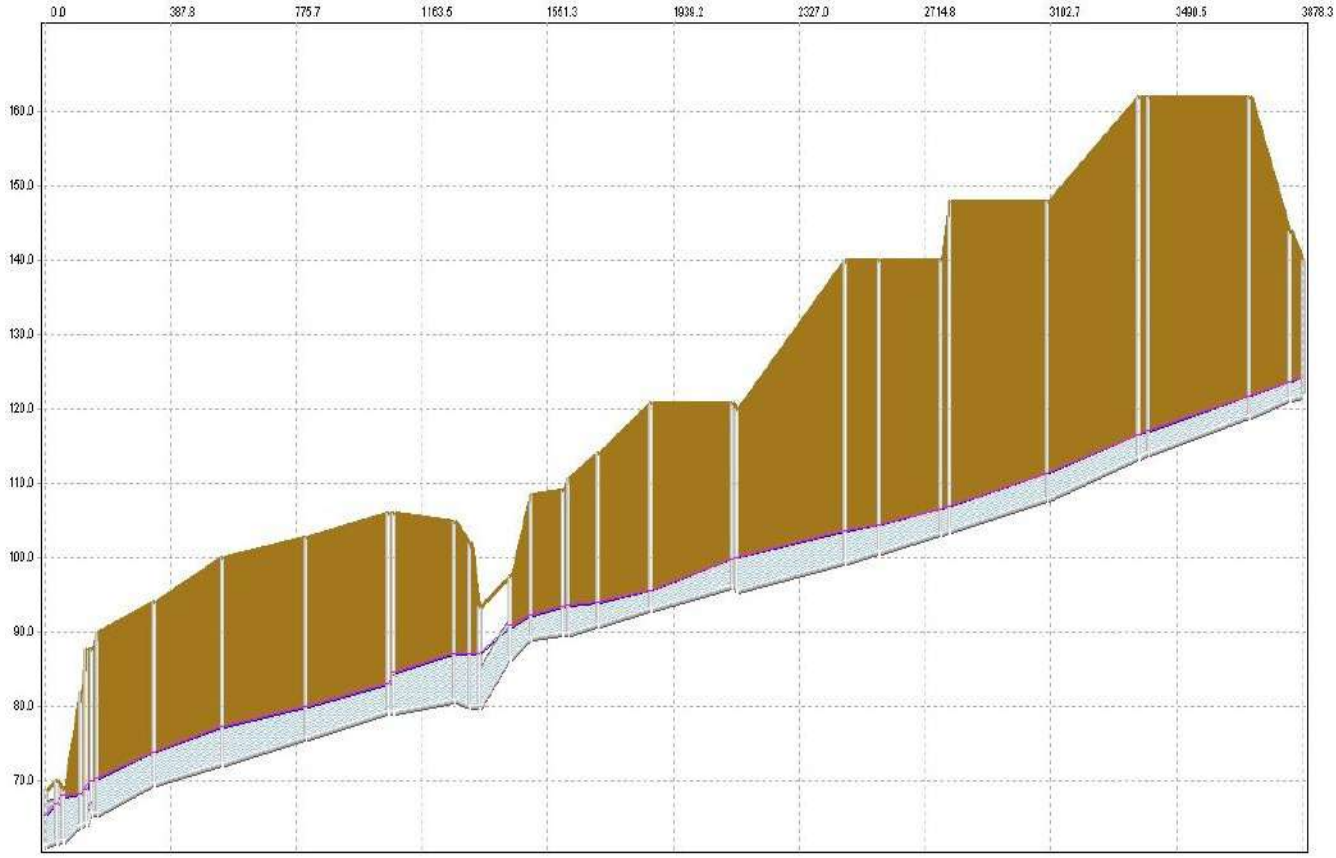
Peak Hydraulic Grade Line

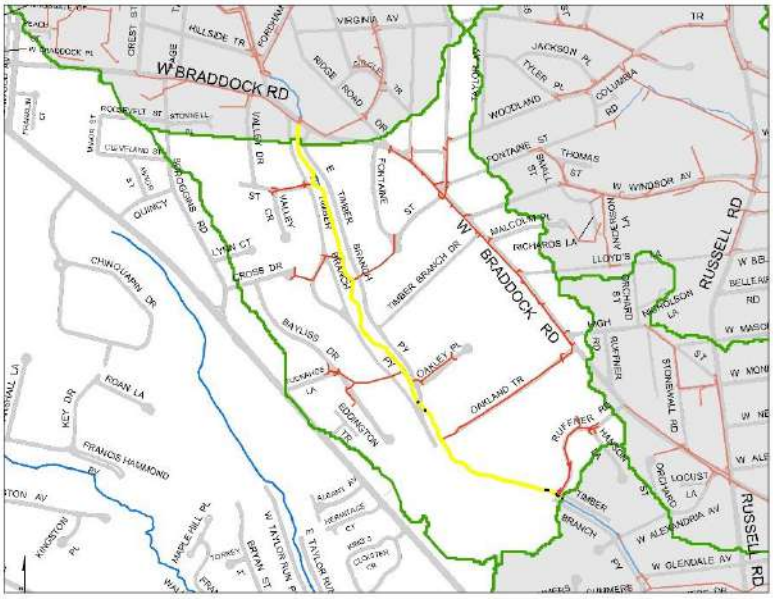
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 30

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 30 from 000125CP to 000508IO





Surface Flooding

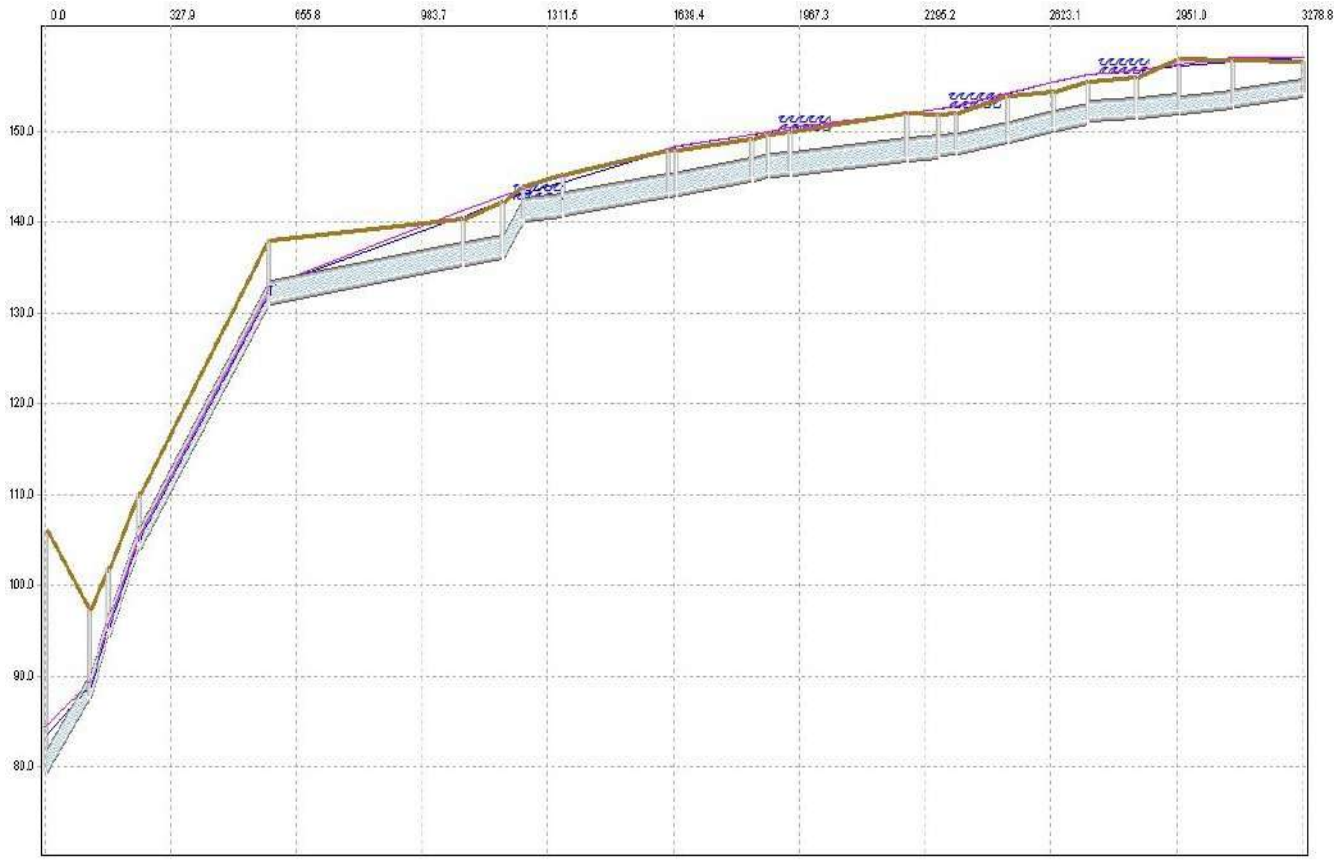
Peak Hydraulic Grade Line

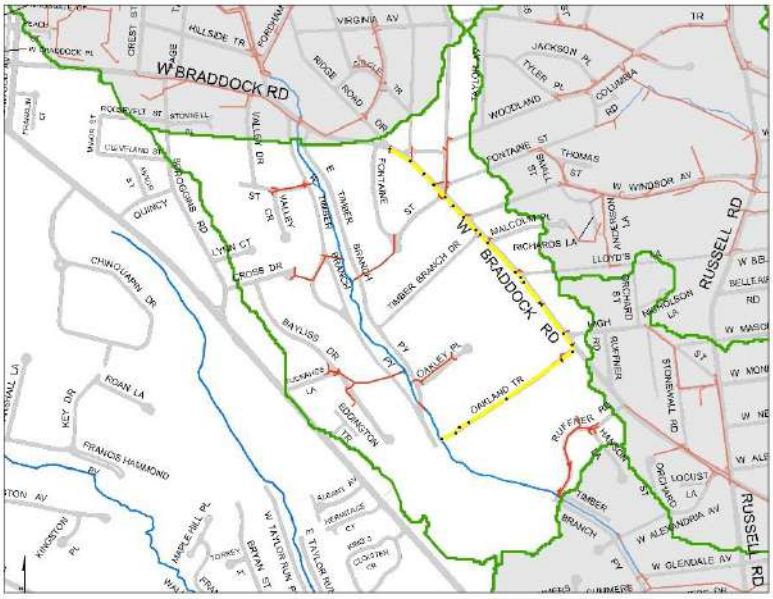
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 31

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 31 from 000527IO to 002644SMH





Surface Flooding

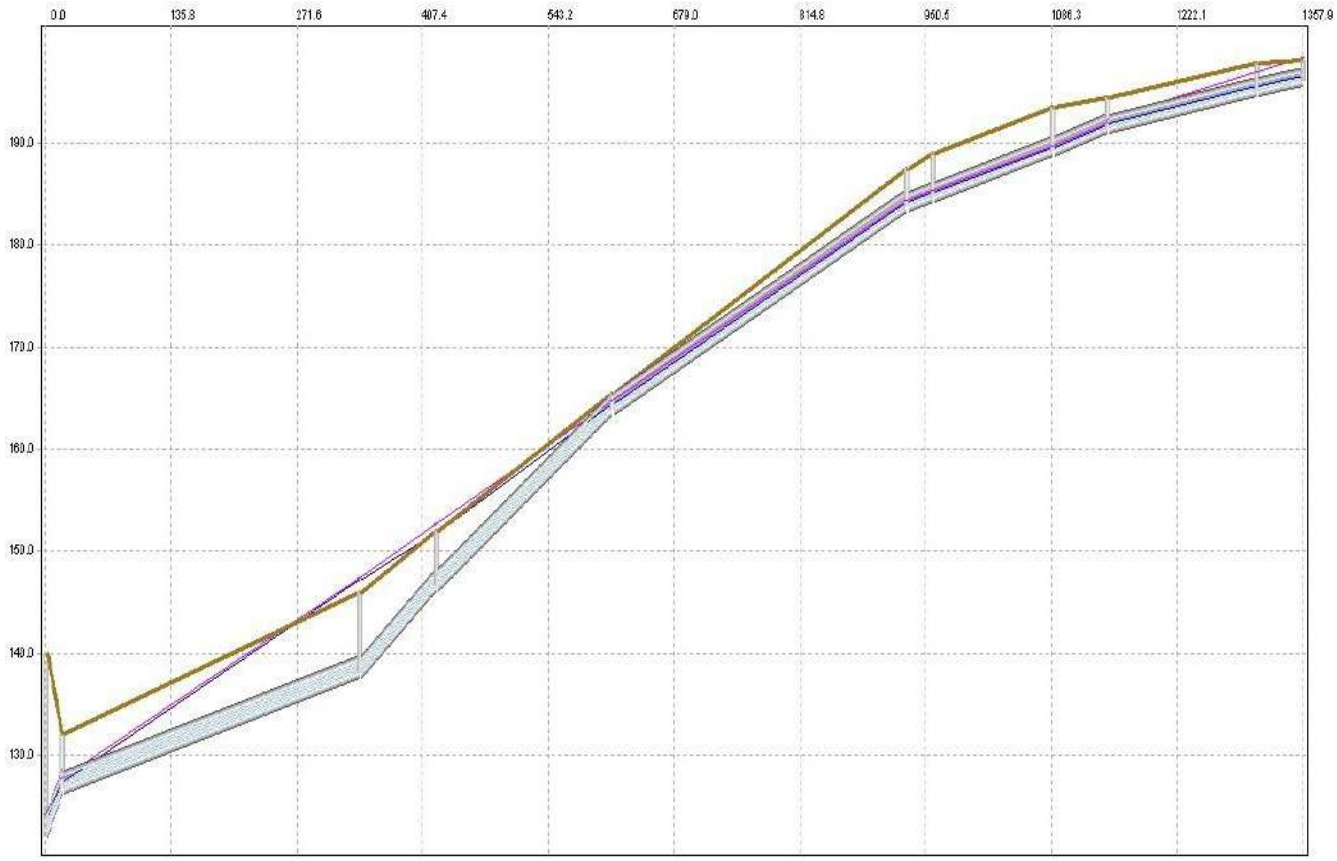
Peak Hydraulic Grade Line

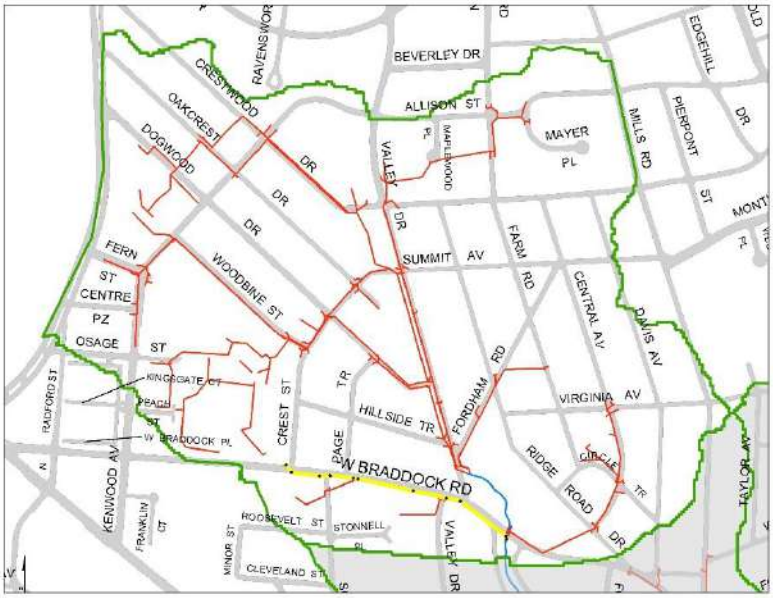
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 32

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 32 from 000508IO to 007487IN





Surface Flooding

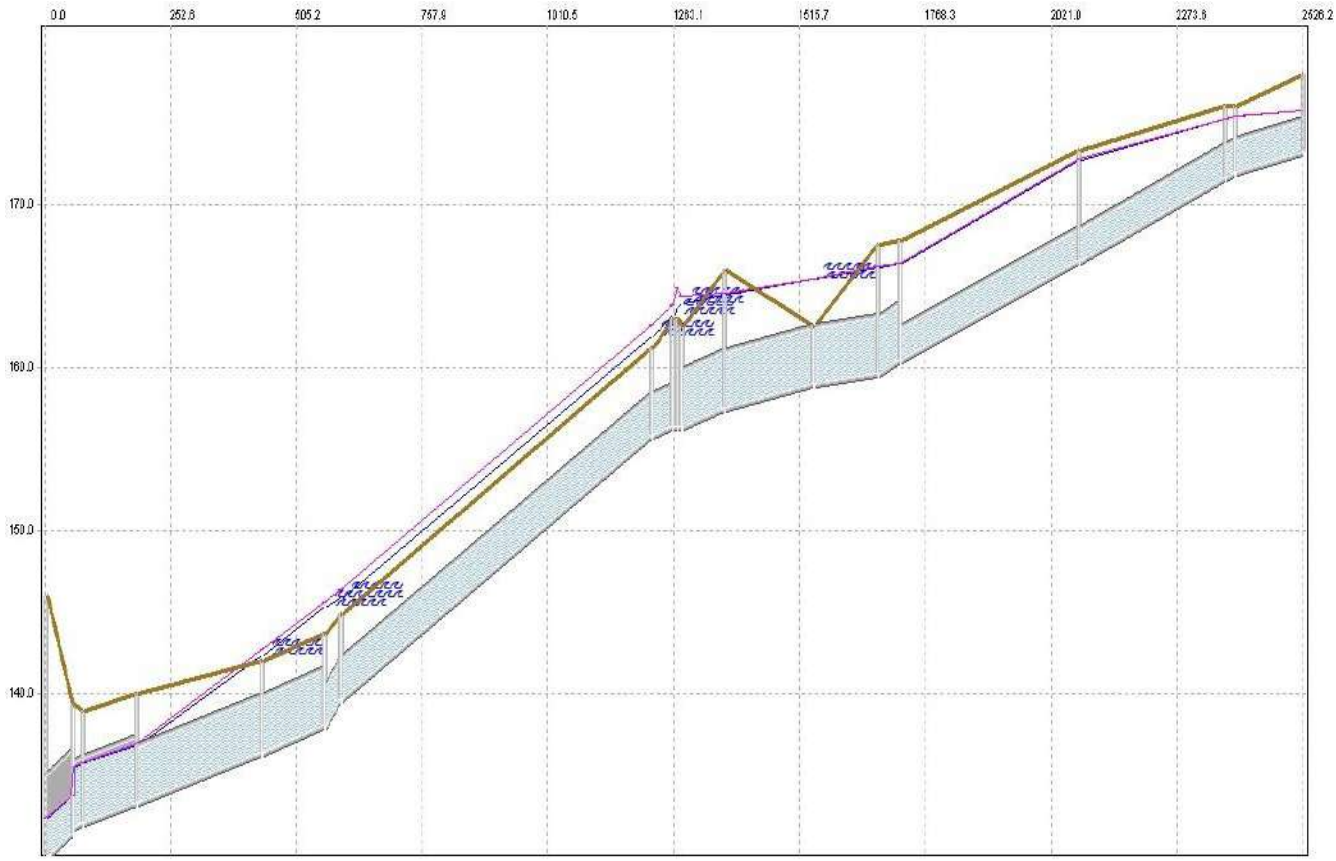
Peak Hydraulic Grade Line

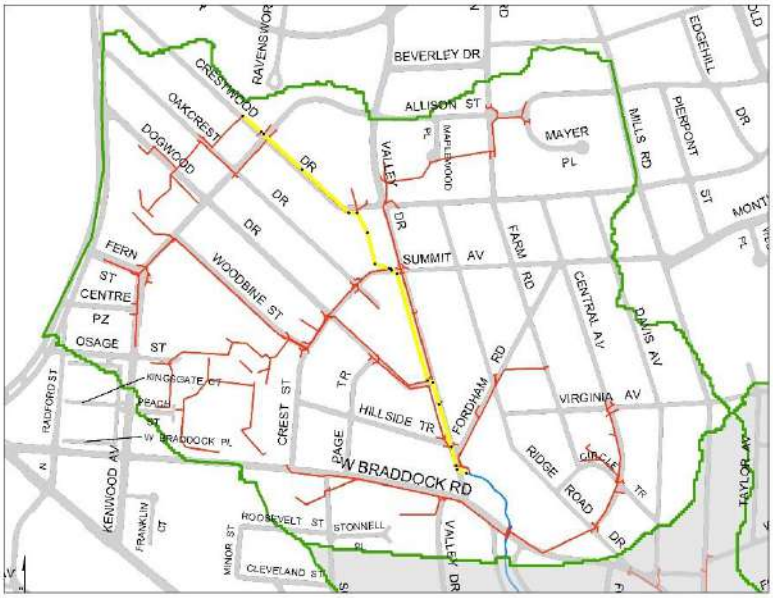
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 33

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 33 from 000499IO to 002532SMH





Surface Flooding

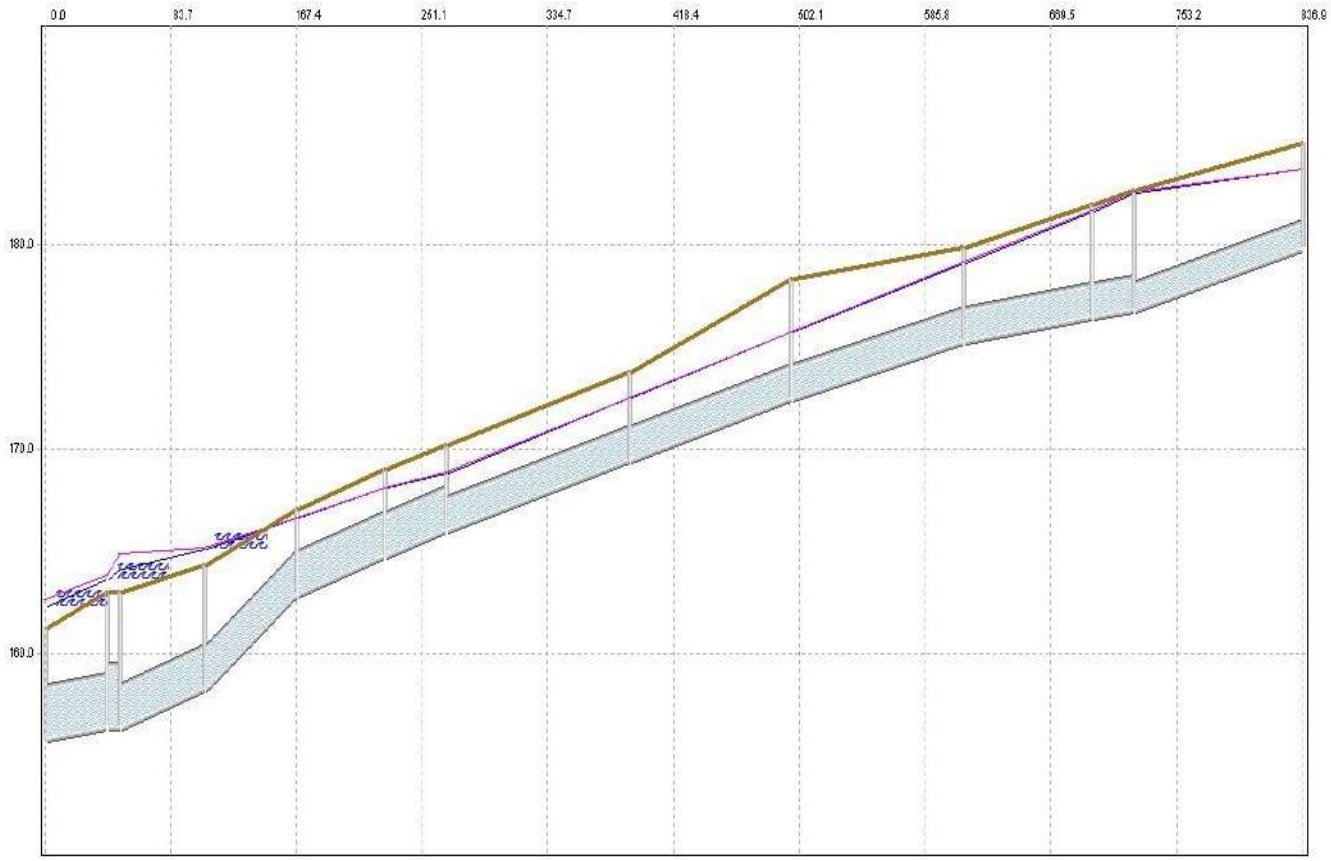
Peak Hydraulic Grade Line

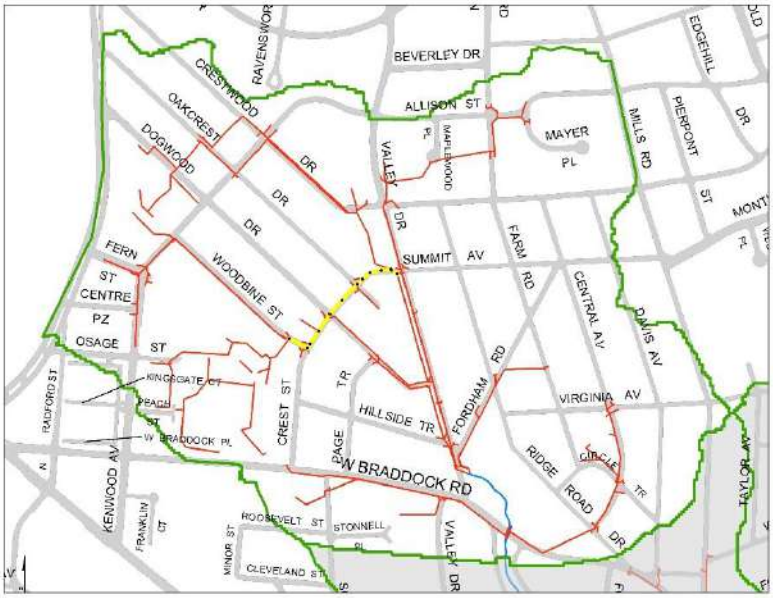
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 34

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 34 from 005541IN to 002513SMH





Surface Flooding

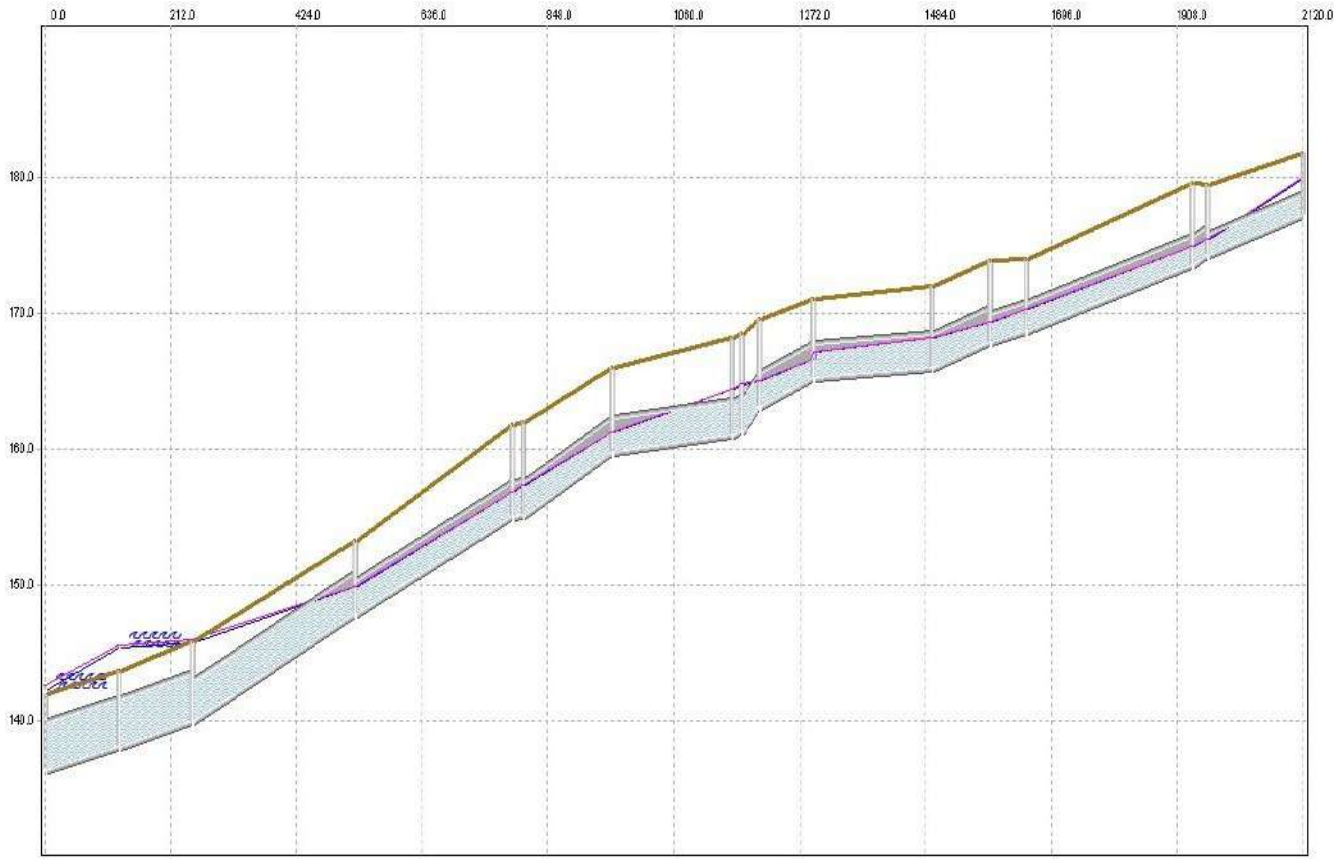
Peak Hydraulic Grade Line

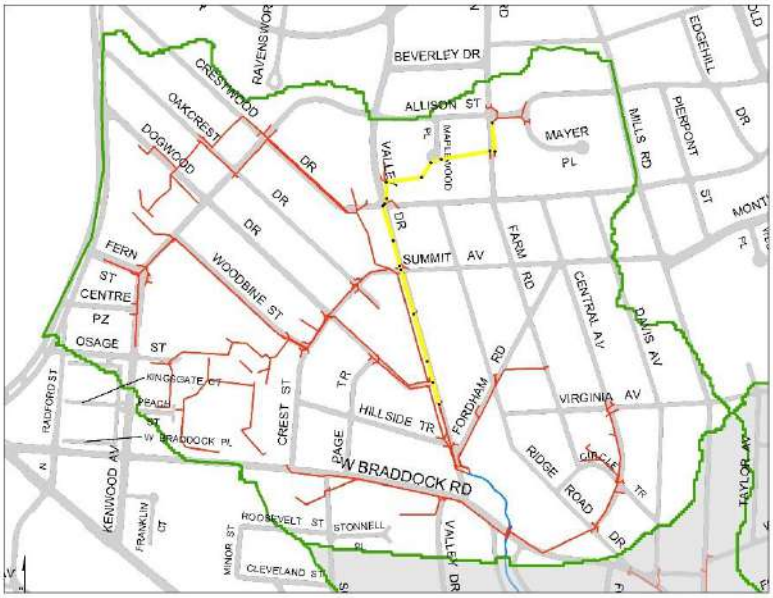
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 35

Scenario 1: Existing IDF, Existing Boundary Condition - Profile 35 from 002608SMH to 005553IN





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

Attachment H
Detailed Model Results: 10-Year, 24-Hour Design Storm Event Based on Updated IDF Curve

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	000604STMP	000658IN	000246SMH	48	1.5	16.7	18.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000605STMP	000246SMH	000029CB	51	1.5	21.6	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000650STMP	000029CB	000660IN	96	1.5	21.5	12.1	0	0	1.1	-	-	-	0.0	0.0	0	0	Surcharged
1	000651STMP	000660IN	000002ND	112	1.75	26.0	15.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000652STMP	000661IN	000660IN	37	1.25	4.5	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000654STMP	000657IN	000658IN	111	1.25	6.4	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000655STMP	000653IN	000658IN	292	1.5	10.3	15.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004691STMP	001541SMH	004855IN	166	2.5	18.0	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004912STMP	004838IN	001535SMH	17	1.5	9.7	5.7	0.2	0.3	1.1	1.7	0.6	0.3	0.0	0.0	0	0	Insufficient Freeboard
1	004913STMP	004796IN	004794IN	157	2.5	3.5	3.1	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004915STMP	004850IN	004852IN	86	2	17.3	5.5	0.2	0.3	1.4	1.2	0.9	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	004916STMP	004847IN	001535SMH	54	1.5	6.4	3.6	0.3	0.3	1.6	1.7	1.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
1	004918STMP	004855IN	001540SMH	22	2.5	18.0	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004919STMP	004831IN	004830IN	55	2	19.0	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004920STMP	004862IN	004859IN	45	1.5	8.7	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004927STMP	001542SMH	001541SMH	87	2.5	14.2	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005047STMP	004893IN	001551SMH	65	1.5	7.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005048STMP	004897IN	000626ND	47	2.5	-0.7	1.1	0.2	0	0.5	1.6	-	-	0.0	0.0	0	0	Surcharged
1	005050STMP	004902IN	001558SMH	11	1.5	8.6	4.9	0.2	0	0.5	1.5	-	-	0.0	0.0	0	0	Surcharged
1	006194STMP	004959IN	001647SMH	11	1.25	7.1	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006196STMP	001647SMH	001617SMH	134	2	7.1	5.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006222STMP	001608SMH	001633SMH	32	1.25	6.9	6.0	0.7	0.9	2.8	3.0	1.6	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006225STMP	001636SMH	001611SMH	146	1.5	16.9	9.4	0.9	0.4	Flooded	3.1	Flooded	1.5	0.6	0.0	3366	0	Flooded
1	006226STMP	001637SMH	001636SMH	64	1.5	15.6	8.7	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.6	4654	3366	Flooded
1	006228STMP	001638SMH	001637SMH	76	1.5	15.4	8.6	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.3	0.8	643	4654	Flooded
1	006229STMP	001612SMH	001638SMH	14	1.25	7.1	8.8	0.8	0.9	Flooded	Flooded	Flooded	Flooded	0.5	0.3	1344	643	Flooded
1	006230STMP	001639SMH	001640SMH	29	1.25	6.7	5.2	0.6	0.6	7.2	Flooded	0.7	Flooded	0.0	0.5	0	1545	Insufficient Freeboard
1	006232STMP	001611SMH	001633SMH	125	1.5	16.9	9.5	0.4	0.9	3.3	3.5	1.5	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006234STMP	001633SMH	001609SMH	93	1.5	21.2	11.8	0.9	0.7	3.5	1.9	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
1	006235STMP	001665SMH	001642SMH	159	5	116.9	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006241STMP	001642SMH	001643SMH	225	5	134.2	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006245STMP	004970IN	001642SMH	50	1.25	7.9	12.2	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
1	006246STMP	004971IN	004976IN	102	1.25	7.6	6.2	0.2	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
1	006247STMP	004972IN	001643SMH	47	1.25	3.3	3.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006248STMP	001643SMH	000640ND	239	3.667 x 6	138.9	6.6	0	0.3	0.1	0.5	-	-	0.0	0.0	0	0	Surcharged
1	006390STMP	001679SMH	001680SMH	107	2.8333 x 4.333	18.7	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006391STMP	005014IN	001679SMH	121	1.25	3.6	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006397STMP	001682SMH	005006IN	62	3	31.5	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006398STMP	005006IN	001683SMH	66	3	31.5	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006399STMP	001683SMH	005007IN	40	3.5	38.3	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006401STMP	001684SMH	001685SMH	38	3.5	42.0	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006402STMP	005013IN	001684SMH	125	1.25	3.8	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006408STMP	001661SMH	001689SMH	14	1.5	17.7	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006409STMP	001687SMH	001688SMH	113	3.5	50.8	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006412STMP	001688SMH	001689SMH	36	4.5	50.9	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006414STMP	001689SMH	001690SMH	121	4.5	97.2	8.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006415STMP	000647ND	001689SMH	174	3.5	29.5	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006416STMP	001690SMH	000306IO	296	5	105.4	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006421STMP	004939IN	001639SMH	53	1.25	6.7	10.6	0.6	0.6	3.0	6.0	0.4	0.7	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006422STMP	004940IN	004939IN	50	1.25	6.7	7.6	0.5	0.6	1.3	1.9	0.7	0.4	0.0	0.0	0	0	Insufficient Freeboard
1	006423STMP	001591SMH	001592SMH	147	4	92.1	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006424STMP	001616SMH	001591SMH	131	4	81.8	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006426STMP	001592SMH	001593SMH	154	4	91.8	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006428STMP	001593SMH	000342IO	62	5 x 6.5	97.6	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006474STMP	001595SMH	001591SMH	76	1.5	10.7	14.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006479STMP	001596SMH	001597SMH	12	3	22.3	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006481STMP	001597SMH	001586SMH	180	3	22.3	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006493STMP	004951IN	001606SMH	11	1.25	7.0	5.7	0.3	0.3	Flooded	1.8	Flooded	0.3	0.0	0.0	8	0	Flooded
1	006494STMP	001606SMH	001607SMH	26	1.25	7.0	6.5	0.3	0.4	1.9	2.0	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	006495STMP	001607SMH	001608SMH	93	1.25	6.9	6.3	0.4	0.7	2.0	2.8	0.8	1.6	0.0	0.0	0	0	Insufficient Freeboard
1	006497STMP	001635SMH	001649SMH	273	2	31.2	12.7	0	0	-	0.0	-	1.0	0.0	0.0	0	0	Sufficient Capacity
1	006498STMP	001609SMH	001635SMH	95	2	31.3	10.0	0.7	0	1.5	-	-	-	0.0	0.0	0	0	Surcharged
1	006501STMP	001614SMH	001612SMH	22	1.25	7.7	6.2	0.8	0.8	2.8	Flooded	0.2	Flooded	0.0	0.5	0	1344	Insufficient Freeboard
1	006505STMP	001617SMH	001616SMH	99	4	78.1	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006507STMP	001589SMH	001645SMH	39	2	37.9	12.0	0.2	0	3.0	1.9	-	-	0.0	0.0	0	0	Surcharged
1	006817STMP	001538SMH	004794IN	67	2	23.5	7.4	0.2	0	0.7	0.3	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	006855STMP	001535SMH	004845IN	49	1.5	14.6	8.2	0.3	0.2	1.8	1.0	0.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
1	006857STMP	001539SMH	004843IN	100	2.5	36.9	8.3	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006858STMP	004843IN	004009SMH	194	3	46.8	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006864STMP	004798IN	004796IN	28	1.25	3.7	4.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006866STMP	004792IN	004794IN	26	1.5	11.9	7.4	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006869STMP	004830IN	001540SMH	65	2	18.9	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006870STMP	001540SMH	001539SMH	125	2.5	36.9	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006871STMP	004809IN	001541SMH	233	2	3.7	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006873STMP	001545SMH	001568SMH	44	2	58.8	18.4	0.4	0	5.7	0.5	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	006877STMP	004859IN	004831IN	284	1.5	8.6	4.8	0	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
1	006886STMP	004839IN	004838IN	98	1.25	9.7	7.8	0.2	0.2	Flooded	1.2	Flooded	0.6	0.2	0.0	560	0	Flooded
1	006903STMP	001558SMH	001557SMH	21	3.5	47.1	-5.3	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
1	006906STMP	001557SMH	001556SMH	246	4	54.2	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908A	004794IN	000607ND	311	3.5	38.7	4.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908B	000607ND	001558SMH	23	3.5	38.7	4.0	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006918STMP	004808IN	001575SMH	98	2	5.6	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006919STMP	001575SMH	001542SMH	76	2.5	5.6	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006925STMP	001574SMH	004808IN	114	1.75	5.6	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942A	001568SMH	000615ND	187	5	58.7	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942B	000615ND	001665SMH	280	5	69.0	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006953STMP	001556SMH	009001IN	285	4.5	64.9	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006959STMP	001584SMH	004925IN	51	3	66.3	9.0	0.2	0.1	0.5	0.1	-	1.8	0.0	0.0	0	0	Surcharged
1	006967STMP	004925IN	004926IN	70	3	66.3	9.3	0.1	0	0.1	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
1	006970STMP	004926IN	001582SMH	29	3	70.5	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006972STMP	001582SMH	001583SMH	75	3	70.5	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006973STMP	001583SMH	004928IN	99	4	70.5	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006975STMP	004928IN	004931IN	73	4	76.3	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006978STMP	004931IN	000341IO	63	4	76.3	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006980STMP	004933IN	001585SMH	15	1.25	5.9	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006982STMP	001585SMH	001596SMH	31	1.25	5.9	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006983STMP	001586SMH	001584SMH	86	3	57.3	10.9	0	0.2	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006984STMP	000338IO	001586SMH	43	3	31.4	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006994STMP	001676SMH	001677SMH	83	2	10.2	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006995STMP	001677SMH	001678SMH	72	2.8333 x 4.333	15.1	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006998STMP	001678SMH	001679SMH	34	2.8333 x 4.333	15.1	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006999STMP	001648SMH	001638SMH	170	1.5	13.2	8.2	0.4	0.9	2.0	Flooded	1.4	Flooded	0.0	0.3	0	643	Insufficient Freeboard
1	007000STMP	001649SMH	001650SMH	48	2	31.0	13.8	0	0.2	0.0	0.8	1.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
1	007001STMP	001650SMH	001652SMH	189	2	38.0	14.1	0.2	0.3	0.9	1.9	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	007002STMP	001651SMH	001650SMH	10	1.25	9.5	-7.7	0.4	0.2	2.0	1.6	0.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
1	007003STMP	006001IN	001651SMH	35	1.25	9.5	8.3	0.2	0.4	Flooded	1.8	Flooded	0.0	0.2	0.0	665	0	Flooded
1	007004STMP	001652SMH	001589SMH	68	2	37.8	13.7	0.3	0.2	1.9	2.7	-	-	0.0	0.0	0	0	Surcharged
1	007005STMP	001653SMH	001645SMH	35	4	-29.7	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007006STMP	001640SMH	001653SMH	415	0.833	4.3	7.6	0.6	0	Flooded	1.8	Flooded	-	0.5	0.0	1545	0	Flooded
1	007035STMP	004479IN	000640ND	274	2	11.6	7.0	0	0.3	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007194STMP	001657SMH	001648SMH	14	1.5	13.2	7.4	0.4	0.4	2.4	2.0	1.0	1.4	0.0	0.0	0	0	Insufficient Freeboard
1	007195STMP	001658SMH	001657SMH	142	1.5	9.7	7.2	0.1	0.4	0.9	2.3	-	1.0	0.0	0.0	0	0	Surcharged
1	007196STMP	001660SMH	001658SMH	76	1.5	9.8	7.1	0.1	0.1	0.5	0.7	-	-	0.0	0.0	0	0	Surcharged
1	007200STMP	004977IN	004972IN	71	1.25	3.3	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007205A	000079CP	000640ND	18	4 x 7	238.3	8.5	0	0.3	0.4	0.4	-	-	0.0	0.0	0	0	Surcharged
1	007205B	000640ND	000080CP	53	4 x 7	379.9	13.6	0.3	0	0.4	-	-	-	0.0	0.0	0	0	Surcharged
1	007211STMP	004985IN	001665SMH	127	3	32.6	9.5	0	0	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007213STMP	004987IN	000344IO	184	2	31.4	10.1	0.4	0	2.1	-	0.1	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	007214STMP	004988IN	004987IN	45	2	31.4	9.9	0.3	0.4	Flooded	2.1	Flooded	0.1	0.2	0.0	781	0	Flooded
1	007215STMP	004976IN	004981IN	127	1.25	7.5	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007216STMP	004981IN	004982IN	62	1.5	7.5	-4.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007217STMP	004982IN	001661SMH	182	1.5	7.5	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007234STMP	001675SMH	004998IN	18	1.5	6.5	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007236STMP	004998IN	005000IN	34	1.5	6.5	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007237STMP	005000IN	001676SMH	38	2	6.5	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007238STMP	005001IN	001676SMH	14	1.25	3.8	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007267STMP	004469IN	004470IN	51	1.75	10.4	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007269STMP	004470IN	001694SMH	39	2.5	37.3	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007270STMP	004474IN	004470IN	244	2.5	26.9	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007271STMP	001694SMH	000302IO	21	2.5	41.9	15.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007272STMP	004475IN	001694SMH	189	1.75	4.6	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007274STMP	004472IN	004474IN	54	1.25	10.5	8.5	0.3	0	Flooded	-	Flooded	-	0.1	0.0	69	0	Flooded
1	007275STMP	004476IN	004474IN	245	2	12.3	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007276STMP	004477IN	004476IN	49	1.25	12.3	9.9	0.4	0	Flooded	-	Flooded	-	0.3	0.0	1083	0	Flooded
1	007718A	003261SMH	000927ND	63	1.5	11.6	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007718B	000927ND	000926ND	65	1.5	11.6	10.9	0	0.2	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007718C	000926ND	003262SMH	35	1.5	11.6	7.3	0.2	0.3	0.9	1.2	-	-	0.0	0.0	0	0	Surcharged
1	008525STMP	007859IN	000909ND	20	1.25	17.0	15.1	0	0	1.1	2.4	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	008702STMP	006006IN	000896ND	27	1.25	6.0	14.7	0	0	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956A	000960ND	000961ND	41	6.5 x 21	754.1	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956B	000961ND	000958ND	117	6.5 x 21	756.7	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956C	000958ND	000963ND	65	6.5 x 21	757.8	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956D	000963ND	000964ND	161	6.5 x 21	764.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956E	000964ND	000897ND	143	6.5 x 21	776.9	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956F	000897ND	000903ND	61	6.5 x 21	782.0	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956G	000903ND	003230SMH	29	6.5 x 21	782.2	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008972STMP	006019IN	001657SMH	104	1.5	3.6	3.3	0.3	0.4	1.7	2.4	-	1.0	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	008994STMP	003291SMH	000912ND	29	0.833	4.0	14.8	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008996STMP	003294SMH	003292SMH	41	1	2.9	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008997STMP	003292SMH	000913ND	12	1	2.8	5.0	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009002STMP	003279SMH	003280SMH	267	1.5	9.2	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009003STMP	003280SMH	003281SMH	352	1.5	20.2	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009004STMP	003281SMH	003282SMH	127	2	30.2	17.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009005STMP	003282SMH	003283SMH	204	2	30.2	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006A	003283SMH	000910ND	27	3	38.6	16.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006B	000910ND	006053IN	72	3	38.7	17.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009007STMP	006053IN	003285SMH	89	3	47.0	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008A	003285SMH	000911ND	55	3	47.0	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008B	000911ND	003289SMH	275	3	47.0	18.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009A	003289SMH	000912ND	162	3	55.9	18.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009B	000913ND	003273SMH	266	3	62.7	16.4	0	0	-	2.2	-	1.5	0.0	0.0	0	0	Sufficient Capacity
1	009009C	000912ND	000913ND	182	3	60.0	19.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009010STMP	003293SMH	003263SMH	76	2	25.3	14.3	0	0.4	-	2.2	1.7	1.2	0.0	0.0	0	0	Sufficient Capacity
1	009011STMP	003262SMH	003293SMH	177	2	25.4	8.4	0.3	0	1.3	-	-	1.7	0.0	0.0	0	0	Surcharged
1	009515STMP	003234SMH	003226SMH	32	2.5	35.7	15.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009623STMP	003263SMH	003273SMH	6	2	29.7	9.4	0.4	0	2.2	1.8	1.2	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	009724STMP	003233SMH	003232SMH	93	1.5	5.8	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009725STMP	006027IN	003233SMH	12	1.5	5.8	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009726STMP	006023IN	006025IN	182	1.5	16.8	9.3	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.7	0.6	7566	976	Flooded
1	009727STMP	006022IN	006023IN	371	1.25	12.1	10.8	0	0.7	-	Flooded	-	Flooded	0.0	0.7	0	7566	Sufficient Capacity
1	009728A	000895ND	000904ND	113	6.5 x 17	622.1	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728B	000904ND	000896ND	14	6.5 x 17	622.1	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728C	000896ND	003231SMH	119	6.5 x 17	629.5	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729A	003231SMH	000905ND	25	6.5 x 17	629.4	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729B	000905ND	003227SMH	119	6.5 x 17	629.0	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730A	003227SMH	000906ND	33	6.5 x 17	628.8	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730B	000906ND	003229SMH	97	6.5 x 17	630.9	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009731STMP	003230SMH	003228SMH	151	6.5 x 21	784.0	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732A	003228SMH	000909ND	22	6.5 x 21	782.8	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732B	000909ND	000293CP	403	6.5 x 21	801.9	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734A	003229SMH	001645SMH	194	6.5 x 17	631.6	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734B	001645SMH	000292CP	98	6.5 x 17	673.6	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009848STMP	006052IN	003283SMH	25	1	8.4	10.6	0.3	0	2.1	-	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	009910A	003274SMH	000929ND	46	2.5	57.0	11.5	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.2	19681	22	Flooded
1	009910B	000929ND	003278SMH	140	2.5	47.0	9.4	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.2	1.5	22	10110	Flooded
1	009911STMP	006089IN	003274SMH	26	1	3.7	9.7	1.1	1.6	Flooded	Flooded	Flooded	Flooded	1.1	1.4	3587	19681	Flooded
1	009935STMP	006100IN	006136IN	44	2.25	36.2	9.1	0.9	1.3	2.2	2.4	-	0.6	0.0	0.0	0	0	Surcharged
1	009937STMP	003275SMH	003273SMH	67	1	4.8	7.7	0.1	0	1.1	1.9	0.5	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	009944STMP	003226SMH	003386SMH	44	3	38.7	16.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009945STMP	003386SMH	003387SMH	10	3	38.8	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009946STMP	003387SMH	000976ND	34	3	38.8	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010129STMP	003225SMH	003234SMH	48	2.5	35.6	16.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010130STMP	006015IN	003225SMH	38	1.25	3.0	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010141STMP	003224SMH	003223SMH	14	2	5.8	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010142STMP	003223SMH	000897ND	22	2	5.7	7.0	0	0	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010144STMP	003232SMH	003224SMH	79	2	5.8	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010146STMP	003284SMH	006053IN	9	1	8.5	13.2	0	0	-	0.2	1.6	-	0.0	0.0	0	0	Sufficient Capacity
1	010148STMP	003286SMH	003287SMH	123	0.833	4.5	14.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010149A	003239SMH	000922ND	81	0.667	-2.2	-5.9	0.8	3	Flooded	Flooded	Flooded	Flooded	0.7	1.5	1667	79	Flooded
1	010149B	000922ND	003286SMH	109	0.667	4.5	12.0	3	0	Flooded	-	Flooded	-	1.5	0.0	79	0	Flooded
1	010150STMP	003287SMH	003284SMH	238	1	8.5	15.9	0	0	-	-	-	1.6	0.0	0.0	0	0	Sufficient Capacity
1	010167STMP	006086IN	003274SMH	107	1.75	-5.8	3.0	1.5	1.6	3.2	Flooded	1.1	Flooded	0.0	1.4	0	19681	Insufficient Freeboard
1	010168STMP	003273SMH	003264SMH	150	3	96.7	13.6	0	1.4	2.3	Flooded	1.5	Flooded	0.0	0.5	0	4162	Insufficient Freeboard
1	010169STMP	003264SMH	003274SMH	109	3	86.1	12.1	1.4	1.6	Flooded	Flooded	Flooded	Flooded	0.5	1.4	4162	19681	Flooded
1	010173STMP	003277SMH	003274SMH	51	2.5	20.9	4.2	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.4	22405	19681	Flooded
1	010174STMP	006109IN	003277SMH	97	1	6.0	7.5	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.5	1.4	6767	22405	Flooded
1	010176A	003278SMH	000938ND	31	2.5	49.7	10.0	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.5	1.0	10110	100	Flooded
1	010176B	000938ND	003301SMH	40	2.5	50.9	10.3	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.0	1.1	100	2731	Flooded
1	010177STMP	006110IN	000938ND	6	1	6.3	7.9	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.5	1.0	5127	100	Flooded
1	010178STMP	003302SMH	006111IN	175	2	20.9	6.6	1.2	1.6	2.9	3.3	1.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	010179STMP	006112IN	003302SMH	30	2	20.9	8.2	0.8	1.2	2.5	2.9	0.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	010180STMP	006113IN	006112IN	13	1.75	20.9	9.6	0.8	0.8	2.5	2.6	0.0	0.4	0.0	0.0	0	0	Insufficient Freeboard
1	010181STMP	006025IN	006113IN	217	1.75	17.6	7.2	0.7	0.8	Flooded	2.5	Flooded	0.0	0.6	0.0	976	0	Flooded
1	010183STMP	006115IN	003303SMH	44	2 x 3	13.5	5.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010185STMP	003303SMH	003305SMH	73	2 x 3	13.5	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010189STMP	003305SMH	000962ND	24	2 x 3	13.5	9.9	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010190STMP	006118IN	002913ND	43	1.25	10.9	10.6	0	0	0.0	2.2	-	-	0.0	0.0	0	0	Surcharged
1	010191STMP	006119IN	006118IN	165	1.25	10.9	8.8	0.3	0	2.7	-	0.3	-	0.0	0.0	0	0	Insufficient Freeboard
1	010194STMP	003309SMH	003310SMH	67	1	4.4	5.4	1.7	1.6	5.9	Flooded	0.1	Flooded	0.0	1.3	0	5468	Insufficient Freeboard
1	010195STMP	003301SMH	003310SMH	23	2.5	55.1	-11.1	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.1	1.3	2731	5468	Flooded
1	010196STMP	003310SMH	003311SMH	87	2.5	52.0	10.5	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.3	0.6	5468	690	Flooded
1	010197STMP	003311SMH	003312SMH	113	2.5	52.3	10.6	1.6	1.6	Flooded	3.6	Flooded	1.3	0.6	0.0	690	0	Flooded
1	010198STMP	006111IN	003312SMH	32	2.5	20.9	4.4	1.6	1.6	2.8	3.1	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	010199STMP	003312SMH	000959ND	46	2.5	63.6	12.8	1.6	0	3.6	1.0	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
1	010211STMP	006131IN	003313SMH	13	1	5.4	9.2	0	0	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010216STMP	006133IN	003311SMH	61	1	3.0	6.3	0.7	1.6	0.5	Flooded	0.8	Flooded	0.0	0.6	0	690	Insufficient Freeboard
1	010217STMP	006134IN	000941ND	36	1	2.5	9.5	0	0	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010218STMP	003322SMH	003317SMH	100	2 x 3.167	34.5	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010219STMP	003317SMH	000946ND	48	2 x 3.167	35.1	9.1	0	0	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010222STMP	006136IN	006137IN	244	2.5	36.3	7.4	1.3	1.7	2.2	Flooded	0.6	Flooded	0.0	1.6	0	24003	Insufficient Freeboard
1	010223STMP	006137IN	003318SMH	40	2.5	41.3	8.4	1.7	1.7	Flooded	Flooded	Flooded	Flooded	1.6	1.5	24003	15903	Flooded
1	010227STMP	003318SMH	003320SMH	109	1.5	19.8	11.0	1.7	0	Flooded	0.2	Flooded	-	1.5	0.0	15903	0	Flooded
1	010228STMP	006138IN	003320SMH	109	1.5	9.5	5.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010230STMP	003320SMH	003321SMH	148	2 x 3.167	28.2	5.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010231STMP	003321SMH	003322SMH	64	2 x 3.167	28.8	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010235STMP	003325SMH	003324SMH	47	1.25	11.2	-8.9	1.3	0.9	Flooded	2.8	Flooded	0.6	0.4	0.0	590	0	Flooded
1	010236STMP	003324SMH	003372SMH	143	1.5	11.2	6.3	0.9	0.9	2.5	Flooded	0.6	Flooded	0.0	0.4	0	650	Insufficient Freeboard
1	010238STMP	003371SMH	003325SMH	92	1.25	10.4	8.3	0.9	1.3	Flooded	Flooded	Flooded	Flooded	0.7	0.4	6035	590	Flooded
1	010243STMP	006143IN	000963ND	126	1	4.8	6.1	0.3	0	2.3	2.4	-	-	0.0	0.0	0	0	Surcharged
1	010246A	003372SMH	000948ND	46	1.5	12.7	-7.1	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.4	0.3	650	6	Flooded
1	010246B	000948ND	003373SMH	103	1.5	12.4	-7.0	0.9	0.4	Flooded	Flooded	Flooded	Flooded	0.3	0.2	6	236	Flooded
1	010248STMP	003373SMH	003374SMH	24	1.5	22.5	13.1	0.4	0.6	Flooded	Flooded	Flooded	Flooded	0.2	0.0	236	2	Flooded
1	010249A	003374SMH	000957ND	3	2	22.4	7.1	0.6	0.5	Flooded	2.1	Flooded	1.7	0.0	0.0	2	0	Flooded
1	010249B	000957ND	003376SMH	254	2	22.3	7.0	0.5	0.4	2.1	0.9	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010251STMP	003376SMH	003375SMH	19	2	22.2	7.4	0.4	0.4	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010252STMP	003375SMH	000960ND	53	2	22.1	7.0	0.4	0	1.1	1.4	-	-	0.0	0.0	0	0	Surcharged
1	010254STMP	006149IN	000961ND	53	1	1.6	4.4	0	0	-	2.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010261STMP	006152IN	000964ND	86	1.25	11.4	9.2	0.2	0	2.0	2.2	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010267STMP	006157IN	006015IN	115	1.25	3.0	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010268STMP	003382SMH	003225SMH	13	2.5	21.7	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010269STMP	006016IN	003382SMH	36	2.5	15.2	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010456STMP	003495SMH	006052IN	91	1	9.6	15.7	0	0.3	-	2.1	-	0.0	0.0	0.0	0	0	Sufficient Capacity
1	010457STMP	008054IN	003495SMH	94	1	9.6	14.1	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
1	010459STMP	003496SMH	003280SMH	119	1	11.1	14.1	0.2	0	2.3	0.0	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
1	014020STMP	004845IN	004850IN	174	2.5	17.4	4.0	0.2	0.2	0.7	0.9	1.8	0.9	0.0	0.0	0	0	Insufficient Freeboard
1	014021STMP	004008SMH	001538SMH	12	2	23.4	7.4	0.3	0.2	0.9	0.7	1.3	1.1	0.0	0.0	0	0	Insufficient Freeboard
1	014022A	009001IN	000626ND	34	4.5	63.9	4.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022B	000626ND	002901ND	57	4.5	72.4	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022C	002900ND	000575IO	38	4.5	237.0	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022D	002901ND	002900ND	8	4.5	162.8	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014023STMP	004009SMH	004010SMH	271	4	45.9	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014024STMP	004010SMH	004011SMH	39	4	81.8	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014025STMP	004011SMH	004012SMH	88	4	81.6	-6.3	0	0.1	0.8	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014026STMP	004012SMH	004013SMH	481	4	81.0	6.3	0.1	0	0.4	-	-	-	0.0	0.0	0	0	Surcharged
1	014027STMP	004013SMH	004014SMH	131	4 x 6	93.3	-4.0	0	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
1	014028STMP	004014SMH	004015SMH	67	4 x 6	93.2	4.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014029STMP	004015SMH	004016SMH	51	4 x 6	93.1	4.2	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014030STMP	004016SMH	004019SMH	104	4 x 6	93.0	3.9	0.1	0.1	0.1	0.1	-	-	0.0	0.0	0	0	Surcharged
1	014031STMP	002902ND	004017SMH	262	4 x 6	75.9	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014032STMP	004017SMH	004018SMH	41	4 x 6	74.3	-3.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014033STMP	004018SMH	004020SMH	120	4 x 6	76.4	3.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014034STMP	004019SMH	001554SMH	161	4 x 6	93.0	3.9	0.1	0	0.1	0.0	-	-	0.0	0.0	0	0	Surcharged
1	014035STMP	004020SMH	001555SMH	104	4 x 6	75.8	-3.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014036STMP	001554SMH	002901ND	82	4 x 6	93.1	3.9	0	0	0.0	0.3	-	-	0.0	0.0	0	0	Surcharged
1	014037STMP	001555SMH	002900ND	83	4 x 6	75.5	3.3	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014902STMP	001680SMH	001682SMH	116	2.8333 x 4.333	31.4	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014903STMP	005007IN	004006SMH	57	3.5	38.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014904STMP	004006SMH	001684SMH	120	3.5	38.4	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014905STMP	001685SMH	001687SMH	116	3.5	50.8	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014906STMP	004852IN	004008SMH	19	2	23.4	7.4	0.3	0.3	1.2	0.9	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	014926STMP	001551SMH	001557SMH	54	1.5	7.3	5.5	0	0	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931A	000959ND	002913ND	153	6.5 x 17	606.8	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931B	002913ND	000962ND	36	6.5 x 17	614.0	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931C	000962ND	000895ND	173	6.5 x 17	624.4	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935A	003313SMH	000946ND	205	5 x 16	697.3	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935B	000946ND	000960ND	184	5 x 16	732.4	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936A	003313SMH	000945ND	192	5 x 13	542.5	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936B	000945ND	000941ND	136	5 x 13	544.2	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936C	000941ND	000959ND	67	5 x 13	547.3	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014942STMP	000976ND	001545SMH	1083	4 x 5	54.0	8.8	0	0.4	-	3.7	-	1.7	0.0	0.0	0	0	Sufficient Capacity
1	014944STMP	001901CB	001902CB	57	1	6.8	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014945STMP	001902CB	004901SMH	323	1	6.8	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014946STMP	004901SMH	004902SMH	79	1.5	6.8	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014948STMP	004902SMH	009912IN	99	3	24.9	15.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	014949STMP	002917ND	009911IN	331	2.5	64.2	20.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014950STMP	009911IN	004903SMH	199	4	71.0	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014951STMP	004818IN	004903SMH	101	1.5	5.5	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014952STMP	004903SMH	001569SMH	70	3	76.4	15.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014953STMP	001569SMH	002902ND	480	4	76.7	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014954STMP	000002ND	004904SMH	217	1.75	25.9	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014955STMP	004904SMH	009912IN	93	1.75	31.1	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014956STMP	009912IN	002917ND	265	3	64.1	19.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007414STMP	002413SMH	002423SMH	59	1.25	5.0	11.9	0	0.2	-	3.6	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007415STMP	005209IN	002413SMH	6	0.833	5.0	10.8	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
2	007417STMP	005210IN	005211IN	32	1	10.0	-12.2	0.9	0.3	Flooded	3.7	Flooded	-	0.2	0.0	354	0	Flooded
2	007761STMP	005995IN	003133SMH	43	1.25	7.7	6.2	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.4	1667	1244	Flooded
2	007771STMP	005211IN	002423SMH	17	2	10.0	8.3	0.3	0.2	2.7	3.3	-	-	0.0	0.0	0	0	Surcharged
2	007772A	002416SMH	0001028ND	33	1.5	20.1	11.3	0.1	0.2	0.8	0.6	-	-	0.0	0.0	0	0	Surcharged
2	007772B	0001028ND	002419SMH	18	1.5	20.0	11.3	0.2	0	0.6	0.1	-	-	0.0	0.0	0	0	Surcharged
2	007785STMP	005224IN	002423SMH	110	1.25	3.7	7.3	0	0.2	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007866STMP	007225IN	007224IN	48	1.25	6.4	5.1	2.4	2.6	Flooded	Flooded	Flooded	Flooded	1.0	1.4	1003	3923	Flooded
2	007867STMP	002459SMH	007224IN	167	1.25	4.1	3.8	1.5	2.6	Flooded	Flooded	Flooded	Flooded	1.3	1.4	4342	3923	Flooded
2	007868STMP	007224IN	007226IN	31	1.25	8.7	7.0	2.6	2.7	Flooded	Flooded	Flooded	Flooded	1.4	1.4	3923	3023	Flooded
2	007869STMP	007226IN	007227IN	109	1.25	8.9	7.2	2.7	3	Flooded	Flooded	Flooded	Flooded	1.4	1.1	3023	1082	Flooded
2	007870STMP	007227IN	003062SMH	33	1.25	8.9	7.2	3	3.7	Flooded	Flooded	Flooded	Flooded	1.1	2.7	1082	16333	Flooded
2	008279STMP	005855IN	000773ND	20	1	6.5	8.6	1.2	1.3	Flooded	Flooded	Flooded	Flooded	0.7	0.2	1432	3390	Flooded
2	008289STMP	005862IN	000812ND	12	1	9.4	11.8	1.7	1.5	Flooded	Flooded	Flooded	Flooded	1.4	1.1	6312	224	Flooded
2	008324STMP	003163SMH	003107SMH	196	2	24.9	8.1	1.2	1.2	Flooded	Flooded	Flooded	Flooded	0.3	1.2	780	13693	Flooded
2	008327STMP	003168SMH	000493CB	225	1.25	10.3	8.2	1.4	1.2	Flooded	2.7	Flooded	0.8	1.2	0.0	5949	0	Flooded
2	008333STMP	005927IN	003159SMH	112	1.25	7.1	8.4	0	0.5	-	1.5	-	1.3	0.0	0.0	0	0	Sufficient Capacity
2	008334STMP	005928IN	003109SMH	47	1	12.2	15.5	0.1	0	Flooded	-	Flooded	-	0.0	0.0	2	0	Flooded
2	008335STMP	003109SMH	000793ND	112	1.5	12.2	14.6	0	0.5	-	5.6	-	1.5	0.0	0.0	0	0	Sufficient Capacity
2	008339STMP	000496CB	000829ND	126	1.25	8.1	6.6	0.3	0	1.6	1.5	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
2	008345STMP	003117SMH	003118SMH	210	2.25	24.6	7.4	0	0	-	0.1	1.8	-	0.0	0.0	0	0	Sufficient Capacity
2	008366STMP	003123SMH	003143SMH	22	1.25	9.5	7.7	0.5	0.5	1.7	1.3	1.1	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	008395STMP	005846IN	000773ND	87	1.25	8.5	6.8	1.3	1.3	Flooded	Flooded	Flooded	Flooded	1.0	0.2	1733	3390	Flooded
2	008396STMP	005847IN	005843IN	35	1	3.0	5.1	1	1	Flooded	Flooded	Flooded	Flooded	0.9	1.0	587	904	Flooded
2	008402STMP	000485CB	003089SMH	28	1	6.7	8.4	1	25.7	Flooded	Flooded	Flooded	Flooded	0.5	0.8	200	3176	Flooded
2	008403STMP	003148SMH	003089SMH	204	1	5.7	7.1	1.8	25.7	3.5	Flooded	1.0	Flooded	0.0	0.8	0	3176	Insufficient Freeboard
2	008405STMP	005876IN	000831ND	24	1	3.7	5.5	0.5	1.5	Flooded	Flooded	Flooded	Flooded	0.3	0.5	196	6	Flooded
2	008408STMP	000487CB	003090SMH	19	1.25	2.1	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008409STMP	003090SMH	000816ND	706	2	17.2	8.2	0	0	-	2.4	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008410STMP	000488CB	003090SMH	10	1.25	14.9	12.1	0.7	0	0.6	-	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	008413STMP	005881IN	000826ND	40	1	5.0	10.7	0	0	-	2.0	1.7	-	0.0	0.0	0	0	Sufficient Capacity
2	008500STMP	005980IN	005981IN	27	2	43.7	13.9	0.3	0.3	2.4	1.8	-	-	0.0	0.0	0	0	Surcharged
2	008501STMP	003124SMH	005980IN	10	2	43.9	-13.9	0.8	0.3	4.0	1.6	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	008502STMP	003144SMH	003124SMH	31	2	44.0	13.8	0.6	0.8	4.5	4.0	-	0.7	0.0	0.0	0	0	Surcharged
2	008505STMP	005981IN	003129SMH	61	2.25	43.5	16.5	0.3	0.6	1.5	4.2	-	-	0.0	0.0	0	0	Surcharged
2	008507STMP	005983IN	005984IN	63	1.5	11.0	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008508STMP	003128SMH	005983IN	68	1.25	8.2	-6.8	0.5	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
2	008511STMP	000514CB	000827ND	113	1.25	5.4	5.2	0	0	-	1.4	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008514STMP	000515CB	007743IN	51	1.25	13.7	10.9	0.6	1.7	Flooded	4.1	Flooded	1.8	0.5	0.0	1388	0	Flooded
2	008515STMP	007743IN	000516CB	42	1.25	13.5	-10.8	1.7	0.6	4.1	1.8	1.8	-	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008516STMP	000516CB	000801ND	194	1.5	13.4	8.4	0.6	0	1.5	2.0	-	-	0.0	0.0	0	0	Surcharged
2	008517STMP	003105SMH	003152SMH	40	1.25	8.8	7.2	0.8	0	1.4	0.6	1.0	1.9	0.0	0.0	0	0	Insufficient Freeboard
2	008527STMP	003462SMH	003456SMH	22	3	35.2	6.7	4.4	4.7	2.8	4.5	1.6	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	008528STMP	003457SMH	003458SMH	43	4	35.0	2.8	4.5	4.5	2.8	3.0	-	-	0.0	0.0	0	0	Surcharged
2	008529STMP	003458SMH	003459SMH	60	4	35.0	-2.8	4.5	4.3	3.0	1.7	-	-	0.0	0.0	0	0	Surcharged
2	008530STMP	003463SMH	003462SMH	66	3	35.2	7.7	4.4	4.4	2.5	2.8	1.5	1.6	0.0	0.0	0	0	Insufficient Freeboard
2	008531STMP	008004IN	003463SMH	78	3	23.4	5.6	4.4	4.4	2.0	2.3	0.5	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	008532STMP	003464SMH	003463SMH	39	2	14.2	6.1	4.4	4.4	2.6	2.7	0.8	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	008533STMP	000633CB	003439SMH	29	1	6.5	-8.1	5.1	5.2	Flooded	Flooded	Flooded	Flooded	4.6	4.3	4383	6163	Flooded
2	008534A	003465SMH	0001033ND	383	2	20.3	6.4	4.2	4.5	Flooded	Flooded	Flooded	Flooded	3.5	3.8	4901	19	Flooded
2	008534B	0001033ND	003440SMH	31	2	20.4	6.4	4.5	4.5	Flooded	Flooded	Flooded	Flooded	3.8	4.2	19	14908	Flooded
2	008536STMP	008024IN	003472SMH	10	2	17.4	5.5	4.2	4.2	Flooded	Flooded	Flooded	Flooded	4.0	3.8	32073	16521	Flooded
2	008537STMP	003474SMH	008024IN	225	2	22.9	7.2	3.9	4.2	5.4	Flooded	-	Flooded	0.0	4.0	0	32073	Surcharged
2	008538STMP	003475SMH	003473SMH	160	4	18.5	-1.7	3.8	2.6	3.1	1.2	-	-	0.0	0.0	0	0	Surcharged
2	008539STMP	003473SMH	003474SMH	59	4	30.7	7.3	2.6	3.9	1.2	3.4	-	-	0.0	0.0	0	0	Surcharged
2	008540STMP	003479SMH	003475SMH	43	4	18.5	-1.5	4	3.8	3.8	3.2	-	-	0.0	0.0	0	0	Surcharged
2	008544STMP	005984IN	007978IN	44	2	16.3	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008545STMP	003131SMH	003129SMH	46	2	16.7	10.1	0	0.6	1.1	4.4	-	-	0.0	0.0	0	0	Surcharged
2	008546STMP	003130SMH	003131SMH	39	2	16.7	9.5	0.1	0	0.4	1.1	-	-	0.0	0.0	0	0	Surcharged
2	008547STMP	005988IN	003130SMH	38	2	16.8	7.7	0	0.1	0.0	0.3	-	-	0.0	0.0	0	0	Surcharged
2	008550STMP	005991IN	005988IN	22	2	10.6	-3.6	0.1	0	0.4	0.0	-	-	0.0	0.0	0	0	Surcharged
2	008553STMP	005992IN	005991IN	55	1.5	10.6	10.2	0	0.1	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008554STMP	003132SMH	005992IN	98	1.25	10.7	-8.8	0.6	0	2.7	-	-	-	0.0	0.0	0	0	Surcharged
2	008556STMP	005994IN	003132SMH	40	1.25	10.6	8.5	0.4	0.6	2.6	2.6	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	008557STMP	003134SMH	003144SMH	212	2.25	34.9	10.7	0.5	0.6	1.7	4.2	-	-	0.0	0.0	0	0	Surcharged
2	008558STMP	007718IN	003134SMH	83	2	28.3	11.2	0.5	0.5	1.5	1.9	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	008560STMP	003137SMH	007718IN	30	2	28.5	-9.0	0.6	0.5	2.6	1.5	0.2	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	008563STMP	007721IN	003137SMH	16	1.5	21.4	12.0	0.5	0.6	Flooded	2.2	Flooded	0.2	0.3	0.0	977	0	Flooded
2	008566STMP	003138SMH	007721IN	27	1.5	21.4	12.0	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.5	0.3	3601	977	Flooded
2	008567STMP	007736IN	000796ND	36	1.5	5.9	10.6	0	0	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008627STMP	000509CB	000787ND	8	1	5.7	7.2	0.4	0.1	1.0	0.3	-	-	0.0	0.0	0	0	Surcharged
2	008629STMP	007729IN	003145SMH	13	1	6.4	-8.0	0.6	0.5	Flooded	Flooded	Flooded	Flooded	0.5	0.1	1796	31	Flooded
2	008630STMP	003145SMH	003123SMH	98	1.25	9.5	7.7	0.5	0.5	Flooded	1.7	Flooded	1.1	0.1	0.0	31	0	Flooded
2	008632STMP	005935IN	003147SMH	96	4	90.4	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008633STMP	003118SMH	003119SMH	41	2.5	24.7	8.1	0	0.2	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008634STMP	003129SMH	003119SMH	201	2.5	58.8	11.9	0.6	0.2	4.2	1.9	-	-	0.0	0.0	0	0	Surcharged
2	008635STMP	003143SMH	003138SMH	277	1.5	12.6	7.7	0.5	0.5	1.4	Flooded	1.3	Flooded	0.0	0.5	0	3601	Insufficient Freeboard
2	008636STMP	003119SMH	003112SMH	201	4	83.0	6.3	0.2	0.2	0.4	0.4	-	-	0.0	0.0	0	0	Surcharged
2	008766STMP	003454SMH	003465SMH	181	1.5	8.7	5.7	0	4.2	-	Flooded	-	Flooded	0.0	3.5	0	4901	Sufficient Capacity
2	008784STMP	005868IN	000813ND	70	1.25	13.0	13.1	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.5	1.2	13594	389	Flooded
2	008787STMP	000484CB	003089SMH	23	1.25	7.9	6.4	0.8	25.7	Flooded	Flooded	Flooded	Flooded	0.4	0.8	388	3176	Flooded
2	008817STMP	005785IN	002906SMH	45	1.5	8.1	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008829STMP	002908SMH	002906SMH	179	1.25	10.5	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008899STMP	007843IN	000883ND	41	1	3.1	8.2	0	0	-	3.7	2.0	-	0.0	0.0	0	0	Sufficient Capacity
2	008915A	002909SMH	000759ND	22	1.25	6.0	-4.9	0.5	0.2	0.7	0.2	-	-	0.0	0.0	0	0	Surcharged
2	008915B	000759ND	002908SMH	13	1.25	6.0	-4.8	0.2	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
2	008916STMP	005792IN	002909SMH	12	1.25	6.0	4.9	0.1	0.5	0.8	0.7	-	-	0.0	0.0	0	0	Surcharged
2	008920STMP	003133SMH	003134SMH	46	1.25	8.2	6.6	0.6	0.5	Flooded	2.6	Flooded	-	0.4	0.0	1244	0	Flooded
2	008938STMP	003072SMH	003086SMH	164	1.5	24.1	22.2	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008941STMP	002919SMH	003072SMH	207	1.5	17.8	22.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008943STMP	003063SMH	002919SMH	83	1.5	17.8	10.6	0.1	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
2	008981STMP	006028IN	000890ND	35	1	6.4	8.1	0.6	0	2.3	3.8	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
2	009074STMP	000537IO	003070SMH	79	1.5	13.8	18.5	0	0	-	-	1.2	-	0.0	0.0	0	0	Sufficient Capacity
2	009075STMP	005820IN	003071SMH	21	1.5	13.8	21.2	0	0.3	-	2.8	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009076STMP	003071SMH	003084SMH	228	2	19.4	6.6	0.3	0.4	3.0	3.2	-	1.6	0.0	0.0	0	0	Surcharged
2	009223STMP	005793IN	005792IN	190	1.25	6.0	5.3	0	0.1	0.1	0.1	-	-	0.0	0.0	0	0	Surcharged
2	009228STMP	002906SMH	002912SMH	157	1.5	18.5	20.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009229STMP	002912SMH	002913SMH	6	1.5	18.5	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009230STMP	002913SMH	002910SMH	78	1.5	18.5	18.5	0	0.4	-	Flooded	-	Flooded	0.0	0.1	0	97	Sufficient Capacity
2	009231STMP	002910SMH	002914SMH	27	1.5	18.1	15.1	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.1	0.3	97	790	Flooded
2	009234STMP	002914SMH	002915SMH	83	1.5	16.4	12.7	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.3	0.5	790	2823	Flooded
2	009235STMP	002915SMH	002916SMH	44	1.75	19.9	-8.1	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.5	0.4	2823	1162	Flooded
2	009236STMP	002916SMH	002917SMH	174	1.25	23.4	18.6	0.5	0	Flooded	-	Flooded	-	0.4	0.0	1162	0	Flooded
2	009238STMP	005775IN	003066SMH	208	1.5	3.1	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009245STMP	000128CP	000129CP	76	5 x 8	538.5	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009249STMP	005813IN	003063SMH	37	1.5	17.8	10.0	0.1	0.1	1.3	1.0	-	-	0.0	0.0	0	0	Surcharged
2	009251STMP	003064SMH	005813IN	184	1.5	3.1	6.7	0	0.1	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009252STMP	003065SMH	003064SMH	93	1.5	3.1	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009253STMP	003066SMH	003065SMH	55	1.5	3.1	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009254STMP	002917SMH	003068SMH	100	1.25	23.4	21.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009258STMP	003067SMH	003158SMH	160	2	23.8	10.2	0	0	-	0.3	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009259STMP	003068SMH	003067SMH	40	2	23.4	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009263STMP	003069SMH	003071SMH	99	1.5	5.9	7.1	0	0.3	0.7	3.5	-	-	0.0	0.0	0	0	Surcharged
2	009264STMP	003070SMH	005820IN	45	1.5	13.8	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009286STMP	003083SMH	003082SMH	28	2	42.7	13.5	0.5	0.5	3.5	3.1	1.3	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	009287STMP	003082SMH	005833IN	44	2	42.7	13.4	0.5	0	4.3	0.8	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
2	009288STMP	003084SMH	003083SMH	6	2	19.4	6.8	0.4	0.5	3.3	3.5	1.6	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	009289STMP	003085SMH	003083SMH	9	1.5	23.5	13.1	0.4	0.5	4.0	3.3	0.5	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	009290A	003086SMH	000767ND	50	1.5	24.0	18.4	0	0.2	0.2	2.5	-	0.5	0.0	0.0	0	0	Surcharged
2	009290B	000767ND	003085SMH	35	1.5	23.6	16.8	0.2	0.4	2.5	3.9	0.5	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009300A	000130CP	000764ND	21	5.5 x 8	547.6	12.4	0	0.4	0.9	0.7	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
2	009300B	000764ND	000765ND	3	5.5 x 8	554.7	12.6	0.4	0.3	0.7	0.5	-	-	0.0	0.0	0	0	Surcharged
2	009300C	000765ND	000766ND	44	5.5 x 8	554.7	12.6	0.3	0.3	0.5	0.2	-	-	0.0	0.0	0	0	Surcharged
2	009300D	000766ND	005833IN	73	5.5 x 8	554.6	12.7	0.3	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
2	009304STMP	005843IN	005846IN	25	1.25	4.5	5.1	1	1.3	Flooded	Flooded	Flooded	Flooded	1.0	1.0	904	1733	Flooded
2	009307STMP	005885IN	000825ND	37	1.5	3.5	5.1	0	0	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009309STMP	003091SMH	000823ND	53	1.25	2.8	7.3	0	0	-	1.9	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009315STMP	005891IN	003093SMH	46	2.5	91.2	18.3	1.3	1.5	RIM	Flooded	RIM	Flooded	0.0	1.3	0	15348	Insufficient Freeboard
2	009317STMP	003093SMH	000821ND	9	2.5	82.0	16.5	1.5	0	Flooded	0.6	Flooded	-	1.3	0.0	15348	0	Flooded
2	009320A	003095SMH	000817ND	14	5 x 10	834.6	21.6	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
2	009320B	000817ND	000816ND	24	5 x 10	848.0	24.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009320C	000816ND	000815ND	11	5 x 10	871.4	26.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009326STMP	005899IN	000777ND	24	1	5.0	8.9	0.2	1	1.2	Flooded	0.5	Flooded	0.0	0.0	0	47	Insufficient Freeboard
2	009330STMP	003097SMH	000776ND	13	1.5	9.6	5.4	0	0.7	2.6	6.1	0.5	0.3	0.0	0.0	0	4	Insufficient Freeboard
2	009331STMP	005903IN	003097SMH	82	1.25	6.4	6.8	0	0	0.3	2.8	1.0	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009338STMP	003098SMH	003099SMH	15	2.25	30.8	7.7	1.2	1.2	Flooded	Flooded	Flooded	Flooded	1.1	1.1	8140	7012	Flooded
2	009341STMP	005909IN	003101SMH	12	2	37.3	14.5	1.2	1.3	Flooded	Flooded	Flooded	Flooded	0.7	0.6	673	446	Flooded
2	009342STMP	003100SMH	005909IN	66	2	37.0	11.7	1.1	1.2	Flooded	Flooded	Flooded	Flooded	0.7	0.7	1119	673	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009343STMP	003160SMH	003100SMH	170	2	37.8	11.9	1.2	1.1	Flooded	Flooded	Flooded	Flooded	1.1	0.7	32380	1119	Flooded
2	009345STMP	003101SMH	003103SMH	44	2.25	55.3	13.7	1.3	1.2	Flooded	5.4	Flooded	1.2	0.6	0.0	446	0	Flooded
2	009346A	003099SMH	000768ND	212	2.25	27.5	6.9	1.2	1.2	Flooded	5.5	Flooded	0.3	1.1	0.0	7012	0	Flooded
2	009346B	000768ND	003101SMH	96	2.25	28.1	7.0	1.2	1.3	5.5	Flooded	0.3	Flooded	0.0	0.6	0	446	Insufficient Freeboard
2	009348STMP	003102SMH	003103SMH	35	2	32.3	10.2	1.3	1.2	5.1	5.7	1.1	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	009359STMP	005921IN	003106SMH	6	1	3.3	8.3	0	0	-	0.3	1.0	1.3	0.0	0.0	0	0	Sufficient Capacity
2	009360STMP	003106SMH	000779ND	11	1.5	7.5	4.2	0	0.1	1.9	5.3	1.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	009361STMP	003104SMH	003105SMH	207	1.25	8.3	6.7	0.8	0.8	Flooded	1.3	Flooded	1.0	0.7	0.0	1040	0	Flooded
2	009362STMP	003107SMH	003108SMH	98	2	32.7	10.3	1.2	1.2	Flooded	Flooded	Flooded	Flooded	1.2	1.1	13693	3432	Flooded
2	009363STMP	008027IN	003479SMH	15	1.5	20.3	16.6	0.5	4	1.1	5.9	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
2	009364STMP	003476SMH	008027IN	268	1.5	14.0	7.8	2.9	0.5	3.2	1.1	0.2	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	009365STMP	006034IN	000885ND	41	0.833	4.5	10.6	0	0	-	3.7	0.4	-	0.0	0.0	0	0	Sufficient Capacity
2	009366STMP	000512CB	003148SMH	98	1	5.9	7.4	1.7	1.8	Flooded	3.5	Flooded	1.0	1.4	0.0	1940	0	Flooded
2	009369STMP	003141SMH	003147SMH	25	3.5 x 7	95.1	-4.0	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
2	009421STMP	005934IN	000829ND	107	1	3.7	4.6	0.4	0	Flooded	1.8	Flooded	-	0.1	0.0	41	0	Flooded
2	009422STMP	000788ND	005935IN	70	3.5	65.2	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009423STMP	005936IN	005935IN	265	3	23.6	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009430STMP	003111SMH	003112SMH	19	1.25	5.6	8.3	0	0.2	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009431A	003112SMH	000792ND	41	4	95.0	7.2	0.2	0.3	0.5	0.5	-	-	0.0	0.0	0	0	Surcharged
2	009431B	000792ND	000791ND	9	4	95.0	7.2	0.3	0.2	0.5	0.4	-	-	0.0	0.0	0	0	Surcharged
2	009431C	000791ND	000790ND	44	4	95.1	7.2	0.2	0.3	0.4	0.5	-	-	0.0	0.0	0	0	Surcharged
2	009431D	000790ND	003141SMH	46	4	95.1	7.3	0.3	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
2	009443STMP	000787ND	003111SMH	143	1.25	5.6	4.6	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
2	009444STMP	005946IN	003142SMH	53	1.25	10.3	8.3	0.3	0.2	2.2	1.2	1.0	1.9	0.0	0.0	0	0	Insufficient Freeboard
2	009456STMP	005957IN	003114SMH	13	1	4.8	5.9	0.2	0	0.2	-	0.5	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	009457STMP	003114SMH	003116SMH	28	1	4.8	7.5	0	0	-	0.2	1.1	1.4	0.0	0.0	0	0	Sufficient Capacity
2	009462STMP	003115SMH	003116SMH	14	2	15.9	5.6	0	0	-	-	1.3	1.4	0.0	0.0	0	0	Sufficient Capacity
2	009463STMP	003142SMH	003115SMH	251	1.5	10.3	5.8	0.2	0	1.0	0.2	1.9	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	009464A	003116SMH	000781ND	29	2	20.7	7.4	0	0	-	-	1.4	-	0.0	0.0	0	0	Sufficient Capacity
2	009464B	000781ND	000780ND	37	2	20.6	7.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009464C	000780ND	003117SMH	66	2	20.4	6.9	0	0	-	-	-	1.8	0.0	0.0	0	0	Sufficient Capacity
2	009469STMP	006035IN	000887ND	42	1	4.3	10.6	0	0	-	1.5	1.2	-	0.0	0.0	0	0	Sufficient Capacity
2	009481STMP	005833IN	000811ND	1757	5 x 8	602.1	17.3	0	1.7	-	Flooded	-	Flooded	0.0	1.2	0	1184	Sufficient Capacity
2	009625STMP	007751IN	000816ND	29	1	9.1	11.4	0.5	0	Flooded	3.4	Flooded	-	0.5	0.0	835	0	Flooded
2	009634STMP	007745IN	000800ND	34	1.25	2.3	8.5	0	0	-	2.8	1.8	-	0.0	0.0	0	0	Sufficient Capacity
2	009743STMP	003199SMH	000546IO	74	4	240.7	14.5	0	0	-	0.0	1.6	-	0.0	0.0	0	0	Sufficient Capacity
2	009854A	007963IN	0001032ND	45	1	6.9	8.6	1	1.5	Flooded	Flooded	Flooded	Flooded	0.9	0.7	3954	6	Flooded
2	009854B	0001032ND	003437SMH	275	1	4.6	5.8	1.5	2.3	Flooded	Flooded	Flooded	Flooded	0.7	2.0	6	5522	Flooded
2	009870STMP	003368SMH	003464SMH	107	2	11.7	4.3	4.3	4.4	2.7	2.6	0.5	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	009871STMP	003369SMH	003370SMH	13	1.75	3.7	7.9	0.4	2.4	0.1	2.1	0.4	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	009873STMP	003459SMH	007994IN	37	2	35.0	11.0	4.3	4.7	3.7	Flooded	-	Flooded	0.0	3.6	0	13716	Surcharged
2	009875STMP	003478SMH	003476SMH	32	1.5	12.7	-7.1	3	2.9	4.3	3.2	0.0	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	009877STMP	008030IN	003477SMH	14	1	3.6	6.5	0.6	2.7	Flooded	3.3	Flooded	0.2	0.3	0.0	300	0	Flooded
2	009878STMP	003477SMH	003476SMH	34	1	3.6	4.5	2.7	2.9	3.3	3.7	0.2	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	009918STMP	003265SMH	006094IN	134	1.5	13.8	7.8	0	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
2	009919STMP	006093IN	003265SMH	65	1.25	8.0	14.1	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009920STMP	006154IN	006093IN	42	1.25	8.0	8.0	0	0	-	-	1.9	-	0.0	0.0	0	0	Sufficient Capacity
2	009967STMP	008017IN	0001036ND	87	0.667	-2.6	6.9	24	1.2	Flooded	6.5	Flooded	0.1	2.3	0.0	5982	0	Flooded
2	009968STMP	008019IN	0001037ND	22	2	23.3	7.3	0	0.9	5.3	5.3	1.2	0.7	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010015STMP	000543CB	003201SMH	26	0.833	9.6	17.2	0.2	0.1	3.2	0.3	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	010020STMP	003201SMH	003202SMH	315	1.5	9.4	6.4	0.1	0.3	2.1	3.8	-	-	0.0	0.0	0	0	Surcharged
2	010024STMP	000544CB	003202SMH	18	1	11.7	14.6	0.1	0.3	4.7	4.4	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
2	010025STMP	003202SMH	003204SMH	12	1.5	20.7	11.5	0.3	0.2	3.9	3.2	-	-	0.0	0.0	0	0	Surcharged
2	010026STMP	006044IN	003203SMH	8	1.25	4.7	8.9	0.1	0.2	0.8	1.9	1.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	010027STMP	003203SMH	003204SMH	191	1.25	4.7	5.2	0.2	0.2	1.9	3.4	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
2	010028STMP	003204SMH	003205SMH	691	2	25.2	8.3	0.2	0.4	2.7	Flooded	-	Flooded	0.0	0.3	0	1658	Surcharged
2	010031STMP	003205SMH	006036IN	247	2.25	34.6	8.6	0.4	2.3	Flooded	4.5	Flooded	0.2	0.3	0.0	1658	0	Flooded
2	010032STMP	006036IN	002911ND	4	2.25	44.8	11.1	2.3	0	4.5	2.1	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
2	010058A	003472SMH	0001038ND	129	2	18.3	5.8	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.8	3.4	16521	15	Flooded
2	010058B	0001038ND	003465SMH	70	2	18.6	5.9	4.2	4.2	Flooded	Flooded	Flooded	Flooded	3.4	3.5	15	4901	Flooded
2	010060STMP	008007IN	003466SMH	29	1	-3.2	-4.0	4.4	4.5	Flooded	Flooded	Flooded	Flooded	3.8	3.9	15698	19900	Flooded
2	010061STMP	003468SMH	003466SMH	200	2	34.2	10.7	0.1	4.5	6.1	Flooded	-	Flooded	0.0	3.9	0	19900	Surcharged
2	010062STMP	008008IN	003466SMH	65	1.25	4.0	4.2	4.3	4.5	Flooded	Flooded	Flooded	Flooded	1.3	3.9	1512	19900	Flooded
2	010067STMP	008012IN	003468SMH	36	1.75	7.1	5.6	0.9	0.1	2.6	3.6	-	-	0.0	0.0	0	0	Surcharged
2	010068STMP	002419SMH	003468SMH	267	2	19.7	7.7	0	0.1	-	2.6	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010072STMP	008015IN	003469SMH	85	1.75	-16.9	-6.9	1.2	2.9	Flooded	4.8	Flooded	1.5	1.1	0.0	24733	0	Flooded
2	010073STMP	003469SMH	0001035ND	11	1.75	-16.9	-6.9	2.9	3.1	4.8	5.4	1.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	010075STMP	000493CB	003163SMH	81	1.5	12.7	11.0	1.2	1.2	2.4	Flooded	0.8	Flooded	0.0	0.3	0	780	Insufficient Freeboard
2	010077A	003150SMH	000804ND	32	2	16.6	5.4	1.2	1.2	4.8	5.0	0.5	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010077B	000804ND	003098SMH	266	2	24.1	7.6	1.2	1.2	5.0	Flooded	1.4	Flooded	0.0	1.1	0	8140	Insufficient Freeboard
2	010079B	000814ND	003161SMH	20	5 x 10	754.7	-15.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.2	123	88004	Flooded
2	010079C	000813ND	000812ND	17	5 x 10	755.2	-15.0	1.6	1.5	Flooded	Flooded	Flooded	Flooded	1.2	1.1	389	224	Flooded
2	010079D	000812ND	000814ND	7	5 x 10	755.0	-15.0	1.5	1.4	Flooded	Flooded	Flooded	Flooded	1.1	1.0	224	123	Flooded
2	010079E	000811ND	000810ND	15	5 x 10	765.1	-15.2	1.7	1.6	Flooded	Flooded	Flooded	Flooded	1.2	1.2	1184	453	Flooded
2	010079F	000810ND	000813ND	9	5 x 10	762.3	-15.2	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.2	1.2	453	389	Flooded
2	010079G	000809ND	000811ND	106	5 x 10	439.8	-8.8	1.9	1.7	Flooded	Flooded	Flooded	Flooded	1.2	1.2	862	1184	Flooded
2	010081A	000815ND	000818ND	11	5 x 15	450.1	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081B	000825ND	000828ND	28	5 x 15	461.0	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081C	000828ND	000826ND	22	5 x 15	458.4	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081D	000826ND	007760IN	106	5 x 15	478.0	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081E	000819ND	000825ND	218	5 x 15	459.0	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081F	000818ND	000819ND	28	5 x 15	453.6	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082A	003164SMH	000830ND	53	4 x 7	194.1	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082B	000829ND	003199SMH	353	4 x 7	220.2	5.8	0	0	-	-	-	1.6	0.0	0.0	0	0	Sufficient Capacity
2	010082C	000830ND	000829ND	452	4 x 7	193.8	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010108STMP	003060SMH	003061SMH	18	1.5	11.7	6.6	3	3.1	Flooded	Flooded	Flooded	Flooded	1.6	2.1	1442	3957	Flooded
2	010110STMP	003061SMH	003062SMH	43	1.5	9.7	5.4	3.1	3.7	Flooded	Flooded	Flooded	Flooded	2.1	2.7	3957	16333	Flooded
2	010111STMP	003062SMH	003195SMH	31	1.5	9.2	-5.1	3.7	3.2	Flooded	Flooded	Flooded	Flooded	2.7	2.5	16333	9313	Flooded
2	010112STMP	003195SMH	000874ND	74	1.5	8.9	-5.0	3.2	3.1	Flooded	Flooded	Flooded	Flooded	2.5	1.9	9313	18	Flooded
2	010125STMP	000539CB	003197SMH	34	1.25	5.5	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010126STMP	000538CB	003197SMH	47	1.25	10.1	9.0	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
2	010127STMP	003197SMH	000882ND	406	2.5	15.5	5.5	0	0	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010202STMP	006122IN	000939ND	42	0.833	4.8	9.1	0.3	0	1.0	3.3	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	010203STMP	006123IN	002912ND	92	2	7.7	6.1	0	0	-	2.2	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010208STMP	006128IN	000940ND	32	1.25	4.5	6.7	0	0	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010264STMP	003381SMH	006154IN	59	1.25	8.0	7.9	0	0	-	-	1.6	1.9	0.0	0.0	0	0	Sufficient Capacity
2	010414STMP	008032IN	003478SMH	11	1	3.9	4.9	0.7	3	Flooded	3.7	Flooded	0.0	0.5	0.0	1594	0	Flooded
2	010415STMP	003486SMH	003478SMH	87	1.25	10.8	8.6	3	3	4.6	4.4	0.5	0.0	0.0	0.0	0	0	Insufficient Freeboard

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		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010416STMP	008033IN	003479SMH	178	2	-9.6	-3.0	4.4	4	Flooded	5.4	Flooded	-	3.3	0.0	47610	0	Flooded
2	010430STMP	003483SMH	003472SMH	152	1.25	11.5	9.1	4.1	4.2	Flooded	Flooded	Flooded	Flooded	0.4	3.8	1778	16521	Flooded
2	010436STMP	008046IN	003486SMH	54	1.25	10.8	9.9	2.2	3	Flooded	4.5	Flooded	0.5	0.6	0.0	1525	0	Flooded
2	010437STMP	003487SMH	008033IN	199	2	10.9	3.4	4.1	4.4	4.6	Flooded	-	Flooded	0.0	3.3	0	47610	Surcharged
2	010439STMP	003488SMH	003490SMH	41	1	6.0	7.7	0.3	0	0.8	-	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
2	010440STMP	008048IN	003488SMH	26	1	6.0	-7.5	55.4	0.3	4.1	0.8	0.9	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010441STMP	008049IN	008048IN	62	1	6.1	7.6	0.6	55.4	Flooded	4.0	Flooded	0.9	0.3	0.0	349	0	Flooded
2	010444STMP	003489SMH	003487SMH	23	2	10.9	3.8	1.1	4.1	2.6	4.5	-	-	0.0	0.0	0	0	Surcharged
2	010448STMP	003490SMH	003489SMH	9	2	6.0	9.5	0	1.1	-	2.6	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010449STMP	007994IN	0001039ND	82	2	36.8	11.5	4.7	0.2	Flooded	1.3	Flooded	-	3.6	0.0	13716	0	Flooded
2	010450STMP	006094IN	003460SMH	231	2	16.5	8.5	0	0.5	-	2.6	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010451STMP	003460SMH	0001039ND	72	2.25	35.8	8.9	0.5	0.2	2.8	1.1	-	-	0.0	0.0	0	0	Surcharged
2	010460STMP	003470SMH	008019IN	119	2	23.4	7.4	0.4	0	5.5	5.3	0.9	1.2	0.0	0.0	0	0	Insufficient Freeboard
2	010465A	000634CB	0001037ND	56	2	4.4	5.1	0.1	0.9	0.6	5.3	1.2	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	010465B	0001037ND	0001036ND	67	2	27.1	8.5	0.9	1.2	5.3	5.1	0.7	0.1	0.0	0.0	0	0	Insufficient Freeboard
2	010465C	0001036ND	0001035ND	214	2	24.5	7.7	1.2	3.1	5.1	5.1	0.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	010465D	0001035ND	003468SMH	92	2	17.8	5.6	3.1	0.1	5.1	6.1	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	010466STMP	008023IN	003470SMH	49	1	8.2	10.3	0.4	0.4	Flooded	3.0	Flooded	0.9	0.3	0.0	1186	0	Flooded
2	010467STMP	003471SMH	003470SMH	115	2	17.9	5.6	0.5	0.4	5.8	5.5	-	0.9	0.0	0.0	0	0	Surcharged
2	010468STMP	002423SMH	003471SMH	60	2	17.9	9.9	0.2	0.5	3.8	5.8	-	-	0.0	0.0	0	0	Surcharged
2	010469STMP	003151SMH	000817ND	13	3	22.9	5.8	0	0	0.6	1.6	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	010470STMP	003152SMH	003151SMH	28	2.5	19.2	11.8	0	0	-	1.1	1.9	1.8	0.0	0.0	0	0	Sufficient Capacity
2	010474STMP	003149SMH	003150SMH	13	1.5	16.6	10.0	1.2	1.2	4.8	5.3	0.8	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	010475STMP	000518CB	000804ND	21	1	10.0	12.3	1.2	1.2	Flooded	6.0	Flooded	1.4	0.8	0.0	7009	0	Flooded
2	010476A	007761IN	000796ND	67	5 x 15	511.1	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476B	000796ND	000797ND	227	5 x 15	516.1	15.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476C	000797ND	000798ND	7	5 x 15	510.5	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476D	000798ND	000131CP	79	5 x 15	514.9	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010477STMP	000519CB	003156SMH	17	1	5.8	7.2	1.8	1.7	Flooded	Flooded	Flooded	Flooded	1.7	1.6	9288	9147	Flooded
2	010478STMP	003156SMH	003167SMH	147	1	5.9	7.5	1.7	1	Flooded	Flooded	Flooded	Flooded	1.6	0.4	9147	932	Flooded
2	010479STMP	003157SMH	003167SMH	21	2	43.5	14.3	0.7	1	Flooded	Flooded	Flooded	Flooded	0.5	0.4	4076	932	Flooded
2	010480STMP	003167SMH	003160SMH	168	2	44.7	14.0	1	1.2	Flooded	Flooded	Flooded	Flooded	0.4	1.1	932	32380	Flooded
2	010481STMP	003159SMH	003167SMH	22	1.25	12.8	16.3	0.5	1	1.5	Flooded	1.3	Flooded	0.0	0.4	0	932	Insufficient Freeboard
2	010482A	003158SMH	000793ND	246	2	34.3	14.6	0	0.5	0.3	5.1	-	1.5	0.0	0.0	0	0	Surcharged
2	010482B	000793ND	003157SMH	277	2	46.1	14.7	0.5	0.7	5.1	Flooded	1.5	Flooded	0.0	0.5	0	4076	Insufficient Freeboard
2	010483STMP	003103SMH	005891IN	711	3.5	77.7	8.0	1.2	1.3	4.3	RIM	1.2	RIM	0.0	0.0	0	0	Insufficient Freeboard
2	010484A	003108SMH	000794ND	172	2	31.9	10.0	1.2	1.3	Flooded	5.1	Flooded	1.5	1.1	0.0	3432	0	Flooded
2	010484B	000794ND	003102SMH	20	2	32.1	10.1	1.3	1.3	5.2	5.1	1.5	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	010567A	007760IN	000827ND	15	5 x 15	490.1	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010567B	000827ND	007761IN	129	5 x 15	500.0	13.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010568STMP	007754IN	000797ND	7	1	1.9	9.5	0	0	-	2.4	1.3	-	0.0	0.0	0	0	Sufficient Capacity
2	010570STMP	007765IN	003145SMH	223	1.25	8.1	6.5	0	0.5	4.4	Flooded	0.9	Flooded	0.0	0.1	0	31	Insufficient Freeboard
2	010572A	003089SMH	000831ND	179	1.5	12.4	-6.9	25.7	1.5	Flooded	Flooded	Flooded	Flooded	0.8	0.5	3176	6	Flooded
2	010572B	000831ND	000488CB	59	1.5	14.9	-8.4	1.5	0.7	Flooded	0.4	Flooded	2.0	0.5	0.0	6	0	Flooded
2	010573A	003161SMH	000769ND	81	5 x 10	796.8	15.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.4	88004	10208	Flooded
2	010573B	000779ND	003095SMH	70	5 x 10	831.2	16.6	0.1	0	1.8	-	0.7	2.0	0.0	0.0	0	0	Insufficient Freeboard
2	010573C	000778ND	000777ND	30	5 x 10	819.3	16.4	1.2	1	Flooded	Flooded	Flooded	Flooded	0.0	0.0	746	47	Flooded
2	010573D	000777ND	000776ND	29	5 x 10	823.2	16.5	1	0.7	Flooded	2.6	Flooded	0.3	0.0	0.0	47	4	Flooded
2	010573E	000776ND	000779ND	78	5 x 10	828.1	16.6	0.7	0.1	2.6	1.8	0.3	0.7	0.0	0.0	4	0	Insufficient Freeboard

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		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010573F	000775ND	000778ND	25	5 x 10	819.4	16.4	1.3	1.2	Flooded	Flooded	Flooded	Flooded	0.0	0.0	490	746	Flooded
2	010573G	000774ND	000775ND	155	5 x 10	815.5	16.3	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.1	0.0	1570	490	Flooded
2	010573H	000773ND	000774ND	32	5 x 10	814.9	16.3	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.2	0.1	3390	1570	Flooded
2	010573I	000772ND	000773ND	31	5 x 10	804.9	16.1	1.4	1.3	Flooded	Flooded	Flooded	Flooded	0.4	0.2	6427	3390	Flooded
2	010573J	000771ND	000772ND	25	5 x 10	804.3	16.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.2	0.4	4133	6427	Flooded
2	010573K	000770ND	000771ND	74	5 x 10	800.1	16.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.2	0.2	3250	4133	Flooded
2	010573L	000769ND	000770ND	6	5 x 10	797.1	15.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.2	10208	3250	Flooded
2	010574A	003147SMH	000789ND	131	3.5 x 7	185.5	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010574B	000789ND	003164SMH	131	3.5 x 7	185.7	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010575STMP	000834ND	003149SMH	210	1.5	16.6	9.2	0.5	1.2	Flooded	4.8	Flooded	0.8	0.4	0.0	10	0	Flooded
2	010625STMP	003437SMH	003369SMH	28	0.833	3.7	6.6	2.3	0.4	Flooded	0.8	Flooded	0.4	2.0	0.0	5522	0	Flooded
2	010626STMP	003439SMH	003438SMH	10	1	7.4	9.3	5.2	4.5	Flooded	Flooded	Flooded	Flooded	4.3	4.2	6163	16552	Flooded
2	010627STMP	003466SMH	003438SMH	107	2	21.4	6.8	4.5	4.5	Flooded	Flooded	Flooded	Flooded	3.9	4.2	19900	16552	Flooded
2	010628STMP	003438SMH	003448SMH	39	2	17.4	5.3	4.5	4.5	Flooded	Flooded	Flooded	Flooded	4.2	4.3	16552	23467	Flooded
2	010635STMP	003440SMH	003448SMH	30	2	22.8	7.2	4.5	4.5	Flooded	Flooded	Flooded	Flooded	4.2	4.3	14908	23467	Flooded
2	010636STMP	003448SMH	003368SMH	102	2	32.1	10.1	4.5	4.3	Flooded	2.4	Flooded	0.5	4.3	0.0	23467	0	Flooded
2	010641STMP	007977IN	005983IN	65	1.25	2.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010642STMP	007978IN	005936IN	169	3	19.8	4.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010643STMP	007992IN	007978IN	24	2	3.5	1.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010646STMP	003456SMH	004003SMH	13	3	35.2	4.9	4.7	5.4	4.5	5.6	1.5	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010647A	003450SMH	0001034ND	35	4	35.1	5.4	4.3	4.4	1.9	2.2	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	010647B	0001034ND	003457SMH	82	4	35.1	3.9	4.4	4.5	2.2	2.8	-	-	0.0	0.0	0	0	Surcharged
2	014016STMP	003370SMH	003368SMH	46	3	3.7	2.6	2.4	4.3	0.8	1.7	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	014018STMP	003368SMH	008004IN	61	2.5	23.3	5.7	4.3	4.4	2.2	2.2	0.5	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	014019STMP	004003SMH	003450SMH	25	4	35.1	-2.8	5.4	4.3	4.8	1.6	1.4	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	014922A	000815ND	000820ND	46	5 x 15	433.2	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922B	000824ND	007760IN	148	5 x 15	522.0	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922C	000823ND	000824ND	28	5 x 15	521.5	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922D	000822ND	000823ND	101	5 x 15	518.7	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922E	000821ND	000822ND	39	5 x 15	518.7	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922F	000820ND	000821ND	54	5 x 15	435.5	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014923STMP	007760IN	007761IN	146	5 x 15	514.2	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924A	007761IN	000795ND	46	5 x 15	511.5	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924B	000795ND	000801ND	262	5 x 15	511.8	15.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924C	000801ND	000799ND	10	5 x 15	519.3	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924D	000799ND	000800ND	37	5 x 15	522.2	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924E	000800ND	000290CP	23	5 x 15	524.4	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014928STMP	0001039ND	000788ND	160	3 x 3	65.3	7.4	0.2	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
2	014930A	000291CP	000882ND	4	5 x 13	521.1	8.3	0	0	-	-	1.4	-	0.0	0.0	0	0	Sufficient Capacity
2	014930B	000882ND	000880ND	16	5 x 13	533.6	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014930C	000880ND	000881ND	16	5 x 13	532.2	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014930D	000881ND	000883ND	114	5 x 13	530.9	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014930E	000883ND	003200SMH	207	5 x 13	520.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014932A	000132CP	007842IN	106	5 x 16	659.8	8.9	0	0	-	-	1.4	-	0.0	0.0	0	0	Sufficient Capacity
2	014932B	007842IN	006101IN	96	5 x 16	661.0	8.9	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014932C	006101IN	007844IN	17	5 x 16	654.7	8.9	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
2	014932D	007844IN	006029IN	86	5 x 16	651.1	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014932E	006029IN	000890ND	12	5 x 16	645.2	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014932F	000890ND	000884ND	17	5 x 16	649.1	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	014932G	000884ND	006032IN	3	5 x 16	648.3	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014932H	006032IN	003200SMH	22	5 x 16	648.6	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933A	003200SMH	000885ND	95	5 x 16	666.1	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933B	000885ND	000886ND	145	5 x 16	666.1	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933C	000886ND	003206SMH	60	5 x 16	666.8	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933D	003206SMH	000887ND	41	5 x 16	672.2	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933E	000887ND	000893ND	43	5 x 16	675.4	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933F	000893ND	006037IN	110	5 x 16	676.8	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933G	006037IN	000939ND	52	5 x 16	678.0	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933H	000939ND	003313SMH	328	5 x 16	684.7	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934A	003200SMH	002910ND	95	5 x 13	499.0	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934B	002910ND	002911ND	289	5 x 13	494.0	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934C	002911ND	002912ND	172	5 x 13	535.5	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934D	002912ND	000940ND	193	5 x 13	542.0	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934E	000940ND	003313SMH	142	5 x 13	546.4	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014940STMP	000874ND	008046IN	152	1.25	8.9	-7.1	3.1	2.2	Flooded	Flooded	Flooded	Flooded	1.9	0.6	18	1525	Flooded
3	008354STMP	000505CB	003120SMH	13	1	11.6	14.4	1.8	1.5	Flooded	Flooded	Flooded	Flooded	1.7	1.4	18687	54007	Flooded
3	008355STMP	003120SMH	003122SMH	203	2.5	57.7	11.6	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.4	1.3	54007	36386	Flooded
3	008358STMP	005975IN	003122SMH	38	1	9.4	14.9	1.7	1.5	Flooded	Flooded	Flooded	Flooded	1.7	1.3	4012	36386	Flooded
3	008361STMP	000507CB	003121SMH	33	1	6.2	7.6	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.3	1.1	3576	3266	Flooded
3	008362STMP	003121SMH	000807ND	47	1	6.2	7.7	1.5	1.7	Flooded	Flooded	Flooded	Flooded	1.1	0.6	3266	21	Flooded
3	008420A	000574CB	000918ND	10	1	2.1	3.0	0.4	0.5	1.8	1.8	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	008420B	000918ND	003398SMH	11	1	2.1	3.1	0.5	0.4	1.8	1.7	0.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	008426STMP	003398SMH	000919ND	30	1.25	2.4	2.8	0.4	0.4	1.5	1.8	0.4	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	008428STMP	000577CB	000919ND	17	1	5.7	7.2	0.5	0.4	Flooded	2.0	Flooded	0.6	0.2	0.0	122	0	Flooded
3	008429STMP	000919ND	003079SMH	218	1.5	7.0	5.2	0.4	0	1.5	2.6	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
3	008435STMP	003400SMH	002914ND	19	2.5	-46.1	-9.3	2.9	1.4	Flooded	Flooded	Flooded	Flooded	1.0	0.0	3802	155	Flooded
3	008436STMP	003401SMH	002915ND	22	2.5	36.4	7.4	2.7	1.4	Flooded	Flooded	Flooded	Flooded	1.0	0.0	3567	113	Flooded
3	008437STMP	003402SMH	000994ND	150	4 x 12	336.5	8.6	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.0	1983	458	Flooded
3	008642STMP	006170IN	006172IN	27	1.75	7.3	6.3	2.8	2.9	1.1	Flooded	0.8	Flooded	0.0	2.6	0	6735	Insufficient Freeboard
3	008643STMP	006171IN	006170IN	145	1.25	7.4	6.0	0.3	2.8	Flooded	1.3	Flooded	0.8	0.1	0.0	50	0	Flooded
3	008644A	006172IN	000847ND	74	2	7.3	2.3	2.9	2.9	Flooded	2.2	Flooded	0.5	2.6	0.0	6735	0	Flooded
3	008644B	000847ND	003383SMH	162	2	7.3	2.3	2.9	3	2.2	Flooded	0.5	Flooded	0.0	2.9	0	15321	Insufficient Freeboard
3	008648A	003218SMH	000915ND	71	3.25 x 5	65.3	5.5	2.3	2.3	RIM	Flooded	RIM	Flooded	0.0	1.3	0	257	Insufficient Freeboard
3	008648B	000915ND	000902ND	212	3.25 x 5	60.6	5.6	2.3	2.5	Flooded	Flooded	Flooded	Flooded	1.3	0.9	257	197	Flooded
3	008648C	000902ND	003217SMH	81	3.25 x 5	60.5	5.1	2.5	2.5	Flooded	RIM	Flooded	RIM	0.9	0.0	197	0	Flooded
3	008706A	003407SMH	000950ND	11	3.25 x 5	68.8	-5.3	2.5	2.5	RIM	Flooded	RIM	Flooded	0.0	1.6	0	1321	Insufficient Freeboard
3	008706B	000950ND	000949ND	25	3.25 x 5	68.7	-5.3	2.5	2.4	Flooded	Flooded	Flooded	Flooded	1.6	1.5	1321	2242	Flooded
3	008706C	000949ND	003406SMH	173	3.25 x 5	69.0	-5.3	2.4	1.5	Flooded	Flooded	Flooded	Flooded	1.5	0.0	2242	573	Flooded
3	008711STMP	007700IN	003077SMH	172	1.25	6.7	5.6	1.5	1.2	2.0	3.4	0.7	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	008718STMP	007706IN	007707IN	104	0.667	2.0	5.6	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.6	1.1	3261	1496	Flooded
3	008719STMP	007707IN	007711IN	182	0.667	2.1	6.0	1.9	0.5	Flooded	Flooded	Flooded	Flooded	1.1	0.4	1496	338	Flooded
3	008753A	003408SMH	000953ND	23	3.25 x 5	66.9	5.2	2.6	2.6	RIM	Flooded	RIM	Flooded	0.0	1.3	0	561	Insufficient Freeboard
3	008753B	000953ND	000952ND	109	3.25 x 5	66.8	5.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.3	1.3	561	1813	Flooded
3	008753C	000952ND	000951ND	105	3.25 x 5	66.7	5.2	2.6	2.5	Flooded	Flooded	Flooded	Flooded	1.3	1.6	1813	1589	Flooded
3	008753D	000951ND	003407SMH	11	3.25 x 5	66.6	5.2	2.5	2.5	Flooded	RIM	Flooded	RIM	1.6	0.0	1589	0	Flooded
3	008754STMP	003217SMH	003408SMH	362	3.25 x 5	67.0	5.2	2.5	2.6	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	008755A	003409SMH	000978ND	156	4 x 12	345.1	8.8	1.4	1.6	Flooded	Flooded	Flooded	Flooded	0.0	0.0	938	720	Flooded
3	008755B	000978ND	003434SMH	88	4 x 12	385.1	8.1	1.6	1.6	Flooded	Flooded	Flooded	Flooded	0.0	0.0	720	2123	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	008756STMP	000971ND	003409SMH	42	4 x 12	341.9	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	715	938	Flooded
3	008904A	000595CB	0001045ND	121	2	14.5	9.1	0	1.3	-	Flooded	-	Flooded	0.0	0.0	0	16	Sufficient Capacity
3	008904B	0001045ND	000596CB	135	2	17.6	7.7	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	16	166	Flooded
3	008907STMP	006217IN	0001045ND	17	1	6.0	-7.6	1.5	1.3	Flooded	Flooded	Flooded	Flooded	1.1	0.0	5482	16	Flooded
3	008909STMP	000524IO	003367SMH	289	1.25	9.9	13.6	0	0.7	-	Flooded	1.4	Flooded	0.0	0.7	0	4955	Sufficient Capacity
3	008910STMP	000596CB	003436SMH	52	2	33.5	10.5	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	166	1965	Flooded
3	008948A	003175SMH	000876ND	48	3	26.6	3.8	2.5	2.6	1.3	1.3	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	008948B	000876ND	003177SMH	119	3	26.6	3.8	2.6	2.6	1.3	1.3	-	-	0.0	0.0	0	0	Surcharged
3	008949A	003186SMH	000853ND	5	3	24.9	4.6	2.5	2.5	1.1	1.1	0.2	1.6	0.0	0.0	0	0	Insufficient Freeboard
3	008949B	000853ND	003175SMH	145	3	17.4	2.7	2.5	2.5	1.1	1.2	1.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
3	008963STMP	000572CB	003397SMH	62	1	5.9	7.5	0.9	1	Flooded	2.9	Flooded	0.7	0.8	0.0	2248	0	Flooded
3	008965STMP	006234IN	000990ND	142	1	2.5	4.0	1.9	2.4	Flooded	4.7	Flooded	0.8	1.8	0.0	6468	0	Flooded
3	008976A	003384SMH	000846ND	33	2	12.8	4.0	3	3	Flooded	Flooded	Flooded	Flooded	2.7	1.5	11412	8	Flooded
3	008976B	000846ND	004007SMH	215	2	12.1	3.8	3	3	Flooded	Flooded	Flooded	Flooded	1.5	1.7	8	12357	Flooded
3	008978A	003385SMH	000833ND	131	1	3.7	4.6	12.9	13	Flooded	Flooded	Flooded	Flooded	12.8	2.6	13933	10	Flooded
3	008978B	000833ND	003384SMH	15	1	5.2	6.5	13	3	Flooded	Flooded	Flooded	Flooded	2.6	2.7	10	11412	Flooded
3	009270A	007711IN	000763ND	35	1.5	7.3	4.1	0.5	1.6	Flooded	Flooded	Flooded	Flooded	0.4	0.0	338	39	Flooded
3	009270B	000763ND	003397SMH	207	1.5	6.7	3.7	1.6	1	Flooded	6.2	Flooded	0.7	0.0	0.0	39	0	Flooded
3	009271STMP	003079SMH	003078SMH	46	3	40.2	9.1	0	0.8	1.5	1.7	-	-	0.0	0.0	0	0	Surcharged
3	009272STMP	007712IN	003079SMH	24	1	5.0	9.2	0	0	-	-	0.8	-	0.0	0.0	0	0	Sufficient Capacity
3	009273STMP	003080SMH	003081SMH	34	2.5	44.3	8.9	1.6	1.6	Flooded	Flooded	Flooded	Flooded	0.8	1.1	2264	8843	Flooded
3	009274STMP	007713IN	003080SMH	25	1.25	7.8	11.0	1.2	1.6	Flooded	Flooded	Flooded	Flooded	1.1	0.8	4514	2264	Flooded
3	009275STMP	003081SMH	000808ND	111	2.5	44.2	8.9	1.6	2	Flooded	Flooded	Flooded	Flooded	1.1	0.5	8843	26	Flooded
3	009276STMP	000481CB	003166SMH	39	1.25	-6.6	-5.1	1.4	2.1	Flooded	Flooded	Flooded	Flooded	0.8	0.5	3890	2703	Flooded
3	009279STMP	003078SMH	003080SMH	297	2.25	39.6	12.6	0.8	1.6	2.6	Flooded	-	Flooded	0.0	0.8	0	2264	Surcharged
3	009479A	003185SMH	000842ND	28	1.5	11.2	6.2	1.6	2.1	Flooded	3.5	Flooded	0.0	0.5	0.0	427	0	Flooded
3	009479B	000842ND	003184SMH	101	1.5	14.0	7.8	2.1	2.5	3.5	Flooded	0.0	Flooded	0.0	0.8	0	4124	Insufficient Freeboard
3	009482STMP	003169SMH	003352SMH	37	2	37.4	-11.8	2.7	2.9	RIM	2.6	RIM	0.9	0.0	0.0	0	0	Insufficient Freeboard
3	009483STMP	003170SMH	003169SMH	16	1.5	12.0	-6.7	3.1	2.7	3.9	RIM	0.4	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009485STMP	007766IN	003170SMH	12	1.25	8.9	7.1	2.9	3.1	3.7	3.9	1.4	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	009486STMP	007794IN	007766IN	155	1.5	8.9	5.0	2.6	2.9	2.7	3.2	1.1	1.4	0.0	0.0	0	0	Insufficient Freeboard
3	009491STMP	003182SMH	003172SMH	168	3	25.6	3.6	2.6	2.6	Flooded	RIM	Flooded	RIM	1.8	0.0	2991	0	Flooded
3	009517A	003172SMH	000837ND	39	3.5	25.3	2.7	2.6	2.6	RIM	1.5	RIM	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	009517B	000837ND	003169SMH	287	3.5	26.1	2.7	2.6	2.7	1.5	RIM	0.3	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009518STMP	003183SMH	003173SMH	169	2	7.0	2.6	2.7	2.8	2.6	Flooded	0.1	Flooded	0.0	2.5	0	7015	Insufficient Freeboard
3	009519A	003173SMH	000836ND	26	2	8.2	2.6	2.8	2.9	Flooded	3.2	Flooded	0.1	2.5	0.0	7015	0	Flooded
3	009519B	002908ND	003170SMH	131	2	9.2	2.9	3	3.1	3.4	3.4	0.1	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	009519C	000836ND	002908ND	156	2	8.1	2.5	2.9	3	3.2	3.4	0.1	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	009525STMP	000525CB	000837ND	26	1	4.8	6.0	2.5	2.6	Flooded	4.0	Flooded	0.3	1.6	0.0	4001	0	Flooded
3	009541STMP	006235IN	000990ND	34	1.5	9.4	8.0	1.3	2.4	1.4	4.2	0.2	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009542A	003331SMH	000990ND	37	3.25 x 5	52.0	4.5	2.4	2.4	RIM	0.7	RIM	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009542B	000990ND	000988ND	99	3.25 x 5	53.5	4.5	2.4	2.4	0.7	0.8	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	009543A	003332SMH	000987ND	77	3.25 x 5	51.8	4.6	2.4	2.4	RIM	0.5	RIM	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009543B	000987ND	003331SMH	97	3.25 x 5	52.0	4.6	2.4	2.4	0.5	RIM	0.8	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009550STMP	003334SMH	000991ND	6	1.25	6.3	5.7	2.8	2.3	2.5	3.9	0.5	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	009552STMP	000529CB	000842ND	33	1	3.8	5.5	0.5	2.1	2.9	4.0	0.6	0.0	0.0	0.0	0	0	Insufficient Freeboard
3	009555STMP	000530CB	003185SMH	27	1	6.0	7.5	0.8	1.6	Flooded	Flooded	Flooded	Flooded	0.5	0.5	493	427	Flooded
3	009557STMP	003190SMH	003185SMH	264	1.25	5.9	5.5	1.2	1.6	2.2	Flooded	-	Flooded	0.0	0.5	0	427	Surcharged
3	009563A	003191SMH	000843ND	104	2	22.7	7.2	2.7	2.6	Flooded	2.0	Flooded	1.3	1.5	0.0	4106	0	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009563B	000843ND	003186SMH	5	2	22.4	7.1	2.6	2.5	2.4	2.1	1.3	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	009566STMP	000853ND	003187SMH	24	2	12.0	3.8	2.5	2.7	2.1	2.2	1.6	0.0	0.0	0.0	0	0	Insufficient Freeboard
3	009567STMP	003188SMH	003189SMH	39	2	10.0	3.2	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.7	2.5	19001	9063	Flooded
3	009570A	003187SMH	000844ND	205	2	12.0	3.8	2.7	2.7	2.2	Flooded	0.0	Flooded	0.0	1.3	0	27	Insufficient Freeboard
3	009570B	000844ND	003188SMH	10	2	11.2	3.6	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.3	2.7	27	19001	Flooded
3	009578STMP	007889IN	003405SMH	56	1.75	12.3	6.7	1.3	1.8	Flooded	Flooded	Flooded	Flooded	0.4	1.0	1066	2599	Flooded
3	009579STMP	003405SMH	000936ND	56	1.75	17.0	7.0	1.8	1.5	Flooded	Flooded	Flooded	Flooded	1.0	0.0	2599	99	Flooded
3	009580A	003406SMH	002916ND	153	4 x 7	250.1	10.3	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	573	317	Flooded
3	009580B	002916ND	002914ND	21	4 x 7	265.0	10.7	1.5	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	317	155	Flooded
3	009580C	002915ND	003402SMH	36	4 x 7	325.0	13.6	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.1	113	1983	Flooded
3	009580D	002914ND	002915ND	4	4 x 7	294.6	11.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	155	113	Flooded
3	009688C	000936ND	003406SMH	22	4 x 7	197.5	7.4	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	99	573	Flooded
3	009692STMP	006169IN	003213SMH	39	1.25	4.1	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009693STMP	000476CB	006169IN	198	1.25	4.1	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009694STMP	003214SMH	003216SMH	282	2.5	23.3	4.7	2.7	2.8	2.7	Flooded	-	Flooded	0.0	2.6	0	16197	Surcharged
3	009695STMP	003214SMH	003215SMH	282	2.5	24.4	5.0	2.7	2.8	2.7	Flooded	-	Flooded	0.0	2.7	0	14826	Surcharged
3	009696STMP	000994ND	000971ND	84	4 x 12	335.5	8.6	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	458	715	Flooded
3	009702STMP	003367SMH	003208SMH	292	1.25	16.3	13.0	0.7	0	Flooded	-	Flooded	-	0.7	0.0	4955	0	Flooded
3	009704STMP	003429SMH	003430SMH	33	0.833	2.9	8.6	1.4	1.5	1.0	Flooded	1.0	Flooded	0.0	1.5	0	7786	Insufficient Freeboard
3	009705STMP	003430SMH	000974ND	71	0.833	5.6	10.3	1.5	1.9	Flooded	Flooded	Flooded	Flooded	1.5	1.9	7786	29	Flooded
3	009706STMP	000974ND	003428SMH	93	0.833	4.6	8.2	1.9	12.9	Flooded	Flooded	Flooded	Flooded	1.9	5.9	29	3193	Flooded
3	009707STMP	003431SMH	000977ND	163	1	3.3	4.3	0.4	0	Flooded	0.0	Flooded	-	0.3	0.0	140	0	Flooded
3	009710STMP	006207IN	003432SMH	31	1	3.6	4.6	0.1	0	0.4	-	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
3	009713A	003432SMH	000977ND	18	2	9.3	8.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009713B	000977ND	000595CB	26	2	12.5	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009714STMP	006212IN	003432SMH	10	1	5.7	7.2	0.4	0	1.0	-	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
3	009717STMP	006230IN	006231IN	43	1	9.8	7.3	0.4	2	Flooded	3.3	Flooded	-	0.2	0.0	498	0	Flooded
3	009718STMP	006231IN	000989ND	15	2	13.5	5.5	2	2.4	2.3	3.9	-	-	0.0	0.0	0	0	Surcharged
3	009719STMP	003329SMH	001001ND	69	3.25 x 5	66.1	-5.3	2.5	2.4	1.0	0.9	-	-	0.0	0.0	0	0	Surcharged
3	009720A	003330SMH	000988ND	12	3.25 x 5	-19.2	4.9	1.2	2.4	-	0.8	-	-	0.0	0.0	0	0	Surcharged
3	009720B	000989ND	003329SMH	54	3.25 x 5	61.6	4.8	2.4	2.5	0.9	1.0	-	-	0.0	0.0	0	0	Surcharged
3	009720C	000988ND	000989ND	46	3.25 x 5	61.9	4.9	2.4	2.4	0.8	0.9	-	-	0.0	0.0	0	0	Surcharged
3	009722STMP	000601CB	003330SMH	17	1.25	5.5	10.7	0	1.2	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009737A	003383SMH	000832ND	67	2	8.1	2.6	3	3	Flooded	Flooded	Flooded	Flooded	2.9	1.9	15321	6	Flooded
3	009737B	000832ND	003384SMH	22	2	8.0	2.5	3	3	Flooded	Flooded	Flooded	Flooded	1.9	2.7	6	11412	Flooded
3	009749STMP	000622CB	000980ND	45	1.25	13.1	10.4	2.2	1.4	Flooded	Flooded	Flooded	Flooded	0.3	0.6	367	974	Flooded
3	009753A	006224IN	000981ND	66	1	5.4	6.8	3.1	3.1	Flooded	4.3	Flooded	0.1	2.7	0.0	13512	0	Flooded
3	009753B	000981ND	003327SMH	20	1	-5.4	6.8	3.1	3	4.3	Flooded	0.1	Flooded	0.0	1.2	0	2301	Insufficient Freeboard
3	009754STMP	006223IN	000999ND	44	1	-7.8	-9.4	2.7	1.4	Flooded	Flooded	Flooded	Flooded	2.2	1.0	23721	2213	Flooded
3	009766STMP	007779IN	003178SMH	12	2	-14.4	4.6	2.8	2.6	Flooded	Flooded	Flooded	Flooded	2.6	2.5	14038	8883	Flooded
3	009767STMP	003178SMH	003179SMH	18	2	15.1	4.8	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.5	2.5	8883	9257	Flooded
3	009768A	000845ND	003179SMH	132	2	10.3	3.3	2.7	2.6	Flooded	Flooded	Flooded	Flooded	1.0	2.5	3	9257	Flooded
3	009768B	000849ND	000845ND	33	2	10.2	3.3	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.0	1.0	6	3	Flooded
3	009768C	003189SMH	000849ND	111	2	10.2	3.2	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.5	1.0	9063	6	Flooded
3	009770STMP	003179SMH	003180SMH	71	3	22.6	3.1	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.5	2.5	9257	9495	Flooded
3	009772STMP	007780IN	000839ND	9	1.5	2.5	3.0	2.7	2.8	Flooded	Flooded	Flooded	Flooded	1.8	0.8	2150	1	Flooded
3	009773STMP	003180SMH	003181SMH	128	3	24.3	3.4	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.5	1.6	9495	1999	Flooded
3	009774STMP	003181SMH	003182SMH	18	3	25.8	-3.7	2.7	2.6	Flooded	Flooded	Flooded	Flooded	1.6	1.8	1999	2991	Flooded
3	009775STMP	003184SMH	003181SMH	46	1.5	15.4	8.6	2.5	2.7	Flooded	Flooded	Flooded	Flooded	0.8	1.6	4124	1999	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009776STMP	003177SMH	003178SMH	256	3	26.6	3.8	2.6	2.6	1.3	Flooded	-	Flooded	0.0	2.5	0	8883	Surcharged
3	009780STMP	003192SMH	003191SMH	61	2	24.2	7.7	2.6	2.7	Flooded	Flooded	Flooded	Flooded	1.5	1.5	6152	4106	Flooded
3	009781STMP	000543IO	003192SMH	66	2	22.2	7.0	2.5	2.6	Flooded	Flooded	Flooded	Flooded	1.7	1.5	22381	6152	Flooded
3	009786STMP	003193SMH	003041SMH	61	1	5.2	6.5	1.3	1.4	Flooded	4.5	Flooded	0.3	1.2	0.0	2304	0	Flooded
3	009788STMP	007793IN	003194SMH	32	1	3.3	8.8	0.7	1.1	Flooded	1.8	Flooded	0.7	0.7	0.0	1306	0	Flooded
3	009791STMP	000621CB	003356SMH	57	1	4.0	5.5	1.1	1.6	Flooded	6.0	Flooded	0.4	0.5	0.0	355	0	Flooded
3	009792STMP	003342SMH	003356SMH	222	2	10.3	3.4	1.5	1.6	Flooded	4.9	Flooded	0.4	0.2	0.0	55	0	Flooded
3	009795STMP	003397SMH	003079SMH	397	2	30.8	9.7	1	0	5.9	2.5	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	009796STMP	003356SMH	003397SMH	519	2	19.3	6.1	1.6	1	5.0	5.8	0.4	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	009805A	003358SMH	001007ND	73	1.75	9.7	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009805B	001007ND	003359SMH	40	1.75	9.7	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009812STMP	003359SMH	003360SMH	58	1.5	9.7	10.4	0	0.4	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009813STMP	003360SMH	003364SMH	29	2	37.9	12.0	0.4	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
3	009814STMP	000626CB	003363SMH	10	1.5	4.1	4.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009817STMP	001908SMH	001909SMH	266	2	16.6	5.2	2.9	2.9	Flooded	5.7	Flooded	1.4	2.6	0.0	16207	0	Flooded
3	009818STMP	008220IN	001910SMH	25	2	26.7	-8.4	2.6	2.7	4.5	4.2	-	-	0.0	0.0	0	0	Surcharged
3	009819STMP	002674SMH	008220IN	214	2	19.8	6.2	2.7	2.6	5.1	4.4	-	-	0.0	0.0	0	0	Surcharged
3	009820STMP	008221IN	008220IN	31	1.25	7.4	11.3	0	2.6	-	1.6	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009846STMP	006182IN	003385SMH	91	1	2.5	3.2	12.8	12.9	Flooded	Flooded	Flooded	Flooded	12.8	12.8	14437	13933	Flooded
3	009847STMP	003394SMH	003385SMH	127	1.25	5.4	4.4	12.9	12.9	Flooded	Flooded	Flooded	Flooded	8.6	12.8	6412	13933	Flooded
3	009851STMP	003353SMH	003354SMH	128	1.5	4.8	2.7	1.5	1.5	Flooded	3.5	Flooded	0.3	1.1	0.0	1394	0	Flooded
3	009852STMP	0001031ND	003361SMH	855	2.5	15.1	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009863STMP	007989IN	003446SMH	33	1	5.4	9.2	0.4	2.7	1.4	2.8	1.6	1.4	0.0	0.0	0	0	Insufficient Freeboard
3	009864STMP	007990IN	007989IN	41	1	5.5	6.9	0.4	0.4	Flooded	0.7	Flooded	1.6	0.2	0.0	119	0	Flooded
3	009865STMP	001909SMH	003446SMH	23	2.25	16.7	4.2	2.9	2.7	5.5	5.4	1.4	1.4	0.0	0.0	0	0	Insufficient Freeboard
3	009866STMP	003446SMH	003447SMH	101	2.25	17.3	4.3	2.7	3	5.5	Flooded	1.4	Flooded	0.0	1.4	0	2864	Insufficient Freeboard
3	009867STMP	003447SMH	003051SMH	55	2.25	19.7	4.9	3	3	Flooded	Flooded	Flooded	Flooded	1.4	2.4	2864	16074	Flooded
3	009868STMP	007991IN	003447SMH	115	1.25	2.7	3.4	2.7	3	2.6	Flooded	0.8	Flooded	0.0	1.4	0	2864	Insufficient Freeboard
3	009869A	003051SMH	000802ND	374	2.25	25.9	6.4	3	2.9	Flooded	Flooded	Flooded	Flooded	2.4	2.6	16074	25	Flooded
3	009869B	000802ND	003339SMH	6	2.25	28.5	7.1	2.9	3	Flooded	Flooded	Flooded	Flooded	2.6	2.8	25	41711	Flooded
3	009952STMP	007848IN	003209SMH	119	1	4.2	7.6	0	0.3	-	0.3	1.7	-	0.0	0.0	0	0	Sufficient Capacity
3	009953STMP	003209SMH	003210SMH	63	1	4.1	5.2	0.3	0.5	1.1	0.8	-	2.0	0.0	0.0	0	0	Surcharged
3	009954STMP	003210SMH	003427SMH	78	1.5	20.2	17.0	0.5	0.8	0.9	Flooded	2.0	Flooded	0.0	0.8	0	5106	Insufficient Freeboard
3	009958A	003427SMH	000995ND	317	1.5	23.0	12.7	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.8	0.5	5106	5	Flooded
3	009958B	000995ND	003212SMH	19	1.5	24.3	13.6	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.5	0.5	5	1759	Flooded
3	009959STMP	003211SMH	003427SMH	55	1	7.0	13.2	0.5	0.8	Flooded	Flooded	Flooded	Flooded	0.1	0.8	41	5106	Flooded
3	010078A	003122SMH	000805ND	28	5 x 10	424.9	11.3	1.5	1.6	Flooded	Flooded	Flooded	Flooded	1.3	0.6	36386	15	Flooded
3	010078B	000808ND	003166SMH	27	5 x 10	432.8	8.6	2	2.1	Flooded	Flooded	Flooded	Flooded	0.5	0.5	26	2703	Flooded
3	010078C	000807ND	000806ND	19	5 x 10	424.6	10.0	1.7	1.7	Flooded	Flooded	Flooded	Flooded	0.6	0.5	21	26	Flooded
3	010078D	000806ND	000808ND	132	5 x 10	424.7	9.3	1.7	2	Flooded	Flooded	Flooded	Flooded	0.5	0.5	26	26	Flooded
3	010078E	000805ND	000807ND	28	5 x 10	424.7	10.6	1.6	1.7	Flooded	Flooded	Flooded	Flooded	0.6	0.6	15	21	Flooded
3	010079A	003166SMH	000809ND	103	5 x 10	432.7	-8.6	2.1	1.9	Flooded	Flooded	Flooded	Flooded	0.5	1.2	2703	862	Flooded
3	010080STMP	003165SMH	003122SMH	158	5 x 10	397.1	10.4	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.1	1.3	18870	36386	Flooded
3	010085STMP	003207SMH	003210SMH	210	1.5	16.3	18.6	0	0.5	-	0.6	-	2.0	0.0	0.0	0	0	Sufficient Capacity
3	010086STMP	003208SMH	003207SMH	23	1.5	16.3	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010087STMP	003194SMH	000856ND	46	1	3.1	3.8	1.1	1.4	4.3	4.5	0.7	1.5	0.0	0.0	0	0	Insufficient Freeboard
3	010088A	003041SMH	000856ND	22	1	5.1	6.4	1.4	1.4	4.5	4.5	0.3	1.5	0.0	0.0	0	0	Insufficient Freeboard
3	010088B	000856ND	003190SMH	130	1	5.8	7.2	1.4	1.2	4.5	2.3	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
3	010133A	003215SMH	000888ND	82	2.5	22.2	4.5	2.8	2.8	Flooded	2.8	Flooded	0.4	2.7	0.0	14826	0	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010133B	000889ND	003392SMH	23	2.5	23.5	4.8	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.6	2.7	35	24793	Flooded
3	010133C	000888ND	000848ND	64	2.5	20.8	4.2	2.8	2.9	2.8	Flooded	0.4	Flooded	0.0	2.2	0	21	Insufficient Freeboard
3	010133D	000848ND	000889ND	195	2.5	20.6	4.2	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.2	2.6	21	35	Flooded
3	010134STMP	003216SMH	003393SMH	364	2.5	24.0	4.9	2.8	2.8	Flooded	Flooded	Flooded	Flooded	2.6	2.6	16197	29778	Flooded
3	010139STMP	006178IN	000915ND	12	1	-6.7	-8.3	3.5	2.3	Flooded	Flooded	Flooded	Flooded	3.0	1.3	26866	257	Flooded
3	010140STMP	001001ND	003218SMH	118	3.25 x 5	65.4	-5.4	2.4	2.3	0.9	RIM	-	RIM	0.0	0.0	0	0	Surcharged
3	010226STMP	006183IN	003385SMH	72	1.25	2.0	2.9	12.8	12.9	Flooded	Flooded	Flooded	Flooded	12.8	12.8	14154	13933	Flooded
3	010271STMP	003389SMH	003401SMH	175	2.5	32.3	6.5	2.8	2.7	Flooded	Flooded	Flooded	Flooded	1.6	1.0	11475	3567	Flooded
3	010272STMP	003390SMH	003400SMH	175	2.5	31.5	6.4	2.9	2.9	Flooded	Flooded	Flooded	Flooded	1.6	1.0	12260	3802	Flooded
3	010273STMP	000562CB	000899ND	8	1.5	8.1	4.5	2.1	2.7	Flooded	Flooded	Flooded	Flooded	1.6	1.5	4070	26	Flooded
3	010279STMP	000564CB	003394SMH	8	1	3.1	4.7	12.8	12.9	Flooded	Flooded	Flooded	Flooded	8.6	8.6	8500	6412	Flooded
3	010280STMP	007862IN	000564CB	26	0.833	4.5	8.3	10.5	12.8	Flooded	Flooded	Flooded	Flooded	8.3	8.6	22840	8500	Flooded
3	010282STMP	000566CB	003428SMH	38	1	2.6	3.3	11.7	12.9	Flooded	Flooded	Flooded	Flooded	4.6	5.9	2846	3193	Flooded
3	010286STMP	003428SMH	003394SMH	47	1.25	5.9	4.7	12.9	12.9	Flooded	Flooded	Flooded	Flooded	5.9	8.6	3193	6412	Flooded
3	010288STMP	007867IN	003429SMH	135	0.833	2.8	5.1	1	1.4	Flooded	1.0	Flooded	1.0	0.7	0.0	913	0	Flooded
3	010289STMP	003392SMH	003390SMH	381	2.5	27.7	5.6	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.7	1.6	24793	12260	Flooded
3	010290STMP	003393SMH	003389SMH	381	2.5	28.2	5.7	2.8	2.8	Flooded	Flooded	Flooded	Flooded	2.6	1.6	29778	11475	Flooded
3	010291A	006188IN	000901ND	264	2	13.7	4.3	2.3	2.5	Flooded	Flooded	Flooded	Flooded	2.2	1.5	28848	20	Flooded
3	010291B	000901ND	000900ND	23	2	14.0	4.4	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.5	1.5	20	20	Flooded
3	010291C	000900ND	000899ND	30	2	15.6	5.0	2.5	2.7	Flooded	Flooded	Flooded	Flooded	1.5	1.5	20	26	Flooded
3	010291D	000899ND	003395SMH	151	2	17.7	5.6	2.7	2.8	Flooded	Flooded	Flooded	Flooded	1.5	1.5	26	9266	Flooded
3	010292STMP	004007SMH	003388SMH	233	2	14.3	4.5	3	3	Flooded	Flooded	Flooded	Flooded	1.7	1.3	12357	3646	Flooded
3	010293A	003388SMH	000916ND	6	2	-17.2	-5.4	3	3	Flooded	Flooded	Flooded	Flooded	1.3	1.3	3646	1512	Flooded
3	010293B	000916ND	003402SMH	89	2	19.0	6.0	3	1.4	Flooded	Flooded	Flooded	Flooded	1.3	0.1	1512	1983	Flooded
3	010296A	003396SMH	000917ND	31	1.5	5.5	5.4	1	1.1	Flooded	4.0	Flooded	0.0	0.3	0.0	254	0	Flooded
3	010296B	000917ND	003397SMH	220	1.5	5.3	3.7	1.1	1	4.4	6.1	0.0	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	010299STMP	006240IN	003334SMH	166	1.25	6.4	5.2	3	2.8	Flooded	2.5	Flooded	0.5	2.8	0.0	26400	0	Flooded
3	010301A	003335SMH	000991ND	90	3.25 x 5	45.1	5.4	1.5	2.3	-	0.2	0.7	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	010301B	000991ND	003332SMH	85	3.25 x 5	51.5	4.9	2.3	2.4	0.2	RIM	0.7	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	010302STMP	003336SMH	003335SMH	7	2.25	44.7	-11.1	3.4	1.5	Flooded	2.7	Flooded	0.7	2.6	0.0	9816	0	Flooded
3	010303STMP	003337SMH	003336SMH	39	2.25	44.0	11.0	3	3.4	Flooded	Flooded	Flooded	Flooded	2.9	2.6	31561	9816	Flooded
3	010306STMP	000607CB	003337SMH	5	1	3.9	4.9	3	3	Flooded	Flooded	Flooded	Flooded	2.6	2.9	4176	31561	Flooded
3	010307STMP	006239IN	003335SMH	45	1	5.2	6.5	0.6	1.5	Flooded	1.0	Flooded	0.7	0.6	0.0	1354	0	Flooded
3	010308STMP	003338SMH	003335SMH	147	1	4.0	4.9	2.4	1.5	4.1	4.0	0.8	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	010309STMP	007929IN	000608CB	108	1.25	9.9	9.7	0.9	0.9	Flooded	1.8	Flooded	1.0	0.9	0.0	6961	0	Flooded
3	010310STMP	006593IN	007929IN	175	1.25	5.2	4.2	0.7	0.9	1.2	Flooded	0.1	Flooded	0.0	0.9	0	6961	Insufficient Freeboard
3	010331STMP	001992SMH	003339SMH	145	2.25	27.6	6.9	2.9	3	Flooded	Flooded	Flooded	Flooded	1.3	2.8	2682	41711	Flooded
3	010332STMP	003339SMH	003337SMH	296	2.25	34.8	8.6	3	3	Flooded	Flooded	Flooded	Flooded	2.8	2.9	41711	31561	Flooded
3	010334STMP	006241IN	006240IN	80	1.25	2.5	3.4	1.9	3	0.7	Flooded	0.1	Flooded	0.0	2.8	0	26400	Insufficient Freeboard
3	010335STMP	000608CB	006240IN	164	1.25	9.8	8.0	0.9	3	2.2	Flooded	1.0	Flooded	0.0	2.8	0	26400	Insufficient Freeboard
3	010337STMP	003434SMH	003436SMH	171	4 x 12	347.4	7.6	1.6	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	2123	1965	Flooded
3	010338STMP	003327SMH	000999ND	30	1	-7.3	-8.9	3	1.4	Flooded	Flooded	Flooded	Flooded	1.2	1.0	2301	2213	Flooded
3	010343STMP	006245IN	000996ND	58	0.833	4.7	11.9	2.4	1.4	Flooded	Flooded	Flooded	Flooded	2.4	1.3	17491	8340	Flooded
3	010347STMP	006273IN	003354SMH	29	1.25	-7.6	-6.1	1.5	1.5	Flooded	3.8	Flooded	0.3	1.5	0.0	12130	0	Flooded
3	010371STMP	000618CB	003355SMH	9	1.25	2.3	5.6	1.3	1.5	1.8	3.6	-	2.0	0.0	0.0	0	0	Surcharged
3	010372STMP	003354SMH	003355SMH	137	1.5	8.2	-4.6	1.5	1.5	3.6	3.4	0.3	2.0	0.0	0.0	0	0	Insufficient Freeboard
3	010373STMP	003355SMH	003344SMH	52	1.5	8.5	4.8	1.5	1.5	3.4	3.6	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
3	010380STMP	000620CB	003356SMH	28	1	6.0	7.5	1.1	1.6	Flooded	5.3	Flooded	0.4	0.8	0.0	2088	0	Flooded
3	010382STMP	003077SMH	003356SMH	36	1.25	6.8	6.4	1.2	1.6	3.7	5.1	0.6	0.4	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010398STMP	000628CB	003361SMH	19	1.25	8.1	6.7	0	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
3	010402STMP	003361SMH	003362SMH	30	2.5	23.2	17.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010403STMP	003362SMH	003363SMH	102	2.5	23.2	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404A	003363SMH	001017ND	68	3	27.3	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404B	001017ND	003365SMH	35	3	27.3	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010405STMP	003364SMH	003365SMH	108	2	37.9	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010407STMP	003365SMH	003366SMH	166	3	65.3	16.7	0	0.5	-	Flooded	-	Flooded	0.0	0.2	0	1002	Sufficient Capacity
3	010408A	003366SMH	001013ND	195	3	81.1	13.5	0.5	1.2	Flooded	Flooded	Flooded	Flooded	0.2	0.5	1002	47	Flooded
3	010408B	001013ND	003120SMH	303	3	78.6	11.4	1.2	1.5	Flooded	Flooded	Flooded	Flooded	0.5	1.4	47	54007	Flooded
3	010409A	003213SMH	001009ND	63	1.75	4.1	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010409B	001009ND	003358SMH	174	1.75	4.1	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010410A	003212SMH	001010ND	287	1.75	28.7	11.8	0.8	0.8	Flooded	1.7	Flooded	1.7	0.5	0.0	1759	0	Flooded
3	010410B	001010ND	003360SMH	72	1.75	28.7	11.9	0.8	0.4	1.7	1.0	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	010411A	007886IN	001015ND	80	1.25	9.3	7.5	1.4	1.6	Flooded	Flooded	Flooded	Flooded	1.2	1.1	7142	355	Flooded
3	010411B	001015ND	000971ND	159	1.25	9.1	7.3	1.6	1.4	Flooded	Flooded	Flooded	Flooded	1.1	0.0	355	715	Flooded
3	010412A	003436SMH	000980ND	15	5 x 10	348.4	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.6	1965	974	Flooded
3	010412B	000983ND	003328SMH	16	5 x 10	365.3	8.6	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.0	1517	7398	Flooded
3	010412C	000999ND	000982ND	33	5 x 10	362.6	8.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.0	2213	1928	Flooded
3	010412D	000982ND	000983ND	129	5 x 10	363.9	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.0	1928	1517	Flooded
3	010412E	000980ND	000999ND	130	5 x 10	349.5	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	1.0	974	2213	Flooded
3	010455STMP	000639CB	000802ND	20	0.833	6.7	12.0	3	2.9	Flooded	Flooded	Flooded	Flooded	3.0	2.6	10530	25	Flooded
3	010472STMP	007748IN	000809ND	16	1.25	16.1	12.8	1.6	1.9	Flooded	Flooded	Flooded	Flooded	1.6	1.2	26457	862	Flooded
3	010576STMP	006246IN	000996ND	36	1.25	12.1	9.7	2.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	1.3	4003	8340	Flooded
3	010578A	003328SMH	000997ND	18	5 x 10	365.9	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.0	7398	989	Flooded
3	010578B	001004ND	003340SMH	14	5 x 10	386.5	10.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.9	1.0	1723	14240	Flooded
3	010578C	000997ND	000984ND	21	5 x 10	366.4	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	1.2	989	3299	Flooded
3	010578D	000996ND	001004ND	151	5 x 10	384.6	9.5	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.3	0.9	8340	1723	Flooded
3	010578E	000984ND	000996ND	125	5 x 10	367.1	8.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.2	1.3	3299	8340	Flooded
3	010580STMP	006247IN	001004ND	16	1.25	12.4	10.3	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.9	4485	1723	Flooded
3	010581STMP	006248IN	006247IN	47	1.25	10.0	8.7	1.3	1.4	Flooded	Flooded	Flooded	Flooded	1.3	1.2	6889	4485	Flooded
3	010582STMP	007884IN	006248IN	237	1.25	8.3	6.8	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.7	1.3	3004	6889	Flooded
3	010584A	003340SMH	001003ND	15	5 x 10	387.5	10.2	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	0.8	14240	1783	Flooded
3	010584B	001003ND	006250IN	69	5 x 10	389.6	10.3	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.8	1.1	1783	17062	Flooded
3	010586A	006250IN	000998ND	72	5 x 10	392.5	10.3	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.1	0.8	17062	3437	Flooded
3	010586B	000998ND	003165SMH	41	5 x 10	394.4	10.3	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.8	1.1	3437	18870	Flooded
3	010596STMP	003341SMH	003342SMH	47	2	10.4	3.6	1.5	1.5	5.0	Flooded	0.3	Flooded	0.0	0.2	0	55	Insufficient Freeboard
3	010597STMP	003343SMH	003341SMH	274	1.75	9.0	4.2	1.5	1.5	3.5	5.3	-	0.3	0.0	0.0	0	0	Surcharged
3	010601STMP	003344SMH	003343SMH	82	1.75	9.0	3.9	1.5	1.5	3.4	3.5	-	-	0.0	0.0	0	0	Surcharged
3	010602STMP	003345SMH	003344SMH	146	1.25	3.5	5.2	1	1.5	Flooded	3.8	Flooded	-	0.1	0.0	3	0	Flooded
3	010603STMP	006260IN	003345SMH	17	1	3.5	6.5	0.9	1	Flooded	Flooded	Flooded	Flooded	0.6	0.1	1288	3	Flooded
3	010605STMP	003347SMH	003214SMH	346	3.5	40.1	5.1	2.7	2.7	1.6	1.7	-	-	0.0	0.0	0	0	Surcharged
3	010606STMP	006261IN	001001ND	125	2	11.5	8.8	0	2.4	-	3.9	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010613STMP	003348SMH	003347SMH	300	3.5	41.5	6.4	2.3	2.7	0.7	1.6	-	-	0.0	0.0	0	0	Surcharged
3	010614STMP	003350SMH	003348SMH	73	3	42.4	9.2	0	2.3	0.4	1.2	-	-	0.0	0.0	0	0	Surcharged
3	010617STMP	003351SMH	003350SMH	40	2.5	37.5	9.3	2.4	0	0.9	0.9	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618A	003352SMH	001000ND	29	2	37.4	11.9	2.9	2.8	2.6	2.0	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618B	001000ND	003351SMH	11	2	37.4	11.9	2.8	2.4	2.0	1.4	-	1.9	0.0	0.0	0	0	Surcharged
3	010879STMP	008268IN	008269IN	32	1.25	3.1	5.8	0.2	0.3	1.2	1.7	-	-	0.0	0.0	0	0	Surcharged
3	010880STMP	008273IN	008269IN	176	2	6.8	5.1	0.1	0.3	0.1	1.3	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010882STMP	002692SMH	008273IN	23	1.25	4.0	6.2	0.1	0.1	0.2	0.5	-	-	0.0	0.0	0	0	Surcharged
3	010884STMP	008272IN	008273IN	58	1.25	3.2	3.4	0.2	0.1	0.7	0.7	-	-	0.0	0.0	0	0	Surcharged
3	011123STMP	001904SMH	001906SMH	269	1.75	12.8	5.2	2.7	2.8	Flooded	Flooded	Flooded	Flooded	1.2	2.7	4762	17352	Flooded
3	011124STMP	001905SMH	001904SMH	23	1.75	16.8	6.9	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.3	1.2	7719	4762	Flooded
3	011125STMP	001912SMH	001905SMH	256	1.75	8.0	4.2	2.5	2.7	2.7	Flooded	-	Flooded	0.0	1.3	0	7719	Surcharged
3	011130STMP	001906SMH	001908SMH	17	2	9.7	3.1	2.8	2.9	Flooded	Flooded	Flooded	Flooded	2.7	2.6	17352	16207	Flooded
3	011131STMP	008218IN	001907SMH	24	1.25	3.4	7.8	2.7	2.8	2.1	Flooded	0.6	Flooded	0.0	2.7	0	18284	Insufficient Freeboard
3	011132STMP	008219IN	001907SMH	32	3	24.1	3.4	2.8	2.8	Flooded	Flooded	Flooded	Flooded	2.3	2.7	7280	18284	Flooded
3	011133STMP	001910SMH	008219IN	245	3	26.7	3.8	2.7	2.8	3.2	Flooded	-	Flooded	0.0	2.3	0	7280	Surcharged
3	011134STMP	001907SMH	001908SMH	18	2	14.2	4.5	2.8	2.9	Flooded	Flooded	Flooded	Flooded	2.7	2.6	18284	16207	Flooded
3	011144STMP	008256IN	008255IN	59	2	14.9	6.6	0.3	0.3	4.2	4.6	-	-	0.0	0.0	0	0	Surcharged
3	011145STMP	008269IN	008256IN	211	2	9.5	6.3	0.3	0.3	1.7	4.0	-	-	0.0	0.0	0	0	Surcharged
3	011146STMP	008257IN	008256IN	28	1.25	5.8	9.4	0.1	0.3	0.5	1.5	-	-	0.0	0.0	0	0	Surcharged
3	011517STMP	008237IN	008236IN	26	1.25	2.3	8.4	0	0.3	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
3	011535STMP	001942SMH	001992SMH	158	2	22.8	7.2	2.9	2.9	4.8	Flooded	0.3	Flooded	0.0	1.3	0	2682	Insufficient Freeboard
3	011536STMP	006582IN	006593IN	27	1.5	5.2	-2.9	0.8	0.7	1.2	0.9	0.1	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	011633STMP	001961SMH	001942SMH	245	2	19.6	6.1	2.8	2.9	Flooded	4.7	Flooded	0.3	1.0	0.0	6464	0	Flooded
3	011634STMP	001975SMH	001947SMH	263	2	18.9	5.9	1.2	1.1	Flooded	Flooded	Flooded	Flooded	0.6	1.0	2899	6280	Flooded
3	011635STMP	001981SMH	001975SMH	251	2	14.5	4.8	1.1	1.2	Flooded	Flooded	Flooded	Flooded	0.4	0.6	900	2899	Flooded
3	011637STMP	001982SMH	001981SMH	15	2	15.4	5.4	1.1	1.1	4.0	Flooded	0.1	Flooded	0.0	0.4	0	900	Insufficient Freeboard
3	011638STMP	006587IN	001982SMH	39	2	15.4	5.0	1.1	1.1	Flooded	4.0	Flooded	0.1	0.4	0.0	467	0	Flooded
3	011640STMP	001984SMH	006587IN	210	2	8.7	4.2	0.9	1.1	2.8	Flooded	0.4	Flooded	0.0	0.4	0	467	Insufficient Freeboard
3	011831A	001913SMH	001110ND	63	1.5	8.1	4.5	2.6	2.6	3.8	3.5	1.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	011831B	001110ND	001911SMH	68	1.5	8.0	4.5	2.6	2.6	3.5	3.2	0.3	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	011833STMP	001911SMH	001912SMH	25	1.5	8.0	-4.5	2.6	2.5	3.2	3.0	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	011834STMP	001914SMH	001913SMH	11	1.5	8.1	-4.5	2.6	2.6	4.3	3.8	1.0	1.1	0.0	0.0	0	0	Insufficient Freeboard
3	011835STMP	002673SMH	001914SMH	233	1.5	8.1	4.5	1.6	2.6	4.3	4.1	1.7	1.0	0.0	0.0	0	0	Insufficient Freeboard
3	011911STMP	002693SMH	002692SMH	25	1.25	4.1	-4.1	0	0.1	0.4	0.2	-	-	0.0	0.0	0	0	Surcharged
3	011968STMP	001920SMH	002673SMH	38	1.25	8.2	7.4	1.2	1.6	4.0	4.2	1.2	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	011971STMP	008235IN	002674SMH	46	1.25	3.9	8.6	0	2.7	0.7	3.5	-	-	0.0	0.0	0	0	Surcharged
3	011972STMP	008236IN	002674SMH	56	2	16.9	5.3	0.3	2.7	4.8	5.0	-	-	0.0	0.0	0	0	Surcharged
3	011973STMP	008255IN	008236IN	211	2	14.8	4.7	0.3	0.3	4.7	4.8	-	-	0.0	0.0	0	0	Surcharged
3	012028STMP	001946SMH	001947SMH	123	1.5	5.9	5.7	0.9	1.1	0.6	Flooded	0.9	Flooded	0.0	1.0	0	6280	Insufficient Freeboard
3	012230STMP	000140CB	001975SMH	22	0.667	4.2	11.7	2	1.2	Flooded	Flooded	Flooded	Flooded	2.0	0.6	11139	2899	Flooded
3	012234STMP	000142CB	001975SMH	32	0.833	3.9	8.2	0.9	1.2	Flooded	Flooded	Flooded	Flooded	0.6	0.6	544	2899	Flooded
3	014005STMP	001947SMH	001961SMH	30	2	20.8	6.5	1.1	2.8	Flooded	Flooded	Flooded	Flooded	1.0	1.0	6280	6464	Flooded
3	014015STMP	003395SMH	002916ND	55	2	-26.1	-8.2	2.8	1.5	Flooded	Flooded	Flooded	Flooded	1.5	0.0	9266	317	Flooded
3	014039A	007779IN	000839ND	56	2	7.2	-2.3	2.8	2.8	Flooded	Flooded	Flooded	Flooded	2.6	0.8	14038	1	Flooded
3	014039B	000839ND	003183SMH	151	2	7.2	-2.3	2.8	2.7	Flooded	2.6	Flooded	0.1	0.8	0.0	1	0	Flooded
3	014927STMP	003171SMH	002908ND	100	1	6.1	7.7	1.8	3	Flooded	4.4	Flooded	0.1	1.8	0.0	11420	0	Flooded
4	007729STMP	000723ND	002632SMH	54	1.25	10.8	15.2	0	0.2	-	3.4	-	1.3	0.0	0.0	0	0	Sufficient Capacity
4	007730STMP	000722ND	002632SMH	33	1.25	17.5	14.0	0.6	0.2	4.2	2.2	0.6	1.3	0.0	0.0	0	0	Insufficient Freeboard
4	007736STMP	005620IN	002633SMH	40	1	6.4	11.0	1	1	Flooded	Flooded	Flooded	Flooded	0.8	1.0	2162	7218	Flooded
4	007737STMP	005621IN	005620IN	100	0.833	6.9	14.0	0	1	-	Flooded	0.3	Flooded	0.0	0.8	0	2162	Sufficient Capacity
4	007740STMP	005623IN	002635SMH	29	1.25	10.8	8.8	1.1	0.3	Flooded	1.4	Flooded	0.5	1.0	0.0	2992	0	Flooded
4	007741STMP	002635SMH	002638SMH	128	2	41.3	14.4	0.3	0.5	3.3	3.1	0.5	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	008186STMP	000714ND	002615SMH	142	1.5	11.2	15.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008481STMP	007630IN	000504IO	56	1.25	12.6	10.8	0.1	0	0.9	-	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
4	008482STMP	007631IN	007632IN	26	0.833	4.9	10.0	0.7	0.7	Flooded	1.7	Flooded	0.8	0.6	0.0	1830	0	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	008484STMP	007632IN	007633IN	10	0.833	4.9	8.8	0.7	0.7	1.7	1.3	0.8	2.0	0.0	0.0	0	0	Insufficient Freeboard
4	008485STMP	007633IN	000397CB	6	0.833	4.9	9.0	0.7	0.1	1.3	0.5	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
4	008486STMP	000397CB	000714ND	33	1	11.2	14.9	0.1	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
4	008489STMP	002615SMH	002616SMH	65	1.5	11.2	11.7	0	0.1	-	1.4	-	1.9	0.0	0.0	0	0	Sufficient Capacity
4	008491STMP	002616SMH	000722ND	99	1.5	17.5	11.7	0.1	0.6	1.7	3.9	1.9	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	008495A	000398CB	000715ND	9	1.5	12.7	7.2	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
4	008495B	000715ND	007639IN	14	1.5	12.7	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008496STMP	007639IN	002617SMH	9	1.5	12.7	14.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008759STMP	000584CB	003410SMH	31	1.25	8.4	8.1	1.1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	0.7	1666	1007	Flooded
4	008836STMP	002629SMH	002630SMH	36	1	10.4	12.9	0.2	0.2	5.2	2.8	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
4	008838STMP	000412CB	000727ND	19	1	3.6	9.3	0	0.2	1.2	3.3	-	-	0.0	0.0	0	0	Surcharged
4	008839STMP	005597IN	000412CB	17	1	3.8	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008842STMP	005600IN	002631SMH	99	1.25	14.9	11.8	0.7	0.8	Flooded	Flooded	Flooded	Flooded	0.4	0.8	1241	5812	Flooded
4	008871STMP	005616IN	002635SMH	108	1.25	2.4	11.3	0	0.3	-	3.0	-	0.5	0.0	0.0	0	0	Sufficient Capacity
4	008908STMP	003357SMH	003435SMH	132	2	6.8	5.3	0	0.4	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008919STMP	007898IN	000954ND	29	0.833	3.3	8.3	1.2	1.6	Flooded	Flooded	Flooded	Flooded	0.9	1.4	1177	3789	Flooded
4	008922STMP	000401CB	002618SMH	33	1	6.7	12.8	0.1	0.2	1.7	3.4	1.3	0.9	0.0	0.0	0	0	Insufficient Freeboard
4	008926A	002618SMH	000737ND	39	1.5	18.8	10.5	0.2	0.3	3.5	3.2	0.9	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	008926B	000737ND	002619SMH	28	1.5	18.5	10.3	0.3	0.3	3.2	2.8	0.3	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009103STMP	002617SMH	002618SMH	226	1.5	12.7	12.0	0	0.2	-	3.3	-	0.9	0.0	0.0	0	0	Sufficient Capacity
4	009120A	002619SMH	000717ND	17	1.75	23.4	9.6	0.3	0.3	2.8	Flooded	0.3	Flooded	0.0	0.1	0	2	Insufficient Freeboard
4	009120B	000718ND	002620SMH	146	1.75	28.3	11.7	0.3	0	2.3	-	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
4	009120C	000717ND	000718ND	57	1.75	23.4	9.6	0.3	0.3	Flooded	2.3	Flooded	1.1	0.1	0.0	2	0	Flooded
4	009121A	000403CB	000716ND	21	1.25	5.0	4.0	0.3	0.3	3.1	3.2	0.8	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	009121B	000716ND	002619SMH	15	1.25	4.9	3.9	0.3	0.3	3.2	3.3	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009128A	002620SMH	000720ND	68	2	28.3	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009128B	000720ND	002622SMH	88	2	57.6	23.2	0	0.3	-	Flooded	-	Flooded	0.0	0.2	0	1770	Sufficient Capacity
4	009129STMP	002621SMH	000720ND	75	1.75	29.4	23.0	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009130STMP	002626SMH	002621SMH	90	1.5	29.4	16.4	0.4	0	4.1	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
4	009131STMP	002622SMH	002623SMH	139	2	56.2	19.8	0.3	0.4	Flooded	2.9	Flooded	0.7	0.2	0.0	1770	0	Flooded
4	009132STMP	002623SMH	002624SMH	80	2	56.2	19.6	0.4	0.4	3.1	Flooded	0.7	Flooded	0.0	0.4	0	5547	Insufficient Freeboard
4	009134STMP	002624SMH	002625SMH	173	2	50.3	20.3	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.5	5547	6196	Flooded
4	009135STMP	002625SMH	007940IN	593	2	46.3	14.4	0.5	0	Flooded	4.8	Flooded	-	0.5	0.0	6196	0	Flooded
4	009136STMP	002627SMH	002626SMH	35	1.5	25.9	15.9	0.2	0.4	3.5	3.8	1.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
4	009137STMP	000407CB	002626SMH	17	1.25	4.1	7.4	0.2	0.4	2.2	4.4	1.7	1.8	0.0	0.0	0	0	Insufficient Freeboard
4	009138STMP	005578IN	000407CB	27	1	3.9	5.0	0.2	0.2	1.4	1.3	1.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
4	009143STMP	002628SMH	002627SMH	361	1.5	19.8	13.6	0	0.2	-	3.3	-	1.6	0.0	0.0	0	0	Sufficient Capacity
4	009146STMP	000409CB	002628SMH	25	1	2.9	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009154STMP	000410CB	000719ND	18	1	3.4	6.7	0	0.3	2.0	3.2	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
4	009155A	002630SMH	000727ND	25	1.25	10.4	10.2	0.2	0.2	2.7	3.0	-	-	0.0	0.0	0	0	Surcharged
4	009155B	000727ND	000719ND	121	1.25	13.8	11.6	0.2	0.3	3.0	3.0	-	-	0.0	0.0	0	0	Surcharged
4	009155C	000719ND	002628SMH	78	1.25	17.2	13.8	0.3	0	3.0	-	-	-	0.0	0.0	0	0	Surcharged
4	009159A	002632SMH	000729ND	215	1.75	34.6	16.0	0.2	0.4	3.0	3.3	1.3	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	009159B	000729ND	002635SMH	60	1.75	33.8	15.0	0.4	0.3	3.3	3.5	0.1	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	009161STMP	002638SMH	002639SMH	88	2	45.1	19.2	0.5	0.5	3.2	4.9	0.1	1.1	0.0	0.0	0	0	Insufficient Freeboard
4	009162STMP	005630IN	002638SMH	49	1.25	14.1	11.5	0.5	0.5	2.0	3.4	1.2	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	009165STMP	005633IN	000730ND	12	1.25	6.3	12.5	0	0.5	2.0	7.3	1.2	1.0	0.0	0.0	0	0	Insufficient Freeboard
4	009166STMP	005634IN	005633IN	28	1.25	6.4	9.2	0.1	0	0.8	1.5	1.1	1.2	0.0	0.0	0	0	Insufficient Freeboard
4	009170A	002640SMH	0001041ND	80	2	53.3	16.6	0.6	0.6	Flooded	6.3	Flooded	0.2	0.4	0.0	556	0	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	009170B	0001041ND	006640IN	371	2	55.2	17.2	0.6	0	7.6	-	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
4	009171A	002639SMH	000730ND	127	2	45.1	17.6	0.5	0.5	5.0	6.6	1.1	1.0	0.0	0.0	0	0	Insufficient Freeboard
4	009171B	000730ND	002640SMH	348	2	50.6	17.6	0.5	0.6	6.6	Flooded	1.0	Flooded	0.0	0.4	0	556	Insufficient Freeboard
4	009396STMP	002633SMH	005623IN	286	1.25	9.8	7.9	1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	1.0	7218	2992	Flooded
4	009494A	003413SMH	000955ND	86	1.75	8.8	3.7	2.4	2.7	Flooded	Flooded	Flooded	Flooded	2.0	2.0	8838	86	Flooded
4	009494B	000955ND	003412SMH	103	1.75	14.4	5.9	2.7	1.6	Flooded	Flooded	Flooded	Flooded	2.0	1.5	86	28017	Flooded
4	009498STMP	000973ND	003414SMH	250	2	10.6	4.2	2	2.6	0.6	Flooded	0.6	Flooded	0.0	2.1	0	7005	Insufficient Freeboard
4	009499STMP	003414SMH	003416SMH	70	2	10.4	3.3	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.1	2.2	7005	11535	Flooded
4	009503STMP	003415SMH	003416SMH	47	1.25	9.7	7.8	2.7	2.6	Flooded	Flooded	Flooded	Flooded	1.8	2.2	2592	11535	Flooded
4	009504A	003416SMH	000956ND	63	2	14.9	4.7	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.2	2.2	11535	75	Flooded
4	009504B	000956ND	003417SMH	33	2	24.7	7.8	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.2	1.5	75	4307	Flooded
4	009508STMP	003417SMH	000966ND	24	2	24.7	7.8	2.7	1.5	Flooded	Flooded	Flooded	Flooded	1.5	0.0	4307	1	Flooded
4	009509STMP	003420SMH	003418SMH	108	2.5	12.9	2.8	1.7	1.5	Flooded	Flooded	Flooded	Flooded	1.4	1.4	4818	17741	Flooded
4	009510STMP	003419SMH	006189IN	4	2	23.3	-7.4	1.9	1.7	Flooded	Flooded	Flooded	Flooded	1.4	1.3	11762	4012	Flooded
4	009511STMP	006197IN	000970ND	16	0.833	7.0	13.2	0.6	0.6	Flooded	0.5	Flooded	-	0.6	0.0	2282	0	Flooded
4	009514STMP	000594CB	003425SMH	52	1.25	3.2	-2.6	0	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
4	009656STMP	002017SMH	002018SMH	5	2	38.5	12.2	0.9	0.8	Flooded	Flooded	Flooded	Flooded	0.4	0.3	1720	605	Flooded
4	009658A	002019SMH	002907ND	30	3	63.3	16.7	0	0.5	-	0.7	-	0.8	0.0	0.0	0	0	Sufficient Capacity
4	009658B	002907ND	002018SMH	185	3	118.8	19.2	0.5	0.8	1.1	Flooded	0.8	Flooded	0.0	0.3	0	605	Insufficient Freeboard
4	009659A	006640IN	001171ND	20	2	26.7	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009659B	001171ND	006645IN	28	2	26.7	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009660STMP	006640IN	002019SMH	57	2	34.1	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009688A	003412SMH	000954ND	19	4 x 7	200.0	7.1	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.5	1.4	28017	3789	Flooded
4	009688B	000954ND	000936ND	137	4 x 7	198.0	7.1	1.6	1.5	Flooded	Flooded	Flooded	Flooded	1.4	0.0	3789	99	Flooded
4	009689STMP	000587CB	003413SMH	36	1.25	6.0	-4.9	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.8	2.0	3743	8838	Flooded
4	009697STMP	006201IN	000973ND	49	1	2.8	3.9	2.1	2	Flooded	1.6	Flooded	0.6	1.6	0.0	1468	0	Flooded
4	009698STMP	003426SMH	000973ND	46	1.5	8.5	4.8	2.1	2	0.9	1.1	0.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009699STMP	006202IN	003426SMH	16	1.25	8.5	6.9	1.9	2.1	Flooded	1.1	Flooded	0.1	0.2	0.0	71	0	Flooded
4	009700STMP	006204IN	006202IN	60	1.25	9.0	7.3	1.7	1.9	1.8	Flooded	1.3	Flooded	0.0	0.2	0	71	Insufficient Freeboard
4	009802STMP	007910IN	003357SMH	141	1.25	6.7	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009904STMP	006594IN	001148ND	31	1.25	5.7	4.6	2.7	2.9	Flooded	Flooded	Flooded	Flooded	2.6	2.5	15609	20	Flooded
4	009996B	001152ND	001174ND	45	1	9.6	12.0	3.6	2.7	Flooded	Flooded	Flooded	Flooded	2.9	2.6	21	50	Flooded
4	010033STMP	006189IN	000966ND	15	2	23.2	7.4	1.7	1.5	Flooded	Flooded	Flooded	Flooded	1.3	0.0	4012	1	Flooded
4	010034A	003418SMH	000966ND	26	4 x 7	152.1	5.8	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.4	0.0	17741	1	Flooded
4	010034B	000966ND	003412SMH	168	4 x 7	171.6	6.8	1.5	1.6	Flooded	Flooded	Flooded	Flooded	0.0	1.5	1	28017	Flooded
4	010035STMP	006194IN	003420SMH	184	2.25	13.7	5.8	0	1.7	0.4	Flooded	-	Flooded	0.0	1.4	0	4818	Surcharged
4	010036STMP	003421SMH	003418SMH	225	4 x 7	159.6	6.2	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.5	1.4	17576	17741	Flooded
4	010037STMP	001968SMH	003421SMH	78	4 x 7	259.1	-9.4	1.4	1.5	Flooded	Flooded	Flooded	Flooded	0.3	0.5	6742	17576	Flooded
4	010038STMP	006190IN	003421SMH	282	1.5	7.9	4.4	1.7	1.5	Flooded	Flooded	Flooded	Flooded	1.6	0.5	5145	17576	Flooded
4	010041STMP	000590CB	000968ND	16	1	3.2	8.2	0.4	1.6	0.9	4.7	1.5	2.0	0.0	0.0	0	0	Insufficient Freeboard
4	010046A	003423SMH	000968ND	54	2	21.3	6.7	1.6	1.6	Flooded	3.7	Flooded	2.0	0.3	0.0	997	0	Flooded
4	010046B	000968ND	003419SMH	207	2	24.3	7.7	1.6	1.9	3.7	Flooded	2.0	Flooded	0.0	1.4	0	11762	Insufficient Freeboard
4	010047A	003435SMH	000967ND	214	2	17.7	7.2	0.4	1.5	1.3	3.5	-	1.5	0.0	0.0	0	0	Surcharged
4	010047B	000967ND	003423SMH	12	2	17.7	5.6	1.5	1.6	3.7	Flooded	1.5	Flooded	0.0	0.3	0	997	Insufficient Freeboard
4	010048STMP	003410SMH	003423SMH	206	1.25	7.8	6.3	1.1	1.6	Flooded	Flooded	Flooded	Flooded	0.7	0.3	1007	997	Flooded
4	010050STMP	003424SMH	006194IN	10	2.25	13.5	6.2	0.5	0	0.2	0.4	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	010053STMP	003425SMH	003424SMH	48	1.5	10.1	10.7	0	0.5	-	1.0	-	1.7	0.0	0.0	0	0	Sufficient Capacity
4	010054STMP	000970ND	003425SMH	13	1.25	7.0	5.6	0.6	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
4	010318A	003492SMH	0001040ND	33	2.25	56.2	14.1	0.8	0.8	0.8	0.5	0.6	1.7	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	010318B	0001040ND	004000SMH	46	2.25	56.2	14.1	0.8	0	0.8	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	010319STMP	007939IN	003492SMH	22	2.25	56.2	14.1	0.8	0.8	Flooded	0.7	Flooded	0.6	0.7	0.0	555	0	Flooded
4	010323STMP	003493SMH	007939IN	119	2.25	55.0	13.7	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.7	0.7	2620	555	Flooded
4	010324STMP	003494SMH	003493SMH	174	2.25	55.9	13.9	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.8	0.7	24599	2620	Flooded
4	010326STMP	007940IN	003494SMH	10	2	70.9	22.3	0	0.8	4.8	Flooded	-	Flooded	0.0	0.8	0	24599	Surcharged
4	010349STMP	007944IN	007948IN	31	1.25	17.9	14.4	0.6	0.6	Flooded	3.8	Flooded	0.2	0.6	0.0	4074	0	Flooded
4	010353STMP	007948IN	0001041ND	10	1.25	17.9	17.3	0.6	0.6	4.4	8.4	0.2	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	010356STMP	003441SMH	003442SMH	146	1.75	11.0	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010358STMP	002631SMH	003441SMH	129	1	11.0	13.7	0.8	0	Flooded	-	Flooded	-	0.8	0.0	5812	0	Flooded
4	010359A	003442SMH	0001042ND	110	1.75	20.6	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010359B	0001042ND	003443SMH	16	1.75	20.6	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010360STMP	003443SMH	002021SMH	346	2	44.0	21.0	0	0.1	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010361STMP	003444SMH	003443SMH	43	1.5	23.5	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010366STMP	007955IN	003444SMH	26	1.5	19.1	17.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010368STMP	003445SMH	007955IN	35	1.5	19.1	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010370STMP	007958IN	003445SMH	178	1.5	19.0	17.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	011022STMP	000125CB	001966SMH	81	1	6.6	8.4	0	2.2	1.4	Flooded	0.5	Flooded	0.0	0.1	0	905	Insufficient Freeboard
4	011023STMP	006552IN	000125CB	27	1	5.0	9.4	0	0	-	0.3	0.7	0.5	0.0	0.0	0	0	Sufficient Capacity
4	011258STMP	006645IN	002019SMH	9	2	29.3	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	011260STMP	002023SMH	001185ND	118	1.25	10.3	8.3	0.9	0.5	Flooded	Flooded	Flooded	Flooded	0.8	0.4	9655	69	Flooded
4	011261STMP	006647IN	002023SMH	71	1	3.7	6.7	0.5	0.9	0.4	Flooded	0.9	Flooded	0.0	0.8	0	9655	Insufficient Freeboard
4	011263STMP	006654IN	001185ND	115	1	2.0	5.6	0	0.5	-	Flooded	-	Flooded	0.0	0.4	0	69	Sufficient Capacity
4	011264STMP	006656IN	001186ND	63	2.5	14.0	5.1	0.4	0.4	Flooded	Flooded	Flooded	Flooded	0.4	0.4	3773	22	Flooded
4	011266STMP	002021SMH	002024SMH	49	2	43.9	14.3	0.1	0.1	3.0	2.7	-	-	0.0	0.0	0	0	Surcharged
4	011383A	001970SMH	001151ND	99	3	81.1	11.3	2.1	2.2	Flooded	Flooded	Flooded	Flooded	1.8	1.2	23241	5	Flooded
4	011383B	001151ND	001969SMH	19	3	81.9	11.4	2.2	2.2	Flooded	Flooded	Flooded	Flooded	1.2	1.6	5	8709	Flooded
4	011385STMP	006553IN	000128CB	27	1	6.6	8.3	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.6	1.4	1300	1403	Flooded
4	011386STMP	000128CB	001151ND	41	1.25	10.7	8.6	1.9	2.2	Flooded	Flooded	Flooded	Flooded	1.4	1.2	1403	5	Flooded
4	011390A	001974SMH	001137ND	44	2	43.7	13.7	3	3.1	Flooded	Flooded	Flooded	Flooded	2.2	1.9	27048	42	Flooded
4	011390B	001137ND	001970SMH	126	2	44.0	13.8	3.1	2.1	Flooded	Flooded	Flooded	Flooded	1.9	1.8	42	23241	Flooded
4	011391STMP	001971SMH	001970SMH	33	3	82.5	12.1	1.9	2.1	Flooded	Flooded	Flooded	Flooded	1.9	1.8	74090	23241	Flooded
4	011392A	001973SMH	001135ND	8	2	10.4	3.3	2.2	2.2	Flooded	Flooded	Flooded	Flooded	0.9	1.6	4384	30	Flooded
4	011392B	001135ND	001944SMH	262	2	13.2	4.3	2.2	2.2	Flooded	Flooded	Flooded	Flooded	1.6	1.6	30	9242	Flooded
4	011441STMP	006540IN	001962SMH	204	2	19.9	6.3	2	2.3	4.4	Flooded	0.1	Flooded	0.0	2.1	0	10000	Insufficient Freeboard
4	011442STMP	001944SMH	001943SMH	237	1.75	16.0	6.5	2.2	2.4	Flooded	Flooded	Flooded	Flooded	1.6	2.0	9242	5150	Flooded
4	011443STMP	001962SMH	006548IN	52	2.5	36.5	-7.4	2.3	2.2	Flooded	Flooded	Flooded	Flooded	2.1	2.0	10000	6937	Flooded
4	011444A	006548IN	001131ND	276	2.5	31.7	6.4	2.2	2.6	Flooded	Flooded	Flooded	Flooded	2.0	1.2	6937	3	Flooded
4	011444B	001131ND	001963SMH	27	2.5	35.4	7.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.2	1.9	3	13107	Flooded
4	011447STMP	001963SMH	001965SMH	195	2.5	38.7	7.8	2.6	2.1	Flooded	RIM	Flooded	RIM	1.9	0.0	13107	0	Flooded
4	011449STMP	000123CB	001131ND	34	0.833	2.9	5.1	2.2	2.6	Flooded	Flooded	Flooded	Flooded	1.9	1.2	3335	3	Flooded
4	011450STMP	001966SMH	001965SMH	139	3	103.7	14.5	2.2	2.1	Flooded	RIM	Flooded	RIM	0.1	0.0	905	0	Flooded
4	011451STMP	001965SMH	001968SMH	127	4	124.6	9.9	2.1	1.4	RIM	Flooded	RIM	Flooded	0.0	0.3	0	6742	Insufficient Freeboard
4	011452STMP	001967SMH	001966SMH	49	3	102.9	14.4	2.1	2.2	Flooded	Flooded	Flooded	Flooded	0.1	0.1	557	905	Flooded
4	011453STMP	001969SMH	001967SMH	255	3	84.3	11.8	2.2	2.1	Flooded	Flooded	Flooded	Flooded	1.6	0.1	8709	557	Flooded
4	011454STMP	000124CB	001967SMH	34	1.5	16.4	11.1	0.1	2.1	Flooded	Flooded	Flooded	Flooded	0.0	0.1	17	557	Flooded
4	011632A	001988SMH	001136ND	275	2	26.1	8.2	3	3.2	Flooded	Flooded	Flooded	Flooded	2.7	2.2	25042	36	Flooded
4	011632B	001136ND	001974SMH	53	2	28.7	9.0	3.2	3	Flooded	Flooded	Flooded	Flooded	2.2	2.2	36	27048	Flooded
4	011671STMP	002015SMH	002014SMH	12	1.5	8.6	-5.1	0.1	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
4	011672A	002011SMH	001167ND	15	1.25	13.0	10.6	0.1	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	011672B	001167ND	002014SMH	319	1.25	8.1	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	011674STMP	002013SMH	002012SMH	211	2	16.7	11.4	0	1.6	-	Flooded	-	Flooded	0.0	1.6	0	28692	Sufficient Capacity
4	011675STMP	006639IN	002016SMH	5	1.25 x 2	27.4	8.3	1.6	1.3	Flooded	Flooded	Flooded	Flooded	1.2	1.1	14172	23971	Flooded
4	011676STMP	002016SMH	002017SMH	81	2	38.4	12.1	1.3	0.9	Flooded	Flooded	Flooded	Flooded	1.1	0.4	23971	1720	Flooded
4	012008STMP	000111CB	006540IN	99	0.833	4.8	8.6	1.6	2	Flooded	3.5	Flooded	0.1	1.6	0.0	9269	0	Flooded
4	012010STMP	000112CB	001943SMH	4	0.833	5.9	10.6	2.3	2.4	Flooded	Flooded	Flooded	Flooded	2.2	2.0	6195	5150	Flooded
4	012049STMP	002018SMH	001971SMH	452	3	100.3	14.1	0.8	1.9	Flooded	Flooded	Flooded	Flooded	0.3	1.9	605	74090	Flooded
4	012137A	002012SMH	001169ND	7	2	19.9	6.3	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.6	1.4	28692	29	Flooded
4	012137B	001169ND	006639IN	40	2	21.1	6.7	1.6	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.2	29	14172	Flooded
4	012138STMP	002014SMH	002013SMH	74	2	16.7	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	012188STMP	001943SMH	006540IN	41	1.75	17.8	-7.3	2.4	2	Flooded	4.7	Flooded	0.1	2.0	0.0	5150	0	Flooded
4	012190STMP	000133CB	001134ND	23	0.833	3.5	10.9	2.2	2.2	Flooded	Flooded	Flooded	Flooded	1.7	1.6	5805	34	Flooded
4	012193A	001983SMH	001134ND	261	1.75	12.0	4.9	2	2.2	3.9	Flooded	0.7	Flooded	0.0	1.6	0	34	Insufficient Freeboard
4	012193B	001134ND	001973SMH	15	1.75	10.7	4.4	2.2	2.2	Flooded	Flooded	Flooded	Flooded	1.6	0.9	34	4384	Flooded
4	012195STMP	000136CB	001974SMH	43	1.25	15.1	12.0	2.8	3	Flooded	Flooded	Flooded	Flooded	2.5	2.2	21335	27048	Flooded
4	012209A	001185ND	001174ND	587	2	44.1	14.2	0.5	2.7	Flooded	Flooded	Flooded	Flooded	0.4	2.6	69	50	Flooded
4	012209B	001174ND	002022SMH	44	2	39.1	12.2	2.7	2.8	Flooded	Flooded	Flooded	Flooded	2.6	2.7	50	39591	Flooded
4	012212STMP	002024SMH	001186ND	198	2	55.6	19.6	0.1	0.4	2.7	Flooded	-	Flooded	0.0	0.4	0	22	Surcharged
4	012218STMP	006566IN	000134CB	23	0.833	3.0	7.0	1.9	2.2	Flooded	Flooded	Flooded	Flooded	1.7	1.4	1404	1885	Flooded
4	012219STMP	000134CB	001136ND	56	1.25	4.2	5.1	2.2	3.2	Flooded	Flooded	Flooded	Flooded	1.4	2.2	1885	36	Flooded
4	012220STMP	006567IN	000135CB	33	0.833	4.6	10.0	1.8	2.1	Flooded	Flooded	Flooded	Flooded	1.2	1.5	2518	3200	Flooded
4	012221STMP	000135CB	001137ND	41	1.25	4.6	7.2	2.1	3.1	Flooded	Flooded	Flooded	Flooded	1.5	1.9	3200	42	Flooded
4	012222STMP	000137CB	000136CB	25	0.833	8.7	15.5	3	2.8	Flooded	Flooded	Flooded	Flooded	3.0	2.5	13074	21335	Flooded
4	012223STMP	006568IN	000137CB	10	0.833	6.1	11.1	3.3	3	Flooded	Flooded	Flooded	Flooded	3.3	3.0	12353	13074	Flooded
4	012226STMP	000138CB	001136ND	45	0.667	3.8	10.6	4.2	3.2	Flooded	Flooded	Flooded	Flooded	3.8	2.2	7829	36	Flooded
4	012247STMP	001987SMH	001983SMH	270	1.75	5.7	4.9	0	2	-	3.9	-	0.7	0.0	0.0	0	0	Sufficient Capacity
4	012248STMP	000152CB	001983SMH	31	0.833	4.0	8.8	0.6	2	Flooded	4.0	Flooded	0.7	0.5	0.0	488	0	Flooded
4	012249STMP	000149CB	001983SMH	20	0.833	3.4	8.0	0.5	2	Flooded	4.1	Flooded	0.7	0.0	0.0	1	0	Flooded
4	012262A	002022SMH	001148ND	37	2	26.6	8.3	2.8	2.9	Flooded	Flooded	Flooded	Flooded	2.7	2.5	39591	20	Flooded
4	012262B	001148ND	001988SMH	20	2	26.3	8.2	2.9	3	Flooded	Flooded	Flooded	Flooded	2.5	2.7	20	25042	Flooded
4	012264STMP	000158CB	001152ND	37	0.667	4.1	-11.3	5.2	3.6	Flooded	Flooded	Flooded	Flooded	4.7	2.9	21312	21	Flooded
4	012280STMP	006623IN	001965SMH	76	0.833	4.5	8.2	0.7	2.1	Flooded	RIM	Flooded	RIM	0.7	0.0	1466	0	Flooded
4	012304STMP	001186ND	001185ND	187	2	49.8	15.8	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.4	22	69	Flooded
4	014000STMP	004000SMH	002907ND	82	2.25	56.3	22.9	0	0.5	-	1.9	-	0.8	0.0	0.0	0	0	Sufficient Capacity
5	007707A	002646SMH	000735ND	81	1.75	14.9	6.2	2.7	2.7	Flooded	3.0	Flooded	0.1	2.4	0.0	2732	0	Flooded
5	007707B	000735ND	000736ND	306	1.75	15.0	6.2	2.7	2.7	3.0	Flooded	0.1	Flooded	0.0	1.6	0	13	Insufficient Freeboard
5	007707C	000736ND	002647SMH	56	1.75	16.4	6.8	2.7	2.6	Flooded	Flooded	Flooded	Flooded	1.6	1.2	13	825	Flooded
5	007710STMP	000428CB	000736ND	37	1.25	4.1	4.1	1.9	2.7	Flooded	Flooded	Flooded	Flooded	1.8	1.6	2471	13	Flooded
5	007713STMP	005655IN	007684IN	71	1.25	10.1	17.6	0	0	-	-	-	1.1	0.0	0.0	0	0	Sufficient Capacity
5	007742STMP	007531IN	002645SMH	31	1.25	5.3	9.8	0.8	2.2	0.6	Flooded	1.7	Flooded	0.0	0.5	0	478	Insufficient Freeboard
5	007895STMP	000472CB	000754ND	10	1	4.6	7.5	1.9	2.7	Flooded	Flooded	Flooded	Flooded	1.6	0.7	4043	7	Flooded
5	007897STMP	000122CP	000123CP	20	1	11.6	14.8	0	0	3.0	3.0	-	-	0.0	0.0	0	0	Surcharged
5	007898A	000124CP	000755ND	20	5.35	498.7	23.6	0	0	-	-	1.9	-	0.0	0.0	0	0	Sufficient Capacity
5	007898B	000755ND	000125CP	37	5.35	515.7	27.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007899STMP	002877SMH	000755ND	4	1.5	21.5	12.0	0.7	0	3.5	2.8	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
5	007900STMP	002885SMH	002877SMH	145	1.5	22.0	13.6	0.1	0.7	1.1	3.3	-	0.6	0.0	0.0	0	0	Surcharged
5	007916STMP	002879SMH	002881SMH	87	1.5	6.0	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007917STMP	005719IN	002880SMH	78	1.25	6.1	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007918STMP	002880SMH	002881SMH	28	1.25	6.1	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	007919STMP	002881SMH	002882SMH	90	1.5	12.1	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007920STMP	002882SMH	002883SMH	101	1.5	12.1	15.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007921STMP	002883SMH	002884SMH	145	1.5	12.1	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007924STMP	002884SMH	002885SMH	93	1.5	12.1	14.7	0	0.1	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008306STMP	005679IN	000464CB	35	1	4.3	8.2	0	0.4	-	1.3	0.7	0.1	0.0	0.0	0	0	Sufficient Capacity
5	008307STMP	005681IN	000464CB	50	1	5.1	9.3	0	0.4	-	1.4	0.8	0.1	0.0	0.0	0	0	Sufficient Capacity
5	008308STMP	005680IN	003025SMH	70	1	9.4	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008311STMP	000464CB	005680IN	4	1	9.4	12.1	0.4	0	1.4	-	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
5	008315STMP	003025SMH	003028SMH	139	1.5	12.1	16.3	0	0.3	-	3.6	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008449STMP	005701IN	000527IO	116	1.75	27.6	15.4	0	0	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008450STMP	003035SMH	003034SMH	53	1.75	21.7	14.4	1.6	2.8	1.4	Flooded	0.5	Flooded	0.0	0.6	0	1546	Insufficient Freeboard
5	008451STMP	003036SMH	003035SMH	105	1.75	19.1	7.9	2.7	1.6	2.1	1.2	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
5	008452A	003034SMH	000750ND	102	1.75	21.1	8.7	2.8	2.8	Flooded	Flooded	Flooded	Flooded	0.6	0.6	1546	15	Flooded
5	008452B	000750ND	003039SMH	508	1.75	20.4	8.4	2.8	0	Flooded	-	Flooded	-	0.6	0.0	15	0	Flooded
5	008453STMP	003039SMH	003040SMH	339	1.75	20.4	18.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008454STMP	003040SMH	002876SMH	78	1.75	20.4	21.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008455STMP	002876SMH	005701IN	49	1.75	27.5	23.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008466STMP	007684IN	003033SMH	75	1.5	10.1	18.7	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
5	008474STMP	002650SMH	000510IO	48	1.75	30.3	12.6	0	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
5	008475STMP	000742ND	002650SMH	216	1.5	23.1	18.4	0	0	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008570STMP	007675IN	007670IN	296	2	37.8	18.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008576STMP	000120CP	000121CP	97	5	416.7	27.7	0	0	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008581STMP	007680IN	000521IO	105	1.5	29.5	16.5	0.3	0	2.9	-	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
5	008585STMP	003033SMH	000522IO	92	1.25	10.1	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008600STMP	003019SMH	000743ND	56	1.25	10.1	-8.3	0.4	0	1.4	-	-	-	0.0	0.0	0	0	Surcharged
5	008601A	000462CB	000743ND	37	1.25	7.6	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008601B	000743ND	000511IO	134	1.25	17.7	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008676STMP	003026SMH	007653IN	15	1.25	7.7	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008677STMP	007653IN	007655IN	37	1.25	13.3	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008682STMP	007655IN	003028SMH	39	1.25	13.3	23.1	0	0.3	-	3.8	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008683STMP	005703IN	003027SMH	45	1.25	7.7	17.0	0	0.3	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008684STMP	003028SMH	007656IN	99	1.5	25.3	16.2	0.3	0.3	3.6	Flooded	-	Flooded	0.0	0.3	0	1832	Surcharged
5	008685STMP	007656IN	007680IN	179	1.5	29.6	16.9	0.3	0.3	Flooded	2.8	Flooded	0.7	0.3	0.0	1832	0	Flooded
5	008694STMP	000470CB	003035SMH	29	1	3.3	4.1	0.8	1.6	1.3	1.3	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
5	008799A	002613SMH	000725ND	53	1.25	9.6	8.3	2.2	2.4	Flooded	Flooded	Flooded	Flooded	1.0	1.8	4884	24	Flooded
5	008799B	000725ND	002643SMH	48	1.25	7.0	5.6	2.4	2.5	Flooded	Flooded	Flooded	Flooded	1.8	2.1	24	4834	Flooded
5	008804A	002584SMH	000712ND	72	1	7.9	10.4	0.6	0.6	Flooded	2.9	Flooded	0.1	0.5	0.0	161	0	Flooded
5	008804B	000712ND	002613SMH	256	1	7.6	9.9	0.6	2.2	2.9	Flooded	0.1	Flooded	0.0	1.0	0	4884	Insufficient Freeboard
5	008851STMP	000414CB	000726ND	34	0.833	3.8	6.8	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.4	2.0	2190	4	Flooded
5	008868STMP	000453CB	007531IN	40	1.25	5.3	-4.3	0	0.8	1.2	0.6	-	1.7	0.0	0.0	0	0	Surcharged
5	009050STMP	000454CB	000453CB	32	1.25	5.3	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009055STMP	000456CB	002584SMH	21	1	8.1	10.1	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.6	0.5	1610	161	Flooded
5	009094STMP	002649SMH	000742ND	51	1.25	23.1	19.0	0	0	1.6	-	-	-	0.0	0.0	0	0	Surcharged
5	009108STMP	003029SMH	003019SMH	156	1.5	10.1	10.0	0	0.4	-	1.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009116STMP	007669IN	000518IO	41	2	37.8	11.5	0	0	0.3	0.2	-	-	0.0	0.0	0	0	Surcharged
5	009117STMP	007670IN	007669IN	38	2	37.8	14.3	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009176STMP	000424CB	000732ND	19	1	2.4	3.0	2.2	2.6	4.0	Flooded	0.0	Flooded	0.0	2.2	0	20	Insufficient Freeboard
5	009201STMP	005691IN	000471CB	28	1	2.1	4.6	0	0.5	-	0.3	0.5	0.6	0.0	0.0	0	0	Sufficient Capacity
5	009202STMP	000471CB	003036SMH	30	1	2.1	2.6	0.5	2.7	2.8	2.8	0.6	0.4	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	009203A	002647SMH	000734ND	44	1.75	16.4	6.8	2.6	2.7	Flooded	Flooded	Flooded	Flooded	1.2	1.6	825	12	Flooded
5	009203B	000754ND	000753ND	22	1.75	19.1	7.9	2.7	2.7	Flooded	2.9	Flooded	0.2	0.7	0.0	7	0	Flooded
5	009203C	000753ND	003036SMH	274	1.75	18.4	7.6	2.7	2.7	2.9	2.0	0.2	0.4	0.0	0.0	0	0	Insufficient Freeboard
5	009203D	000734ND	000754ND	195	1.75	16.4	6.8	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.6	0.7	12	7	Flooded
5	009213STMP	003027SMH	003026SMH	116	1.25	7.7	6.3	0.3	0	1.2	-	-	-	0.0	0.0	0	0	Surcharged
5	009397STMP	000415CB	002643SMH	27	1.25	6.1	4.9	2.2	2.5	Flooded	Flooded	Flooded	Flooded	1.9	2.1	2164	4834	Flooded
5	009402A	002643SMH	000732ND	87	1.5	10.3	6.2	2.5	2.6	Flooded	Flooded	Flooded	Flooded	2.1	2.2	4834	20	Flooded
5	009402B	000733ND	002646SMH	47	1.5	14.2	8.0	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.5	2.4	17	2732	Flooded
5	009402C	000732ND	000726ND	120	1.5	11.1	6.2	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.2	2.0	20	4	Flooded
5	009402D	000726ND	000733ND	136	1.5	11.7	6.5	2.7	2.7	Flooded	Flooded	Flooded	Flooded	2.0	2.5	4	17	Flooded
5	009404A	000731ND	000724ND	112	1.5	8.6	4.8	2.5	2.5	3.4	Flooded	0.8	Flooded	0.0	1.7	0	72	Insufficient Freeboard
5	009404B	000724ND	002643SMH	127	1.5	6.8	3.8	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.7	2.1	72	4834	Flooded
5	009415STMP	002644SMH	002645SMH	182	1.25	3.8	3.8	2.1	2.2	Flooded	Flooded	Flooded	Flooded	1.4	0.5	2892	478	Flooded
5	009417STMP	002645SMH	000731ND	140	1.25	5.2	4.1	2.2	2.5	Flooded	3.7	Flooded	0.8	0.5	0.0	478	0	Flooded
5	009418STMP	000423CB	000731ND	19	1	3.8	4.7	1.3	2.5	Flooded	3.9	Flooded	0.8	0.7	0.0	989	0	Flooded
6	007127STMP	005483IN	005484IN	9	1	5.9	-7.5	1.8	1.4	Flooded	Flooded	Flooded	Flooded	1.8	1.4	10205	2138	Flooded
6	007128STMP	005484IN	005485IN	7	1	4.9	6.6	1.4	0	Flooded	-	Flooded	0.6	1.4	0.0	2138	0	Flooded
6	007129STMP	005485IN	005486IN	6	1	4.9	15.6	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	007130STMP	005486IN	002559SMH	29	1.5	5.0	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133A	000695ND	000694ND	185	2.5	0.0	0.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133B	000694ND	000689ND	60	2.5	8.6	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133C	000689ND	002559SMH	167	2.5	8.6	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007135STMP	005490IN	005491IN	7	1	4.0	-5.0	1	0.6	Flooded	Flooded	Flooded	Flooded	1.0	0.6	3133	364	Flooded
6	007136STMP	005491IN	005492IN	6	1	3.6	-4.9	0.6	0	Flooded	-	Flooded	0.7	0.6	0.0	364	0	Flooded
6	007137STMP	005492IN	000445CB	17	1	3.6	14.2	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007186STMP	005403IN	000439CB	4	1	1.2	8.4	0	0	-	-	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	007187STMP	005405IN	005404IN	9	1	7.3	10.5	0	0	-	0.5	0.1	-	0.0	0.0	0	0	Sufficient Capacity
6	007189STMP	005408IN	005407IN	18	1	4.5	11.8	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	007190STMP	005407IN	002566SMH	5	1	4.5	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007191STMP	005409IN	005408IN	11	1	4.5	6.1	0.4	0	Flooded	-	Flooded	0.5	0.4	0.0	572	0	Flooded
6	007193STMP	005411IN	005412IN	17	1	6.6	9.3	0.9	0	Flooded	-	Flooded	0.5	0.9	0.0	4855	0	Flooded
6	007380STMP	000446CB	002560SMH	36	2	3.6	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007381STMP	000445CB	000446CB	50	2	3.6	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007382STMP	002559SMH	002560SMH	58	2.5	13.6	5.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007386STMP	005499IN	005500IN	7	1	8.7	10.9	0.9	0.2	Flooded	0.0	Flooded	-	0.9	0.0	6783	0	Flooded
6	007387STMP	005500IN	000694ND	35	1	8.6	14.9	0.2	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
6	007388STMP	005502IN	000011PD	101	1	0.0	0.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007389STMP	005503IN	002561SMH	43	2	8.6	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007390STMP	007526IN	005503IN	220	2	4.8	4.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007459STMP	002562SMH	002561SMH	237	1.25	6.2	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007460STMP	002561SMH	000011PD	22	2	14.6	15.6	0	0	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007461STMP	005504IN	005505IN	90	1.25	5.6	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007462STMP	002563SMH	002537SMH	85	3.5	68.5	7.2	0.9	0.9	3.1	Flooded	1.8	Flooded	0.0	0.8	0	17824	Insufficient Freeboard
6	007463STMP	002564SMH	002563SMH	179	3.5	68.4	8.8	0.8	0.9	RIM	3.1	RIM	1.8	0.0	0.0	0	0	Insufficient Freeboard
6	007464STMP	002553SMH	002564SMH	129	3.5	68.5	8.2	0.3	0.8	2.1	RIM	-	RIM	0.0	0.0	0	0	Surcharged
6	007466STMP	000448CB	000449CB	226	1	7.3	9.4	0.4	0.4	2.7	1.6	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	007467STMP	005506IN	000448CB	11	0.833	5.1	13.4	0.3	0.4	Flooded	2.9	Flooded	0.8	0.3	0.0	431	0	Flooded
6	007468STMP	005507IN	000448CB	11	0.833	3.2	11.0	0	0.4	-	2.9	0.3	0.8	0.0	0.0	0	0	Sufficient Capacity
6	007469STMP	005508IN	005509IN	61	1.25	8.8	8.0	0	0.1	0.1	0.3	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	007470STMP	005509IN	002535SMH	43	1.25	8.7	7.2	0.1	0	0.3	0.9	-	-	0.0	0.0	0	0	Surcharged
6	007471STMP	002534SMH	002535SMH	30	2.5	29.2	13.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007472STMP	002587SMH	002534SMH	90	2.5	29.2	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007473STMP	007513IN	007512IN	32	1	3.4	6.1	0	0	-	-	0.3	0.7	0.0	0.0	0	0	Sufficient Capacity
6	007474STMP	007514IN	007513IN	40	1	3.4	7.3	0	0	-	-	0.4	0.3	0.0	0.0	0	0	Sufficient Capacity
6	007477STMP	007519IN	007518IN	11	1.5	8.9	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007599STMP	005399IN	000682ND	71	1	1.7	3.3	0	0	-	0.6	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007600STMP	005400IN	005401IN	11	1	1.6	-3.1	0	0	-	-	0.3	0.7	0.0	0.0	0	0	Sufficient Capacity
6	007601STMP	005401IN	002565SMH	68	1	1.6	6.2	0	0	-	0.9	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007602STMP	005402IN	002565SMH	42	2.5	35.9	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007603STMP	002566SMH	005402IN	221	2.5	36.0	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007604STMP	000439CB	005404IN	31	1.25	1.2	4.3	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007702STMP	000457CB	002585SMH	46	1	5.2	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007704STMP	007539IN	007538IN	9	0.833	5.2	9.8	1.7	0	Flooded	-	Flooded	0.5	1.7	0.0	10221	0	Flooded
6	007717STMP	005658IN	000508IO	19	1.75	34.6	23.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007719STMP	005659IN	005660IN	11	0.833	2.7	5.0	0.1	0	0.1	-	0.1	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	007720STMP	005660IN	000738ND	5	0.833	2.7	10.2	0	0	-	6.3	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	007721STMP	000429CB	000738ND	21	2	5.9	6.8	0	0	-	5.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007722STMP	005661IN	000429CB	8	0.833	5.9	11.4	0	0	0.1	-	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
6	007723A	000506IO	000738ND	31	6.17 x 4.5	186.0	7.5	0	0	1.1	1.0	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	007723B	000738ND	000507IO	41	6.17 x 4.5	218.6	11.3	0	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
6	007728STMP	007487IN	007486IN	49	1	6.4	8.1	0.3	0.2	Flooded	0.8	Flooded	1.1	0.2	0.0	229	0	Flooded
6	008061STMP	005412IN	000440CB	12	1	6.6	14.6	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008063STMP	000440CB	002570SMH	22	1.25	6.6	9.5	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008065STMP	005415IN	005416IN	10	1	4.5	6.4	0.2	0	Flooded	-	Flooded	0.5	0.2	0.0	109	0	Flooded
6	008066STMP	005416IN	002568SMH	15	1	4.5	11.7	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008067STMP	002568SMH	002569SMH	11	1.25	4.5	7.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008069STMP	002569SMH	002570SMH	26	1.25	4.5	8.8	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008070STMP	005418IN	005419IN	7	1	5.1	7.3	0	0	-	-	0.1	0.5	0.0	0.0	0	0	Sufficient Capacity
6	008071STMP	002572SMH	002570SMH	122	1.5	17.5	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008072A	002570SMH	000679ND	40	2	28.1	12.9	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008072B	000679ND	002571SMH	59	2	32.5	13.7	0	0.5	0.0	0.7	-	1.4	0.0	0.0	0	0	Surcharged
6	008073STMP	005419IN	000441CB	34	1	5.1	12.3	0	0.4	-	1.0	0.5	2.0	0.0	0.0	0	0	Sufficient Capacity
6	008074STMP	000441CB	000679ND	10	1	5.1	6.4	0.4	0	1.0	1.0	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
6	008075STMP	002509SMH	002572SMH	107	1.5	17.3	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008076STMP	007516IN	004906SMH	270	5	8.9	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008077STMP	007518IN	007516IN	96	1.5	8.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008086STMP	002510SMH	002509SMH	115	1.5	17.3	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008088A	002512SMH	000680ND	28	1.5	17.3	9.7	0.7	0.6	1.4	1.0	-	-	0.0	0.0	0	0	Surcharged
6	008088B	000680ND	002510SMH	86	1.5	17.3	9.8	0.6	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
6	008092STMP	005433IN	002512SMH	25	1.25	6.0	8.8	0.2	0.7	0.2	1.6	-	-	0.0	0.0	0	0	Surcharged
6	008093STMP	005431IN	005432IN	7	1	6.0	8.0	1	0	Flooded	-	Flooded	0.5	1.0	0.0	4633	0	Flooded
6	008094STMP	005432IN	005433IN	5	1	6.0	15.6	0	0.2	-	0.4	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008095STMP	005434IN	005435IN	11	1	4.4	5.8	0.1	0	Flooded	-	Flooded	0.2	0.1	0.0	10	0	Flooded
6	008096STMP	005435IN	005436IN	7	1	4.4	6.9	0	0	-	-	0.2	0.6	0.0	0.0	0	0	Sufficient Capacity
6	008097STMP	005436IN	000443CB	18	1	4.4	14.3	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008098STMP	005437IN	000443CB	19	1	0.9	6.3	0	0	-	-	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	008099STMP	005438IN	005437IN	6	1	0.9	-3.0	0	0	-	-	0.6	0.8	0.0	0.0	0	0	Sufficient Capacity
6	008102STMP	002513SMH	002512SMH	112	1.25	7.9	8.8	0.1	0.7	0.0	1.6	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008103STMP	005444IN	002513SMH	34	1	7.9	11.4	0.1	0.1	0.1	0.3	-	-	0.0	0.0	0	0	Surcharged
6	008104STMP	005447IN	002514SMH	122	2.5	24.0	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008107STMP	005446IN	005445IN	6	1	7.8	10.2	1.7	0	Flooded	-	Flooded	0.4	1.7	0.0	14201	0	Flooded
6	008108STMP	005445IN	005444IN	8	1	7.8	15.2	0	0.1	-	0.1	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008110STMP	002511SMH	002507SMH	216	3	48.5	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008111STMP	002507SMH	002508SMH	37	3	48.6	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008112STMP	002508SMH	002524SMH	254	3	48.8	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008113STMP	000443CB	002512SMH	35	1.25	5.3	7.8	0	0.7	-	1.6	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008114STMP	002514SMH	002511SMH	111	3	48.3	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008116STMP	002515SMH	002514SMH	62	3	25.1	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008117STMP	002518SMH	002515SMH	358	3	25.1	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008118STMP	005448IN	005447IN	32	2	23.8	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008119STMP	005505IN	002516SMH	51	1.25	14.8	12.0	0	0.9	1.9	1.0	-	1.2	0.0	0.0	0	0	Surcharged
6	008120STMP	002516SMH	005448IN	14	1.25	14.8	12.0	0.9	0	1.1	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008121STMP	002517SMH	005448IN	30	2	8.9	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008122STMP	000011PD	005505IN	58	1.5	-0.6	-3.5	0	0	4.2	2.4	-	-	0.0	0.0	0	0	Surcharged
6	008123STMP	002519SMH	002518SMH	435	3	25.1	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008124STMP	005449IN	002519SMH	28	1.25	3.7	9.9	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008125STMP	002521SMH	002520SMH	31	1.25	5.4	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008127STMP	005479IN	002521SMH	91	1.25	5.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008129STMP	005452IN	005451IN	49	1	5.6	-7.3	23.7	0	1.9	-	-	-	0.0	0.0	0	0	Surcharged
6	008130STMP	005451IN	005454IN	81	1.25	5.6	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008131STMP	005453IN	005452IN	90	1	5.6	7.0	0.7	23.7	Flooded	1.9	Flooded	-	0.6	0.0	2059	0	Flooded
6	008132STMP	005454IN	002523SMH	103	1.5	5.6	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008133STMP	007578IN	007580IN	73	1	5.4	7.0	0.2	0.2	Flooded	1.6	Flooded	1.1	0.2	0.0	323	0	Flooded
6	008135STMP	007580IN	007581IN	15	1.25	5.5	6.1	0.2	0.3	1.4	2.2	1.1	1.5	0.0	0.0	0	0	Insufficient Freeboard
6	008136B	000681ND	002525SMH	49	1.25	7.1	13.1	0	0	-	-	1.2	-	0.0	0.0	0	0	Sufficient Capacity
6	008137STMP	007581IN	007582IN	45	1.25	5.5	4.4	0.3	0.3	2.2	2.3	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
6	008138STMP	002523SMH	007583IN	80	1.75	5.7	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008139STMP	007586IN	007583IN	216	1.25	7.2	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008140STMP	007583IN	007584IN	49	2	12.6	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008141STMP	007582IN	007584IN	181	1.5	14.8	8.3	0.3	0	2.0	0.1	-	-	0.0	0.0	0	0	Surcharged
6	008142STMP	007584IN	007585IN	107	2.5	29.3	9.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008143STMP	007585IN	002530SMH	83	2.5	31.7	8.7	0	0	-	-	-	1.5	0.0	0.0	0	0	Sufficient Capacity
6	008144STMP	007587IN	007586IN	12	1.25	7.2	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008145STMP	002524SMH	002527SMH	318	3	48.7	19.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008166STMP	007592IN	007593IN	9	1.25	7.2	-5.6	0.1	0	0.2	-	0.6	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008167STMP	007593IN	000681ND	21	1.25	7.2	6.8	0	0	-	-	0.9	1.2	0.0	0.0	0	0	Sufficient Capacity
6	008170STMP	002525SMH	002526SMH	230	1.25	7.1	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008172STMP	002565SMH	002533SMH	308	2.5	37.5	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008173STMP	002532SMH	005404IN	137	2	9.6	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008174STMP	002530SMH	002566SMH	269	2.5	31.6	8.1	0	0	-	-	1.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008175STMP	005397IN	007597IN	7	1	5.5	-7.4	0.9	0	Flooded	-	Flooded	0.5	0.9	0.0	3838	0	Flooded
6	008176STMP	007597IN	000444CB	7	1	5.5	12.8	0	1	-	0.8	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008178STMP	000444CB	002528SMH	8	1.25	5.5	-4.7	1	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
6	008180STMP	002528SMH	002531SMH	73	1.5	5.5	7.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008183STMP	002531SMH	005456IN	109	2	5.5	4.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008184STMP	005456IN	002532SMH	137	2	9.7	5.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008185STMP	002533SMH	002551SMH	303	2.5	37.5	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

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		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008188STMP	005458IN	002553SMH	13	3	7.2	-1.8	0.8	0.3	2.7	0.6	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	008224STMP	005459IN	005458IN	29	1	1.1	5.2	0	0.8	-	4.7	-	1.8	0.0	0.0	0	0	Sufficient Capacity
6	008225STMP	005475IN	005459IN	100	1	1.0	6.1	0	0	-	-	1.3	-	0.0	0.0	0	0	Sufficient Capacity
6	008272STMP	002520SMH	002519SMH	11	3	22.5	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008273STMP	002560SMH	002520SMH	220	2.75	17.2	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008274STMP	002551SMH	002552SMH	13	3	37.5	7.1	0	0.5	1.7	1.9	-	-	0.0	0.0	0	0	Surcharged
6	008275STMP	002552SMH	002553SMH	45	3.5	65.2	10.0	0.5	0.3	1.4	2.1	-	-	0.0	0.0	0	0	Surcharged
6	008276STMP	005480IN	005479IN	131	1	5.4	-7.0	0.6	0	3.2	-	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
6	008277STMP	005481IN	005480IN	38	1	5.4	6.7	0.6	0.6	Flooded	3.2	Flooded	1.3	0.3	0.0	605	0	Flooded
6	008291STMP	002601SMH	002602SMH	94	2	26.7	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008320STMP	005662IN	000430CB	7	0.833	8.2	15.4	0.8	0.7	Flooded	Flooded	Flooded	Flooded	0.8	0.7	3600	6002	Flooded
6	008321STMP	000430CB	000741ND	9	1	11.3	16.2	0.7	0.8	Flooded	Flooded	Flooded	Flooded	0.7	0.5	6002	22	Flooded
6	008322STMP	000431CB	000740ND	37	1.25	9.5	10.6	0.4	0.5	3.1	Flooded	0.7	Flooded	0.0	0.2	0	6	Insufficient Freeboard
6	008441STMP	002605SMH	000499IO	56	5	171.3	20.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442A	002606SMH	000710ND	108	4	149.9	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442B	000710ND	002605SMH	19	4	149.9	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008443STMP	002607SMH	002605SMH	136	3	24.9	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008444STMP	000708ND	000500IO	30	1.25	14.4	18.0	0	0	-	0.9	1.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008602STMP	007559IN	007560IN	6	1	7.1	10.2	0.1	1.7	Flooded	1.7	Flooded	0.4	0.1	0.0	118	0	Flooded
6	008603STMP	007560IN	000744ND	12	1	7.1	-9.1	1.7	0	1.7	-	0.4	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008604STMP	007562IN	007561IN	185	1.25	9.5	8.5	0	5.9	-	2.6	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	008639STMP	007498IN	005564IN	29	1.25	8.9	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008640STMP	007506IN	005564IN	75	1.25	3.3	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008656STMP	002585SMH	002586SMH	26	1.5	5.2	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008657STMP	002586SMH	002596SMH	128	1.5	8.7	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008658STMP	000459CB	002586SMH	43	1	4.3	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008660STMP	007542IN	000459CB	14	0.833	4.3	13.2	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008661STMP	002596SMH	002598SMH	123	1.5	8.7	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008663STMP	000460CB	002597SMH	30	1.25	14.0	17.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008664STMP	007543IN	000460CB	12	1	14.0	18.1	0.6	0	Flooded	-	Flooded	-	0.6	0.0	4635	0	Flooded
6	008666STMP	007545IN	007546IN	40	1.25	4.6	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008667STMP	002599SMH	007545IN	134	1.25	4.6	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008668STMP	007546IN	002597SMH	12	1.25	4.6	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008672A	002597SMH	000703ND	56	1.5	26.7	17.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008672B	000703ND	002601SMH	125	1.5	26.7	16.5	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008673STMP	007563IN	002599SMH	105	1	4.6	11.1	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008720STMP	007568IN	000385CB	26	0.833	8.1	14.8	0.9	0	Flooded	0.2	Flooded	-	0.9	0.0	6741	0	Flooded
6	008721STMP	002602SMH	003020SMH	19	2.25	34.3	14.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722A	003020SMH	000704ND	27	2.25	34.3	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722B	000704ND	000745ND	98	2.25	34.3	16.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008726STMP	000449CB	000388CB	96	1.25	7.3	6.2	0.4	0.4	1.4	1.6	-	1.6	0.0	0.0	0	0	Surcharged
6	008727STMP	000387CB	000388CB	52	1	9.3	11.7	0.9	0.4	2.5	1.9	0.1	1.6	0.0	0.0	0	0	Insufficient Freeboard
6	008728STMP	007571IN	000387CB	16	0.833	4.3	10.9	0.9	0.9	Flooded	2.7	Flooded	0.1	0.9	0.0	3324	0	Flooded
6	008729STMP	007572IN	000387CB	10	0.833	6.4	13.4	0.9	0.9	Flooded	2.7	Flooded	0.1	0.9	0.0	4043	0	Flooded
6	008730STMP	000388CB	000389CB	110	1.25	14.4	12.6	0.4	0.5	1.6	1.2	1.6	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	008731A	000389CB	000706ND	100	1.25	14.2	13.7	0.5	0.5	1.2	2.0	1.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
6	008731B	000706ND	000390CB	252	1.25	14.2	11.7	0.5	1.1	2.0	Flooded	0.3	Flooded	0.0	0.9	0	2334	Insufficient Freeboard
6	008734STMP	000390CB	002604SMH	46	1.25	14.4	11.5	1.1	1	Flooded	1.8	Flooded	0.9	0.9	0.0	2334	0	Flooded
6	008735STMP	007573IN	000390CB	12	0.833	6.4	14.7	1	1.1	Flooded	Flooded	Flooded	Flooded	0.8	0.9	784	2334	Flooded

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008736STMP	007574IN	007573IN	10	0.833	3.2	6.3	2	1	Flooded	Flooded	Flooded	Flooded	1.2	0.8	937	784	Flooded
6	008737STMP	007575IN	007574IN	5	0.833	3.0	-5.4	2.6	2	Flooded	Flooded	Flooded	Flooded	2.6	1.2	3846	937	Flooded
6	008738STMP	007576IN	007575IN	7	0.833	3.4	6.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	2.6	2.6	8273	3846	Flooded
6	008739STMP	002604SMH	000708ND	45	1.25	14.4	12.0	1	0	1.8	-	0.9	1.5	0.0	0.0	0	0	Insufficient Freeboard
6	008771STMP	007503IN	007502IN	9	0.833	3.5	-6.7	1.1	0	Flooded	-	Flooded	0.5	1.1	0.0	3441	0	Flooded
6	008772STMP	007505IN	007504IN	8	0.833	5.0	9.3	2.2	0	Flooded	-	Flooded	0.4	2.2	0.0	12788	0	Flooded
6	008773STMP	007507IN	007506IN	8	0.833	3.3	12.4	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008774STMP	007508IN	007507IN	10	0.833	3.3	6.5	0.5	0	Flooded	-	Flooded	0.6	0.5	0.0	607	0	Flooded
6	008775STMP	002545SMH	007509IN	63	2	22.2	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008776STMP	007509IN	007515IN	98	2.5	25.9	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008777STMP	007510IN	007509IN	10	0.833	3.8	12.3	0	0	-	0.5	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008779STMP	007512IN	002587SMH	40	1	3.4	11.5	0	0	-	0.2	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	008791STMP	002608SMH	002606SMH	252	3.5	149.9	15.5	0.9	0	Flooded	-	Flooded	-	0.7	0.0	2701	0	Flooded
6	008792A	002610SMH	000711ND	7	3	7.1	3.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008792B	000711ND	002611SMH	305	3	15.4	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008857STMP	002591SMH	002590SMH	167	1.5	4.9	2.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008860STMP	007530IN	002591SMH	47	1.5	4.9	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008861STMP	005517IN	007530IN	194	1	4.9	6.2	1	0	Flooded	-	Flooded	-	1.0	0.0	4545	0	Flooded
6	008862STMP	005519IN	005518IN	19	1	6.1	7.8	0.4	0.6	Flooded	1.8	Flooded	1.8	0.4	0.0	631	0	Flooded
6	008863STMP	005518IN	005520IN	184	1.25	6.1	-5.1	0.6	0	1.5	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	008864STMP	005520IN	002562SMH	53	1.25	6.1	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008876STMP	005547IN	005546IN	19	0.833	2.6	11.0	0	0	-	0.2	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	008877STMP	005548IN	005547IN	14	0.833	2.6	-5.0	0.4	0	Flooded	-	Flooded	0.7	0.4	0.0	191	0	Flooded
6	008878STMP	005549IN	002545SMH	278	2	22.2	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008882STMP	005554IN	005553IN	39	1.5	15.8	9.7	0.2	0.3	0.1	0.2	-	-	0.0	0.0	0	0	Surcharged
6	008883STMP	005556IN	005554IN	35	1.25	3.1	6.2	0	0.2	-	0.3	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008884STMP	005564IN	005554IN	135	1.5	12.3	9.2	0	0.2	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008885STMP	005555IN	005554IN	8	0.833	1.3	7.8	0	0.2	-	0.8	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	008887STMP	005558IN	005556IN	38	1	3.1	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008888STMP	005561IN	005558IN	29	1	3.1	4.4	0	0	-	-	1.9	-	0.0	0.0	0	0	Sufficient Capacity
6	008891STMP	005562IN	005561IN	12	0.833	3.1	9.9	0	0	-	0.0	0.6	1.9	0.0	0.0	0	0	Sufficient Capacity
6	008892STMP	005563IN	005562IN	9	0.833	3.1	5.8	0.3	0	Flooded	-	Flooded	0.6	0.3	0.0	199	0	Flooded
6	009032STMP	007486IN	007488IN	161	1	6.0	7.8	0.2	0	0.8	-	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
6	009033STMP	007488IN	002580SMH	60	1.25	6.0	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034A	002580SMH	000700ND	130	1.25	6.0	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034B	000700ND	002581SMH	28	1.25	6.1	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009037A	002581SMH	000744ND	317	1.5	9.7	13.4	0	0	-	-	-	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009037B	000744ND	000740ND	191	1.5	16.5	15.7	0	0.5	-	Flooded	0.8	Flooded	0.0	0.2	0	6	Sufficient Capacity
6	009037C	000740ND	000741ND	82	1.5	28.0	17.5	0.5	0.8	Flooded	Flooded	Flooded	Flooded	0.2	0.5	6	22	Flooded
6	009037D	000741ND	005658IN	322	1.5	24.6	14.0	0.8	0	Flooded	-	Flooded	-	0.5	0.0	22	0	Flooded
6	009038STMP	002582SMH	002581SMH	168	1	3.8	7.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009042STMP	002583SMH	002582SMH	30	1	3.8	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009043STMP	007493IN	002583SMH	14	1	3.8	10.1	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009044STMP	007495IN	007494IN	8	1	3.8	-4.8	1	0	Flooded	-	Flooded	0.1	1.0	0.0	2621	0	Flooded
6	009045STMP	007494IN	007493IN	10	1	3.8	-5.2	0	0	-	-	0.1	0.5	0.0	0.0	0	0	Sufficient Capacity
6	009046STMP	007497IN	007496IN	75	1	5.7	8.0	0.3	0.5	Flooded	Flooded	Flooded	Flooded	0.2	0.1	114	22	Flooded
6	009047STMP	007496IN	007495IN	118	1	5.7	7.1	0.5	1	Flooded	Flooded	Flooded	Flooded	0.1	1.0	22	2621	Flooded
6	009058STMP	002648SMH	000431CB	87	1.5	9.5	8.7	0	0.4	-	2.9	1.7	0.7	0.0	0.0	0	0	Sufficient Capacity
6	009059STMP	005512IN	000698ND	9	1.25	6.0	7.8	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	009060STMP	005513IN	005512IN	8	0.833	6.0	15.4	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009061STMP	005515IN	002538SMH	6	1	8.2	10.3	1.3	0.9	Flooded	Flooded	Flooded	Flooded	1.1	0.5	7520	2889	Flooded
6	009062STMP	005516IN	005515IN	6	0.833	5.4	11.0	1.2	1.3	Flooded	Flooded	Flooded	Flooded	1.2	1.1	3800	7520	Flooded
6	009064STMP	002538SMH	005541IN	41	2.5	75.2	15.2	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.5	0.8	2889	9734	Flooded
6	009066STMP	002539SMH	002542SMH	264	2.5	48.9	14.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067A	002540SMH	000698ND	149	2.5	37.8	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067B	000698ND	002539SMH	19	2.5	43.5	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009068STMP	005514IN	002539SMH	33	0.833	0.3	3.8	0	0	-	0.8	0.9	-	0.0	0.0	0	0	Sufficient Capacity
6	009069STMP	002571SMH	002541SMH	61	2	32.5	16.8	0.5	0.9	0.7	Flooded	1.4	Flooded	0.0	0.6	0	1918	Insufficient Freeboard
6	009070STMP	002541SMH	000697ND	56	2	31.8	10.1	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.6	0.7	1918	619	Flooded
6	009073STMP	005544IN	002542SMH	20	1	6.4	9.3	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009088STMP	007616IN	002611SMH	32	0.833	5.7	10.9	0	0	0.1	-	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
6	009089STMP	007617IN	007616IN	20	0.833	5.7	13.6	0	0	-	0.1	0.4	0.1	0.0	0.0	0	0	Sufficient Capacity
6	009090STMP	000432CB	000740ND	17	1.25	5.1	4.3	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.2	0.2	118	6	Flooded
6	009091STMP	007561IN	002648SMH	18	1.25	9.5	-7.7	5.9	0	2.6	-	-	1.7	0.0	0.0	0	0	Surcharged
6	009179STMP	005545IN	005544IN	9	0.833	6.4	12.9	0	0	-	0.1	0.2	-	0.0	0.0	0	0	Sufficient Capacity
6	009180STMP	002542SMH	002543SMH	274	3	55.0	13.2	0	0.8	-	2.3	-	0.5	0.0	0.0	0	0	Sufficient Capacity
6	009181STMP	002543SMH	002544SMH	125	3.5	55.0	7.6	0.8	0.9	1.8	RIM	0.5	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	009182STMP	002612SMH	002609SMH	58	3	48.8	13.3	0.7	0.9	1.0	Flooded	-	Flooded	0.0	0.7	0	6150	Surcharged
6	009183STMP	005546IN	005549IN	26	2	18.4	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009184STMP	005553IN	005546IN	161	1.5	15.8	9.1	0.3	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
6	009185STMP	007501IN	007498IN	33	1.25	8.5	6.7	0.9	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
6	009186STMP	007499IN	007498IN	13	0.833	0.8	5.9	0	0	-	0.2	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	009187STMP	007500IN	007499IN	10	0.833	0.8	-2.9	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009188STMP	007504IN	007501IN	9	0.833	5.0	12.8	0	0.9	-	0.7	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	009189STMP	007502IN	007501IN	5	0.833	3.5	10.8	0	0.9	-	0.7	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009191STMP	005665IN	000432CB	6	0.833	5.0	12.1	0.3	0.5	Flooded	Flooded	Flooded	Flooded	0.3	0.2	492	118	Flooded
6	009192STMP	007524IN	007519IN	87	1	8.9	11.1	0.6	0	2.0	0.2	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
6	009193STMP	007525IN	007524IN	9	1	8.9	11.1	0.6	0.6	Flooded	1.6	Flooded	1.4	0.6	0.0	3171	0	Flooded
6	009195STMP	007528IN	007526IN	98	2	4.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009196STMP	002589SMH	007528IN	80	1.5	4.9	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009197STMP	007538IN	000457CB	16	0.833	5.2	14.0	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009372STMP	002535SMH	002536SMH	16	2.5	37.8	8.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009373STMP	002536SMH	002540SMH	202	2.5	37.8	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009374STMP	005511IN	000450CB	34	0.833	6.3	13.5	3.1	3.1	Flooded	Flooded	Flooded	Flooded	3.1	2.8	24422	2376	Flooded
6	009376STMP	000450CB	002539SMH	26	0.833	5.6	10.2	3.1	0	Flooded	0.8	Flooded	-	2.8	0.0	2376	0	Flooded
6	009377STMP	002590SMH	002589SMH	61	1.5	4.9	-3.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009379STMP	002611SMH	002607SMH	47	3	21.0	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009380STMP	007604IN	002607SMH	21	0.833	4.2	14.9	0	0	-	0.5	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	009381STMP	007605IN	007604IN	11	0.833	4.2	9.1	0.8	0	Flooded	-	Flooded	0.6	0.8	0.0	2101	0	Flooded
6	009382STMP	002544SMH	002608SMH	125	3.5	151.5	15.7	0.9	0.9	RIM	Flooded	RIM	Flooded	0.0	0.7	0	2701	Insufficient Freeboard
6	009383STMP	007606IN	002608SMH	13	1.25	6.0	5.5	0.9	0.9	1.9	Flooded	0.1	Flooded	0.0	0.7	0	2701	Insufficient Freeboard
6	009385STMP	007607IN	007606IN	6	1	6.0	10.5	0.8	0.9	Flooded	2.1	Flooded	0.1	0.8	0.0	2586	0	Flooded
6	009387STMP	007610IN	002544SMH	33	2.5	85.2	17.2	0.9	0.9	Flooded	RIM	Flooded	RIM	0.8	0.0	10804	0	Flooded
6	009388STMP	005541IN	007610IN	625	2.5	69.5	15.0	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.8	9734	10804	Flooded
6	009389STMP	002527SMH	002612SMH	47	3	48.8	18.5	0	0.7	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009390STMP	002609SMH	002544SMH	24	3	47.9	7.6	0.9	0.9	Flooded	RIM	Flooded	RIM	0.7	0.0	6150	0	Flooded
6	009391STMP	002526SMH	002610SMH	106	1.25	7.1	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009392STMP	007611IN	000711ND	5	1.25	8.4	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

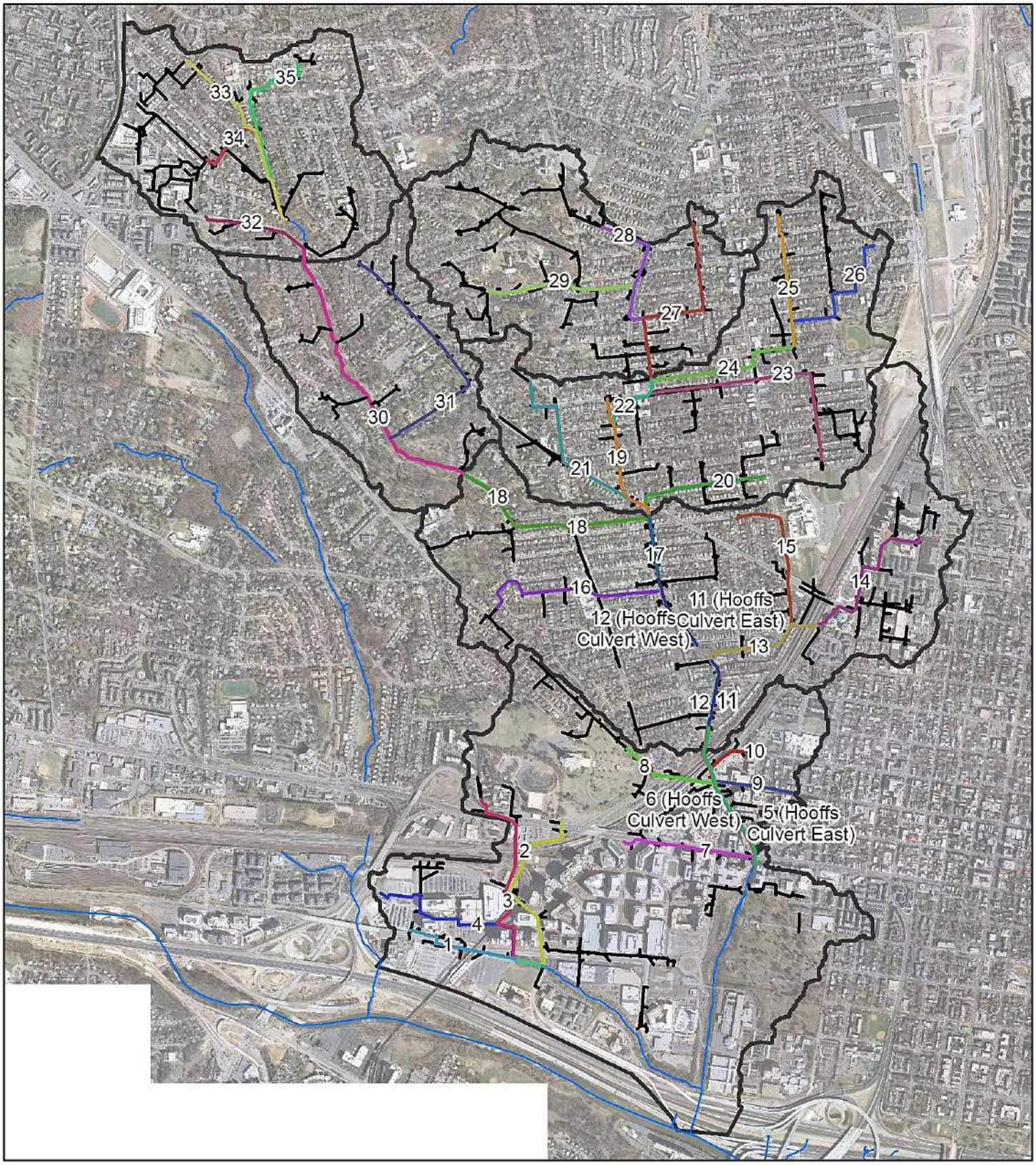
TABLE 1

Hooffs Run Scenario 2 (Updated IDF, Existing Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	**DGravityMain FacilityID**	**US**	**DS**	**Length (ft)**	**Diameter/ Height x Width (ft)**	**Maximum Flow (ft3/s)**	**Maximum Velocity (fps)**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**Summary Pipe Condition**
6	009393STMP	007612IN	007611IN	7	0.833	8.4	17.1	0	0	-	0.0	0.3	-	0.0	0.0	0	0	Sufficient Capacity
6	009394STMP	007613IN	007610IN	29	1	9.7	13.5	1.7	0.9	Flooded	Flooded	Flooded	Flooded	1.7	0.8	24372	10804	Flooded
6	014900STMP	005457IN	002552SMH	359	2	27.9	9.7	0.2	0.5	2.0	2.9	-	-	0.0	0.0	0	0	Surcharged
6	014901A	005404IN	000682ND	18	2	17.8	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014901B	000682ND	005457IN	294	2	19.4	8.9	0	0.2	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014917STMP	002537SMH	000697ND	10	3	51.2	7.2	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.7	17824	619	Flooded
6	014918STMP	000697ND	002538SMH	9	3	80.5	11.3	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.7	0.5	619	2889	Flooded
6	014957STMP	007515IN	002587SMH	200	2.5	25.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014958STMP	000745ND	000738ND	338	2.25	34.3	15.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014959STMP	002598SMH	002597SMH	145	1.5	8.7	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014960STMP	004906SMH	004907SMH	21	2	8.9	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014961STMP	004907SMH	004908SMH	46	2	8.9	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014963STMP	004908SMH	004909SMH	77	2	8.9	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014964STMP	004909SMH	004910SMH	120	2	8.9	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014965STMP	004910SMH	002517SMH	26	2	8.9	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 2
Hooffs Run Scenario 2 Outfall Boundary Conditions: Existing Boundary Conditions

Node ID	Location	Boundary Condition
000080CP	Old Cameron Run	Computed Tide Coefficeints
000302IO	Old Cameron Run	Computed Tide Coefficeints
000306IO	Old Cameron Run	Computed Tide Coefficeints
000341IO	Hooffs Run	Computed Tide Coefficeints
000342IO	Hooffs Run	Computed Tide Coefficeints
Hooffs_632	Hooffs Run	Computed Tide Coefficeints



Legend

Profiles

	4	9	14	19	24	29	34
N/A	5	10	15	20	25	30	35
1	6	11	16	21	26	31	City of Alexandria Streams
2	7	12	17	22	27	32	
3	8	13	18	23	28	33	Hooffs Run Subwatersheds

Hooffs Run Profile Locations

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

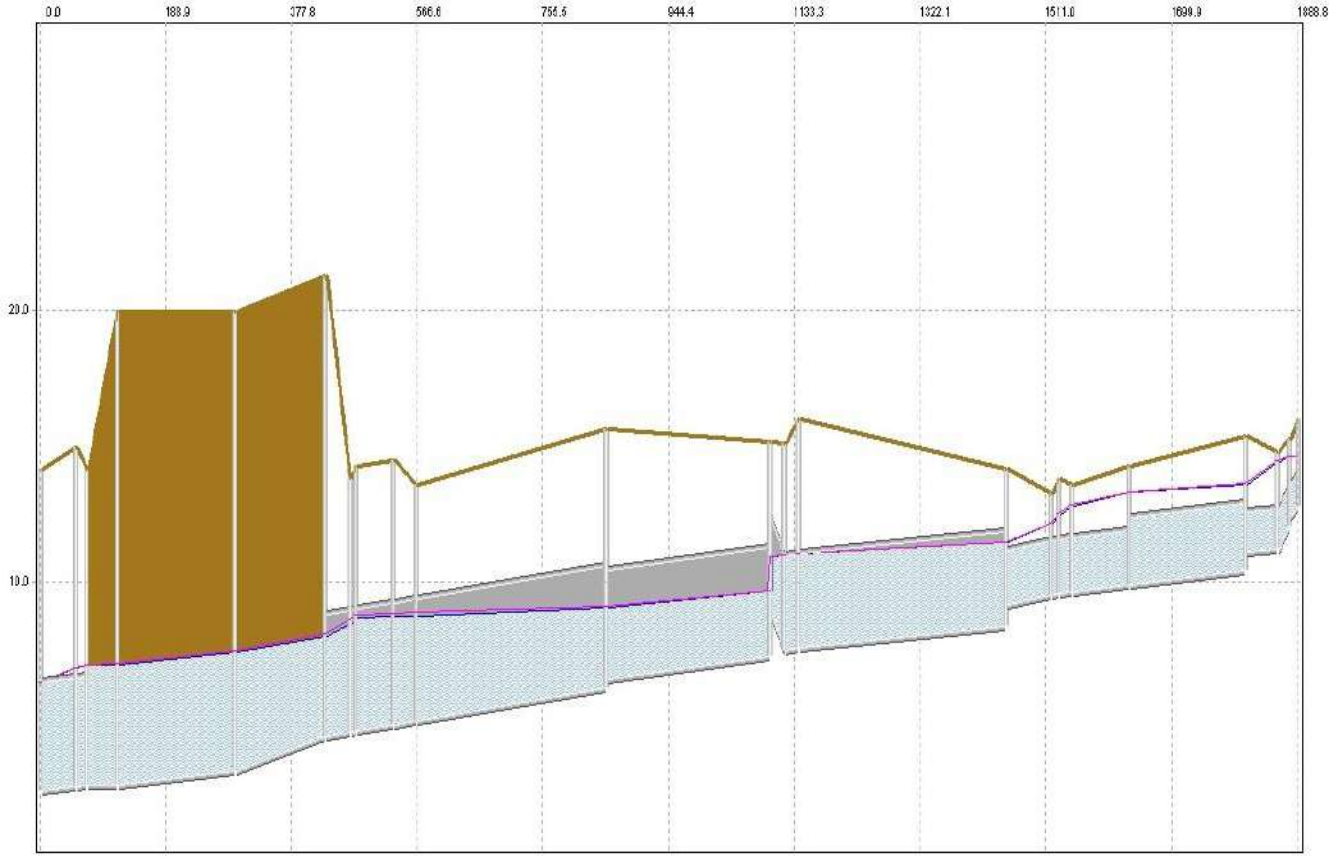
0 750 1,500 3,000
Feet

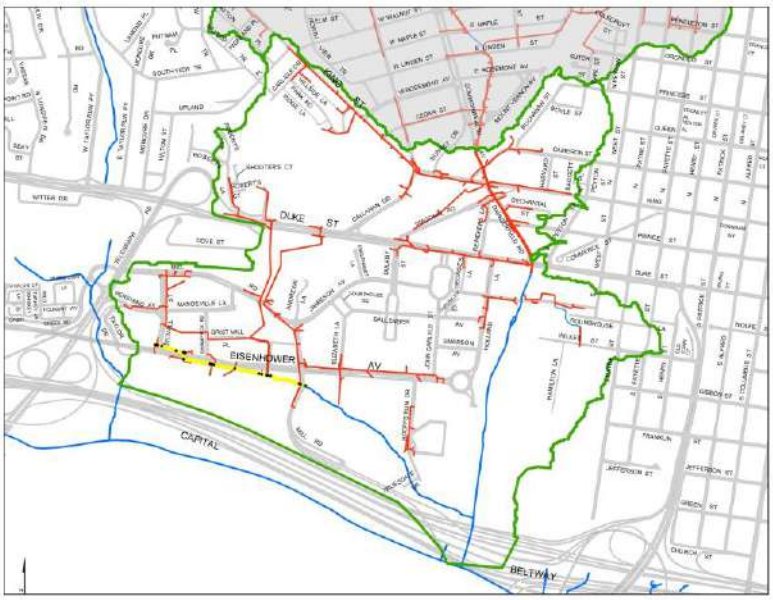
N

CH2MHILL

FIGURE 1

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 1 from 000080CP to 004837IN





Surface Flooding

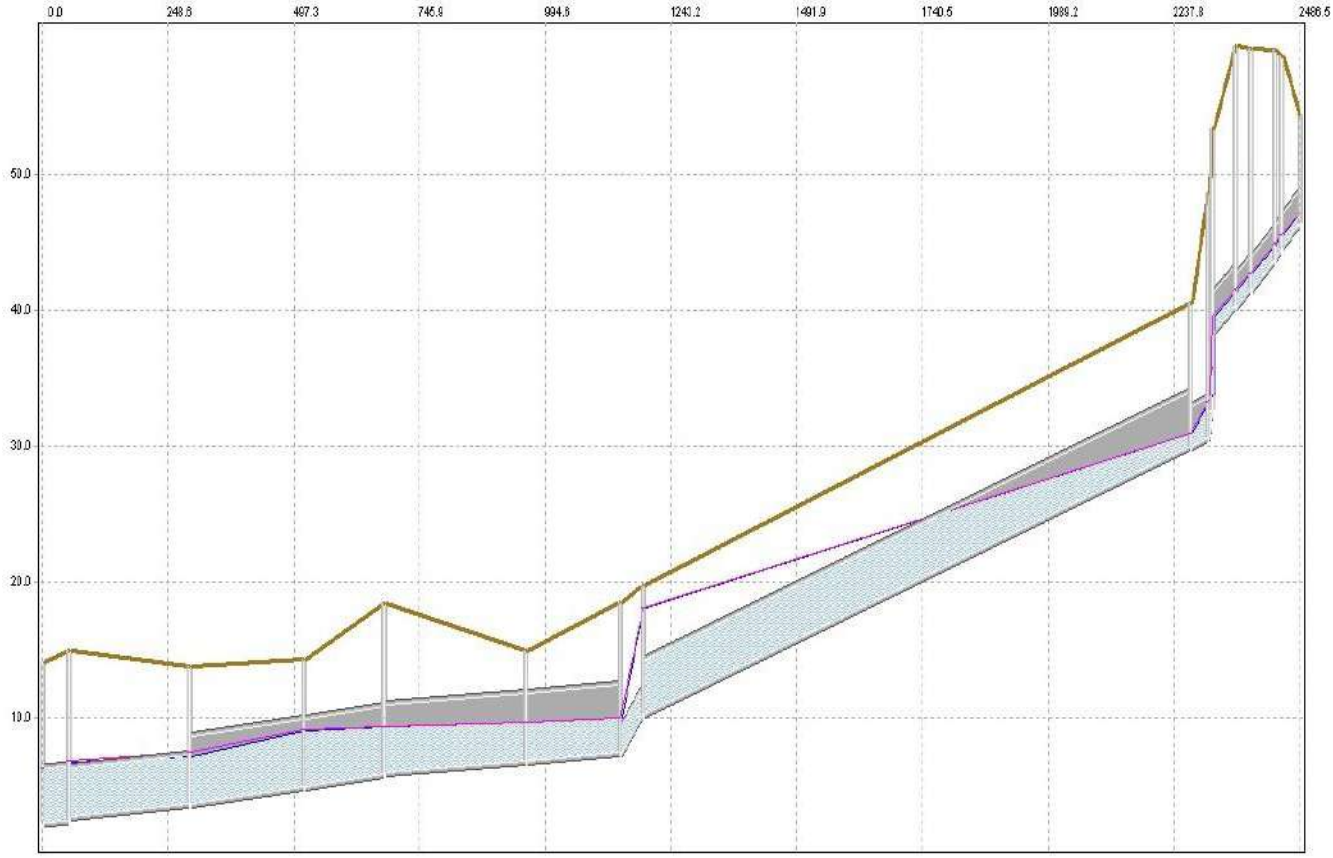
Peak Hydraulic Grade Line

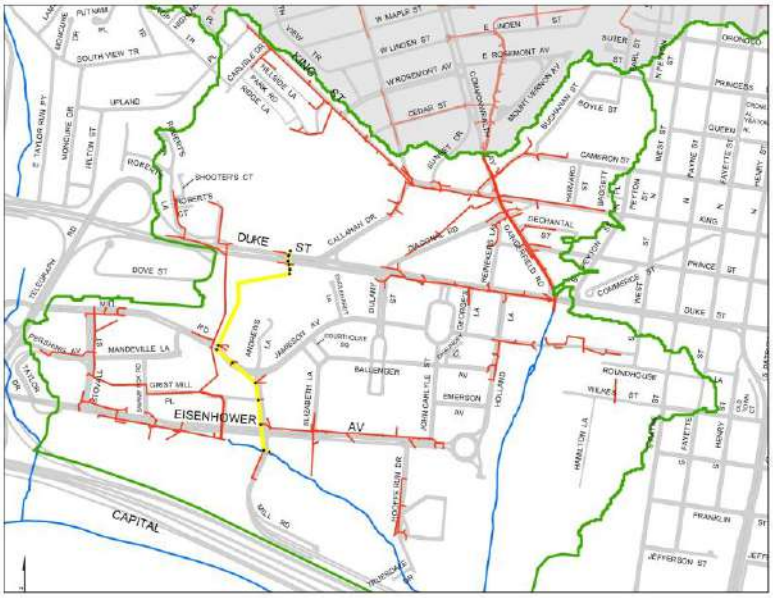
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 2

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 2 from 000080CP to 006016IN





Surface Flooding

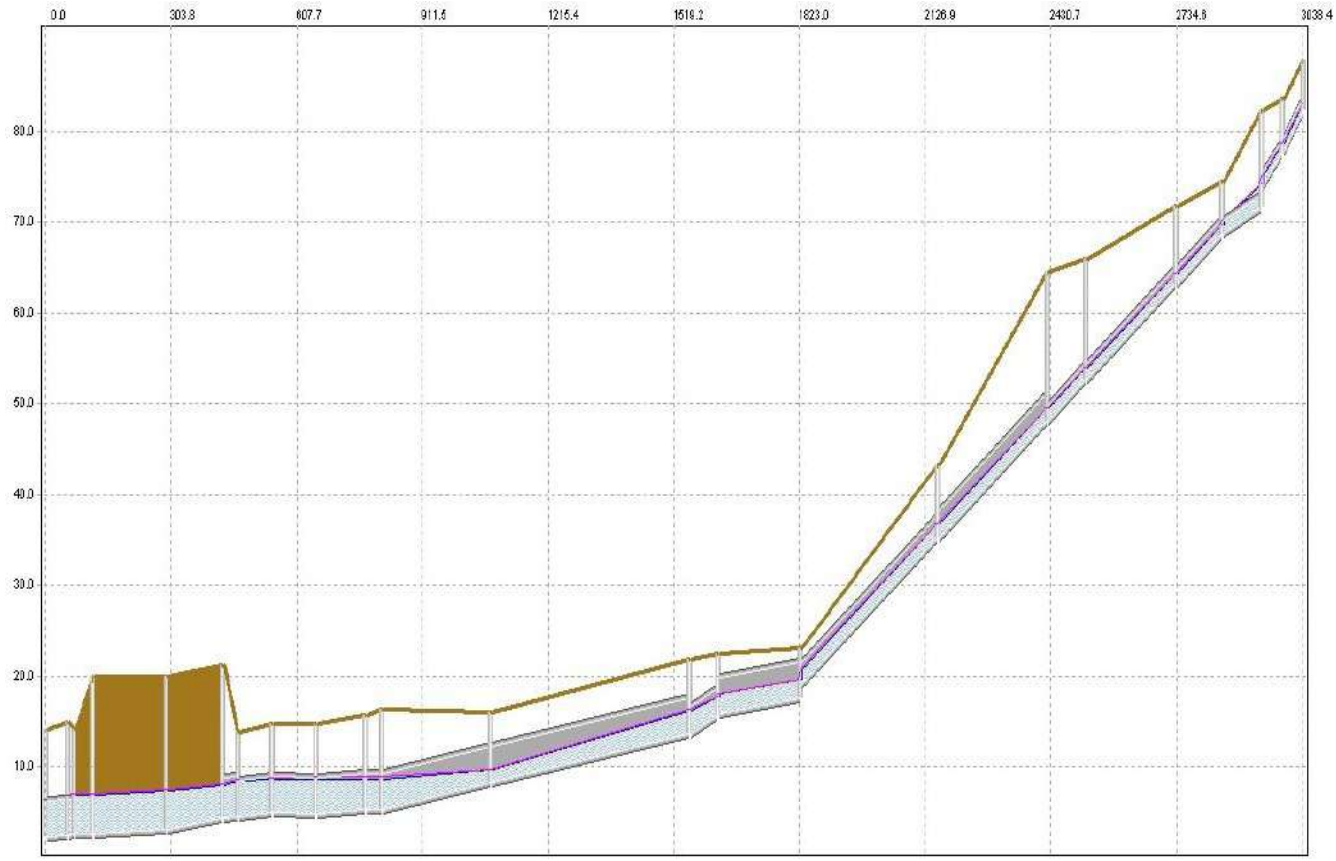
Peak Hydraulic Grade Line

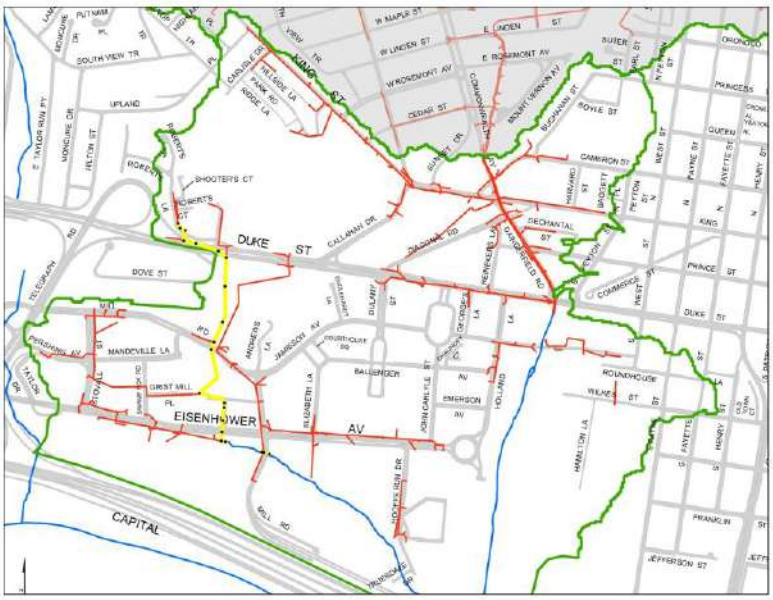
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 3

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 3 from 000080CP to 000658IN





Surface Flooding

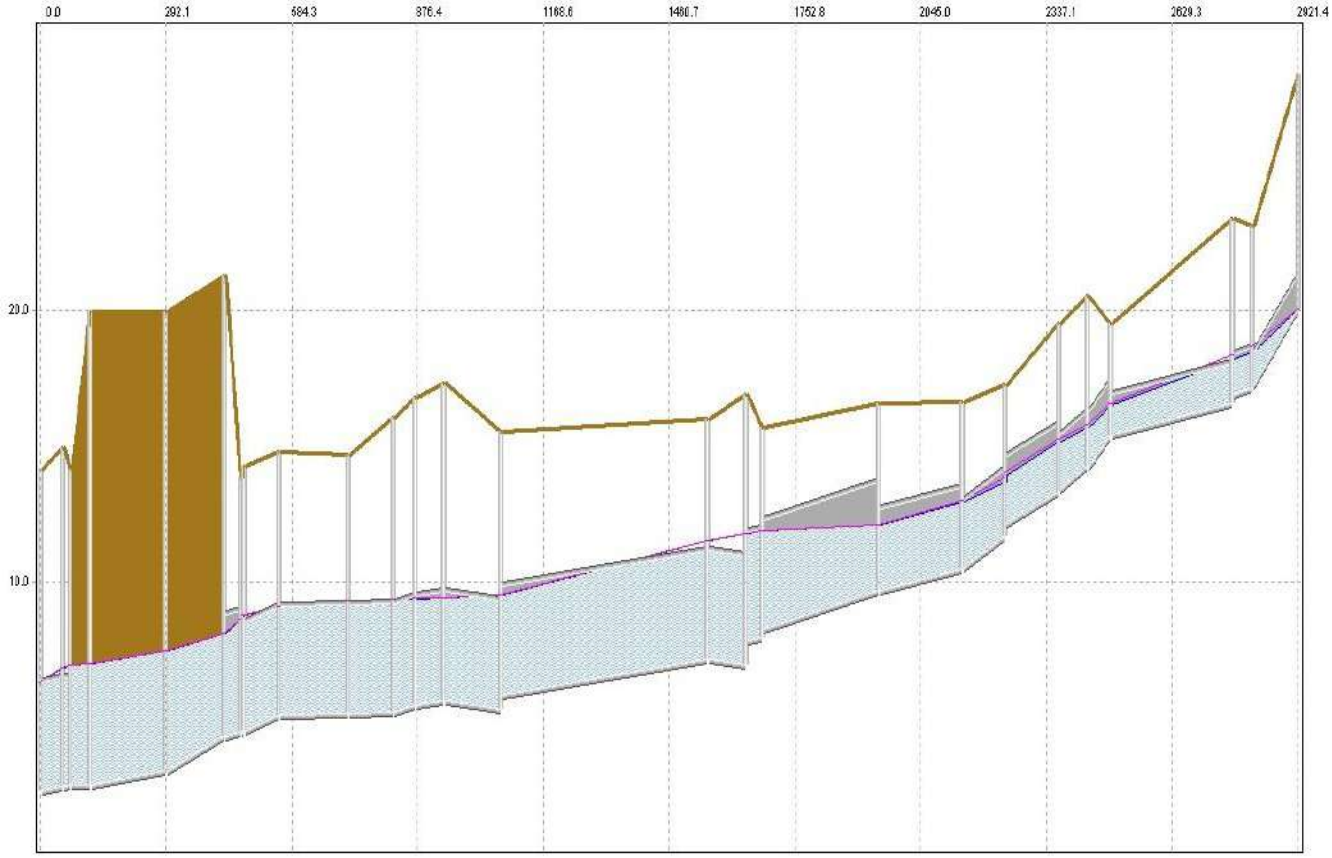
Peak Hydraulic Grade Line

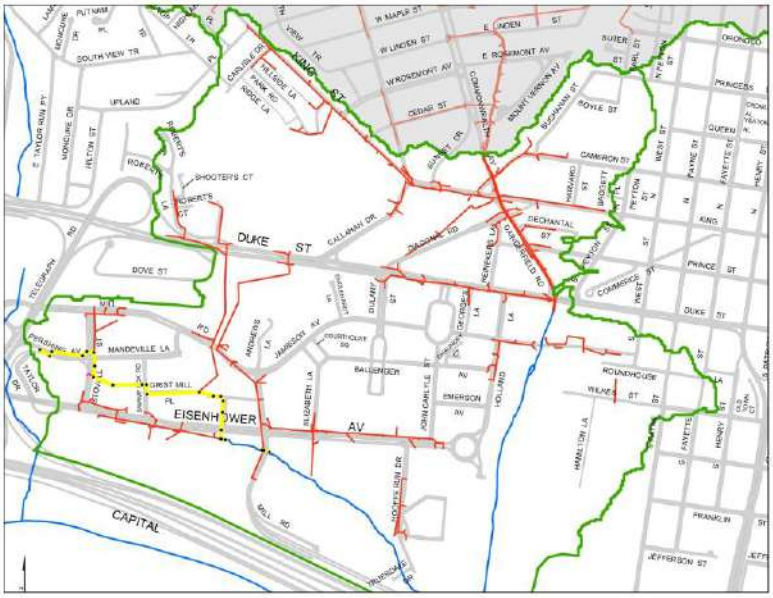
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 4

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 4 from 000080CP to 004860IN





Surface Flooding

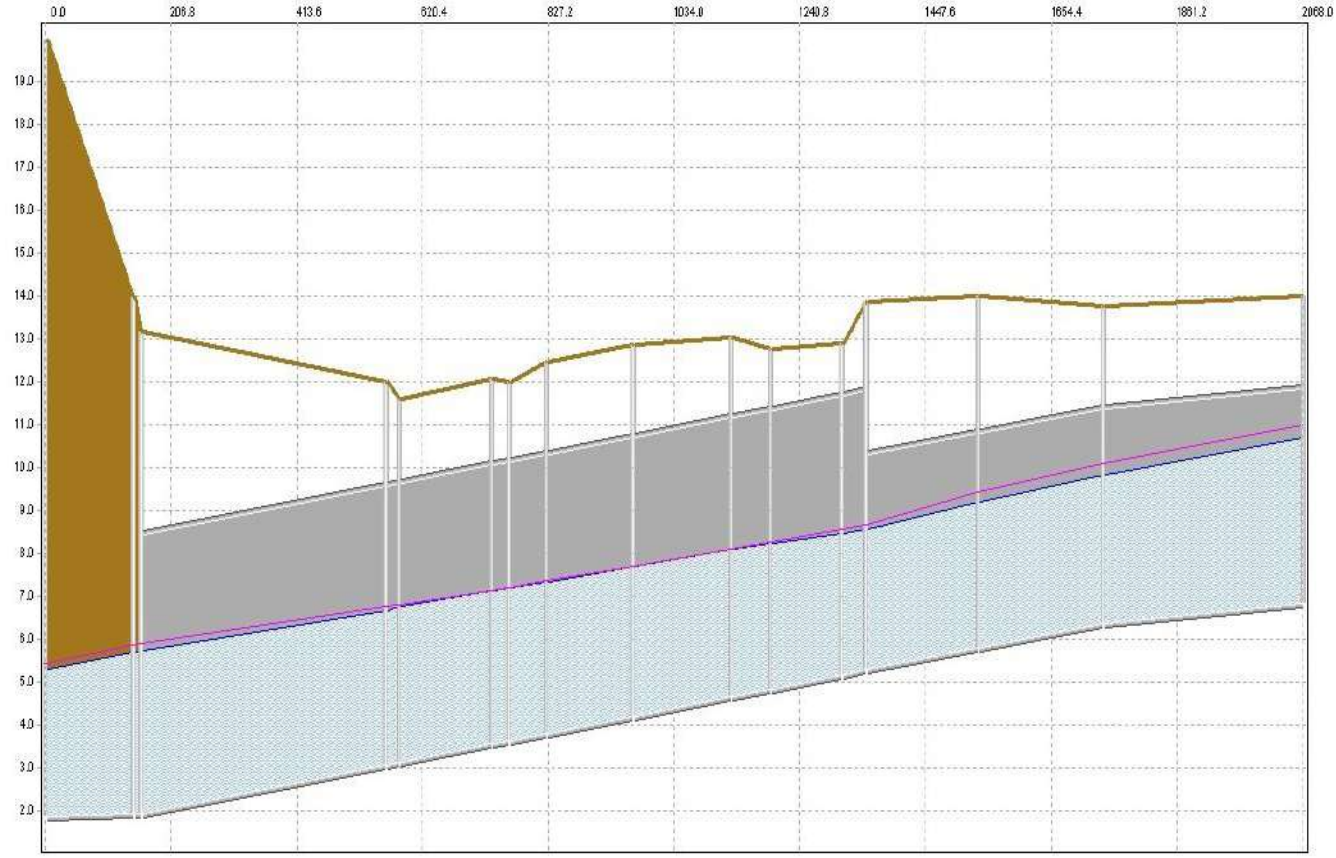
Peak Hydraulic Grade Line

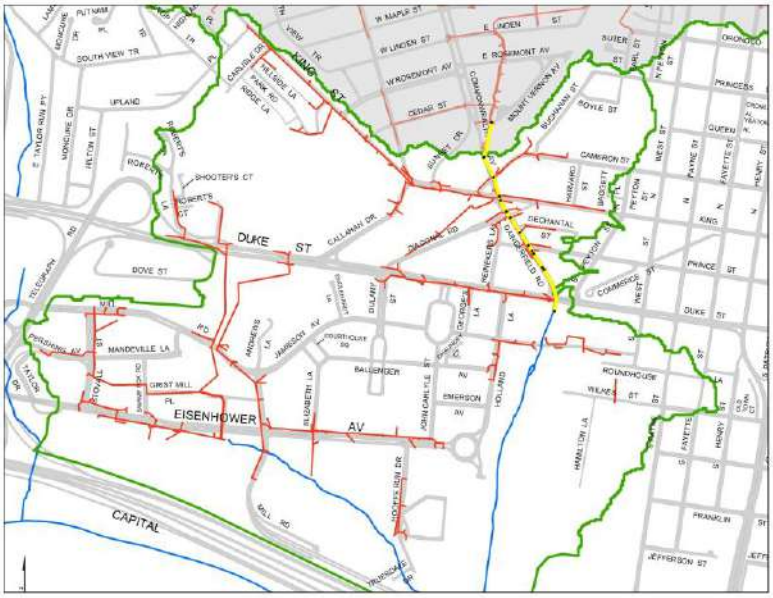
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 5

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 5 from 000293CP to 000939ND





Surface Flooding

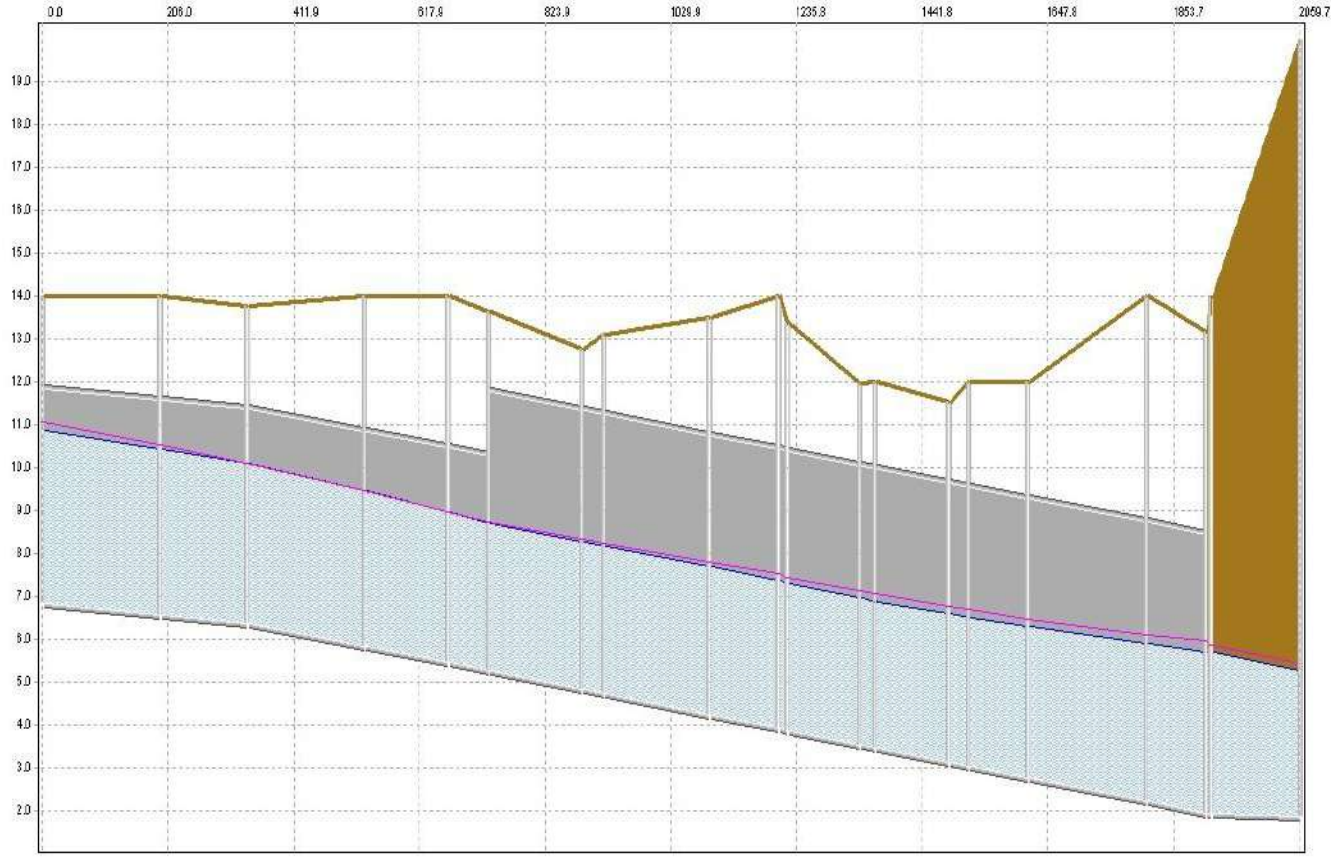
Peak Hydraulic Grade Line

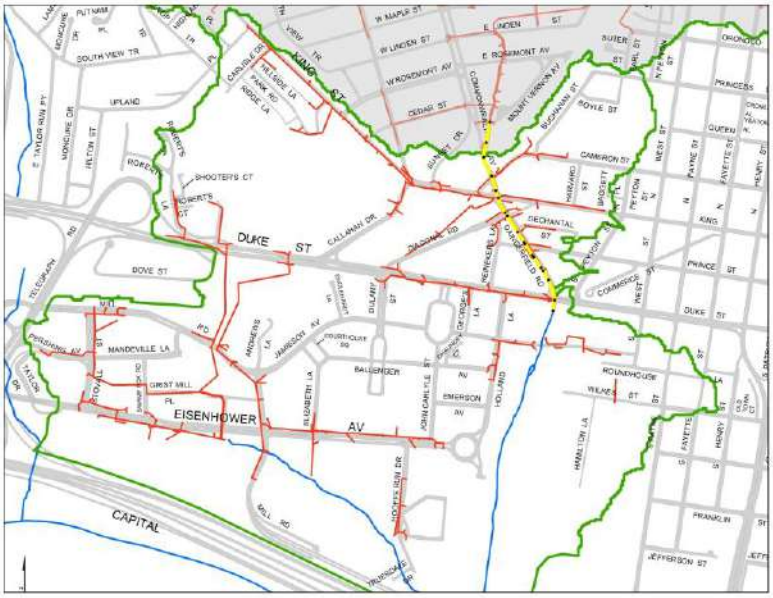
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 6

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 6 from 000292CP to 002912ND





Surface Flooding

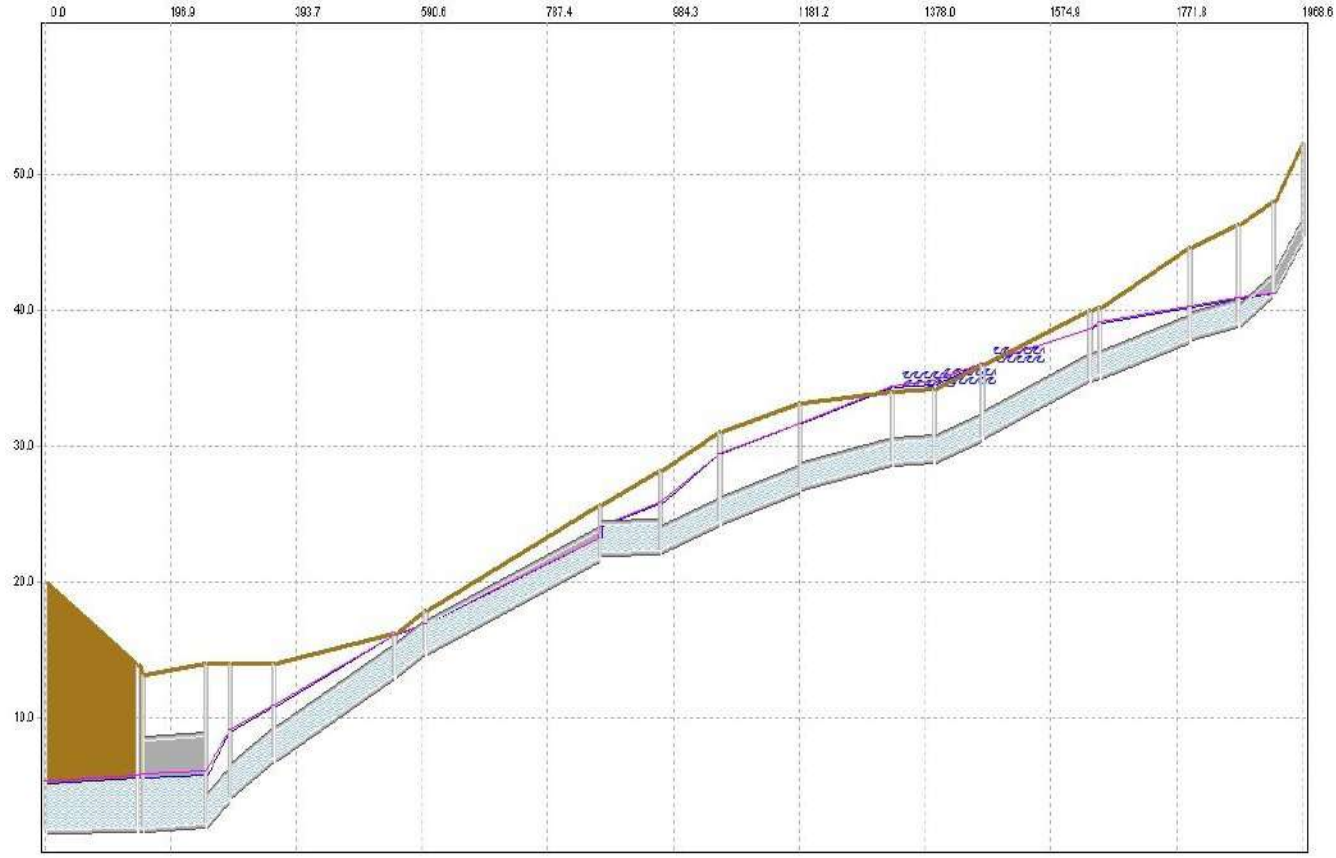
Peak Hydraulic Grade Line

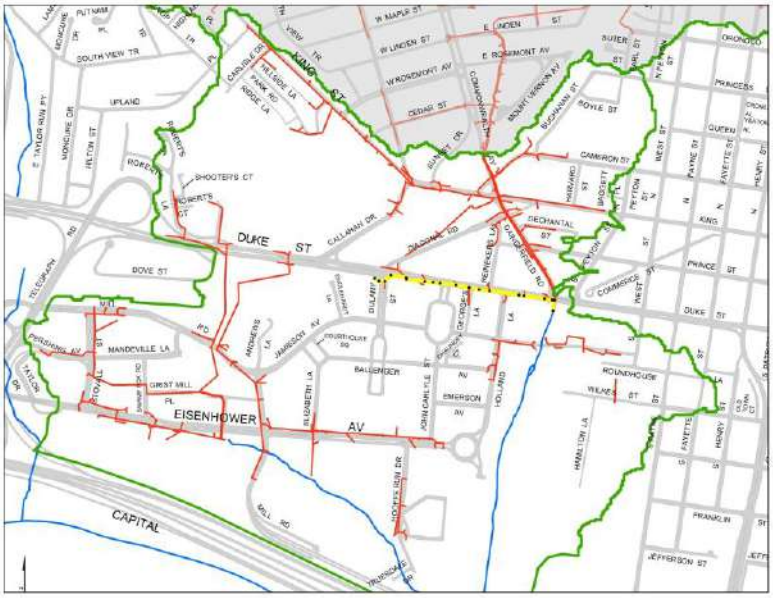
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 7

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 7 from 000292CP to 004975IN





Surface Flooding

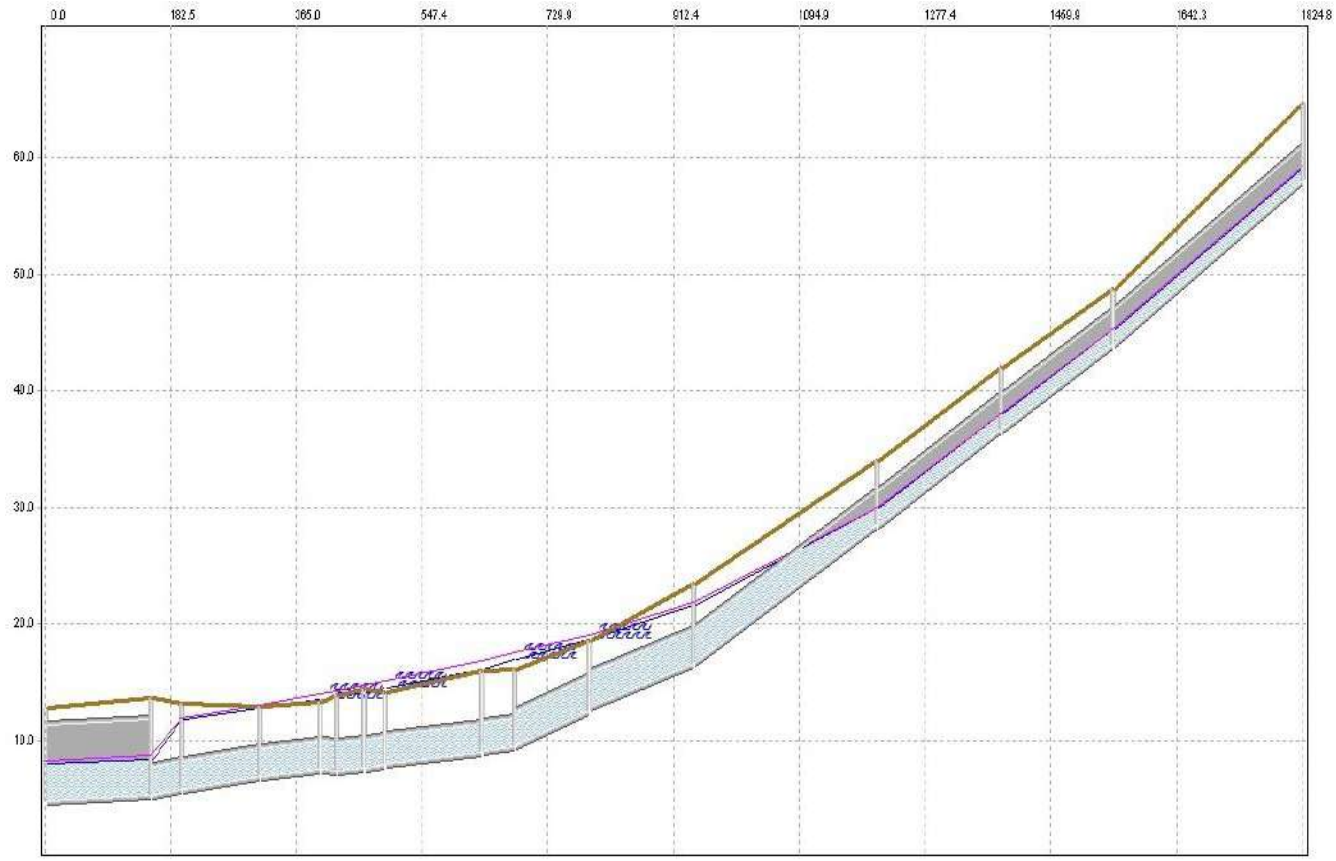
Peak Hydraulic Grade Line

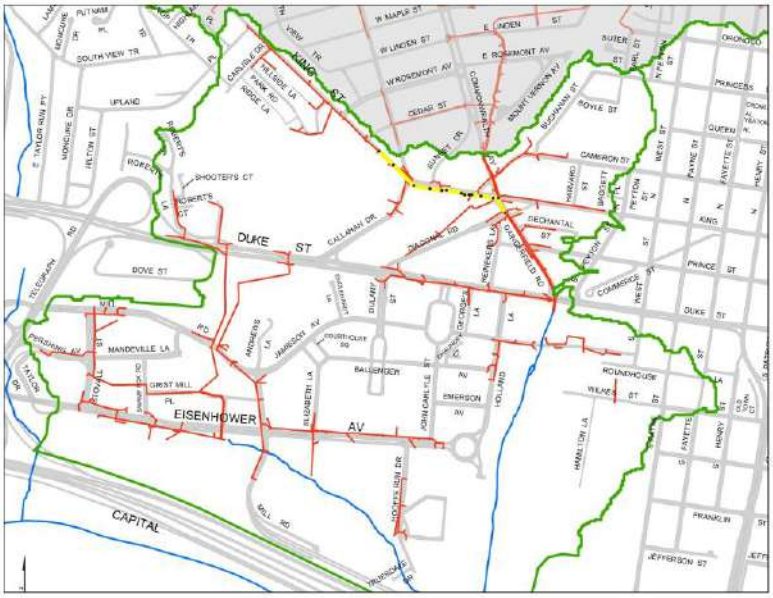
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 8

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 8 from 002913ND to 000912ND





Surface Flooding

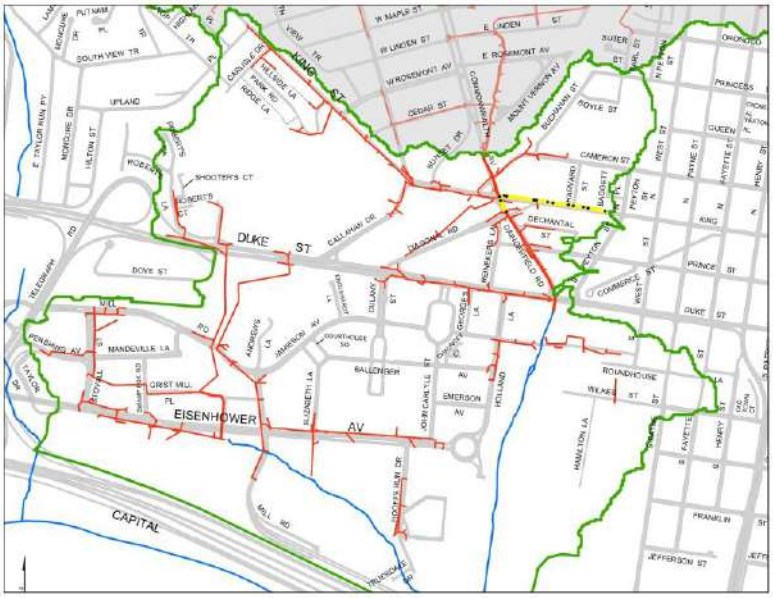
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 9

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 9 from 000958ND to 000944ND



Surface Flooding

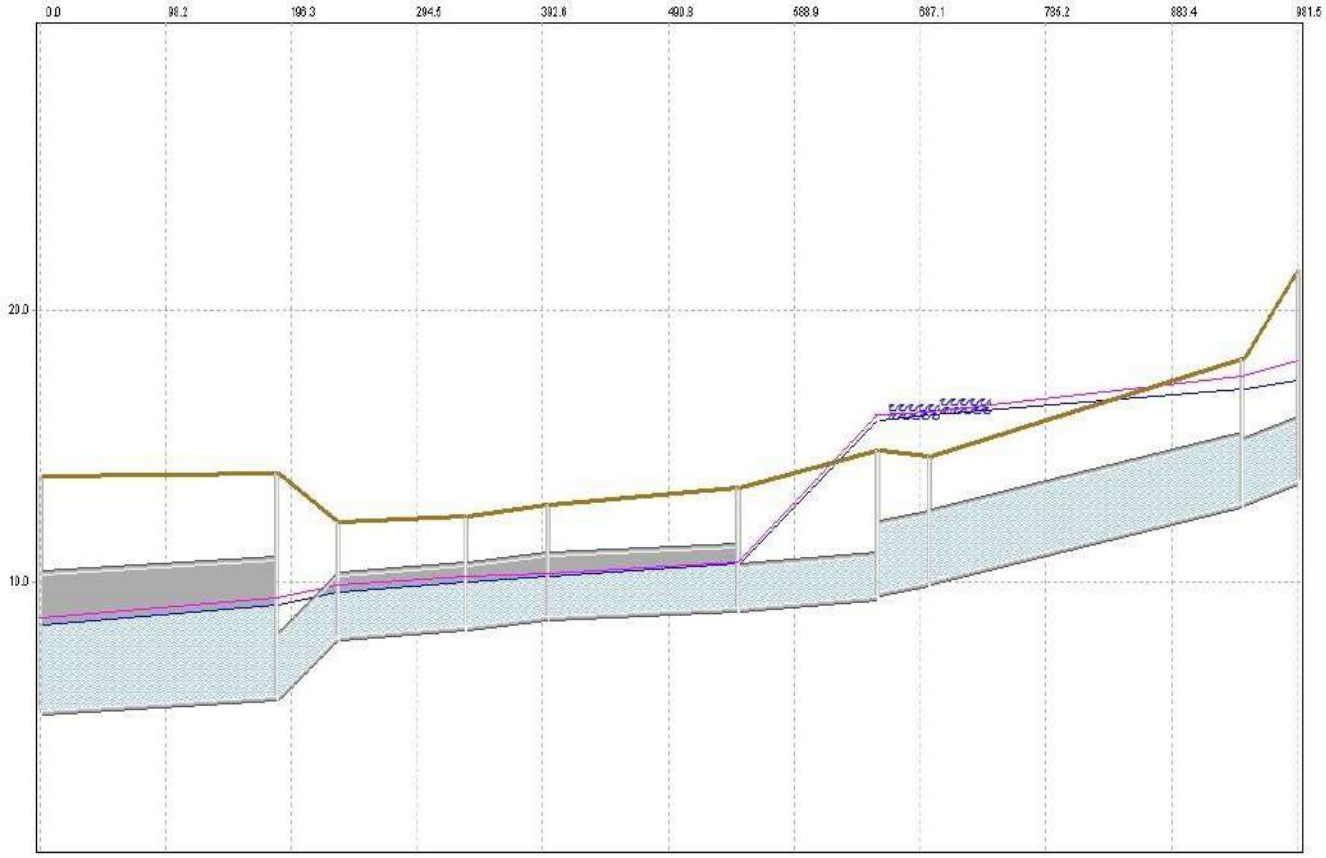
Peak Hydraulic Grade Line

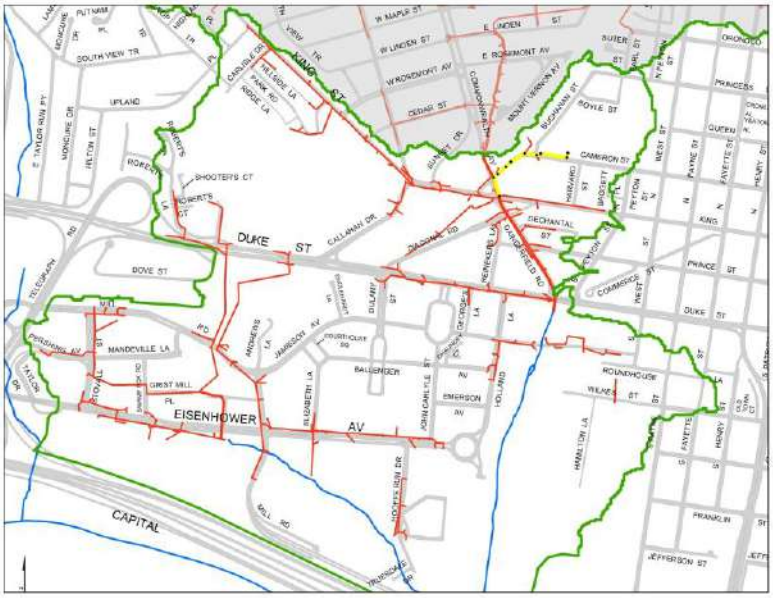
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 10

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 10 from 000960ND to 006100IN





Surface Flooding

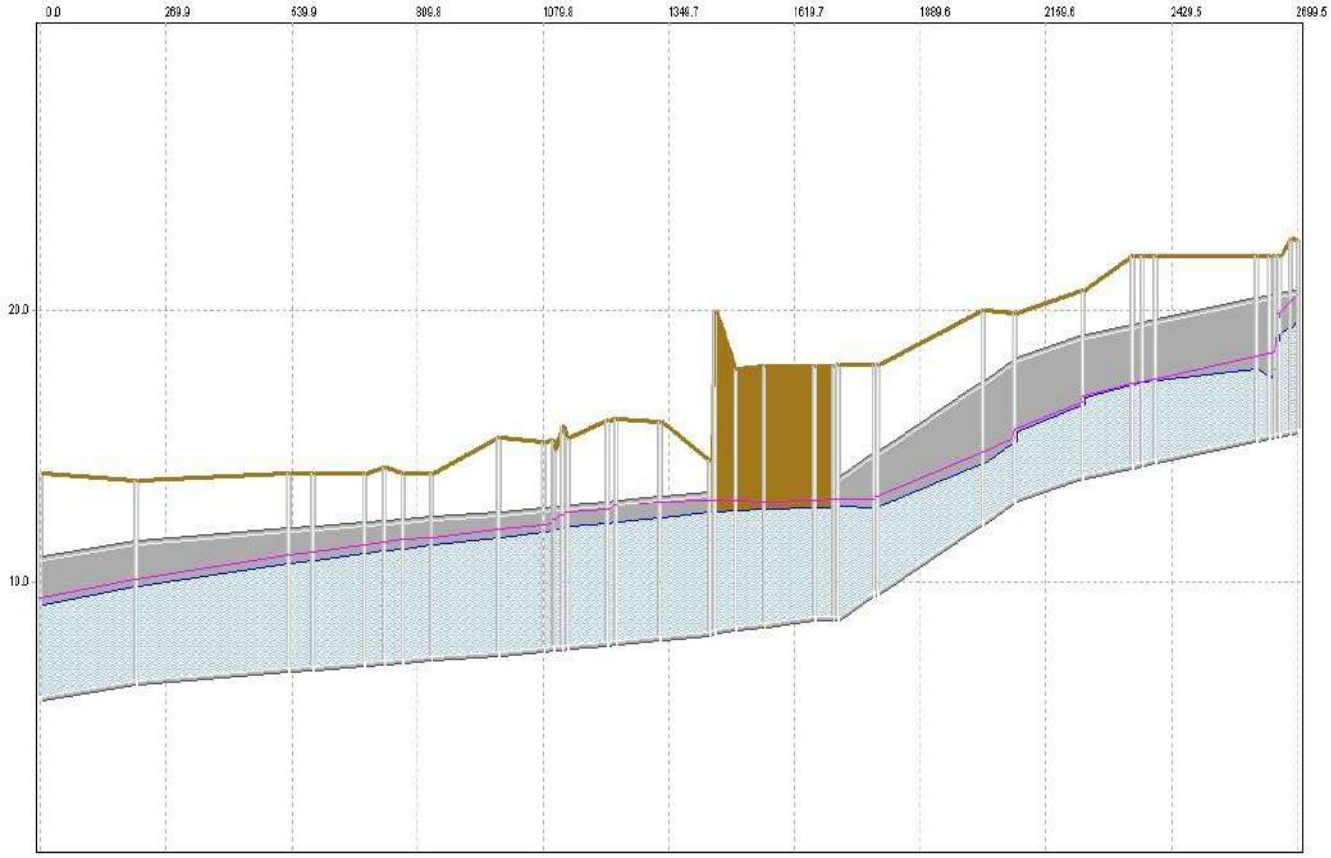
Peak Hydraulic Grade Line

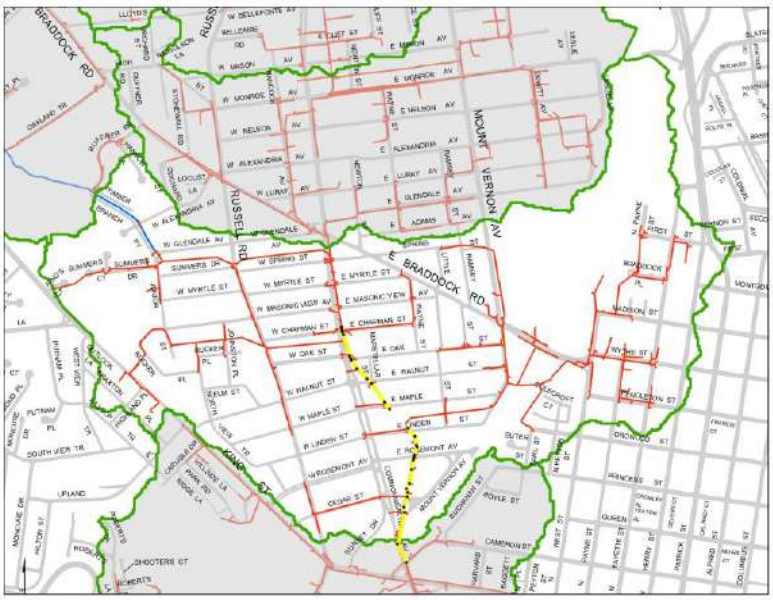
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 11

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 11 from 000946ND to 003095SMH





Surface Flooding

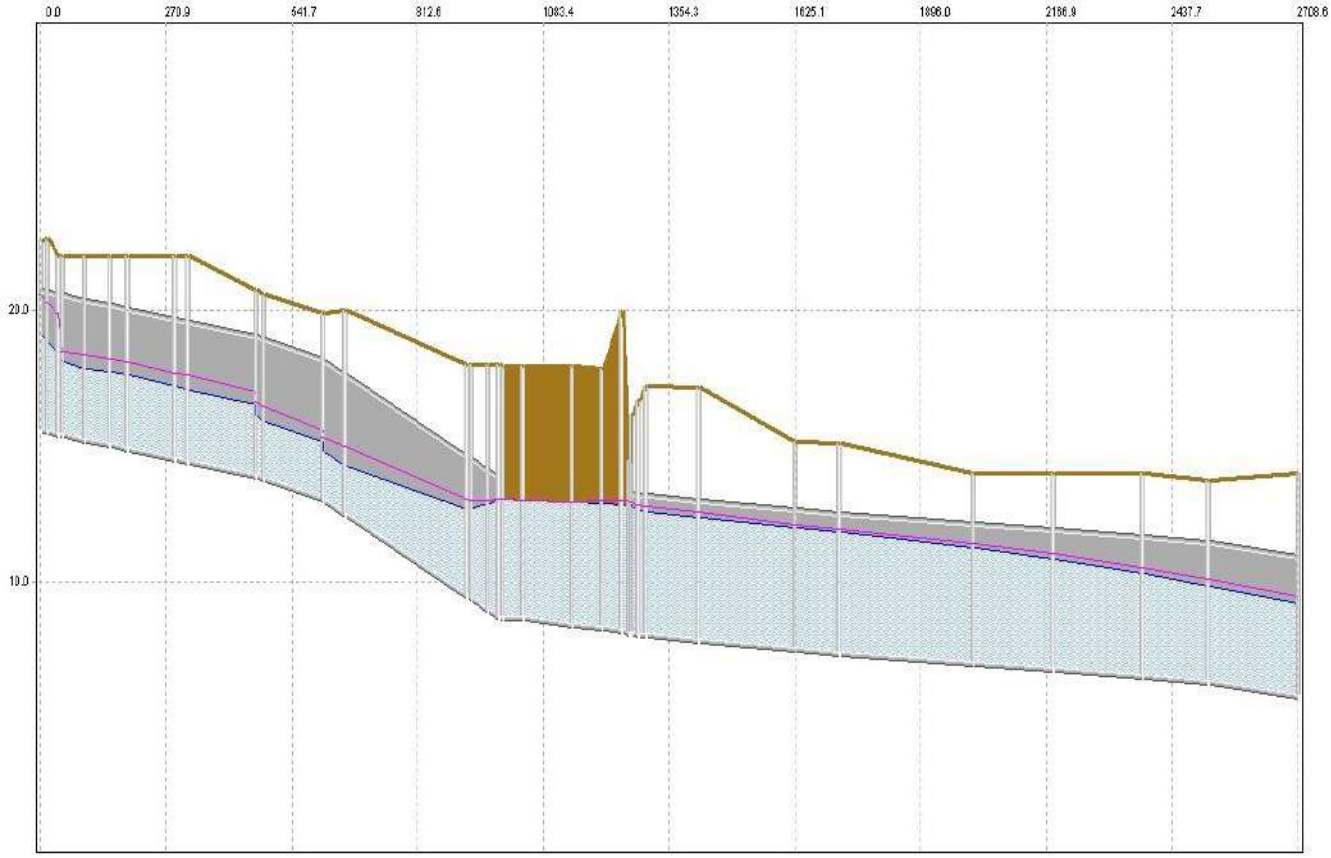
Peak Hydraulic Grade Line

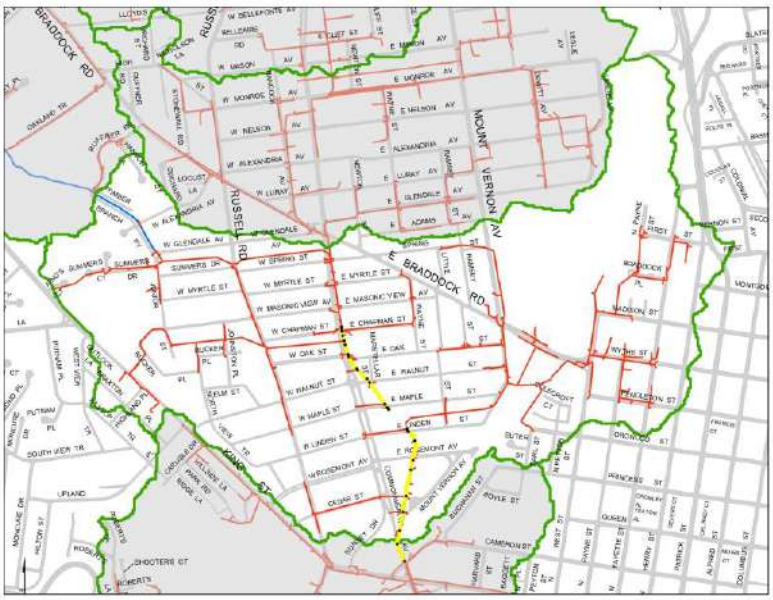
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 12

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 12 from 000945ND to 003095SMH





Surface Flooding

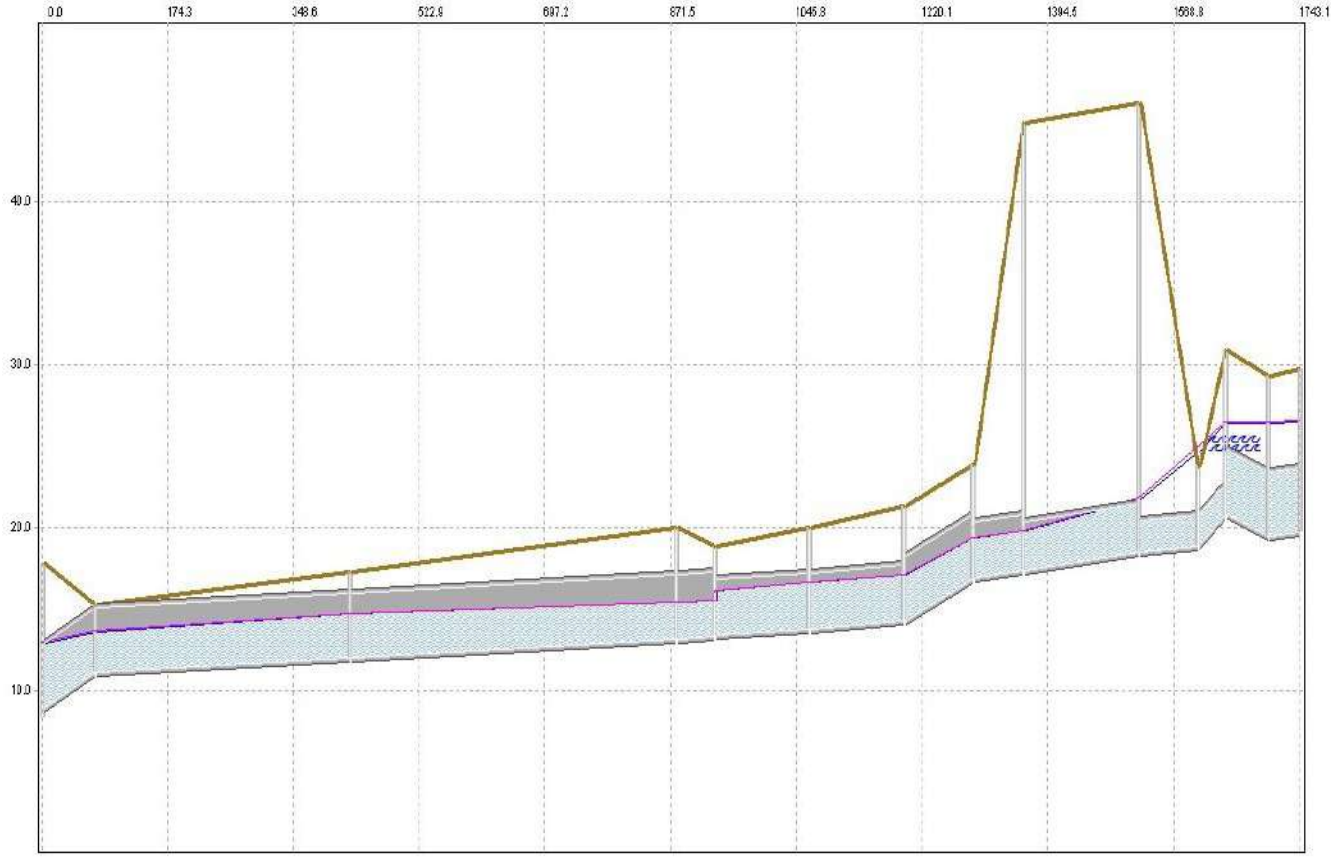
Peak Hydraulic Grade Line

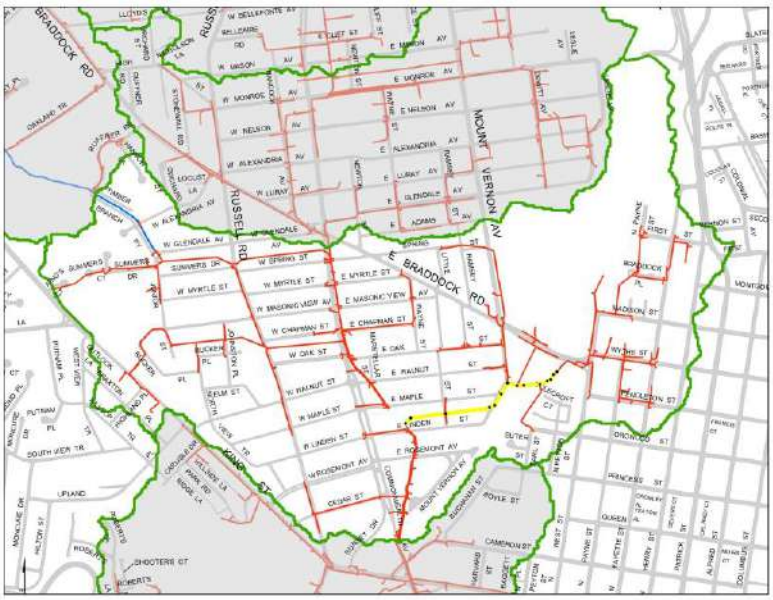
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 13

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 13 from 000546IOto 003457SMH





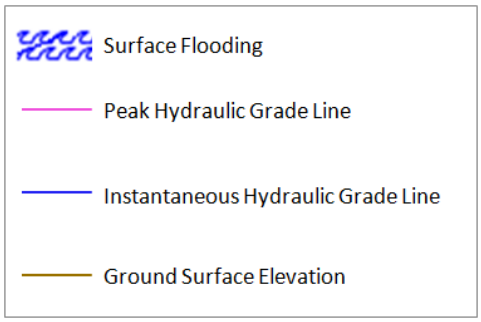
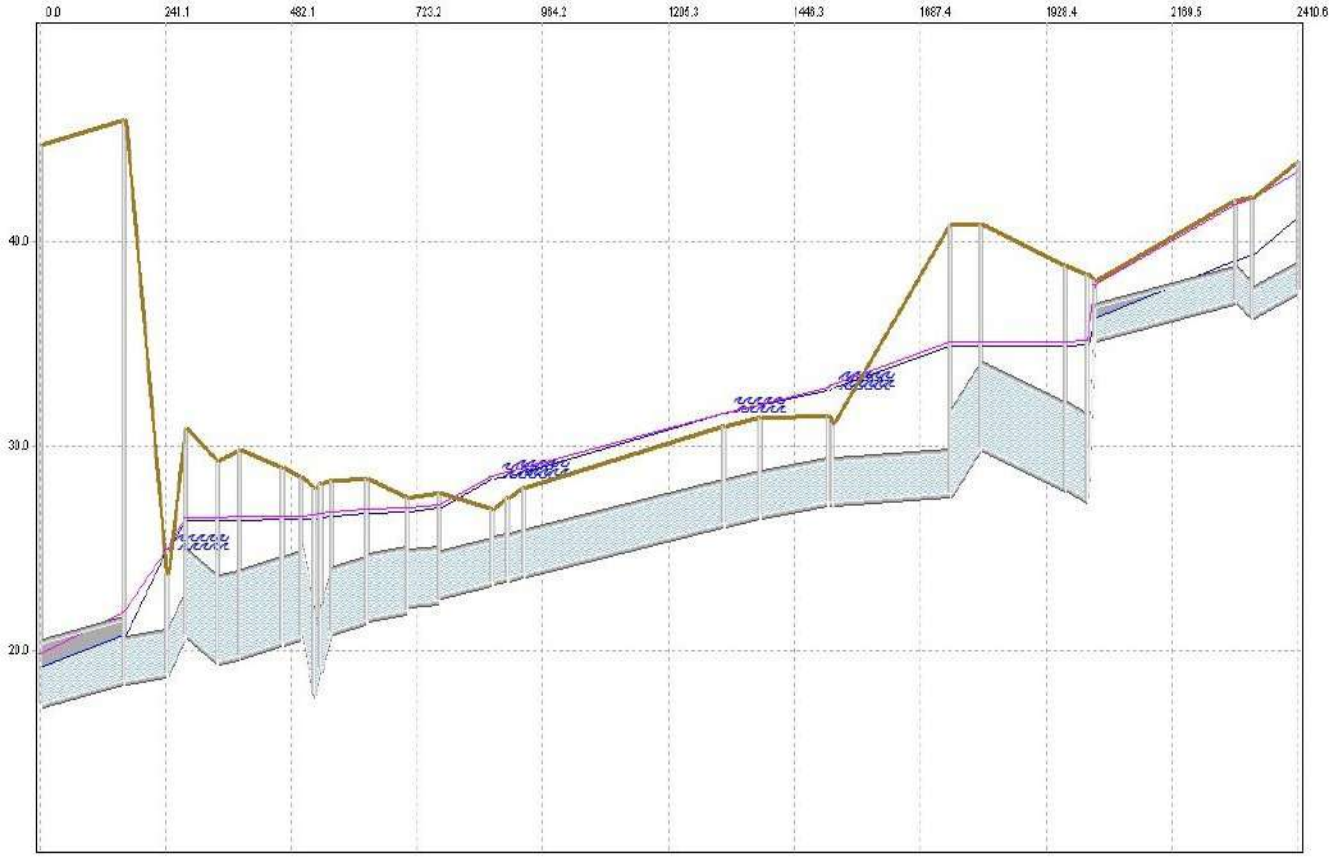
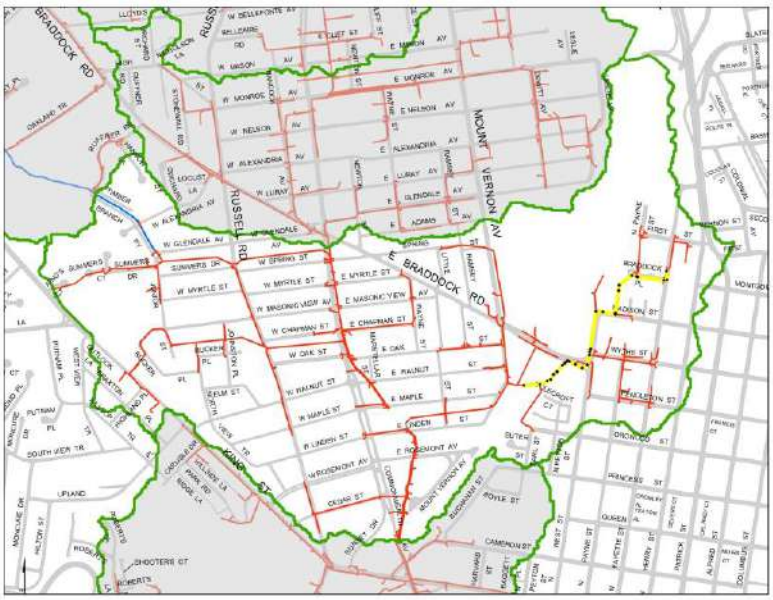


FIGURE 14

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 14 from 000788ND to 003486SMH





Surface Flooding

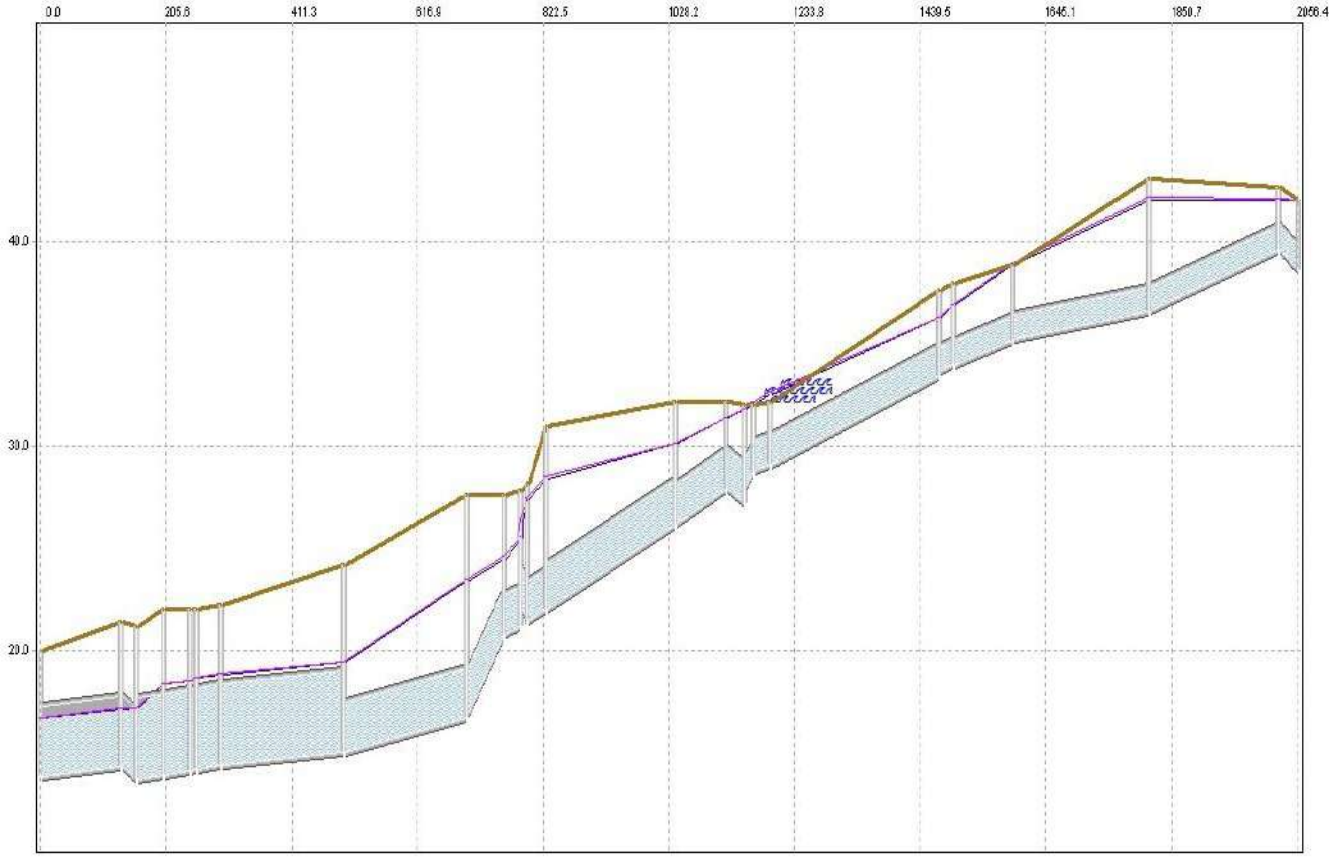
Peak Hydraulic Grade Line

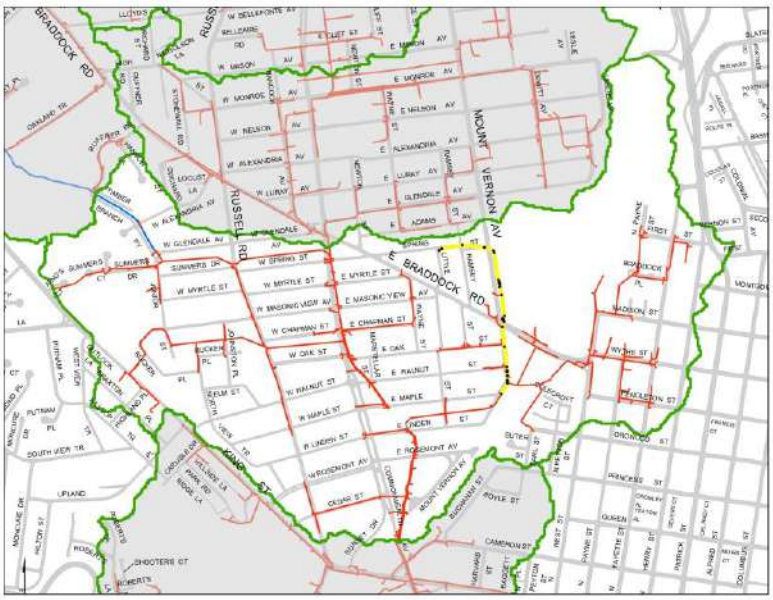
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 15

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 15 from 000789ND to 007762IN





Surface Flooding

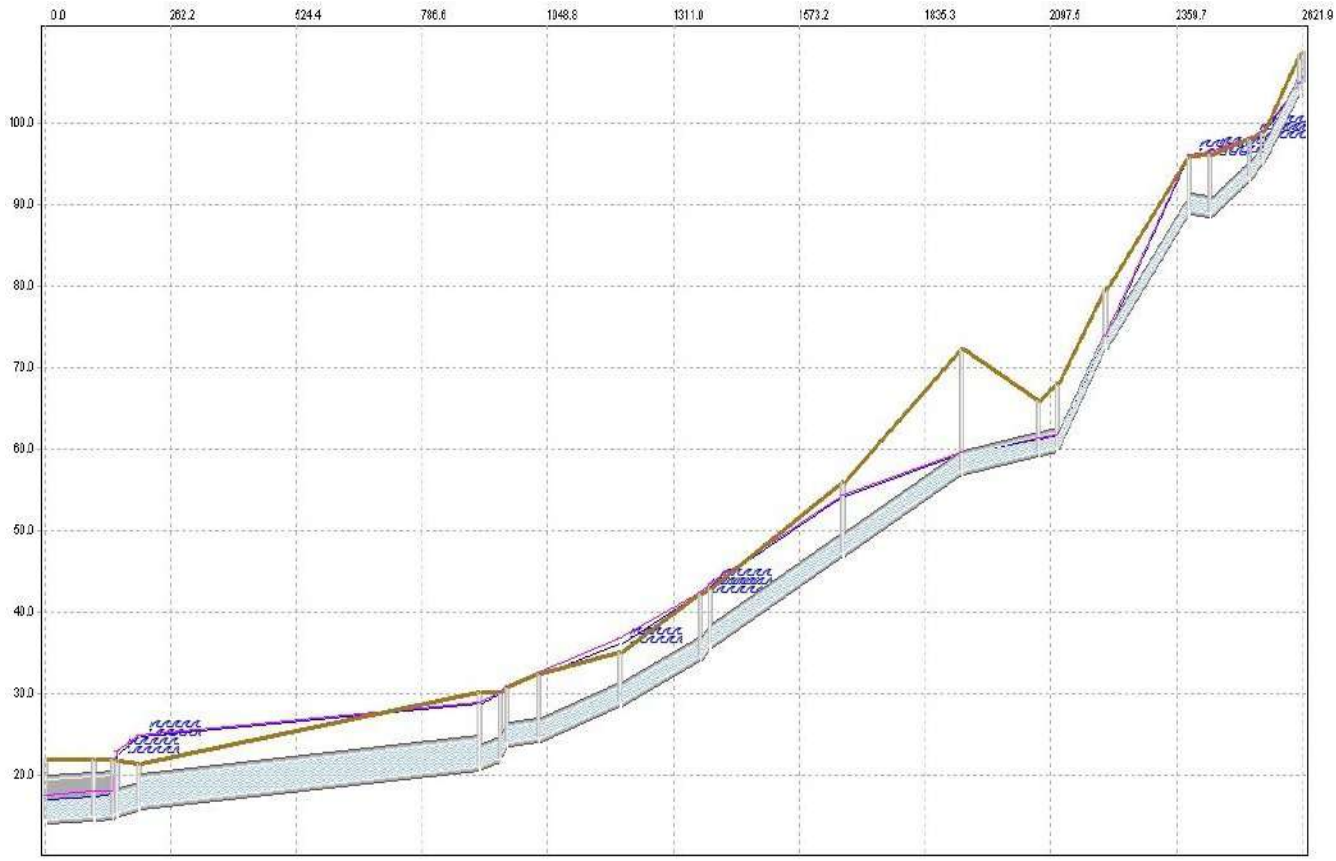
Peak Hydraulic Grade Line

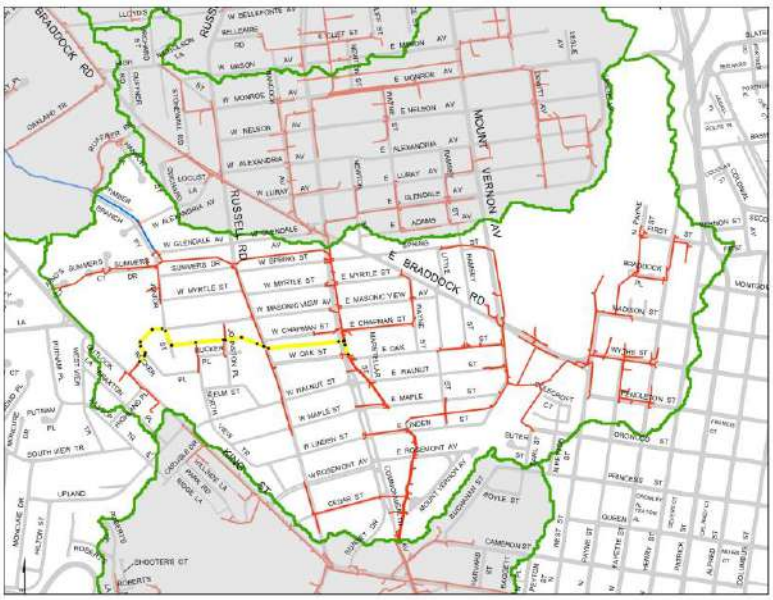
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 16

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 16 from 000823ND to 002912SMH





Surface Flooding

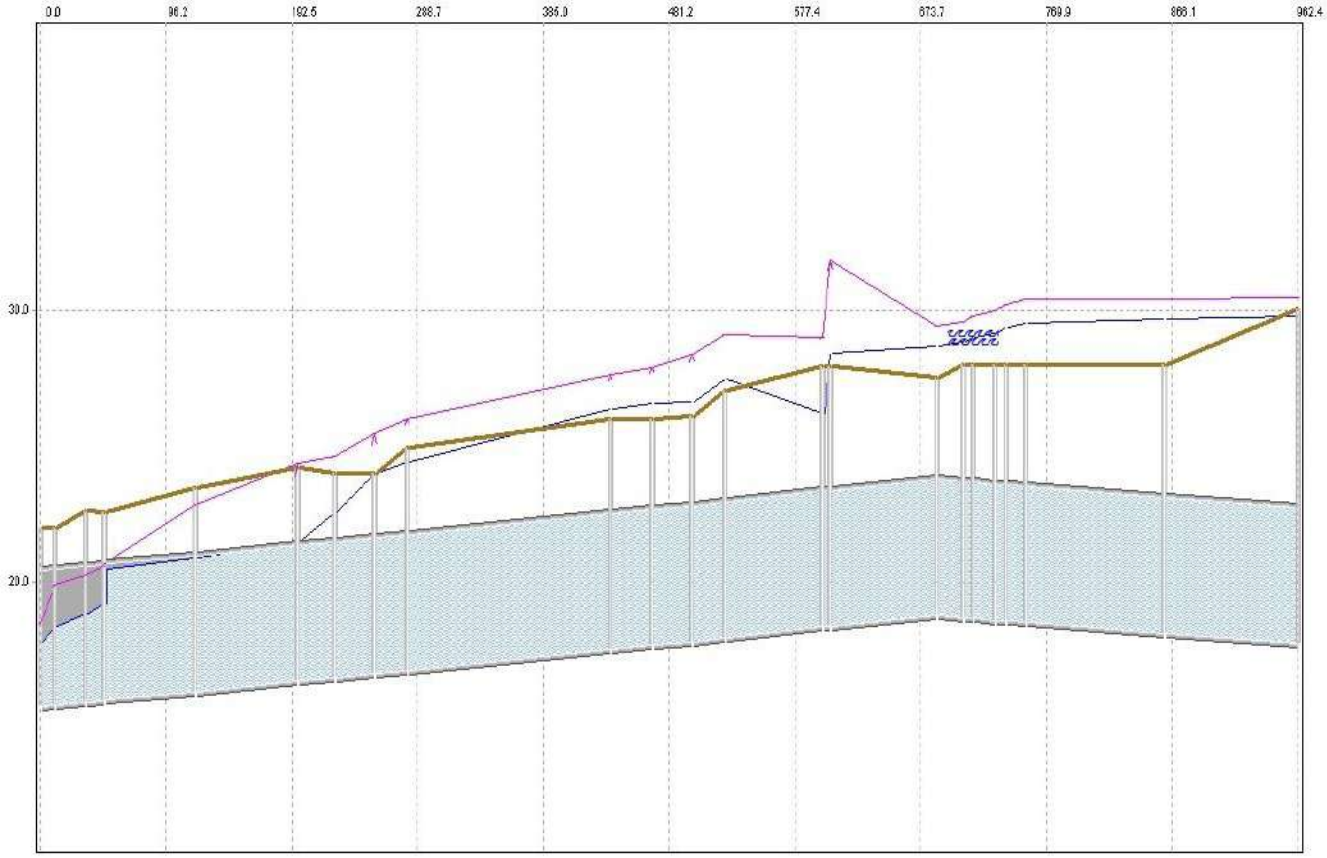
Peak Hydraulic Grade Line

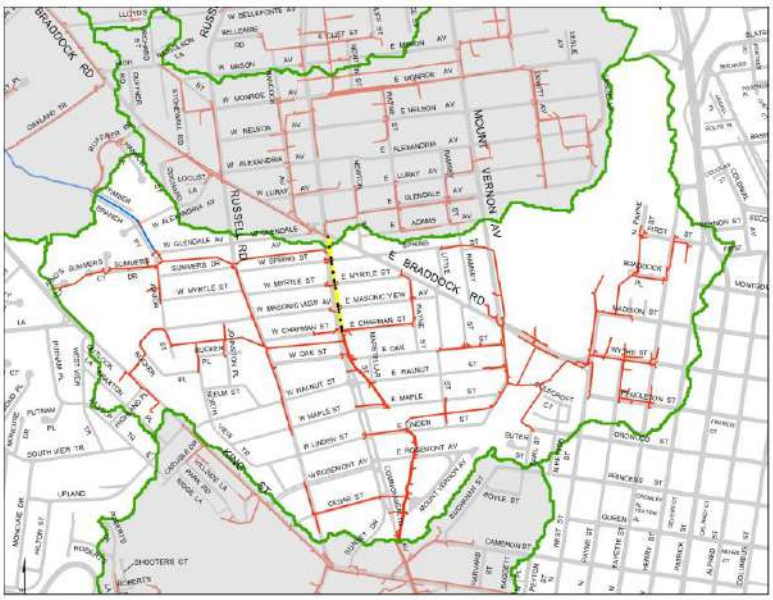
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 17

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 17 from 000815ND to 003166SMH





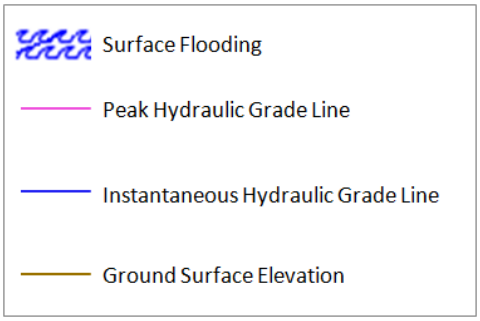
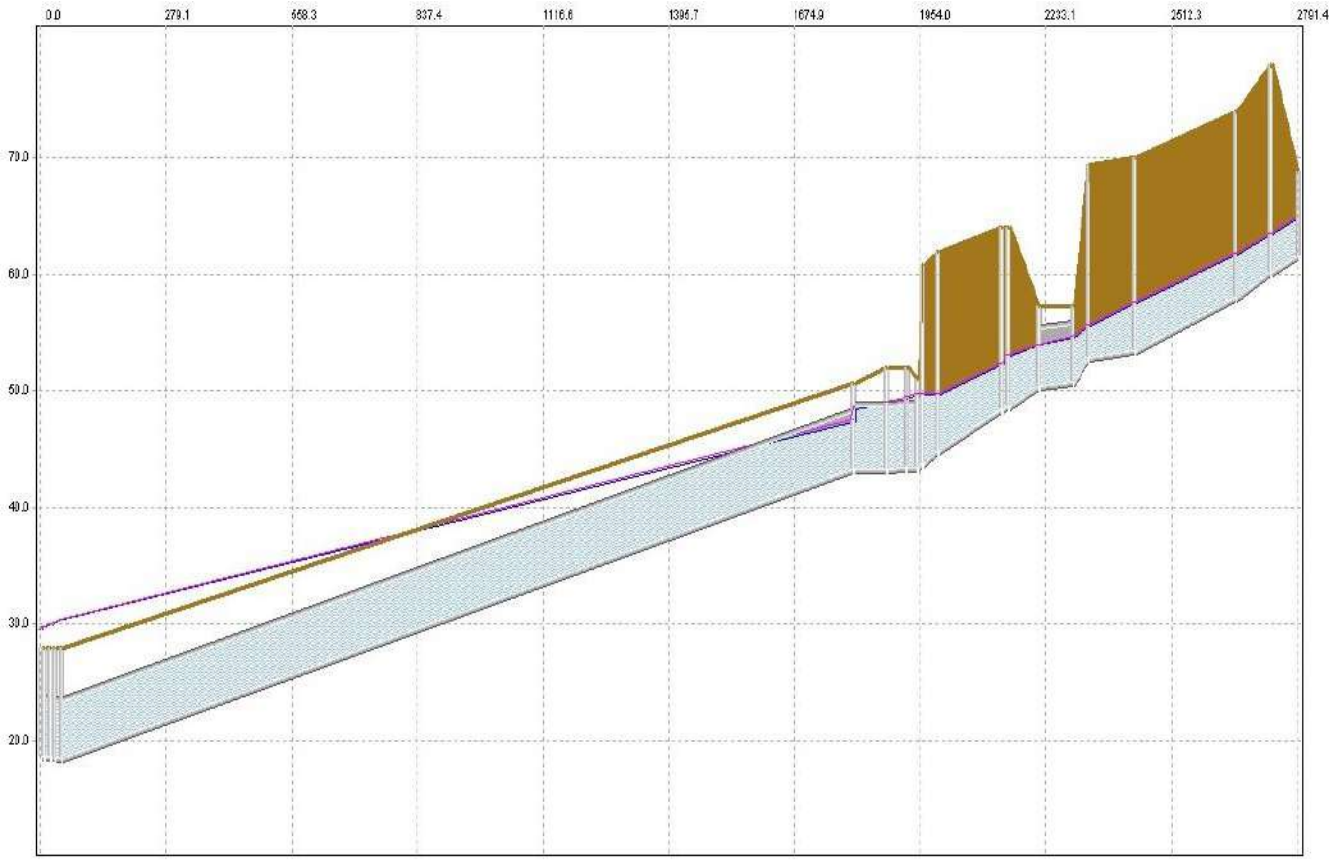
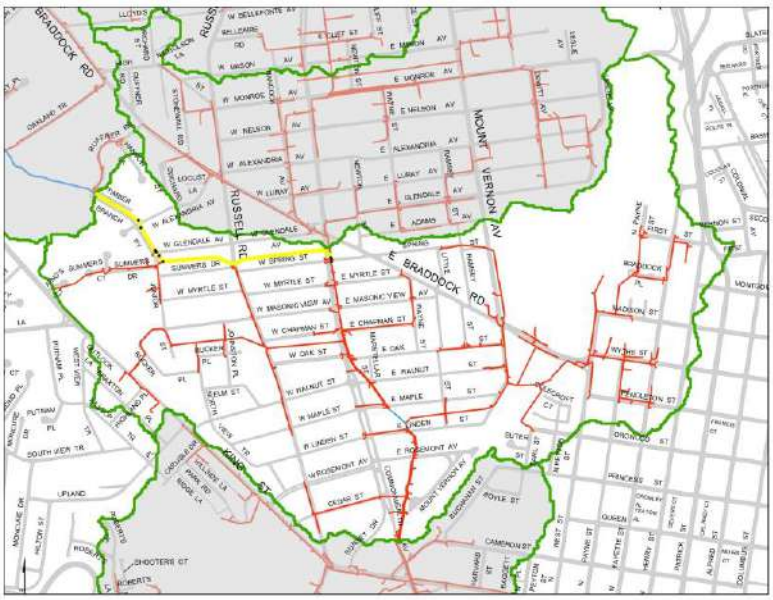


FIGURE 18

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 18 from 000814ND to 000125CP





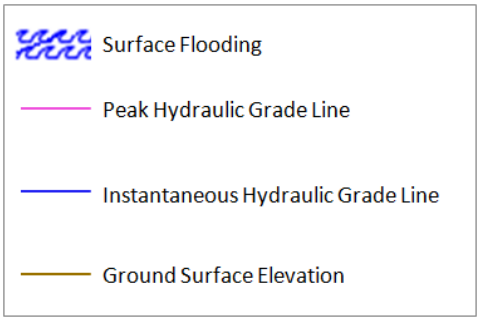
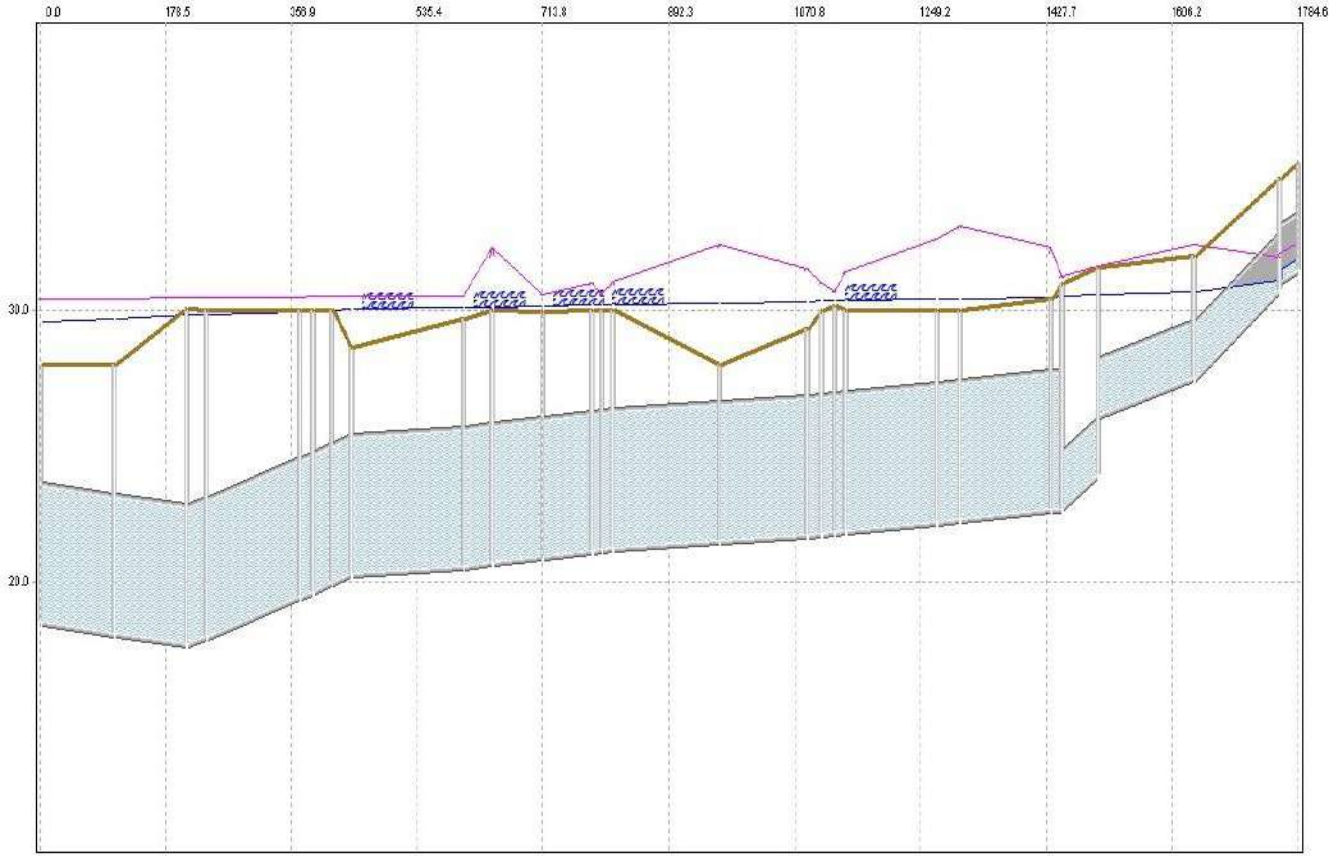
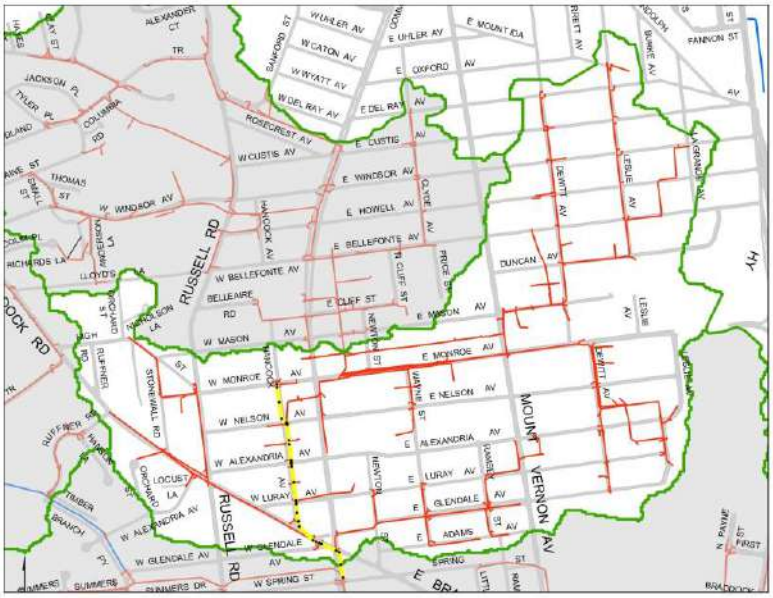


FIGURE 19

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 19 from 000811ND to 000977ND





Surface Flooding

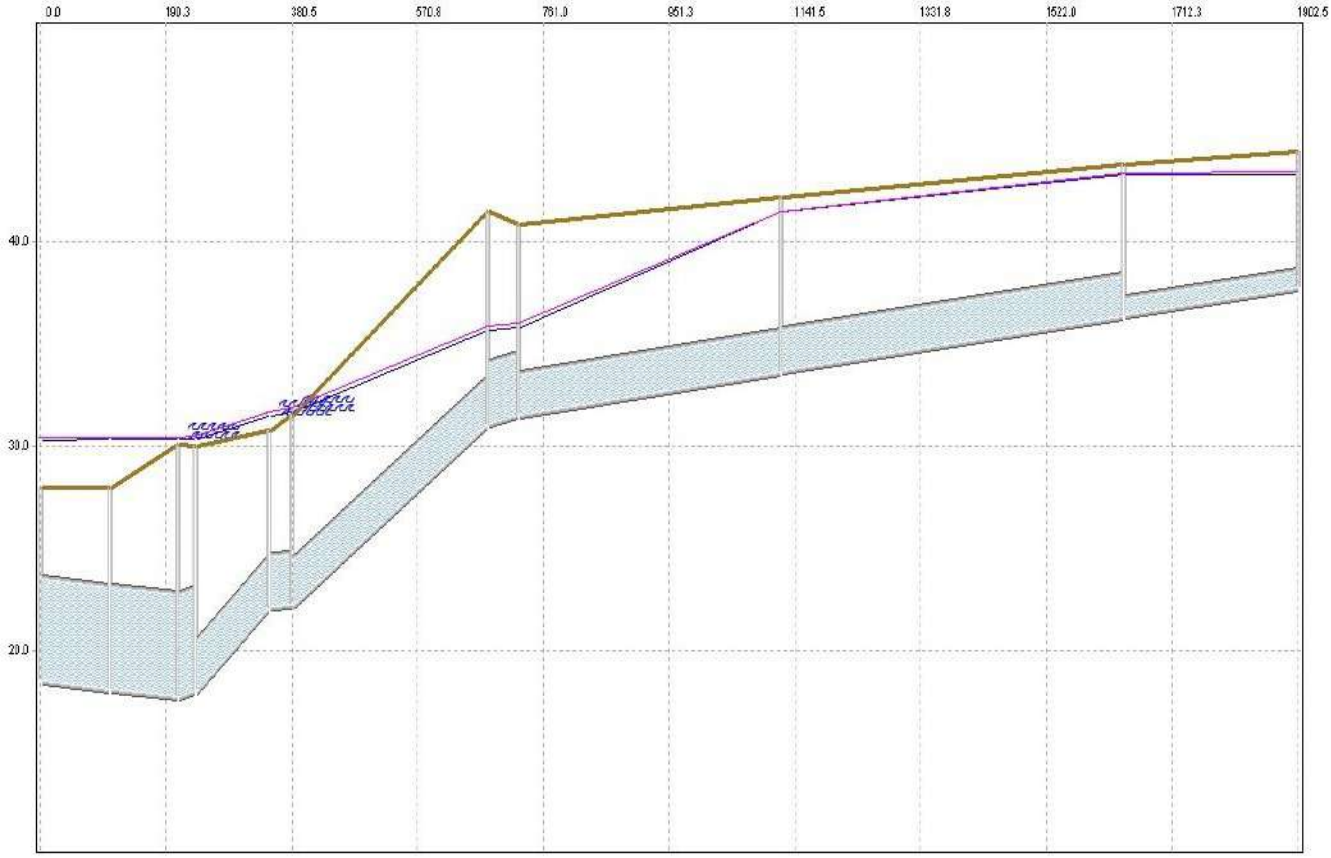
Peak Hydraulic Grade Line

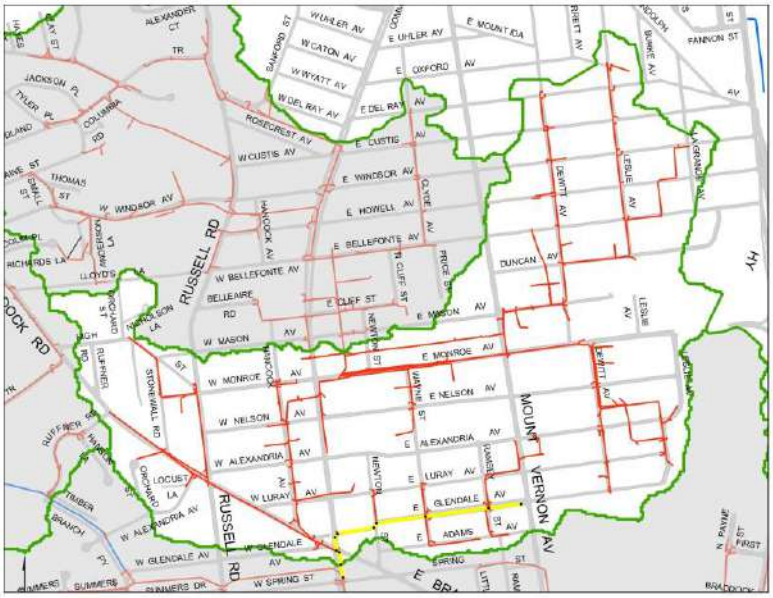
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 20

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 20 from 000811ND to 001005ND





Surface Flooding

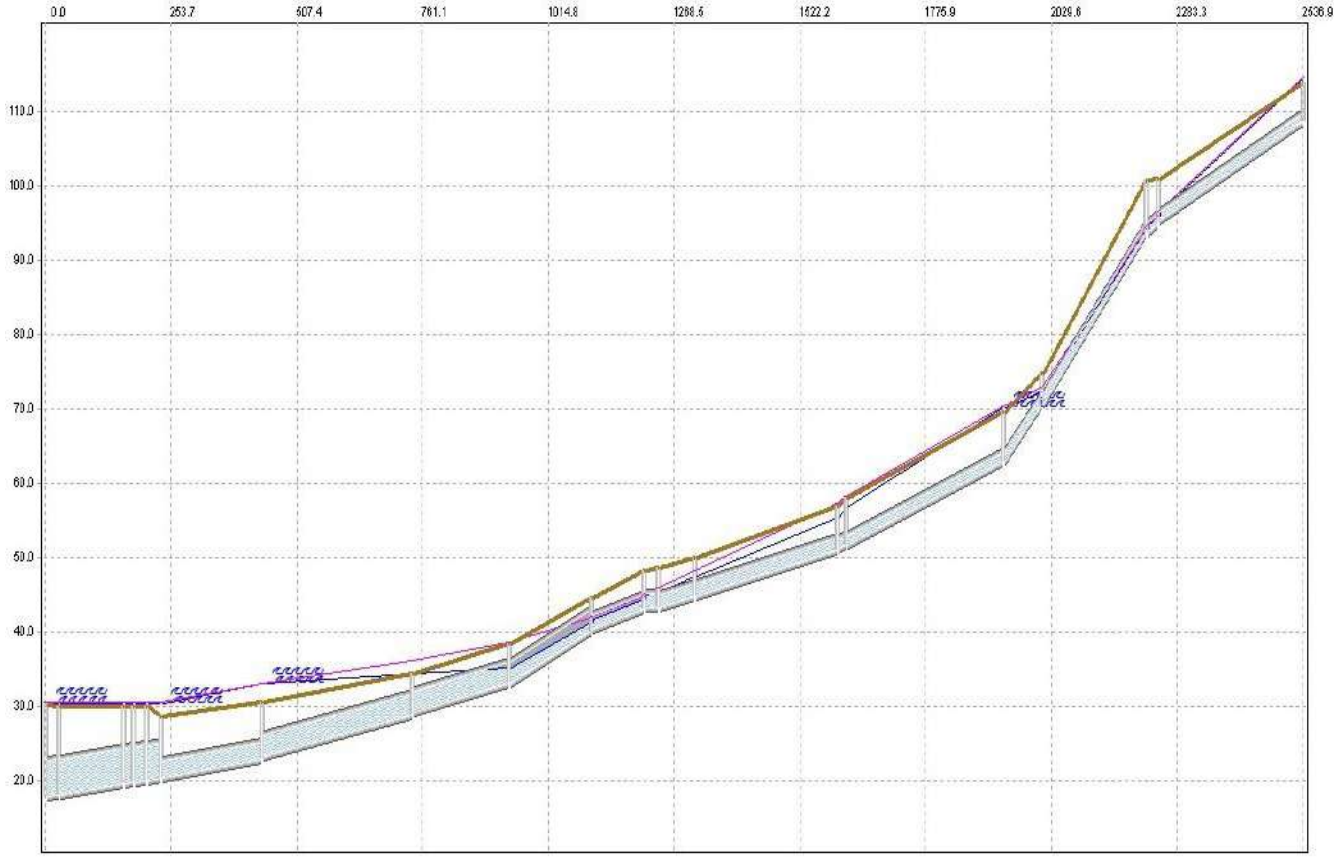
Peak Hydraulic Grade Line

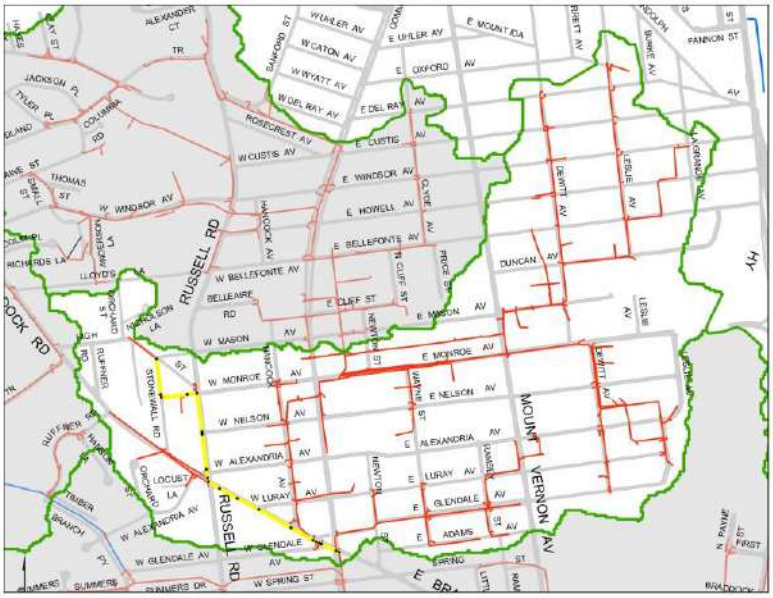
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 21

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 21 from 003166SMH to 003367SMH





Surface Flooding

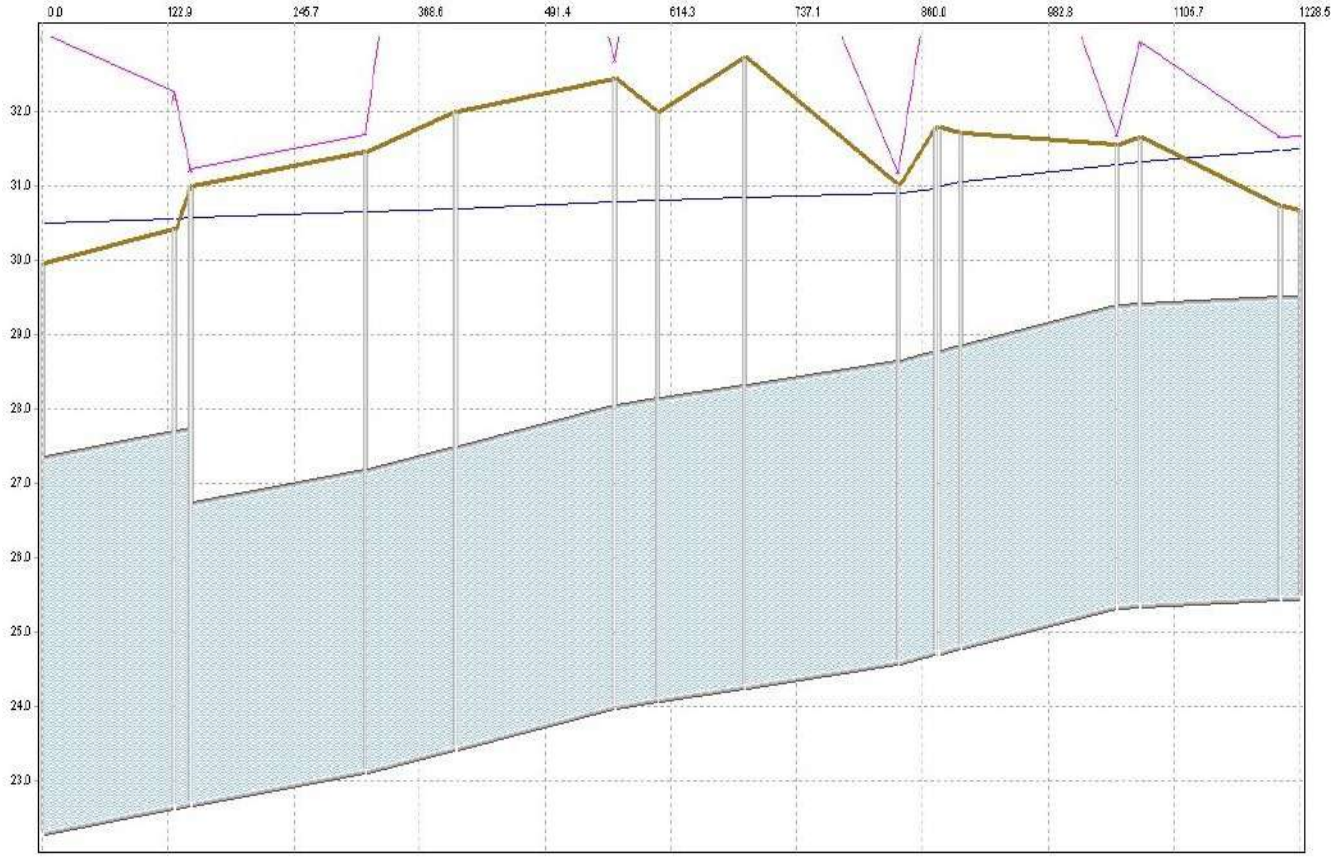
Peak Hydraulic Grade Line

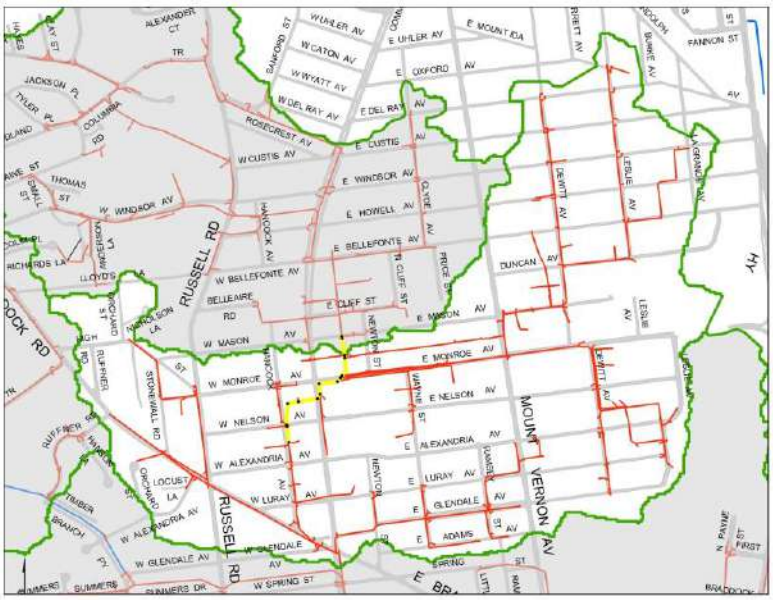
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 22

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 22 from 000999ND to 003412SMH





Surface Flooding

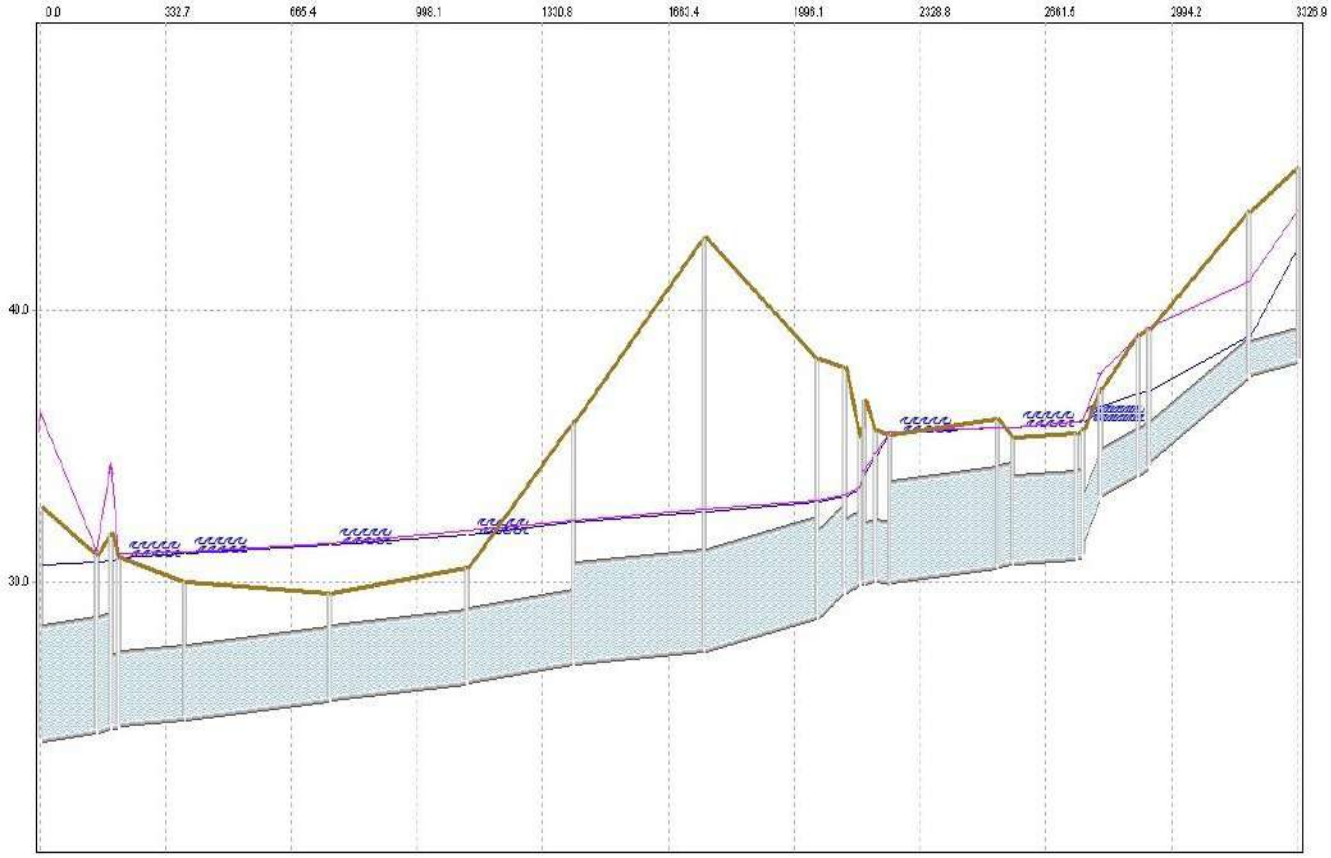
Peak Hydraulic Grade Line

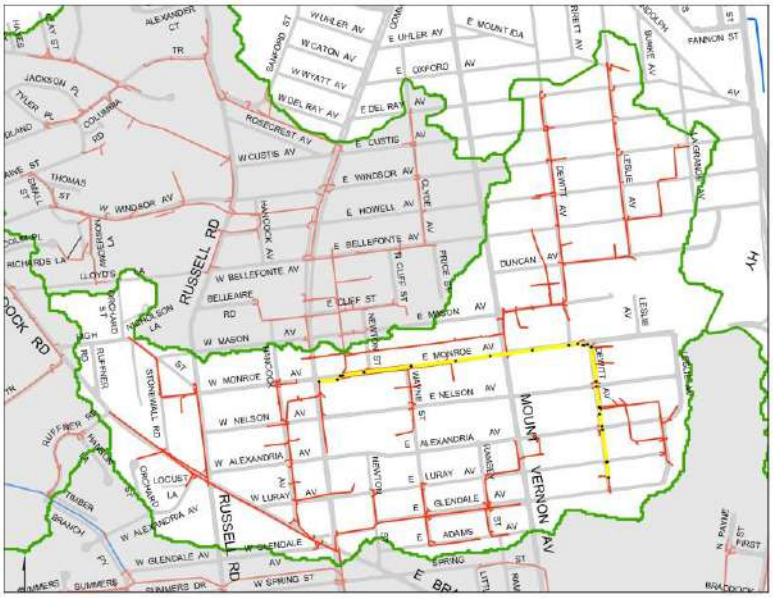
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 23

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 23 from 000994ND to 000856ND





Surface Flooding

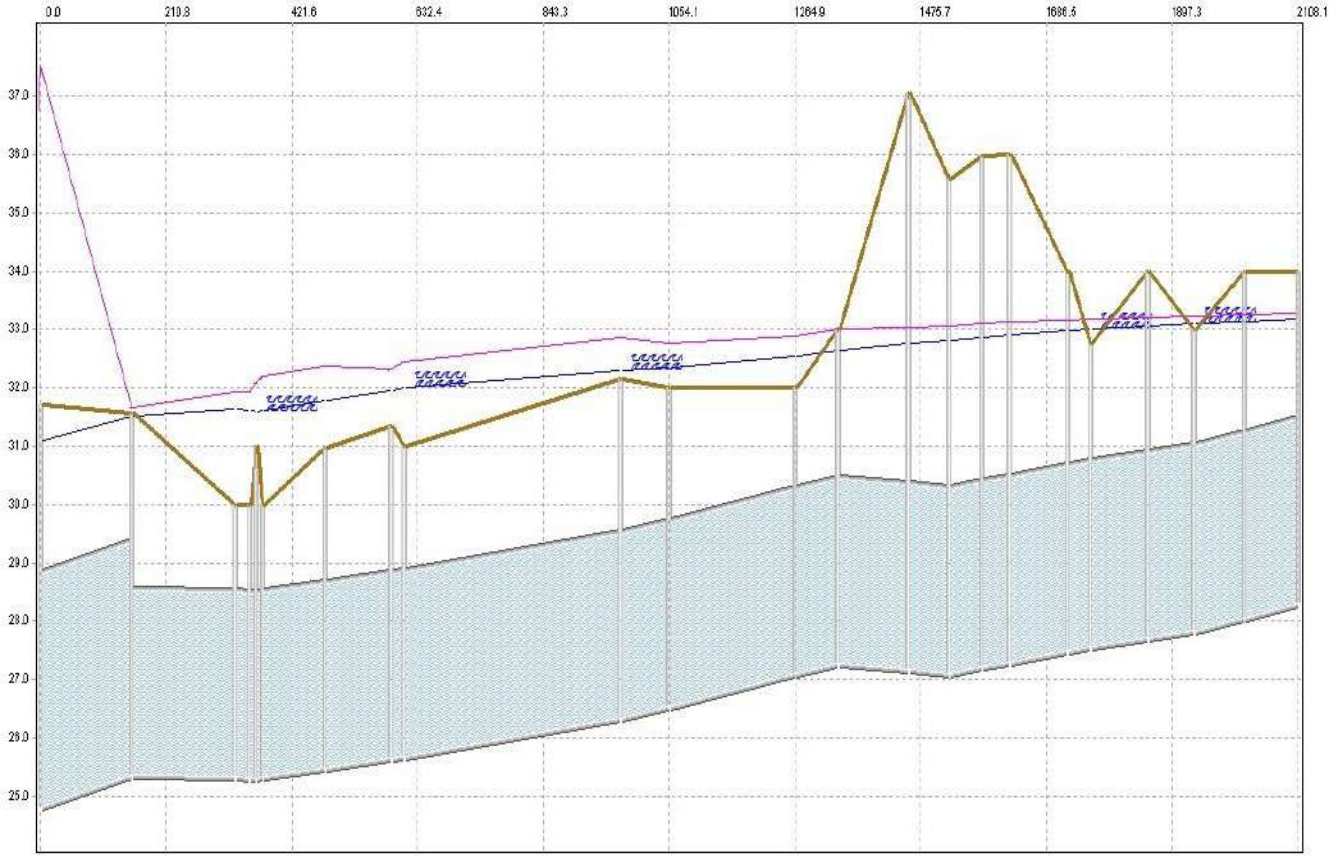
Peak Hydraulic Grade Line

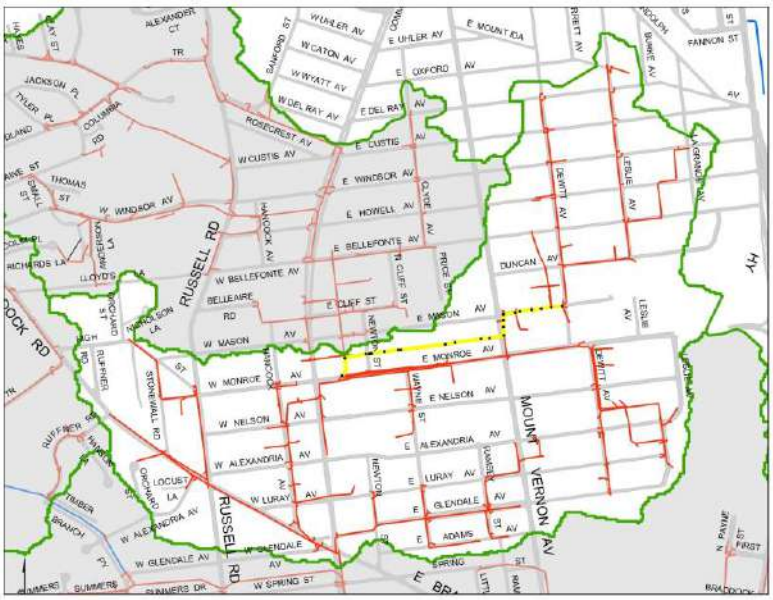
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 24

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 24 from 002916ND to 003335SMH





Surface Flooding

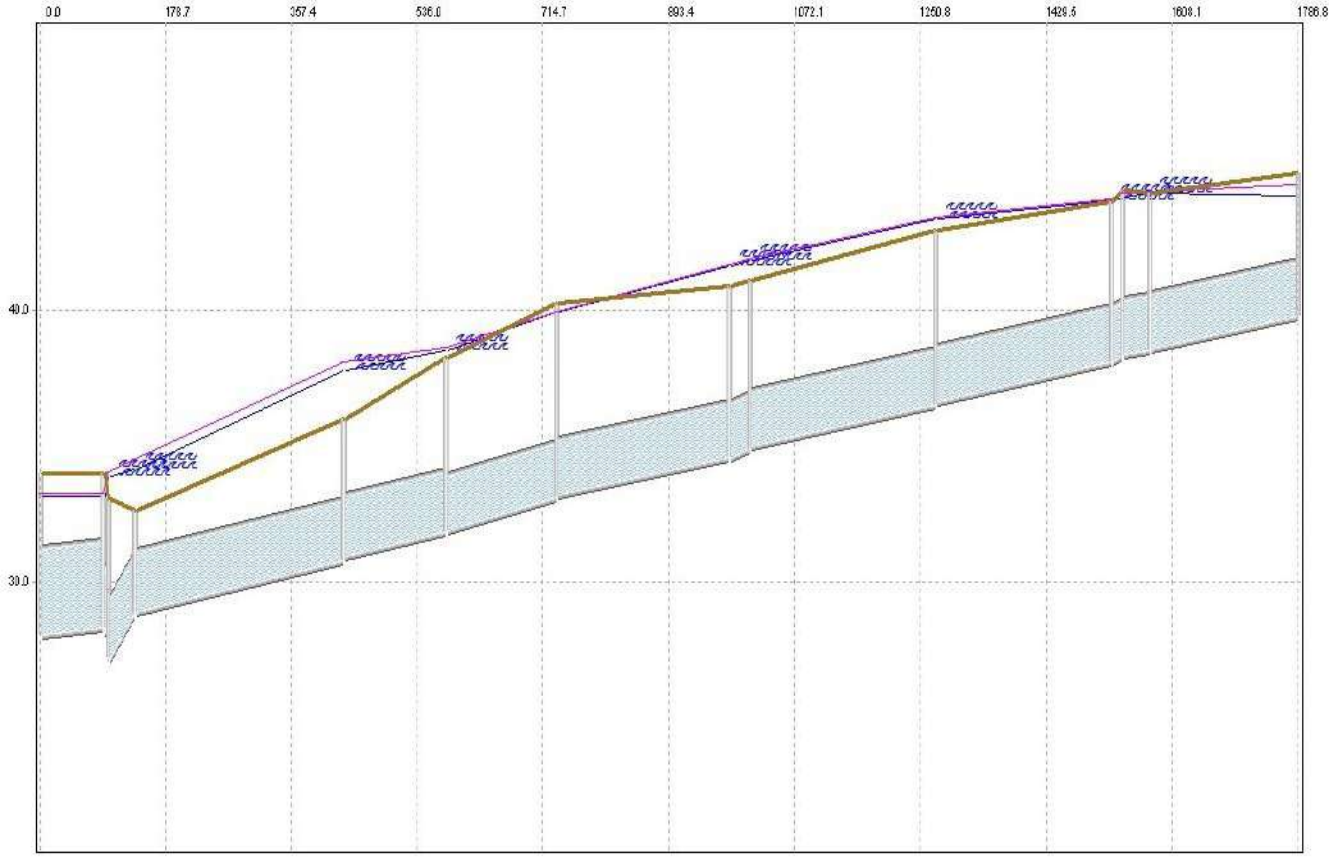
Peak Hydraulic Grade Line

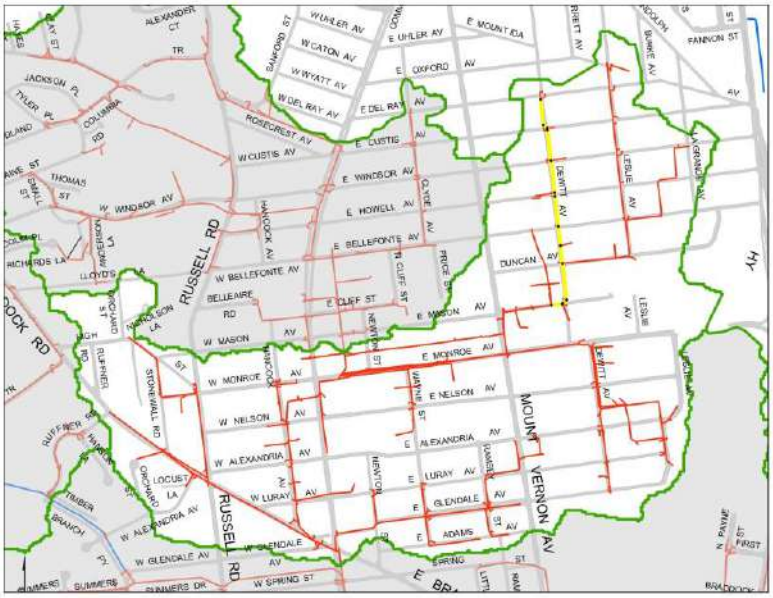
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 25

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 25 from 000991ND to 001984SMH





Surface Flooding

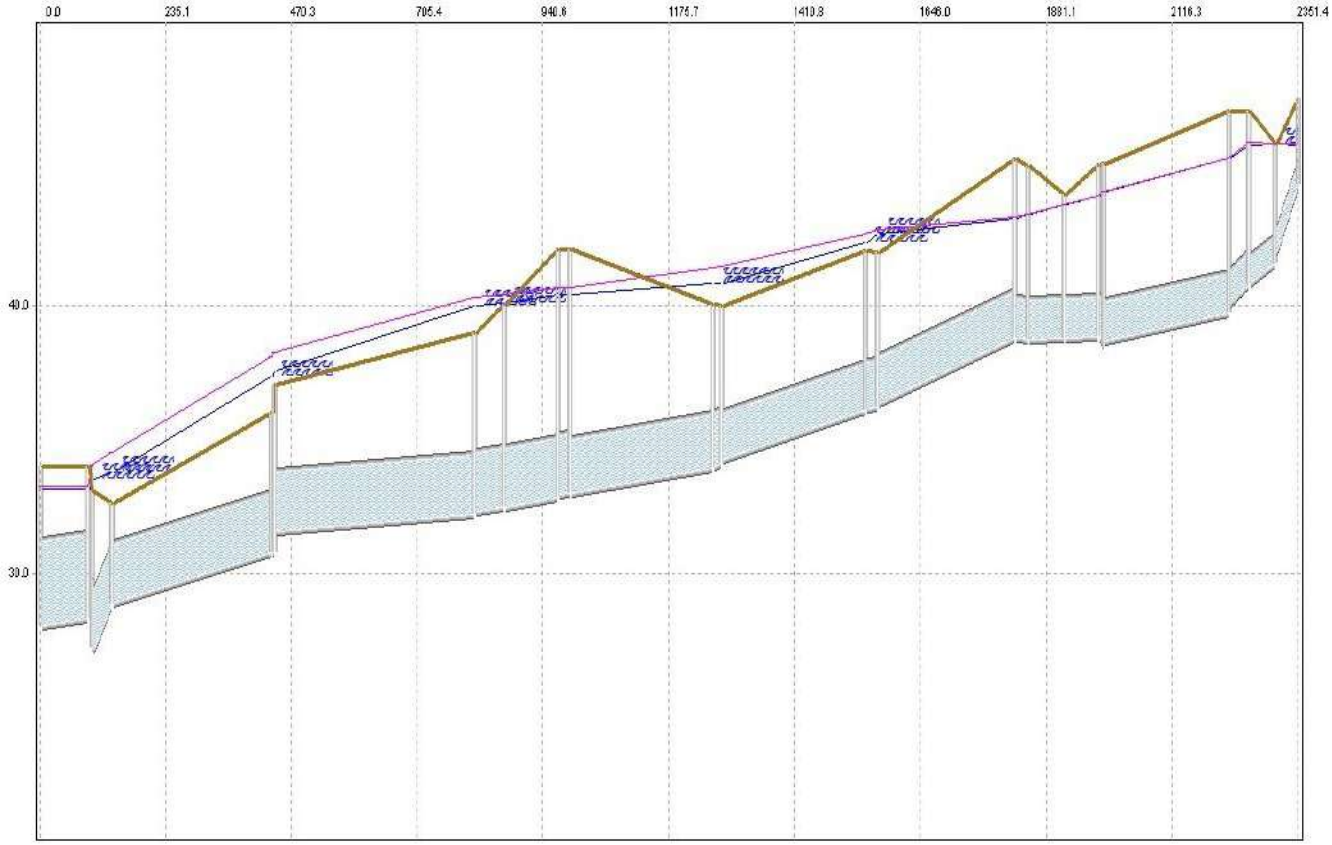
Peak Hydraulic Grade Line

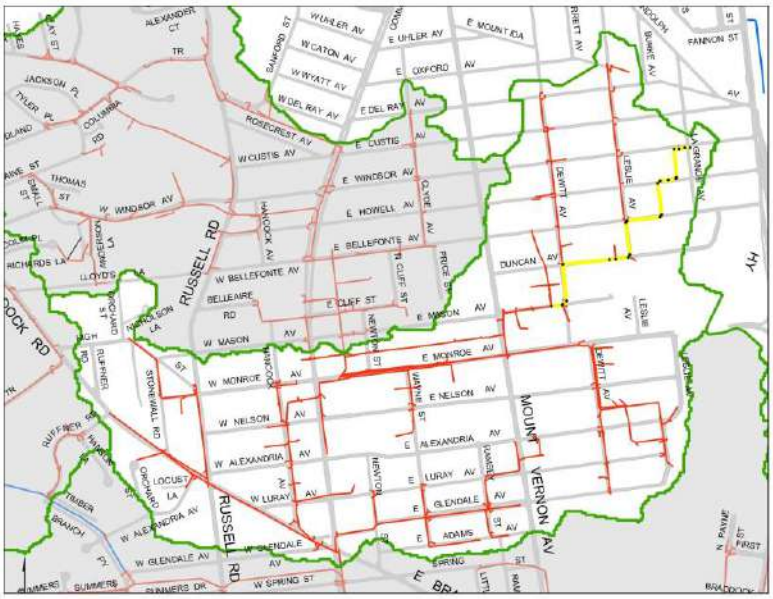
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 26

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 26 from 000991ND to 000107CB





Surface Flooding

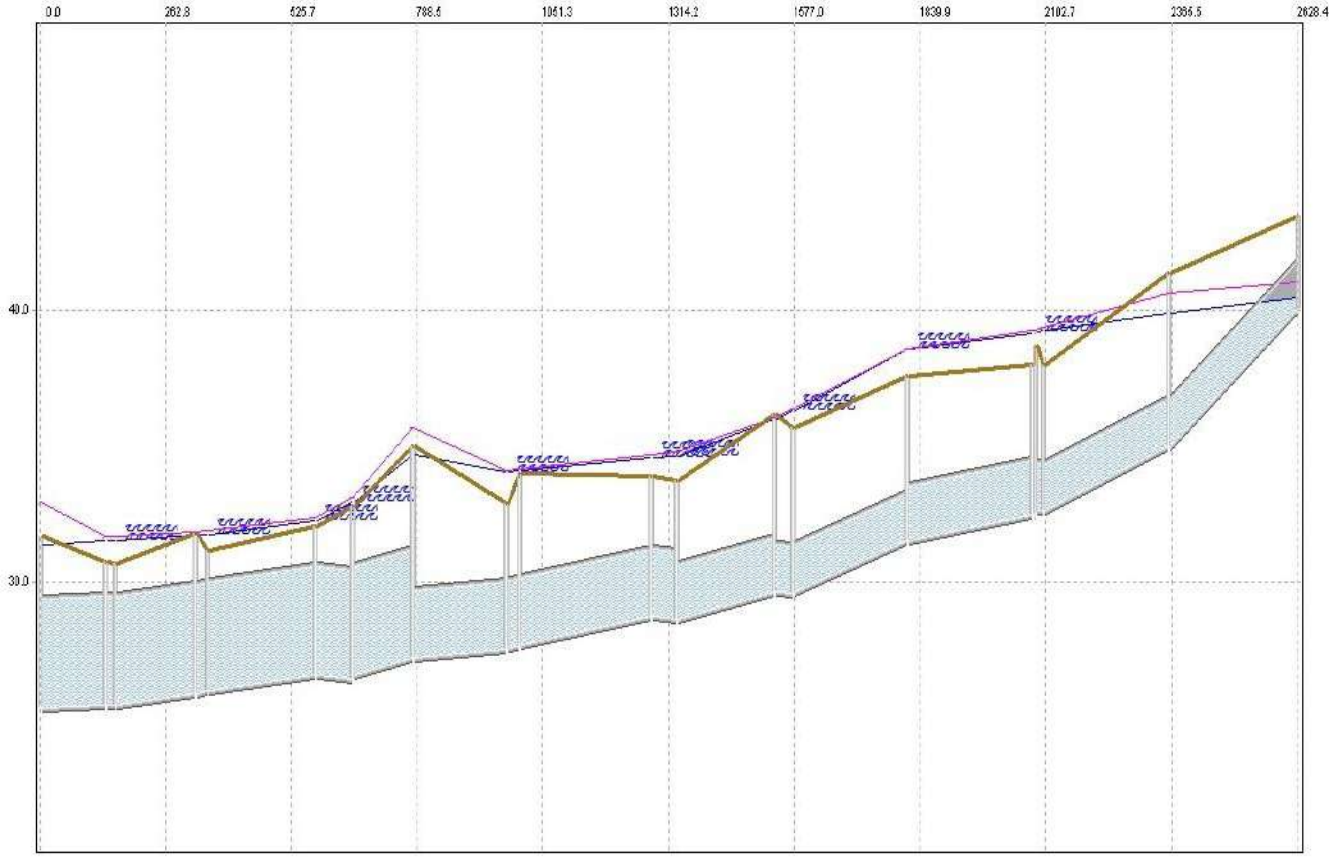
Peak Hydraulic Grade Line

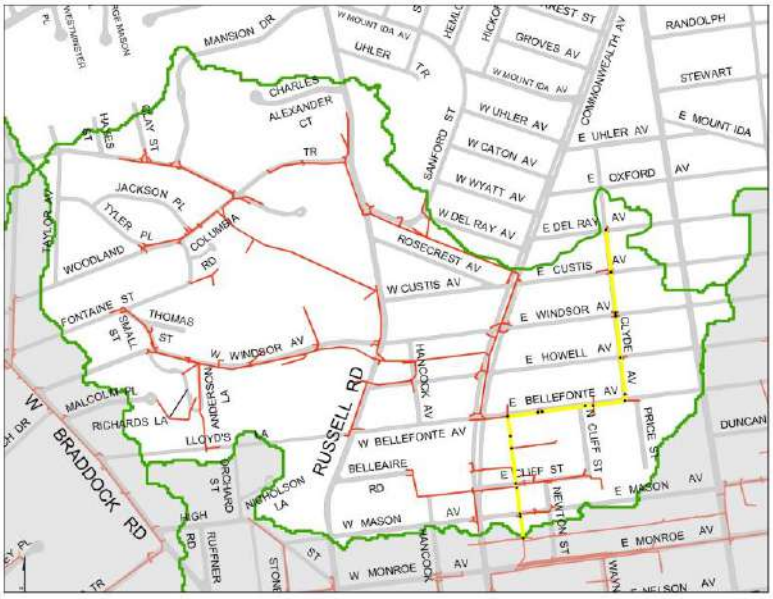
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 27

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 27 from 000936ND to 001987SMH





Surface Flooding

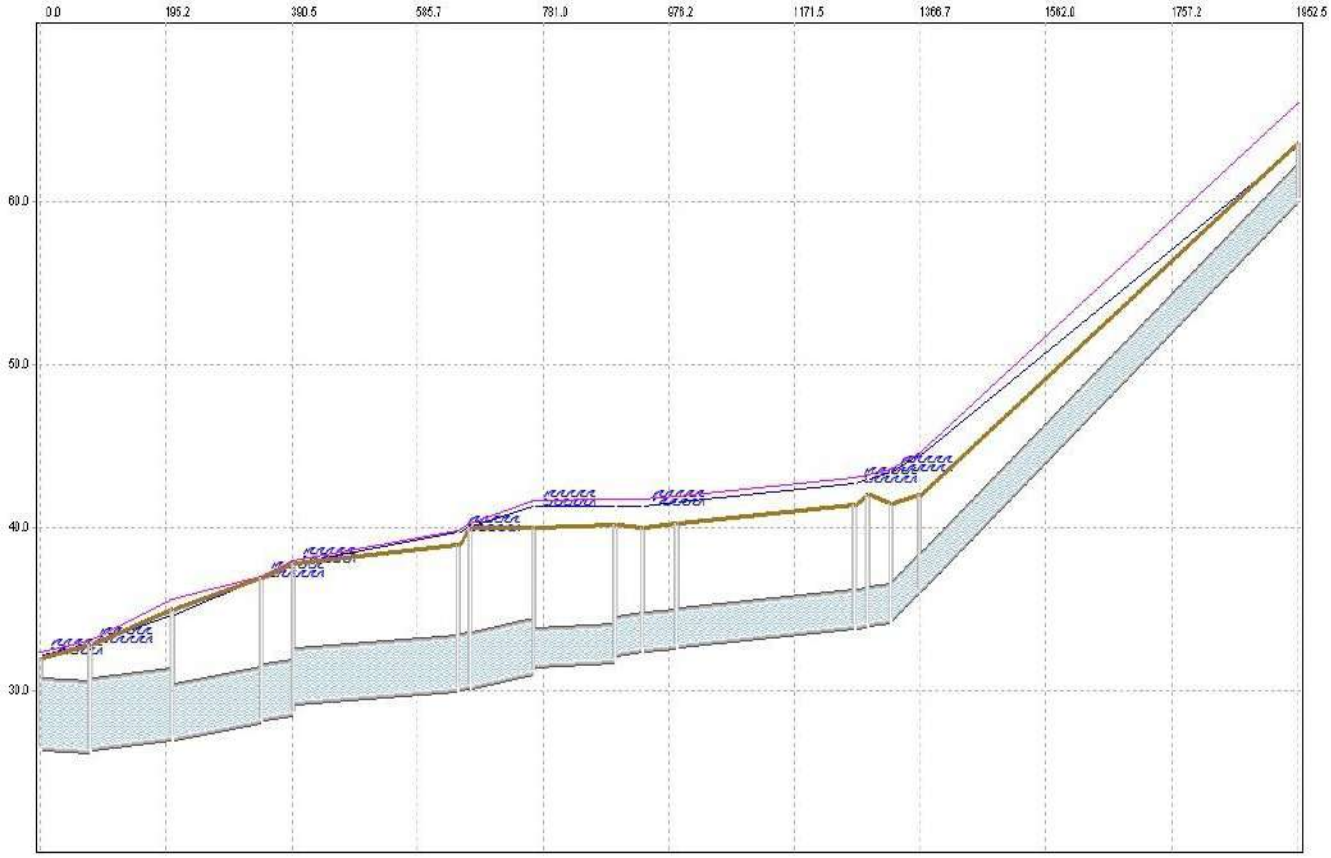
Peak Hydraulic Grade Line

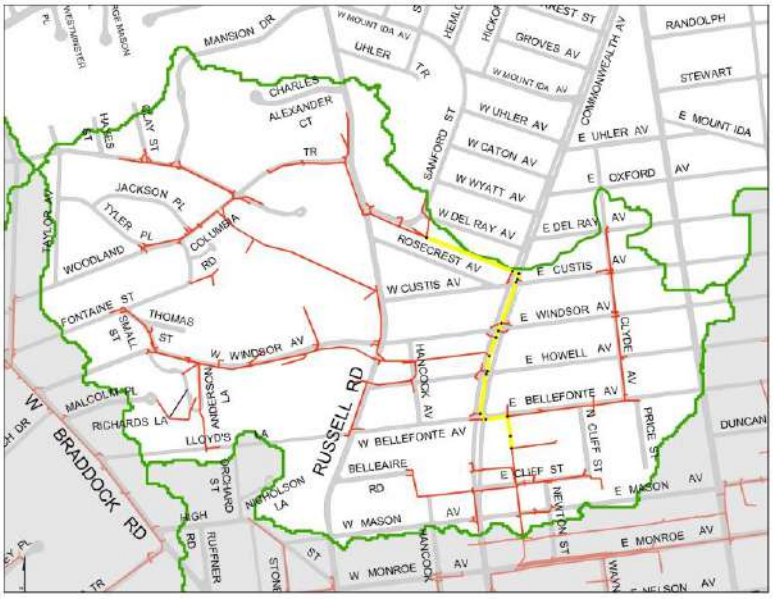
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 28

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 28 from 003421SMH to 001185ND





Surface Flooding

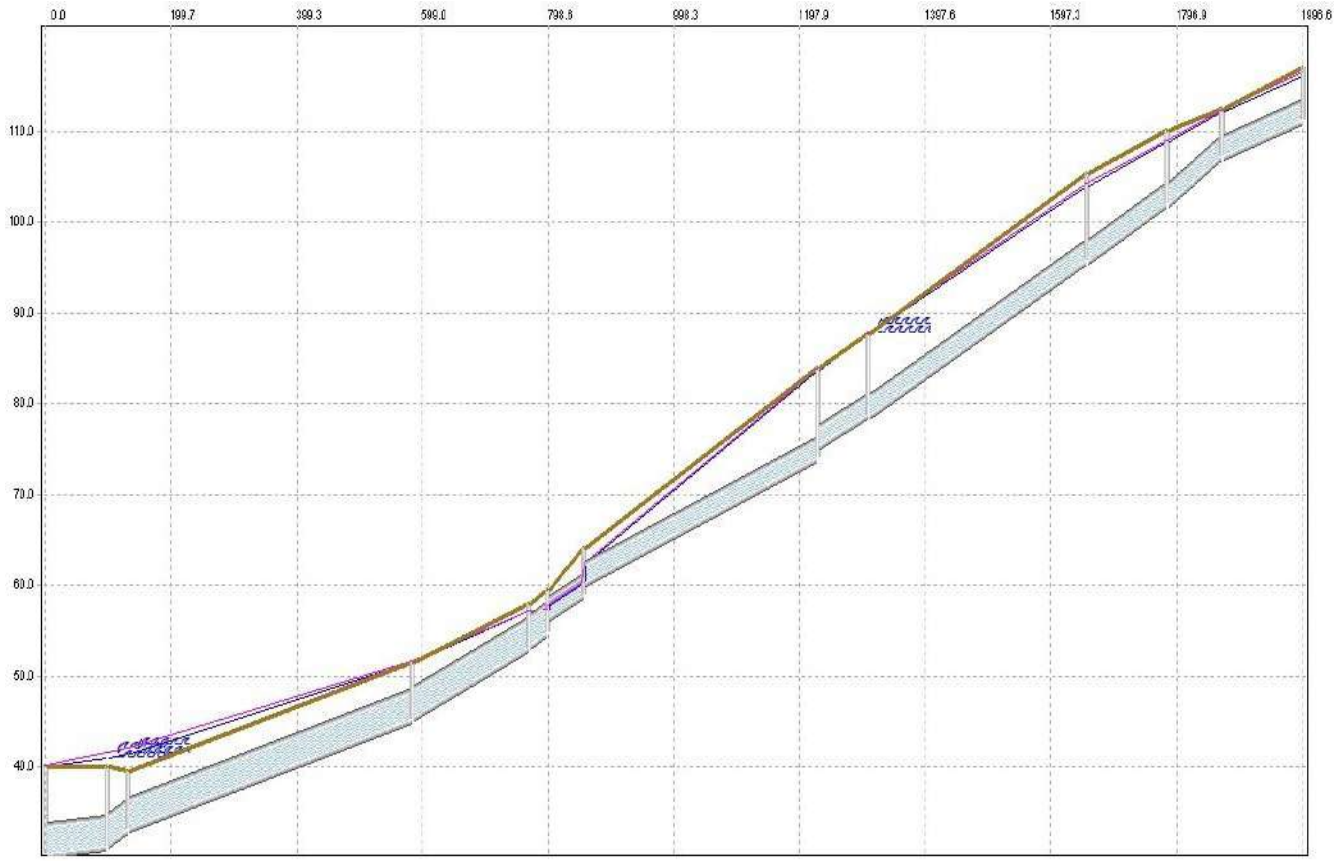
Peak Hydraulic Grade Line

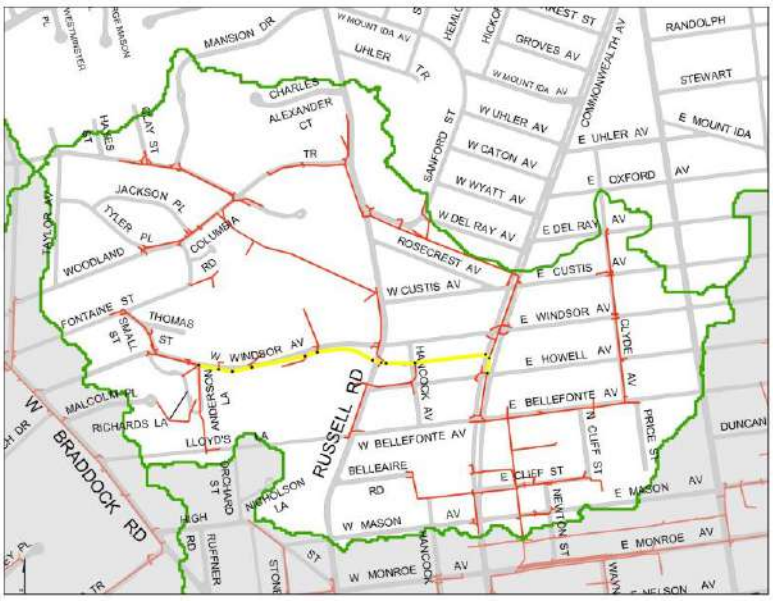
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 29

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 29 from 001151ND to 002635SMH





Surface Flooding

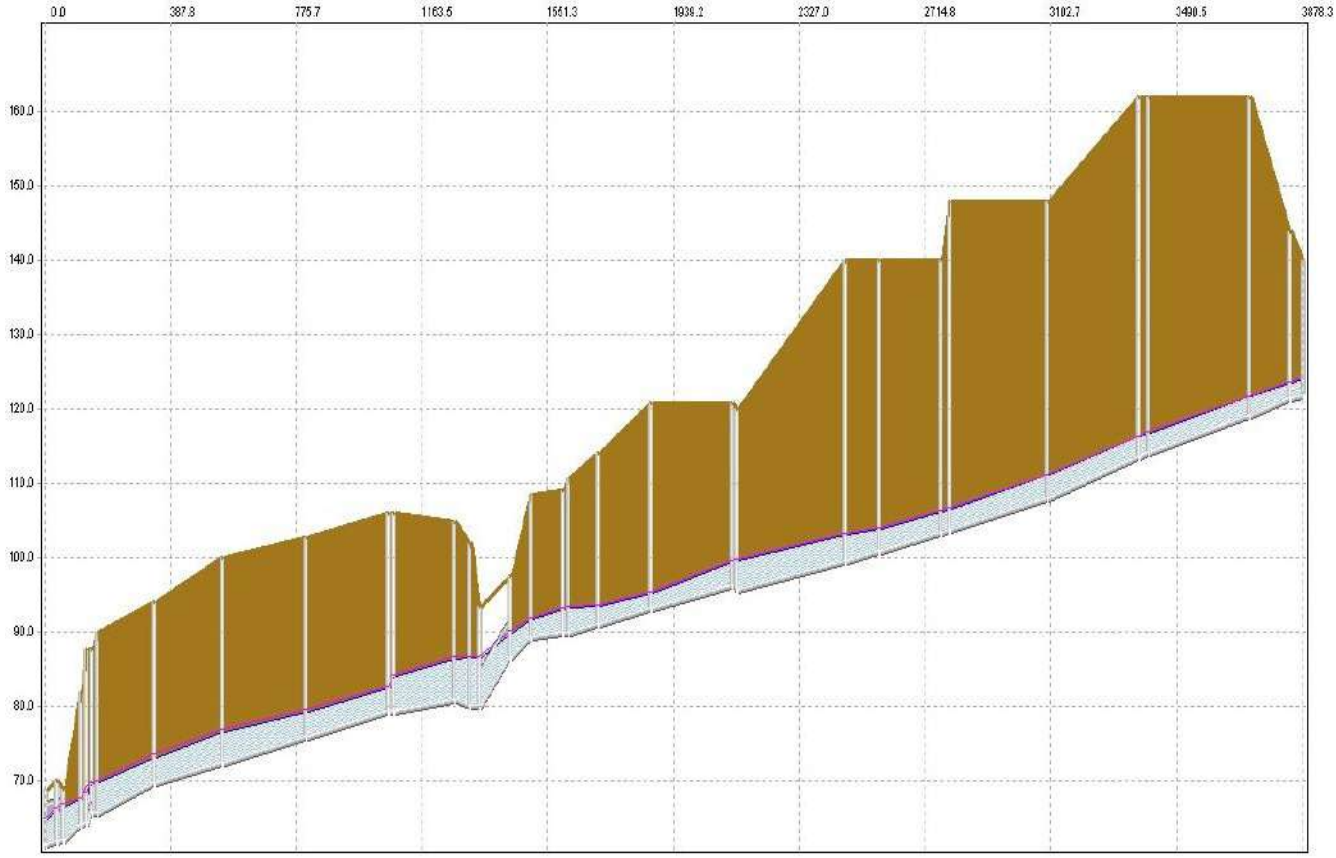
Peak Hydraulic Grade Line

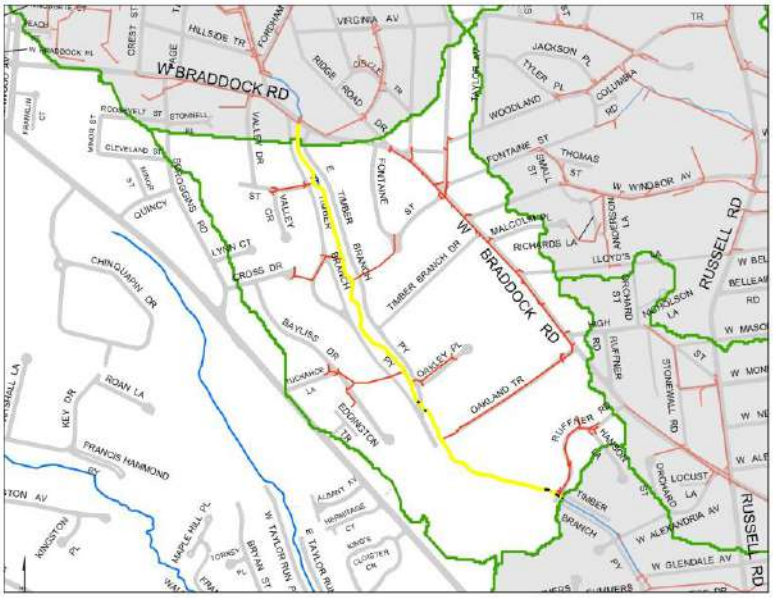
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 30

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 30 from 000125CP to 000508IO





Surface Flooding

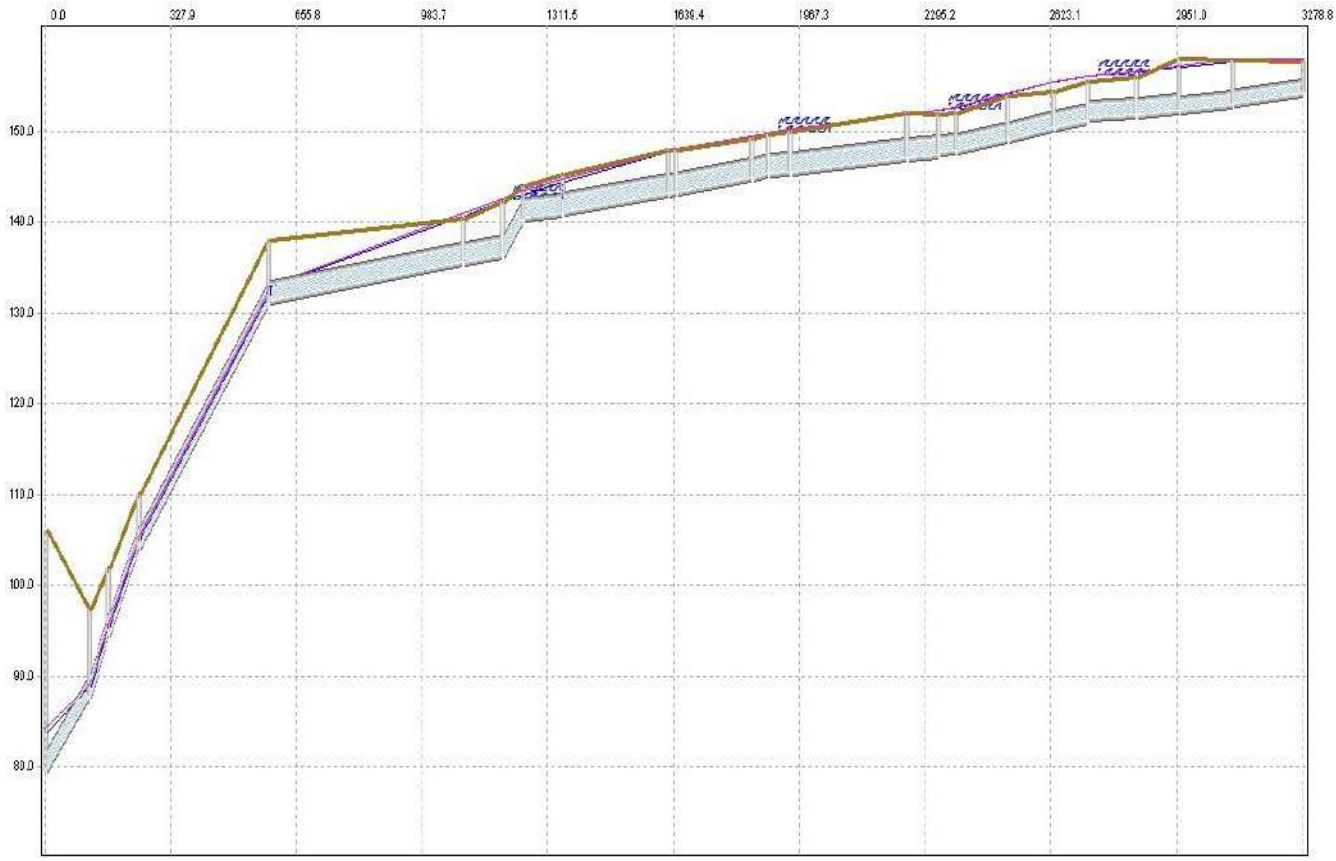
Peak Hydraulic Grade Line

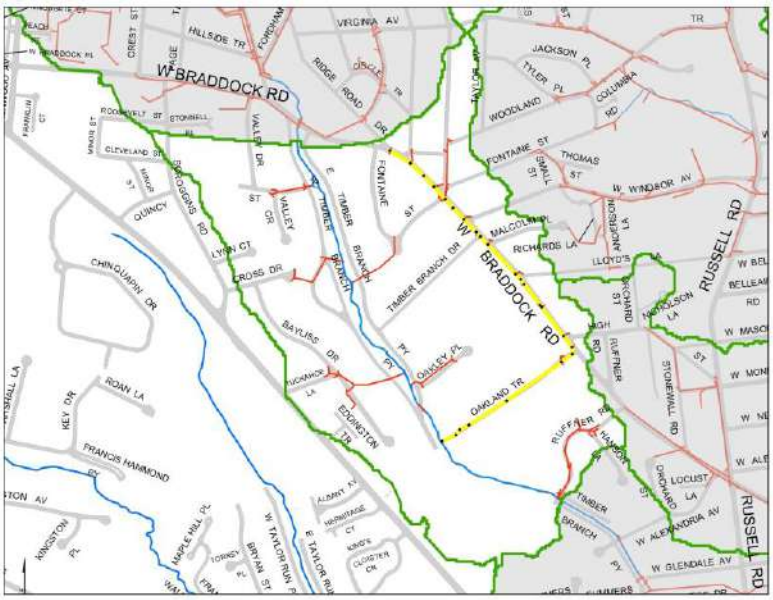
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 31

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 31 from 000527IO to 002644SMH





Surface Flooding

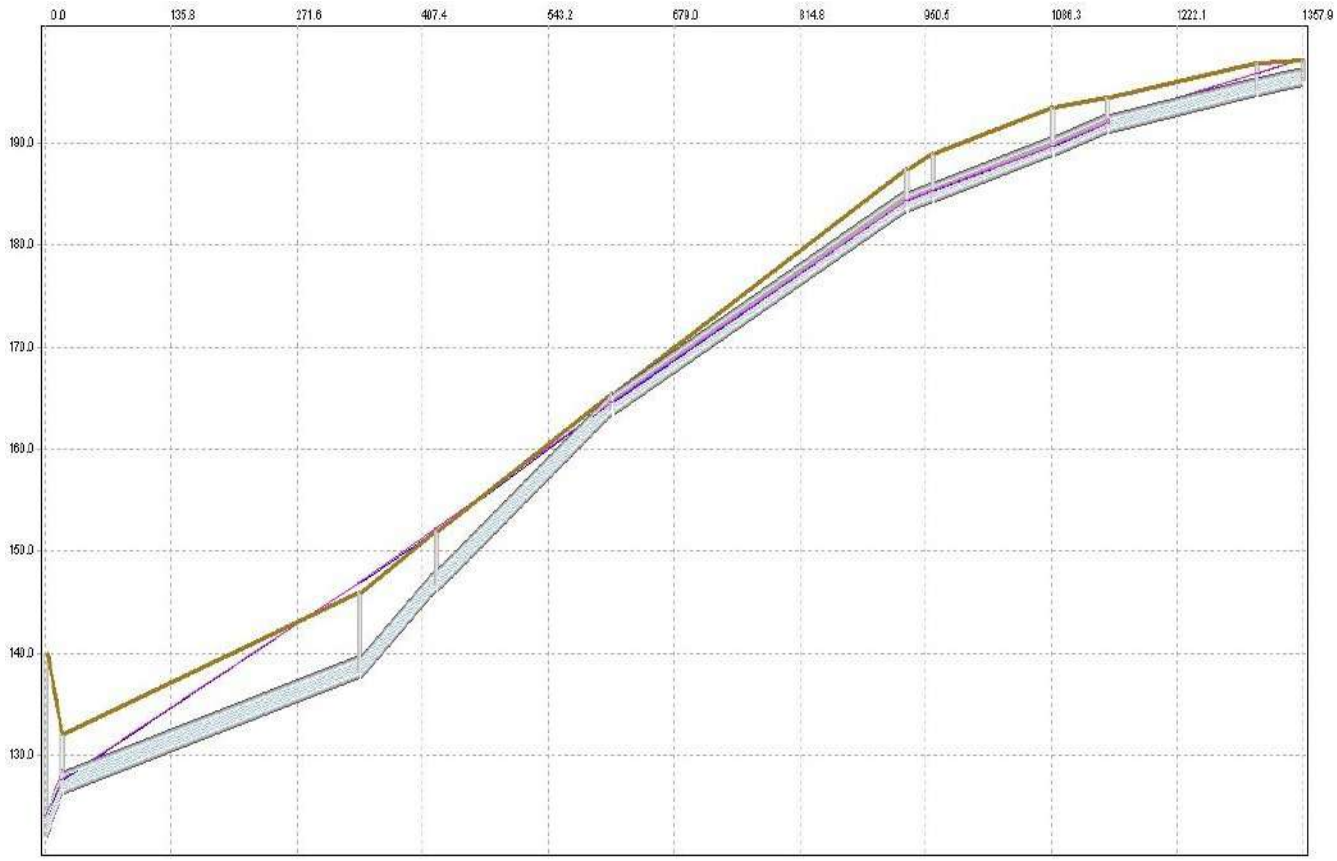
Peak Hydraulic Grade Line

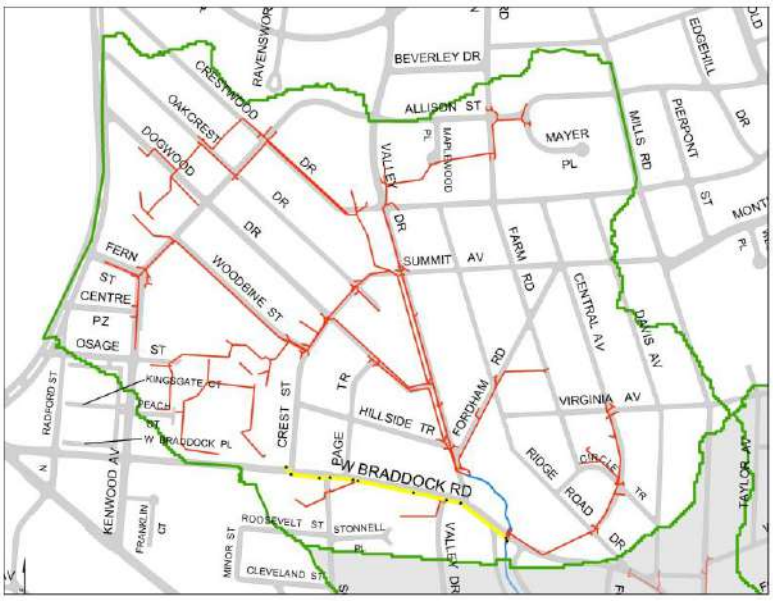
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 32

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 32 from 000508IO to 007487IN





Surface Flooding

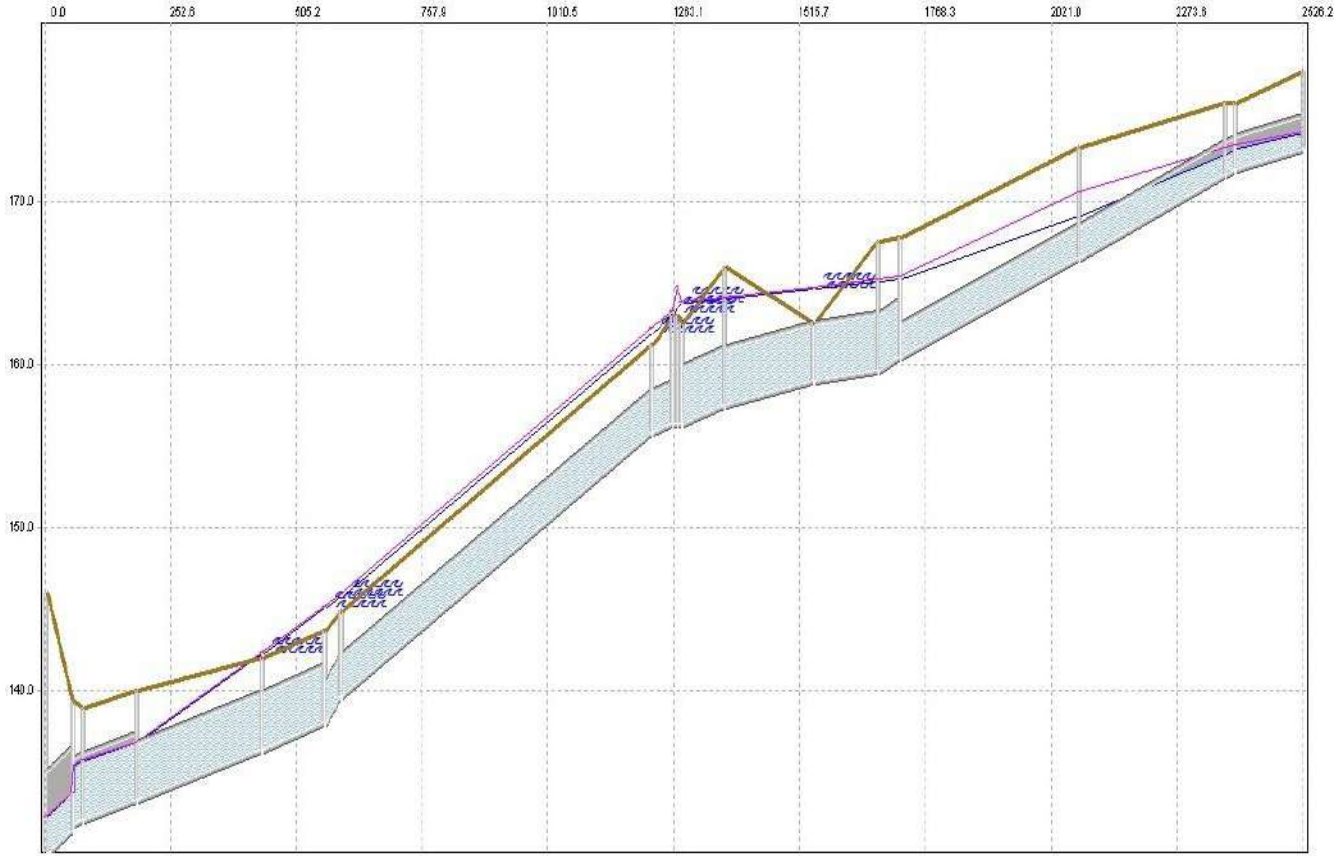
Peak Hydraulic Grade Line

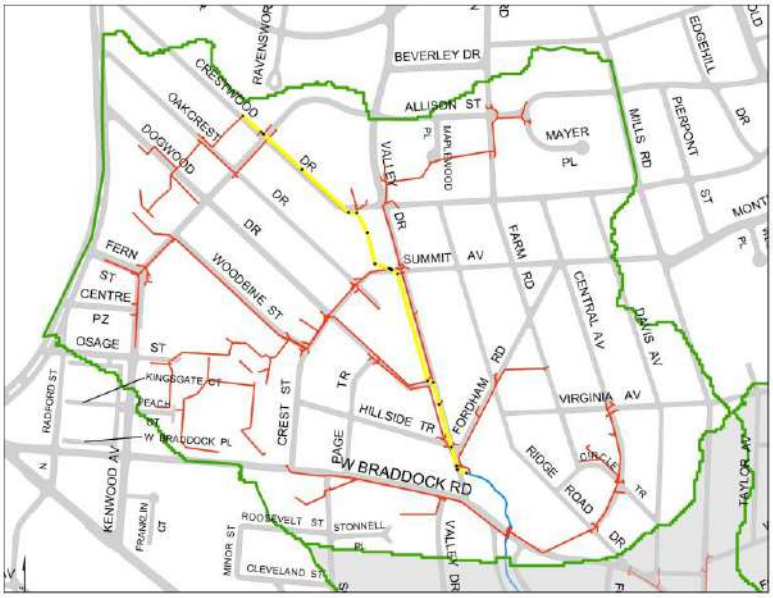
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 33

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 33 from 000499IO to 002532SMH





Surface Flooding

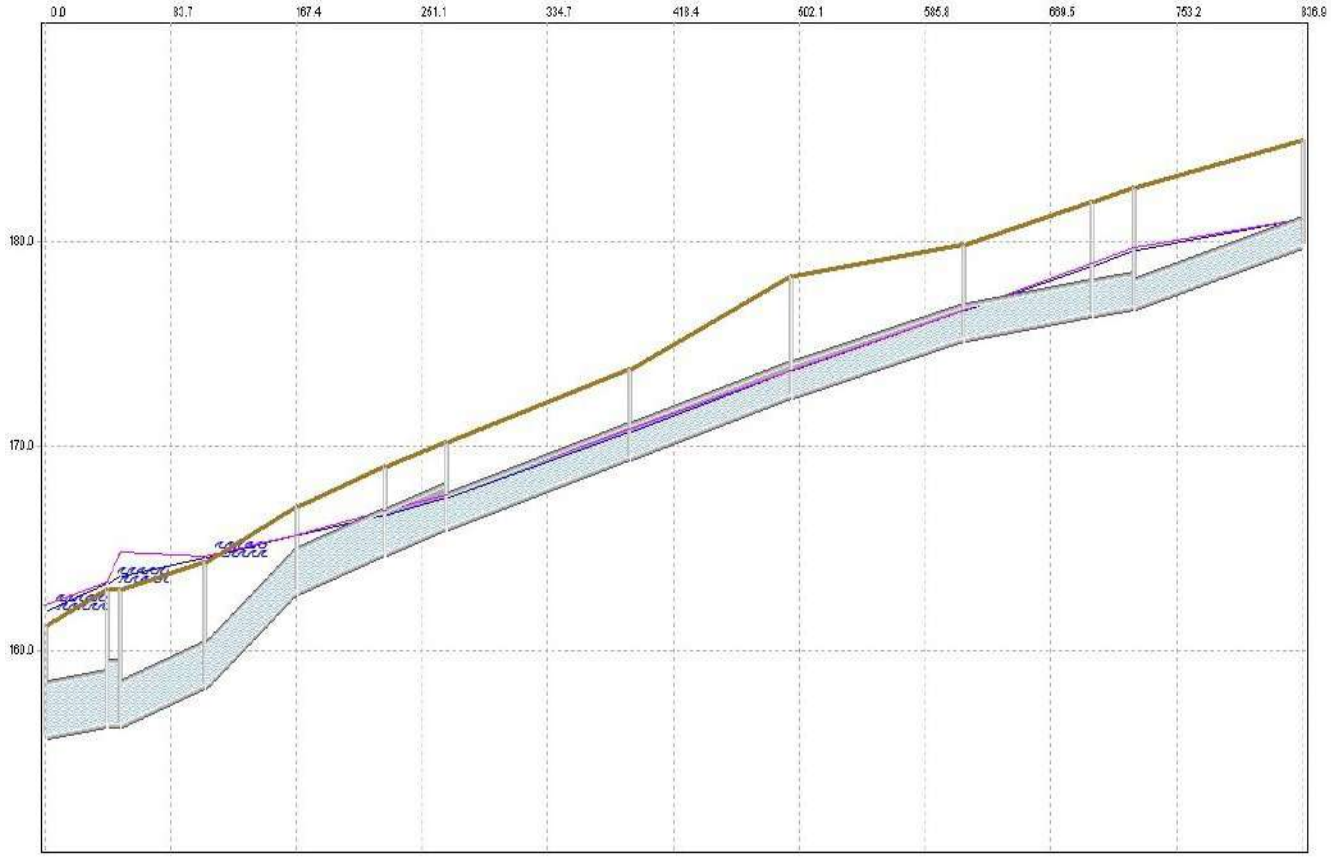
Peak Hydraulic Grade Line

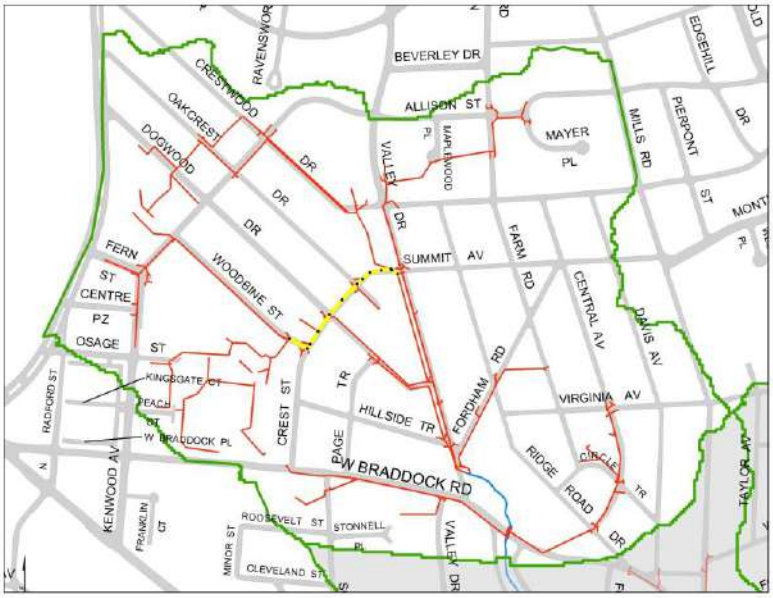
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 34

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 34 from 005541IN to 002513SMH





Surface Flooding

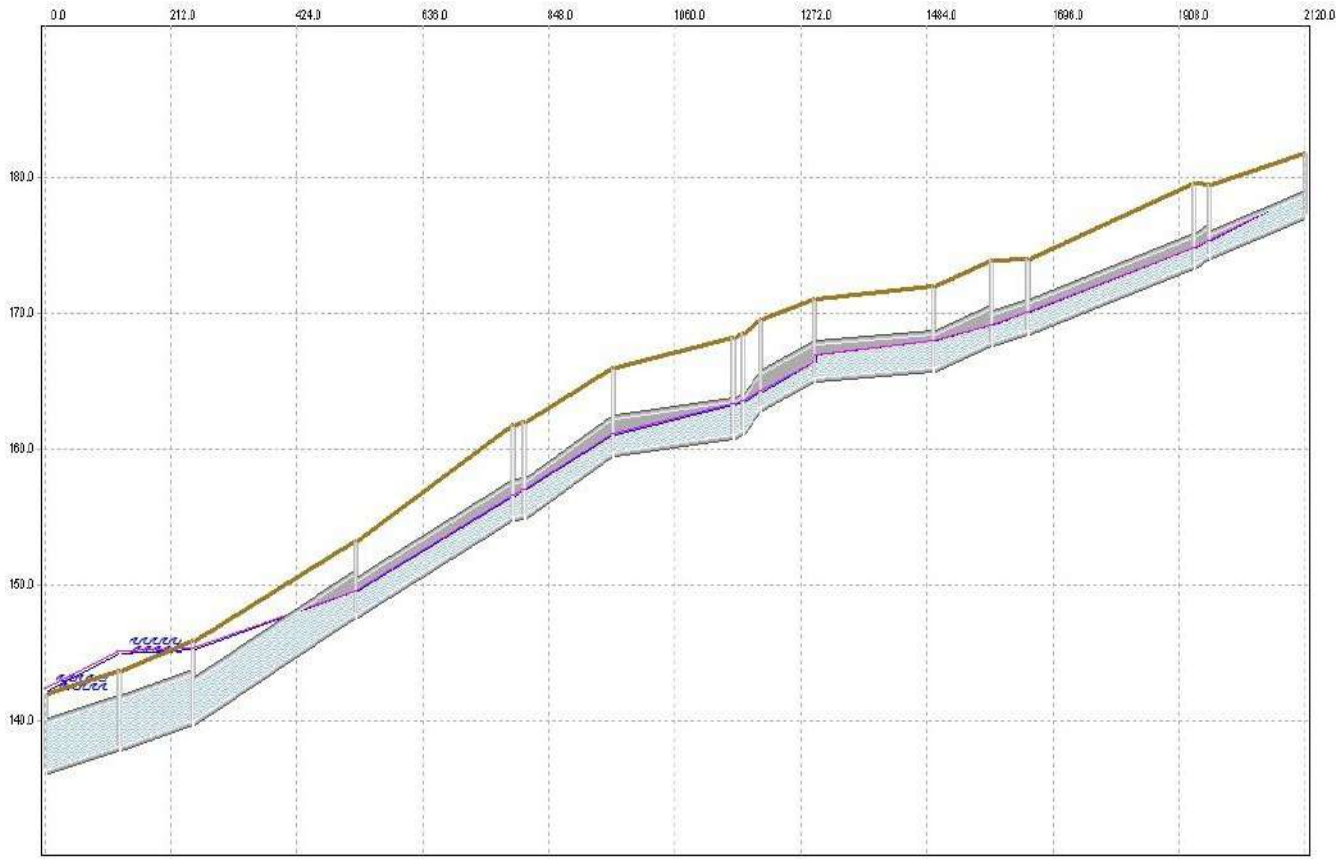
Peak Hydraulic Grade Line

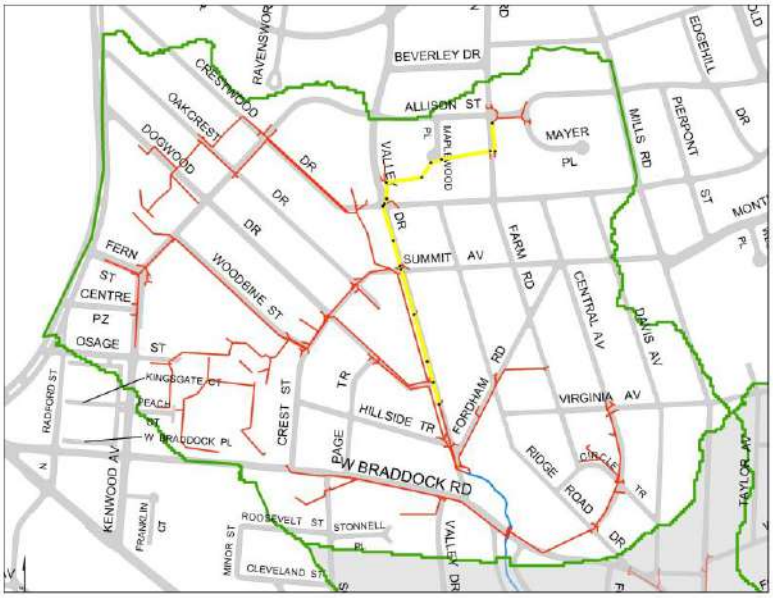
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 35

Scenario 2: Updated IDF, Existing Boundary Condition - Profile 35 from 002608SMH to 005553IN





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

Attachment I
Detailed Model Results:
10-Year, 24-Hour Design Storm Event Based on Projected Year 2100 IDF Curve

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	000604STMP	000658IN	000246SMH	48	1.5	18.7	18.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000605STMP	000246SMH	000029CB	51	1.5	24.3	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000650STMP	000029CB	000660IN	96	1.5	24.2	13.6	0	0	2.1	-	-	-	0.0	0.0	0	0	Surcharged
1	000651STMP	000660IN	000002ND	112	1.75	29.0	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000652STMP	000661IN	000660IN	37	1.25	4.9	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000654STMP	000657IN	000658IN	111	1.25	7.1	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000655STMP	000653IN	000658IN	292	1.5	11.6	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004691STMP	001541SMH	004855IN	166	2.5	20.2	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004912STMP	004838IN	001535SMH	17	1.5	10.5	6.1	0.3	0.4	1.3	2.0	0.4	0.0	0.0	0.0	0	0	Insufficient Freeboard
1	004913STMP	004796IN	004794IN	157	2.5	4.2	3.1	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004915STMP	004850IN	004852IN	86	2	17.5	5.6	0.3	0.4	1.7	1.5	0.6	0.5	0.0	0.0	0	0	Insufficient Freeboard
1	004916STMP	004847IN	001535SMH	54	1.5	6.9	3.9	0.3	0.4	1.9	2.0	1.1	0.0	0.0	0.0	0	0	Insufficient Freeboard
1	004918STMP	004855IN	001540SMH	22	2.5	20.1	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004919STMP	004831IN	004830IN	55	2	21.3	9.3	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004920STMP	004862IN	004859IN	45	1.5	9.9	5.6	0.1	0.1	0.9	0.8	-	-	0.0	0.0	0	0	Surcharged
1	004927STMP	001542SMH	001541SMH	87	2.5	16.0	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005047STMP	004893IN	001551SMH	65	1.5	7.9	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005048STMP	004897IN	000626ND	47	2.5	-0.9	1.0	0.3	0	0.9	2.0	-	-	0.0	0.0	0	0	Surcharged
1	005050STMP	004902IN	001558SMH	11	1.5	9.4	5.3	0.3	0.1	0.7	1.6	-	-	0.0	0.0	0	0	Surcharged
1	006194STMP	004959IN	001647SMH	11	1.25	8.3	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006196STMP	001647SMH	001617SMH	134	2	8.3	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006222STMP	001608SMH	001633SMH	32	1.25	7.0	6.1	0.8	1	2.8	3.1	1.5	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006225STMP	001636SMH	001611SMH	146	1.5	17.0	9.5	1	0.5	Flooded	3.2	Flooded	1.4	0.7	0.0	4244	0	Flooded
1	006226STMP	001637SMH	001636SMH	64	1.5	15.4	8.6	1	1	Flooded	Flooded	Flooded	Flooded	0.9	0.7	5502	4244	Flooded
1	006228STMP	001638SMH	001637SMH	76	1.5	15.5	8.6	1	1	Flooded	Flooded	Flooded	Flooded	0.4	0.9	1170	5502	Flooded
1	006229STMP	001612SMH	001638SMH	14	1.25	7.6	8.8	0.9	1	Flooded	Flooded	Flooded	Flooded	0.6	0.4	1823	1170	Flooded
1	006230STMP	001639SMH	001640SMH	29	1.25	7.2	5.7	0.7	0.7	7.3	Flooded	0.6	Flooded	0.0	0.6	0	1966	Insufficient Freeboard
1	006232STMP	001611SMH	001633SMH	125	1.5	17.0	9.5	0.5	1	3.4	3.5	1.4	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006234STMP	001633SMH	001609SMH	93	1.5	21.6	12.0	1	0.8	3.6	2.0	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
1	006235STMP	001665SMH	001642SMH	159	5	127.7	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006241STMP	001642SMH	001643SMH	225	5	147.1	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006245STMP	004970IN	001642SMH	50	1.25	8.5	12.8	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
1	006246STMP	004971IN	004976IN	102	1.25	8.1	6.6	0.2	0	1.1	0.2	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
1	006247STMP	004972IN	001643SMH	47	1.25	3.6	3.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006248STMP	001643SMH	000640ND	239	3.667 x 6	150.6	6.8	0	0.3	0.3	0.6	-	-	0.0	0.0	0	0	Surcharged
1	006390STMP	001679SMH	001680SMH	107	2.8333 x 4.333	20.8	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006391STMP	005014IN	001679SMH	121	1.25	4.0	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006397STMP	001682SMH	005006IN	62	3	34.8	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006398STMP	005006IN	001683SMH	66	3	34.9	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006399STMP	001683SMH	005007IN	40	3.5	42.3	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006401STMP	001684SMH	001685SMH	38	3.5	46.3	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006402STMP	005013IN	001684SMH	125	1.25	4.0	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006408STMP	001661SMH	001689SMH	14	1.5	18.8	10.4	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006409STMP	001687SMH	001688SMH	113	3.5	56.0	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006412STMP	001688SMH	001689SMH	36	4.5	56.1	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006414STMP	001689SMH	001690SMH	121	4.5	106.4	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006415STMP	000647ND	001689SMH	174	3.5	32.4	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006416STMP	001690SMH	000306IO	296	5	115.2	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006421STMP	004939IN	001639SMH	53	1.25	7.2	10.6	0.6	0.7	3.2	6.1	0.3	0.6	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006422STMP	004940IN	004939IN	50	1.25	7.2	7.6	0.5	0.6	1.5	2.0	0.5	0.3	0.0	0.0	0	0	Insufficient Freeboard
1	006423STMP	001591SMH	001592SMH	147	4	101.2	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006424STMP	001616SMH	001591SMH	131	4	89.9	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006426STMP	001592SMH	001593SMH	154	4	100.9	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006428STMP	001593SMH	000342IO	62	5 x 6.5	107.3	16.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006474STMP	001595SMH	001591SMH	76	1.5	11.7	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006479STMP	001596SMH	001597SMH	12	3	24.3	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006481STMP	001597SMH	001586SMH	180	3	24.3	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006493STMP	004951IN	001606SMH	11	1.25	7.1	5.7	0.3	0.3	Flooded	1.8	Flooded	0.3	0.2	0.0	187	0	Flooded
1	006494STMP	001606SMH	001607SMH	26	1.25	7.0	6.5	0.3	0.4	1.9	2.1	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
1	006495STMP	001607SMH	001608SMH	93	1.25	7.0	6.3	0.4	0.8	2.1	2.8	0.7	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006497STMP	001635SMH	001649SMH	273	2	32.1	12.7	0	0.1	-	0.2	-	0.8	0.0	0.0	0	0	Sufficient Capacity
1	006498STMP	001609SMH	001635SMH	95	2	32.1	10.2	0.8	0	1.6	-	-	-	0.0	0.0	0	0	Surcharged
1	006501STMP	001614SMH	001612SMH	22	1.25	8.3	6.6	0.9	0.9	2.9	Flooded	0.1	Flooded	0.0	0.6	0	1823	Insufficient Freeboard
1	006505STMP	001617SMH	001616SMH	99	4	86.1	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006507STMP	001589SMH	001645SMH	39	2	38.0	12.0	0.3	0	3.0	1.9	-	-	0.0	0.0	0	0	Surcharged
1	006817STMP	001538SMH	004794IN	67	2	24.4	7.7	0.3	0	0.9	0.5	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
1	006855STMP	001535SMH	004845IN	49	1.5	14.6	8.2	0.4	0.2	2.0	1.3	0.0	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006857STMP	001539SMH	004843IN	100	2.5	40.0	8.3	0.1	0.1	0.7	1.0	-	-	0.0	0.0	0	0	Surcharged
1	006858STMP	004843IN	004009SMH	194	3	49.9	7.4	0.1	0	0.6	0.4	-	-	0.0	0.0	0	0	Surcharged
1	006864STMP	004798IN	004796IN	28	1.25	4.0	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006866STMP	004792IN	004794IN	26	1.5	12.9	7.4	0	0	0.1	0.2	-	-	0.0	0.0	0	0	Surcharged
1	006869STMP	004830IN	001540SMH	65	2	21.2	7.4	0	0	0.0	0.4	-	-	0.0	0.0	0	0	Surcharged
1	006870STMP	001540SMH	001539SMH	125	2.5	40.9	9.2	0	0.1	0.0	0.2	-	-	0.0	0.0	0	0	Surcharged
1	006871STMP	004809IN	001541SMH	233	2	4.1	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006873STMP	001545SMH	001568SMH	44	2	63.3	19.7	0.5	0	7.3	0.7	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	006877STMP	004859IN	004831IN	284	1.5	9.9	5.6	0.1	0	1.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006886STMP	004839IN	004838IN	98	1.25	10.3	8.3	0.3	0.3	Flooded	1.5	Flooded	0.4	0.3	0.0	1244	0	Flooded
1	006903STMP	001558SMH	001557SMH	21	3.5	50.0	-5.3	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006906STMP	001557SMH	001556SMH	246	4	57.8	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908A	004794IN	000607ND	311	3.5	40.8	4.4	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908B	000607ND	001558SMH	23	3.5	40.8	4.2	0.1	0.1	0.1	0.1	-	-	0.0	0.0	0	0	Surcharged
1	006918STMP	004808IN	001575SMH	98	2	6.3	7.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006919STMP	001575SMH	001542SMH	76	2.5	6.3	7.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006925STMP	001574SMH	004808IN	114	1.75	6.3	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942A	001568SMH	000615ND	187	5	63.0	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942B	000615ND	001665SMH	280	5	74.6	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006953STMP	001556SMH	009001IN	285	4.5	68.1	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006959STMP	001584SMH	004925IN	51	3	69.8	9.6	0.3	0.2	0.7	0.2	-	1.7	0.0	0.0	0	0	Surcharged
1	006967STMP	004925IN	004926IN	70	3	69.8	9.6	0.2	0	0.2	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	006970STMP	004926IN	001582SMH	29	3	74.3	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006972STMP	001582SMH	001583SMH	75	3	74.3	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006973STMP	001583SMH	004928IN	99	4	74.4	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006975STMP	004928IN	004931IN	73	4	80.9	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006978STMP	004931IN	000341IO	63	4	80.9	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006980STMP	004933IN	001585SMH	15	1.25	6.4	5.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006982STMP	001585SMH	001596SMH	31	1.25	6.4	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006983STMP	001586SMH	001584SMH	86	3	60.0	11.0	0	0.3	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006984STMP	000338IO	001586SMH	43	3	32.1	19.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006994STMP	001676SMH	001677SMH	83	2	11.4	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006995STMP	001677SMH	001678SMH	72	2.8333 x 4.333	16.8	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006998STMP	001678SMH	001679SMH	34	2.8333 x 4.333	16.8	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006999STMP	001648SMH	001638SMH	170	1.5	14.2	8.3	0.5	1	2.5	Flooded	0.9	Flooded	0.0	0.4	0	1170	Insufficient Freeboard
1	007000STMP	001649SMH	001650SMH	48	2	32.1	13.8	0.1	0.3	0.2	0.9	0.8	0.0	0.0	0.0	0	0	Insufficient Freeboard
1	007001STMP	001650SMH	001652SMH	189	2	37.9	14.1	0.3	0.4	1.0	2.0	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	007002STMP	001651SMH	001650SMH	10	1.25	10.3	-8.4	0.4	0.3	Flooded	1.7	Flooded	0.0	0.2	0.0	217	0	Flooded
1	007003STMP	006001IN	001651SMH	35	1.25	10.3	10.7	0.3	0.4	Flooded	Flooded	Flooded	Flooded	0.3	0.2	1288	217	Flooded
1	007004STMP	001652SMH	001589SMH	68	2	37.9	13.5	0.4	0.3	2.0	2.7	-	-	0.0	0.0	0	0	Surcharged
1	007005STMP	001653SMH	001645SMH	35	4	-32.1	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007006STMP	001640SMH	001653SMH	415	0.833	4.3	7.7	0.7	0	Flooded	1.9	Flooded	-	0.6	0.0	1966	0	Flooded
1	007035STMP	004479IN	000640ND	274	2	13.0	7.1	0	0.3	-	2.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007194STMP	001657SMH	001648SMH	14	1.5	14.2	7.9	0.4	0.5	2.9	2.5	0.5	0.9	0.0	0.0	0	0	Insufficient Freeboard
1	007195STMP	001658SMH	001657SMH	142	1.5	11.1	7.3	0.2	0.4	1.8	2.8	-	0.5	0.0	0.0	0	0	Surcharged
1	007196STMP	001660SMH	001658SMH	76	1.5	11.1	7.1	0.2	0.2	1.5	1.6	-	-	0.0	0.0	0	0	Surcharged
1	007200STMP	004977IN	004972IN	71	1.25	3.6	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007205A	000079CP	000640ND	18	4 x 7	262.0	9.4	0	0.3	0.6	0.5	-	-	0.0	0.0	0	0	Surcharged
1	007205B	000640ND	000080CP	53	4 x 7	420.4	15.0	0.3	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
1	007211STMP	004985IN	001665SMH	127	3	35.6	9.5	0	0	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007213STMP	004987IN	000344IO	184	2	32.1	10.3	0.5	0	Flooded	-	Flooded	1.5	0.3	0.0	435	0	Flooded
1	007214STMP	004988IN	004987IN	45	2	33.1	10.5	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.3	2518	435	Flooded
1	007215STMP	004976IN	004981IN	127	1.25	8.0	6.5	0	0	0.5	-	-	-	0.0	0.0	0	0	Surcharged
1	007216STMP	004981IN	004982IN	62	1.5	8.0	-4.6	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
1	007217STMP	004982IN	001661SMH	182	1.5	8.0	5.7	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007234STMP	001675SMH	004998IN	18	1.5	7.4	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007236STMP	004998IN	005000IN	34	1.5	7.4	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007237STMP	005000IN	001676SMH	38	2	7.4	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007238STMP	005001IN	001676SMH	14	1.25	4.2	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007267STMP	004469IN	004470IN	51	1.75	11.4	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007269STMP	004470IN	001694SMH	39	2.5	38.6	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007270STMP	004474IN	004470IN	244	2.5	27.3	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007271STMP	001694SMH	000302IO	21	2.5	43.7	15.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007272STMP	004475IN	001694SMH	189	1.75	5.0	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007274STMP	004472IN	004474IN	54	1.25	10.5	8.5	0.4	0	Flooded	-	Flooded	-	0.2	0.0	269	0	Flooded
1	007275STMP	004476IN	004474IN	245	2	12.4	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007276STMP	004477IN	004476IN	49	1.25	12.4	10.0	0.5	0	Flooded	-	Flooded	-	0.4	0.0	1795	0	Flooded
1	007718A	003261SMH	000927ND	63	1.5	12.9	11.7	0	0.1	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007718B	000927ND	000926ND	65	1.5	12.8	10.7	0.1	0.4	0.8	2.6	-	-	0.0	0.0	0	0	Surcharged
1	007718C	000926ND	003262SMH	35	1.5	12.8	7.2	0.4	0.6	2.6	2.8	-	1.7	0.0	0.0	0	0	Surcharged
1	008525STMP	007859IN	000909ND	20	1.25	18.1	15.0	0.1	0	Flooded	2.4	Flooded	-	0.1	0.0	40	0	Flooded
1	008702STMP	006006IN	000896ND	27	1.25	6.4	14.8	0	0	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956A	000960ND	000961ND	41	6.5 x 21	774.3	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956B	000961ND	000958ND	117	6.5 x 21	777.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956C	000958ND	000963ND	65	6.5 x 21	777.2	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956D	000963ND	000964ND	161	6.5 x 21	781.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956E	000964ND	000897ND	143	6.5 x 21	792.8	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956F	000897ND	000903ND	61	6.5 x 21	797.1	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956G	000903ND	003230SMH	29	6.5 x 21	796.4	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008972STMP	006019IN	001657SMH	104	1.5	4.3	3.3	0.3	0.4	2.2	2.9	-	0.5	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	008994STMP	003291SMH	000912ND	29	0.833	4.8	15.0	0	0	-	0.6	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008996STMP	003294SMH	003292SMH	41	1	3.4	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008997STMP	003292SMH	000913ND	12	1	3.4	4.8	0	0	0.1	0.8	-	-	0.0	0.0	0	0	Surcharged
1	009002STMP	003279SMH	003280SMH	267	1.5	10.4	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009003STMP	003280SMH	003281SMH	352	1.5	21.8	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009004STMP	003281SMH	003282SMH	127	2	33.4	18.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009005STMP	003282SMH	003283SMH	204	2	33.4	18.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006A	003283SMH	000910ND	27	3	41.9	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006B	000910ND	006053IN	72	3	41.9	17.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009007STMP	006053IN	003285SMH	89	3	51.5	19.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008A	003285SMH	000911ND	55	3	51.6	19.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008B	000911ND	003289SMH	275	3	51.5	19.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009A	003289SMH	000912ND	162	3	62.0	19.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009B	000913ND	003273SMH	266	3	69.9	14.7	0	1.7	-	Flooded	-	Flooded	0.0	1.7	0	36300	Sufficient Capacity
1	009009C	000912ND	000913ND	182	3	66.6	19.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009010STMP	003293SMH	003263SMH	76	2	28.9	11.3	0.8	2	0.8	Flooded	0.0	Flooded	0.0	1.7	0	32325	Insufficient Freeboard
1	009011STMP	003262SMH	003293SMH	177	2	28.9	9.1	0.6	0.8	2.9	0.8	1.7	0.0	0.0	0.0	0	0	Insufficient Freeboard
1	009515STMP	003234SMH	003226SMH	32	2.5	42.4	16.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009623STMP	003263SMH	003273SMH	6	2	21.0	6.6	2	1.7	Flooded	Flooded	Flooded	Flooded	1.7	1.7	32325	36300	Flooded
1	009724STMP	003233SMH	003232SMH	93	1.5	6.2	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009725STMP	006027IN	003233SMH	12	1.5	6.2	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009726STMP	006023IN	006025IN	182	1.5	17.0	9.4	0.8	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.8	9906	1710	Flooded
1	009727STMP	006022IN	006023IN	371	1.25	13.6	10.9	0.1	0.8	Flooded	Flooded	Flooded	Flooded	0.0	0.8	8	9906	Flooded
1	009728A	000895ND	000904ND	113	6.5 x 17	635.0	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728B	000904ND	000896ND	14	6.5 x 17	634.8	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728C	000896ND	003231SMH	119	6.5 x 17	639.1	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729A	003231SMH	000905ND	25	6.5 x 17	640.7	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729B	000905ND	003227SMH	119	6.5 x 17	641.5	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730A	003227SMH	000906ND	33	6.5 x 17	641.5	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730B	000906ND	003229SMH	97	6.5 x 17	641.2	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009731STMP	003230SMH	003228SMH	151	6.5 x 21	793.9	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732A	003228SMH	000909ND	22	6.5 x 21	791.6	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732B	000909ND	000293CP	403	6.5 x 21	807.4	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734A	003229SMH	001645SMH	194	6.5 x 17	642.6	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734B	001645SMH	000292CP	98	6.5 x 17	686.8	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009848STMP	006052IN	003283SMH	25	1	8.5	10.7	0.5	0	Flooded	-	Flooded	-	0.2	0.0	227	0	Flooded
1	009910A	003274SMH	000929ND	46	2.5	41.9	8.5	2.1	2.1	Flooded	4.3	Flooded	0.1	0.9	0.0	1097	0	Flooded
1	009910B	000929ND	003278SMH	140	2.5	43.4	8.8	2.1	2.1	4.4	Flooded	0.1	Flooded	0.0	1.1	0	4155	Insufficient Freeboard
1	009911STMP	006089IN	003274SMH	26	1	4.9	9.9	0.4	2.1	Flooded	Flooded	Flooded	Flooded	0.2	0.9	151	1097	Flooded
1	009935STMP	006100IN	006136IN	44	2.25	40.4	10.1	1.2	1.6	2.9	3.0	-	0.0	0.0	0.0	0	0	Surcharged
1	009937STMP	003275SMH	003273SMH	67	1	7.4	9.3	2	1.7	Flooded	Flooded	Flooded	Flooded	2.0	1.7	9413	36300	Flooded
1	009944STMP	003226SMH	003386SMH	44	3	45.7	17.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009945STMP	003386SMH	003387SMH	10	3	45.7	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009946STMP	003387SMH	000976ND	34	3	45.7	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010129STMP	003225SMH	003234SMH	48	2.5	42.3	17.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010130STMP	006015IN	003225SMH	38	1.25	3.3	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010141STMP	003224SMH	003223SMH	14	2	6.2	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010142STMP	003223SMH	000897ND	22	2	6.2	7.0	0	0	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010144STMP	003232SMH	003224SMH	79	2	6.2	5.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010146STMP	003284SMH	006053IN	9	1	9.5	13.2	0	0	0.0	0.2	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
1	010148STMP	003286SMH	003287SMH	123	0.833	4.8	14.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010149A	003239SMH	000922ND	81	0.667	-2.9	-7.6	1.2	3.6	Flooded	Flooded	Flooded	Flooded	0.9	1.9	2620	101	Flooded
1	010149B	000922ND	003286SMH	109	0.667	4.8	12.6	3.6	0	Flooded	-	Flooded	-	1.9	0.0	101	0	Flooded
1	010150STMP	003287SMH	003284SMH	238	1	9.5	16.1	0	0	-	0.0	-	1.3	0.0	0.0	0	0	Sufficient Capacity
1	010167STMP	006086IN	003274SMH	107	1.75	4.2	2.9	1.4	2.1	1.9	Flooded	-	Flooded	0.0	0.9	0	1097	Surcharged
1	010168STMP	003273SMH	003264SMH	150	2	43.1	13.4	1.7	2.1	Flooded	Flooded	Flooded	Flooded	1.7	2.1	36300	44480	Flooded
1	010169STMP	003264SMH	003274SMH	109	1.75	39.6	16.1	2.1	2.1	Flooded	Flooded	Flooded	Flooded	2.1	0.9	44480	1097	Flooded
1	010173STMP	003277SMH	003274SMH	51	2.5	7.1	5.8	2.1	2.1	Flooded	Flooded	Flooded	Flooded	1.1	0.9	2021	1097	Flooded
1	010174STMP	006109IN	003277SMH	97	1	2.5	4.6	1.8	2.1	Flooded	Flooded	Flooded	Flooded	0.4	1.1	136	2021	Flooded
1	010176A	003278SMH	000938ND	31	2.5	45.9	9.3	2.1	2.2	Flooded	Flooded	Flooded	Flooded	1.1	0.0	4155	2	Flooded
1	010176B	000938ND	003301SMH	40	2.5	47.8	9.6	2.2	2.2	Flooded	Flooded	Flooded	Flooded	0.0	0.7	2	899	Flooded
1	010177STMP	006110IN	000938ND	6	1	2.7	4.4	2.1	2.2	Flooded	Flooded	Flooded	Flooded	1.1	0.0	2205	2	Flooded
1	010178STMP	003302SMH	006111IN	175	2	20.9	6.6	1.1	1.8	3.0	3.4	1.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
1	010179STMP	006112IN	003302SMH	30	2	20.9	8.1	0.9	1.1	2.5	2.9	0.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
1	010180STMP	006113IN	006112IN	13	1.75	21.0	9.6	0.9	0.9	Flooded	2.7	Flooded	0.4	0.1	0.0	36	0	Flooded
1	010181STMP	006025IN	006113IN	217	1.75	18.0	7.4	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.8	0.1	1710	36	Flooded
1	010183STMP	006115IN	003303SMH	44	2 x 3	14.5	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010185STMP	003303SMH	003305SMH	73	2 x 3	14.6	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010189STMP	003305SMH	000962ND	24	2 x 3	14.6	9.8	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010190STMP	006118IN	002913ND	43	1.25	11.1	10.5	0.1	0	0.1	2.3	-	-	0.0	0.0	0	0	Surcharged
1	010191STMP	006119IN	006118IN	165	1.25	11.1	8.9	0.3	0.1	Flooded	0.1	Flooded	-	0.1	0.0	70	0	Flooded
1	010194STMP	003309SMH	003310SMH	67	1	4.7	5.8	2.2	2.1	Flooded	Flooded	Flooded	Flooded	0.2	1.0	60	3796	Flooded
1	010195STMP	003301SMH	003310SMH	23	2.5	49.7	-10.0	2.2	2.1	Flooded	Flooded	Flooded	Flooded	0.7	1.0	899	3796	Flooded
1	010196STMP	003310SMH	003311SMH	87	2.5	49.5	10.0	2.1	2.1	Flooded	Flooded	Flooded	Flooded	1.0	0.5	3796	536	Flooded
1	010197STMP	003311SMH	003312SMH	113	2.5	49.8	10.1	2.1	2.1	Flooded	3.7	Flooded	1.2	0.5	0.0	536	0	Flooded
1	010198STMP	006111IN	003312SMH	32	2.5	20.9	4.4	1.8	2.1	2.9	3.2	0.8	1.2	0.0	0.0	0	0	Insufficient Freeboard
1	010199STMP	003312SMH	000959ND	46	2.5	63.0	12.8	2.1	0	3.7	1.0	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
1	010211STMP	006131IN	003313SMH	13	1	6.2	9.3	0.1	0	0.3	2.8	-	-	0.0	0.0	0	0	Surcharged
1	010216STMP	006133IN	003311SMH	61	1	3.3	6.4	0.7	2.1	0.7	Flooded	0.6	Flooded	0.0	0.5	0	536	Insufficient Freeboard
1	010217STMP	006134IN	000941ND	36	1	2.8	9.7	0	0	-	2.6	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010218STMP	003322SMH	003317SMH	100	2 x 3.167	36.4	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010219STMP	003317SMH	000946ND	48	2 x 3.167	36.9	9.1	0	0	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010222STMP	006136IN	006137IN	244	2.5	40.5	8.2	1.6	1.8	2.8	Flooded	0.0	Flooded	0.0	1.8	0	28874	Insufficient Freeboard
1	010223STMP	006137IN	003318SMH	40	2.5	33.5	6.8	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.7	28874	19082	Flooded
1	010227STMP	003318SMH	003320SMH	109	1.5	20.0	11.1	1.9	0	Flooded	0.3	Flooded	-	1.7	0.0	19082	0	Flooded
1	010228STMP	006138IN	003320SMH	109	1.5	11.2	6.1	0.2	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
1	010230STMP	003320SMH	003321SMH	148	2 x 3.167	29.8	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010231STMP	003321SMH	003322SMH	64	2 x 3.167	30.3	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010235STMP	003325SMH	003324SMH	47	1.25	11.4	-9.1	1.4	1	Flooded	2.8	Flooded	0.6	0.5	0.0	977	0	Flooded
1	010236STMP	003324SMH	003372SMH	143	1.5	11.4	6.4	1	1	2.6	Flooded	0.6	Flooded	0.0	0.5	0	975	Insufficient Freeboard
1	010238STMP	003371SMH	003325SMH	92	1.25	10.3	8.2	1	1.4	Flooded	Flooded	Flooded	Flooded	0.8	0.5	7537	977	Flooded
1	010243STMP	006143IN	000963ND	126	1	5.2	6.6	0.4	0	2.9	2.5	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010246A	003372SMH	000948ND	46	1.5	13.7	-7.7	1	1	Flooded	Flooded	Flooded	Flooded	0.5	0.4	975	9	Flooded
1	010246B	000948ND	003373SMH	103	1.5	13.1	-7.4	1	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.2	9	535	Flooded
1	010248STMP	003373SMH	003374SMH	24	1.5	22.4	13.1	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.2	0.2	535	42	Flooded
1	010249A	003374SMH	000957ND	3	2	22.3	7.1	0.6	0.6	Flooded	2.1	Flooded	1.7	0.2	0.0	42	0	Flooded
1	010249B	000957ND	003376SMH	254	2	22.2	7.0	0.6	0.5	2.1	0.9	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010251STMP	003376SMH	003375SMH	19	2	22.1	7.4	0.5	0.5	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010252STMP	003375SMH	000960ND	53	2	22.1	7.0	0.5	0	1.1	1.4	-	-	0.0	0.0	0	0	Surcharged
1	010254STMP	006149IN	000961ND	53	1	1.7	4.3	0	0	-	2.4	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010261STMP	006152IN	000964ND	86	1.25	12.4	9.9	0.3	0	2.7	2.3	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	010267STMP	006157IN	006015IN	115	1.25	3.3	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010268STMP	003382SMH	003225SMH	13	2.5	25.5	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010269STMP	006016IN	003382SMH	36	2.5	18.0	13.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010456STMP	003495SMH	006052IN	91	1	10.4	16.0	0	0.5	-	Flooded	-	Flooded	0.0	0.2	0	227	Sufficient Capacity
1	010457STMP	008054IN	003495SMH	94	1	10.4	14.1	0.1	0	Flooded	-	Flooded	-	0.1	0.0	21	0	Flooded
1	010459STMP	003496SMH	003280SMH	119	1	11.4	14.4	0.4	0	2.9	0.1	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
1	014020STMP	004845IN	004850IN	174	2.5	17.6	4.0	0.2	0.3	1.0	1.2	1.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
1	014021STMP	004008SMH	001538SMH	12	2	24.4	7.8	0.3	0.3	1.2	0.9	1.0	0.9	0.0	0.0	0	0	Insufficient Freeboard
1	014022A	009001IN	000626ND	34	4.5	67.8	4.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022B	000626ND	002901ND	57	4.5	76.8	5.0	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022C	002900ND	000575IO	38	4.5	261.1	16.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014022D	002901ND	002900ND	8	4.5	177.5	11.0	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	014023STMP	004009SMH	004010SMH	271	4	48.9	6.5	0	0.1	-	0.6	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014024STMP	004010SMH	004011SMH	39	4	87.1	7.5	0.1	0.1	0.9	0.9	-	-	0.0	0.0	0	0	Surcharged
1	014025STMP	004011SMH	004012SMH	88	4	86.8	-6.9	0.1	0.2	1.8	1.3	-	-	0.0	0.0	0	0	Surcharged
1	014026STMP	004012SMH	004013SMH	481	4	85.9	6.8	0.2	0.1	1.3	0.3	-	-	0.0	0.0	0	0	Surcharged
1	014027STMP	004013SMH	004014SMH	131	4 x 6	101.2	-4.2	0.1	0.1	0.8	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014028STMP	004014SMH	004015SMH	67	4 x 6	101.2	4.4	0.1	0.1	0.4	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014029STMP	004015SMH	004016SMH	51	4 x 6	101.2	4.2	0.1	0.2	0.4	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014030STMP	004016SMH	004019SMH	104	4 x 6	101.2	4.2	0.2	0.2	0.6	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014031STMP	002902ND	004017SMH	262	4 x 6	86.2	7.4	0	0.1	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014032STMP	004017SMH	004018SMH	41	4 x 6	85.6	-3.6	0.1	0.1	0.2	0.2	-	-	0.0	0.0	0	0	Surcharged
1	014033STMP	004018SMH	004020SMH	120	4 x 6	88.4	3.7	0.1	0.1	0.2	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014034STMP	004019SMH	001554SMH	161	4 x 6	101.2	4.2	0.2	0.1	0.6	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014035STMP	004020SMH	001555SMH	104	4 x 6	88.5	-3.7	0.1	0.1	0.4	0.3	-	-	0.0	0.0	0	0	Surcharged
1	014036STMP	001554SMH	002901ND	82	4 x 6	101.2	4.2	0.1	0.1	0.4	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014037STMP	001555SMH	002900ND	83	4 x 6	88.6	3.7	0.1	0	0.3	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014902STMP	001680SMH	001682SMH	116	2.8333 x 4.333	34.8	4.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014903STMP	005007IN	004006SMH	57	3.5	42.3	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014904STMP	004006SMH	001684SMH	120	3.5	42.4	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014905STMP	001685SMH	001687SMH	116	3.5	56.0	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014906STMP	004852IN	004008SMH	19	2	24.4	7.7	0.4	0.3	1.5	1.2	0.5	1.0	0.0	0.0	0	0	Insufficient Freeboard
1	014926STMP	001551SMH	001557SMH	54	1.5	7.8	5.6	0	0	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931A	000959ND	002913ND	153	6.5 x 17	622.9	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931B	002913ND	000962ND	36	6.5 x 17	625.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931C	000962ND	000895ND	173	6.5 x 17	635.1	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935A	003313SMH	000946ND	205	5 x 16	722.2	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935B	000946ND	000960ND	184	5 x 16	755.4	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936A	003313SMH	000945ND	192	5 x 13	561.3	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936B	000945ND	000941ND	136	5 x 13	563.8	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936C	000941ND	000959ND	67	5 x 13	564.8	12.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014942STMP	000976ND	001545SMH	1083	4 x 5	63.6	9.6	0	0.5	-	5.3	-	0.1	0.0	0.0	0	0	Sufficient Capacity
1	014944STMP	001901CB	001902CB	57	1	7.7	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014945STMP	001902CB	004901SMH	323	1	7.7	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014946STMP	004901SMH	004902SMH	79	1.5	7.7	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014948STMP	004902SMH	009912IN	99	3	28.1	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	014949STMP	002917ND	009911IN	331	2.5	72.1	20.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014950STMP	009911IN	004903SMH	199	4	80.2	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014951STMP	004818IN	004903SMH	101	1.5	6.1	5.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014952STMP	004903SMH	001569SMH	70	3	86.2	15.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014953STMP	001569SMH	002902ND	480	4	86.5	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014954STMP	000002ND	004904SMH	217	1.75	29.0	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014955STMP	004904SMH	009912IN	93	1.75	34.6	16.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014956STMP	009912IN	002917ND	265	3	72.0	20.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007414STMP	002413SMH	002423SMH	59	1.25	5.4	11.9	0	0.3	-	4.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007415STMP	005209IN	002413SMH	6	0.833	5.4	10.8	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
2	007417STMP	005210IN	005211IN	32	1	10.3	-12.5	1	0.3	Flooded	4.1	Flooded	-	0.3	0.0	956	0	Flooded
2	007761STMP	005995IN	003133SMH	43	1.25	9.0	7.2	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.6	2990	2471	Flooded
2	007771STMP	005211IN	002423SMH	17	2	10.4	8.3	0.3	0.3	3.1	3.7	-	-	0.0	0.0	0	0	Surcharged
2	007772A	002416SMH	0001028ND	33	1.5	21.7	12.2	0.2	0.3	1.5	1.1	-	-	0.0	0.0	0	0	Surcharged
2	007772B	0001028ND	002419SMH	18	1.5	21.6	12.1	0.3	0	1.1	0.5	-	-	0.0	0.0	0	0	Surcharged
2	007785STMP	005224IN	002423SMH	110	1.25	3.9	7.3	0	0.3	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007866STMP	007225IN	007224IN	48	1.25	6.5	5.2	2.9	3.1	Flooded	Flooded	Flooded	Flooded	1.4	1.7	1382	4900	Flooded
2	007867STMP	002459SMH	007224IN	167	1.25	4.2	3.8	1.8	3.1	Flooded	Flooded	Flooded	Flooded	1.6	1.7	5389	4900	Flooded
2	007868STMP	007224IN	007226IN	31	1.25	7.3	5.8	3.1	3.2	Flooded	Flooded	Flooded	Flooded	1.7	1.7	4900	3471	Flooded
2	007869STMP	007226IN	007227IN	109	1.25	8.9	7.2	3.2	3.4	Flooded	Flooded	Flooded	Flooded	1.7	1.4	3471	1508	Flooded
2	007870STMP	007227IN	003062SMH	33	1.25	8.9	7.2	3.4	5.3	Flooded	Flooded	Flooded	Flooded	1.4	3.1	1508	17726	Flooded
2	008279STMP	005855IN	000773ND	20	1	6.2	8.5	1.2	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.1	1524	1383	Flooded
2	008289STMP	005862IN	000812ND	12	1	5.9	7.4	1.3	1.4	Flooded	Flooded	Flooded	Flooded	1.1	0.7	5549	144	Flooded
2	008324STMP	003163SMH	003107SMH	196	2	25.1	8.1	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.5	1.5	2433	17396	Flooded
2	008327STMP	003168SMH	000493CB	225	1.25	10.3	8.2	1.7	1.5	Flooded	2.9	Flooded	0.6	1.4	0.0	7457	0	Flooded
2	008333STMP	005927IN	003159SMH	112	1.25	7.9	8.4	0	0.7	0.0	1.7	-	1.1	0.0	0.0	0	0	Surcharged
2	008334STMP	005928IN	003109SMH	47	1	12.3	15.6	0.3	0	Flooded	-	Flooded	-	0.2	0.0	466	0	Flooded
2	008335STMP	003109SMH	000793ND	112	1.5	12.3	14.7	0	0.5	-	6.5	-	0.6	0.0	0.0	0	0	Sufficient Capacity
2	008339STMP	000496CB	000829ND	126	1.25	8.7	7.0	0.5	0	Flooded	2.3	Flooded	1.7	0.0	0.0	0	0	Flooded
2	008345STMP	003117SMH	003118SMH	210	2.25	26.5	7.3	0.1	0.1	0.3	0.4	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
2	008366STMP	003123SMH	003143SMH	22	1.25	9.9	8.0	0.7	0.6	1.9	1.5	0.9	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	008395STMP	005846IN	000773ND	87	1.25	7.8	6.3	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.9	0.1	1518	1383	Flooded
2	008396STMP	005847IN	005843IN	35	1	3.4	5.1	0.9	1	Flooded	Flooded	Flooded	Flooded	0.9	0.9	763	905	Flooded
2	008402STMP	000485CB	003089SMH	28	1	5.2	6.6	1	25.8	Flooded	Flooded	Flooded	Flooded	0.6	0.9	303	3731	Flooded
2	008403STMP	003148SMH	003089SMH	204	1	5.6	7.1	2	25.8	3.6	Flooded	0.9	Flooded	0.0	0.9	0	3731	Insufficient Freeboard
2	008405STMP	005876IN	000831ND	24	1	3.8	5.5	0.6	1.6	Flooded	Flooded	Flooded	Flooded	0.5	0.6	617	8	Flooded
2	008408STMP	000487CB	003090SMH	19	1.25	2.4	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008409STMP	003090SMH	000816ND	706	2	17.3	8.2	0	0	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008410STMP	000488CB	003090SMH	10	1.25	15.0	12.2	0.9	0	0.7	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008413STMP	005881IN	000826ND	40	1	5.6	10.7	0	0	-	2.1	1.6	-	0.0	0.0	0	0	Sufficient Capacity
2	008500STMP	005980IN	005981IN	27	2	43.7	13.9	0.4	0.4	2.9	2.2	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	008501STMP	003124SMH	005980IN	10	2	43.9	-13.8	0.9	0.4	4.5	2.0	0.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	008502STMP	003144SMH	003124SMH	31	2	44.0	13.8	0.8	0.9	4.9	4.5	-	0.3	0.0	0.0	0	0	Surcharged
2	008505STMP	005981IN	003129SMH	61	2.25	43.7	16.9	0.4	0.7	2.0	4.7	-	-	0.0	0.0	0	0	Surcharged
2	008507STMP	005983IN	005984IN	63	1.5	13.3	9.9	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008508STMP	003128SMH	005983IN	68	1.25	9.8	-8.0	0.6	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
2	008511STMP	000514CB	000827ND	113	1.25	5.8	5.4	0	0	0.2	1.6	-	-	0.0	0.0	0	0	Surcharged
2	008514STMP	000515CB	007743IN	51	1.25	13.7	10.9	0.8	1.9	Flooded	4.8	Flooded	1.0	0.7	0.0	2605	0	Flooded
2	008515STMP	007743IN	000516CB	42	1.25	13.5	-10.8	1.9	0.8	4.8	3.0	1.0	1.9	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008516STMP	000516CB	000801ND	194	1.5	13.4	8.0	0.8	0.2	2.7	4.3	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008517STMP	003105SMH	003152SMH	40	1.25	9.2	7.5	1	0	1.6	1.1	0.8	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	008527STMP	003462SMH	003456SMH	22	3	35.4	6.7	5.1	5.4	2.9	4.6	1.4	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	008528STMP	003457SMH	003458SMH	43	4	35.3	2.8	5.1	5.2	2.9	3.2	-	-	0.0	0.0	0	0	Surcharged
2	008529STMP	003458SMH	003459SMH	60	4	35.2	-2.8	5.2	5	3.2	1.8	-	-	0.0	0.0	0	0	Surcharged
2	008530STMP	003463SMH	003462SMH	66	3	35.4	7.7	5.1	5.1	2.6	2.9	1.3	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	008531STMP	008004IN	003463SMH	78	3	23.6	5.6	5.1	5.1	2.2	2.4	0.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	008532STMP	003464SMH	003463SMH	39	2	14.5	6.1	5.1	5.1	2.7	2.8	0.7	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	008533STMP	000633CB	003439SMH	29	1	6.5	-8.1	6	6	Flooded	Flooded	Flooded	Flooded	5.4	5.1	5163	7023	Flooded
2	008534A	003465SMH	0001033ND	383	2	20.5	6.5	4.9	5.2	Flooded	Flooded	Flooded	Flooded	4.2	4.5	6202	20	Flooded
2	008534B	0001033ND	003440SMH	31	2	20.5	6.5	5.2	5.2	Flooded	Flooded	Flooded	Flooded	4.5	4.9	20	16742	Flooded
2	008536STMP	008024IN	003472SMH	10	2	17.5	5.5	4.8	4.8	Flooded	Flooded	Flooded	Flooded	4.7	4.4	36578	19130	Flooded
2	008537STMP	003474SMH	008024IN	225	2	23.5	7.4	4.6	4.8	5.5	Flooded	-	Flooded	0.0	4.7	0	36578	Surcharged
2	008538STMP	003475SMH	003473SMH	160	4	18.9	-1.8	4.5	3	3.3	1.3	-	-	0.0	0.0	0	0	Surcharged
2	008539STMP	003473SMH	003474SMH	59	4	29.9	7.3	3	4.6	1.3	3.5	-	-	0.0	0.0	0	0	Surcharged
2	008540STMP	003479SMH	003475SMH	43	4	18.9	-1.5	4.7	4.5	3.9	3.3	-	-	0.0	0.0	0	0	Surcharged
2	008544STMP	005984IN	007978IN	44	2	19.2	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008545STMP	003131SMH	003129SMH	46	2	18.7	10.1	0	0.7	1.7	4.9	-	-	0.0	0.0	0	0	Surcharged
2	008546STMP	003130SMH	003131SMH	39	2	18.7	9.5	0.2	0	1.0	1.6	-	-	0.0	0.0	0	0	Surcharged
2	008547STMP	005988IN	003130SMH	38	2	18.7	7.8	0	0.2	0.7	0.9	-	-	0.0	0.0	0	0	Surcharged
2	008550STMP	005991IN	005988IN	22	2	11.8	-3.7	0.2	0	1.1	0.7	-	-	0.0	0.0	0	0	Surcharged
2	008553STMP	005992IN	005991IN	55	1.5	11.8	10.2	0	0.2	-	1.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008554STMP	003132SMH	005992IN	98	1.25	11.8	-9.5	0.6	0	3.4	-	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
2	008556STMP	005994IN	003132SMH	40	1.25	11.8	9.5	0.5	0.6	Flooded	3.4	Flooded	1.3	0.0	0.0	0	0	Flooded
2	008557STMP	003134SMH	003144SMH	212	2.25	35.4	10.9	0.7	0.8	1.9	4.6	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	008558STMP	007718IN	003134SMH	83	2	28.3	10.9	0.6	0.7	1.7	2.1	0.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	008560STMP	003137SMH	007718IN	30	2	28.5	-9.0	0.7	0.6	2.8	1.7	0.0	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	008563STMP	007721IN	003137SMH	16	1.5	21.1	11.9	0.7	0.7	Flooded	2.4	Flooded	0.0	0.5	0.0	2150	0	Flooded
2	008566STMP	003138SMH	007721IN	27	1.5	21.1	11.9	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.5	5210	2150	Flooded
2	008567STMP	007736IN	000796ND	36	1.5	6.6	11.0	0	0	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008627STMP	000509CB	000787ND	8	1	6.4	8.0	0.5	0.1	1.5	0.7	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008629STMP	007729IN	003145SMH	13	1	7.2	-9.0	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.4	2697	590	Flooded
2	008630STMP	003145SMH	003123SMH	98	1.25	9.9	8.0	0.7	0.7	Flooded	1.8	Flooded	0.9	0.4	0.0	590	0	Flooded
2	008632STMP	005935IN	003147SMH	96	4	98.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008633STMP	003118SMH	003119SMH	41	2.5	26.6	8.0	0.1	0.3	0.2	1.8	-	-	0.0	0.0	0	0	Surcharged
2	008634STMP	003129SMH	003119SMH	201	2.5	60.4	12.2	0.7	0.3	4.7	2.2	-	-	0.0	0.0	0	0	Surcharged
2	008635STMP	003143SMH	003138SMH	277	1.5	12.8	7.7	0.6	0.7	1.6	Flooded	1.1	Flooded	0.0	0.6	0	5210	Insufficient Freeboard
2	008636STMP	003119SMH	003112SMH	201	4	86.2	6.6	0.3	0.3	0.7	0.7	-	-	0.0	0.0	0	0	Surcharged
2	008766STMP	003454SMH	003465SMH	181	1.5	9.7	5.7	0	4.9	-	Flooded	-	Flooded	0.0	4.2	0	6202	Sufficient Capacity
2	008784STMP	005868IN	000813ND	70	1.25	10.8	12.6	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.3	0.7	11661	212	Flooded
2	008787STMP	000484CB	003089SMH	23	1.25	8.0	6.4	0.9	25.8	Flooded	Flooded	Flooded	Flooded	0.6	0.9	901	3731	Flooded
2	008817STMP	005785IN	002906SMH	45	1.5	9.3	17.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008829STMP	002908SMH	002906SMH	179	1.25	11.7	10.2	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
2	008899STMP	007843IN	000883ND	41	1	3.5	8.3	0	0	-	6.1	1.9	-	0.0	0.0	0	0	Sufficient Capacity
2	008915A	002909SMH	000759ND	22	1.25	6.9	-5.6	0.6	0.3	1.3	0.6	-	-	0.0	0.0	0	0	Surcharged
2	008915B	000759ND	002908SMH	13	1.25	6.8	-5.6	0.3	0	0.6	0.1	-	-	0.0	0.0	0	0	Surcharged
2	008916STMP	005792IN	002909SMH	12	1.25	6.9	5.6	0.2	0.6	1.4	1.2	-	-	0.0	0.0	0	0	Surcharged
2	008920STMP	003133SMH	003134SMH	46	1.25	9.6	7.7	0.7	0.7	Flooded	2.8	Flooded	1.8	0.6	0.0	2471	0	Flooded
2	008938STMP	003072SMH	003086SMH	164	1.5	27.1	22.4	0	0.2	-	1.8	-	1.1	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	**DGravityMain FacilityID**	**US**	**DS**	**Length (ft)**	**Diameter/ Height x Width (ft)**	**Maximum Flow (ft3/s)**	**Maximum Velocity (fps)**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**Summary Pipe Condition**
2	008941STMP	002919SMH	003072SMH	207	1.5	20.0	22.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008943STMP	003063SMH	002919SMH	83	1.5	20.0	11.9	0.2	0	1.7	-	-	-	0.0	0.0	0	0	Surcharged
2	008981STMP	006028IN	000890ND	35	1	7.1	8.9	1	0.1	3.2	6.7	0.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	009074STMP	000537IO	003070SMH	79	1.5	16.5	19.3	0	0	-	-	1.2	-	0.0	0.0	0	0	Sufficient Capacity
2	009075STMP	005820IN	003071SMH	21	1.5	16.5	21.0	0	0.6	-	4.4	-	0.7	0.0	0.0	0	0	Sufficient Capacity
2	009076STMP	003071SMH	003084SMH	228	2	23.5	7.4	0.6	0.6	4.6	4.3	0.7	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009223STMP	005793IN	005792IN	190	1.25	6.9	5.6	0.1	0.2	1.1	0.6	-	-	0.0	0.0	0	0	Surcharged
2	009228STMP	002906SMH	002912SMH	157	1.5	20.9	21.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009229STMP	002912SMH	002913SMH	6	1.5	20.9	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009230STMP	002913SMH	002910SMH	78	1.5	20.9	18.5	0	0.5	-	Flooded	-	Flooded	0.0	0.4	0	1022	Sufficient Capacity
2	009231STMP	002910SMH	002914SMH	27	1.5	18.1	15.1	0.5	0.7	Flooded	Flooded	Flooded	Flooded	0.4	0.5	1022	1974	Flooded
2	009234STMP	002914SMH	002915SMH	83	1.5	16.4	12.3	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.5	0.6	1974	4570	Flooded
2	009235STMP	002915SMH	002916SMH	44	1.75	22.5	-9.2	0.7	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.6	4570	2571	Flooded
2	009236STMP	002916SMH	002917SMH	174	1.25	23.5	18.6	0.7	0.6	Flooded	1.3	Flooded	-	0.6	0.0	2571	0	Flooded
2	009238STMP	005775IN	003066SMH	208	1.5	3.5	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009245STMP	000128CP	000129CP	76	5 x 8	594.6	18.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009249STMP	005813IN	003063SMH	37	1.5	20.0	11.2	0.2	0.2	2.3	1.7	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	009251STMP	003064SMH	005813IN	184	1.5	3.5	7.1	0	0.2	-	2.2	-	1.6	0.0	0.0	0	0	Sufficient Capacity
2	009252STMP	003065SMH	003064SMH	93	1.5	3.5	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009253STMP	003066SMH	003065SMH	55	1.5	3.5	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009254STMP	002917SMH	003068SMH	100	1.25	23.9	20.9	0.6	0.2	1.4	1.5	-	-	0.0	0.0	0	0	Surcharged
2	009258STMP	003067SMH	003158SMH	160	2	24.3	10.9	0.2	0	1.2	2.0	-	-	0.0	0.0	0	0	Surcharged
2	009259STMP	003068SMH	003067SMH	40	2	24.0	9.5	0.2	0.2	1.1	1.2	-	-	0.0	0.0	0	0	Surcharged
2	009263STMP	003069SMH	003071SMH	99	1.5	7.0	7.2	0.3	0.6	2.4	5.0	1.0	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	009264STMP	003070SMH	005820IN	45	1.5	16.6	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009286STMP	003083SMH	003082SMH	28	2	45.8	14.4	0.6	0.7	4.5	Flooded	0.3	Flooded	0.0	0.2	0	1624	Insufficient Freeboard
2	009287STMP	003082SMH	005833IN	44	2	46.0	14.4	0.7	0.2	Flooded	Flooded	Flooded	Flooded	0.2	0.2	1624	10500	Flooded
2	009288STMP	003084SMH	003083SMH	6	2	25.0	7.9	0.6	0.6	4.4	4.5	0.5	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	009289STMP	003085SMH	003083SMH	9	1.5	24.4	13.6	0.6	0.6	Flooded	4.4	Flooded	0.3	0.3	0.0	1541	0	Flooded
2	009290A	003086SMH	000767ND	50	1.5	27.1	18.4	0.2	0.5	1.8	Flooded	1.1	Flooded	0.0	0.2	0	4	Insufficient Freeboard
2	009290B	000767ND	003085SMH	35	1.5	24.7	16.7	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.2	0.3	4	1541	Flooded
2	009300A	000130CP	000764ND	21	5.5 x 8	932.2	21.1	0.4	0.5	Flooded	Flooded	Flooded	Flooded	0.4	0.2	77504	1728	Flooded
2	009300B	000764ND	000765ND	3	5.5 x 8	928.2	21.0	0.5	0.5	Flooded	Flooded	Flooded	Flooded	0.2	0.1	1728	739	Flooded
2	009300C	000765ND	000766ND	44	5.5 x 8	924.6	21.0	0.5	0.4	Flooded	Flooded	Flooded	Flooded	0.1	0.1	739	231	Flooded
2	009300D	000766ND	005833IN	73	5.5 x 8	922.1	20.9	0.4	0.2	Flooded	Flooded	Flooded	Flooded	0.1	0.2	231	10500	Flooded
2	009304STMP	005843IN	005846IN	25	1.25	4.2	5.0	1	1.3	Flooded	Flooded	Flooded	Flooded	0.9	0.9	905	1518	Flooded
2	009307STMP	005885IN	000825ND	37	1.5	3.9	5.3	0	0	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009309STMP	003091SMH	000823ND	53	1.25	3.1	7.6	0	0	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009315STMP	005891IN	003093SMH	46	2.5	92.6	18.6	1.6	1.8	RIM	Flooded	RIM	Flooded	0.0	1.5	0	18482	Insufficient Freeboard
2	009317STMP	003093SMH	000821ND	9	2.5	82.9	16.7	1.8	0	Flooded	0.8	Flooded	-	1.5	0.0	18482	0	Flooded
2	009320A	003095SMH	000817ND	14	5 x 10	908.8	21.3	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
2	009320B	000817ND	000816ND	24	5 x 10	921.1	24.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009320C	000816ND	000815ND	11	5 x 10	943.4	29.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009326STMP	005899IN	000777ND	24	1	-5.3	7.6	0.4	1.3	1.4	Flooded	0.3	Flooded	0.0	0.0	0	51	Insufficient Freeboard
2	009330STMP	003097SMH	000776ND	13	1.5	14.5	8.1	0	1.2	Flooded	Flooded	Flooded	Flooded	0.0	0.0	2	4	Flooded
2	009331STMP	005903IN	003097SMH	82	1.25	5.9	6.7	0.1	0	0.6	Flooded	0.7	Flooded	0.0	0.0	0	2	Insufficient Freeboard
2	009338STMP	003098SMH	003099SMH	15	2.25	28.4	7.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	1.4	9955	8368	Flooded
2	009341STMP	005909IN	003101SMH	12	2	37.9	14.6	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.0	1.0	1444	1150	Flooded
2	009342STMP	003100SMH	005909IN	66	2	37.6	11.9	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.0	1.0	2002	1444	Flooded
2	009343STMP	003160SMH	003100SMH	170	2	38.5	12.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.4	1.0	39349	2002	Flooded
2	009345STMP	003101SMH	003103SMH	44	2.25	55.1	13.6	1.5	1.5	Flooded	5.5	Flooded	1.1	1.0	0.0	1150	0	Flooded
2	009346A	003099SMH	000768ND	212	2.25	27.9	6.9	1.4	1.5	Flooded	5.6	Flooded	0.3	1.4	0.0	8368	0	Flooded
2	009346B	000768ND	003101SMH	96	2.25	27.9	6.9	1.5	1.5	5.6	Flooded	0.3	Flooded	0.0	1.0	0	1150	Insufficient Freeboard
2	009348STMP	003102SMH	003103SMH	35	2	32.5	10.3	1.5	1.5	5.2	5.8	1.0	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	009359STMP	005921IN	003106SMH	6	1	4.3	8.7	0	0	-	0.9	0.8	0.7	0.0	0.0	0	0	Sufficient Capacity
2	009360STMP	003106SMH	000779ND	11	1.5	7.2	4.0	0	1	2.5	5.4	0.7	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	009361STMP	003104SMH	003105SMH	207	1.25	8.3	6.7	1	1	Flooded	1.5	Flooded	0.8	0.9	0.0	1400	0	Flooded
2	009362STMP	003107SMH	003108SMH	98	2	33.0	10.4	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.5	1.3	17396	4780	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009363STMP	008027IN	003479SMH	15	1.5	20.5	16.6	0.6	4.7	Flooded	6.0	Flooded	-	0.1	0.0	11	0	Flooded
2	009364STMP	003476SMH	008027IN	268	1.5	13.9	7.8	3.3	0.6	3.2	Flooded	0.2	Flooded	0.0	0.1	0	11	Insufficient Freeboard
2	009365STMP	006034IN	000885ND	41	0.833	5.2	10.6	0.1	0	0.1	4.3	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
2	009366STMP	000512CB	003148SMH	98	1	5.6	7.0	1.9	2	Flooded	3.6	Flooded	0.9	1.5	0.0	2366	0	Flooded
2	009369STMP	003141SMH	003147SMH	25	3.5 x 7	99.7	-4.1	0	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
2	009421STMP	005934IN	000829ND	107	1	3.7	4.7	0.6	0	Flooded	2.6	Flooded	1.7	0.5	0.0	390	0	Flooded
2	009422STMP	000788ND	005935IN	70	3.5	69.0	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009423STMP	005936IN	005935IN	265	3	27.7	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009430STMP	003111SMH	003112SMH	19	1.25	6.2	8.3	0	0.3	0.0	2.2	-	-	0.0	0.0	0	0	Surcharged
2	009431A	003112SMH	000792ND	41	4	99.6	7.6	0.3	0.3	0.7	0.7	-	-	0.0	0.0	0	0	Surcharged
2	009431B	000792ND	000791ND	9	4	99.7	7.6	0.3	0.3	0.7	0.6	-	-	0.0	0.0	0	0	Surcharged
2	009431C	000791ND	000790ND	44	4	99.7	7.6	0.3	0.4	0.7	0.7	-	-	0.0	0.0	0	0	Surcharged
2	009431D	000790ND	003141SMH	46	4	99.7	7.7	0.4	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
2	009443STMP	000787ND	003111SMH	143	1.25	6.3	5.2	0.1	0	0.4	-	-	-	0.0	0.0	0	0	Surcharged
2	009444STMP	005946IN	003142SMH	53	1.25	11.4	9.2	0.4	0.2	Flooded	2.2	Flooded	0.9	0.1	0.0	106	0	Flooded
2	009456STMP	005957IN	003114SMH	13	1	5.4	6.9	0.3	0.2	Flooded	0.4	Flooded	0.4	0.1	0.0	49	0	Flooded
2	009457STMP	003114SMH	003116SMH	28	1	5.4	7.5	0.2	0.1	0.5	1.0	0.4	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	009462STMP	003115SMH	003116SMH	14	2	16.9	5.6	0.2	0.1	0.6	0.5	0.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	009463STMP	003142SMH	003115SMH	251	1.5	10.8	6.1	0.2	0.2	1.9	1.0	0.9	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009464A	003116SMH	000781ND	29	2	21.7	7.4	0.1	0.2	0.5	0.5	0.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	009464B	000781ND	000780ND	37	2	21.7	7.3	0.2	0.2	0.5	0.6	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	009464C	000780ND	003117SMH	66	2	21.7	6.9	0.2	0.1	0.6	0.4	-	1.3	0.0	0.0	0	0	Surcharged
2	009469STMP	006035IN	000887ND	42	1	4.9	10.7	0	0	-	1.7	1.2	-	0.0	0.0	0	0	Sufficient Capacity
2	009481STMP	005833IN	000811ND	1757	5 x 8	673.9	19.8	0.2	1.7	Flooded	Flooded	Flooded	Flooded	0.2	0.9	10500	611	Flooded
2	009625STMP	007751IN	000816ND	29	1	9.5	12.0	0.7	0	Flooded	3.1	Flooded	-	0.6	0.0	1720	0	Flooded
2	009634STMP	007745IN	000800ND	34	1.25	2.7	9.1	0	0.3	-	5.0	1.8	-	0.0	0.0	0	0	Sufficient Capacity
2	009743STMP	003199SMH	000546IO	74	4	254.6	14.6	0.1	0	RIM	2.1	RIM	-	0.0	0.0	0	0	Insufficient Freeboard
2	009854A	007963IN	0001032ND	45	1	7.0	8.7	1.2	1.7	Flooded	Flooded	Flooded	Flooded	1.0	0.8	4908	6	Flooded
2	009854B	0001032ND	003437SMH	275	1	4.6	5.8	1.7	2.7	Flooded	Flooded	Flooded	Flooded	0.8	2.4	6	6452	Flooded
2	009870STMP	003368SMH	003464SMH	107	2	11.8	4.3	5	5.1	2.8	2.7	0.4	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	009871STMP	003369SMH	003370SMH	13	1.75	3.7	7.9	0.7	3	0.2	2.2	0.3	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	009873STMP	003459SMH	007994IN	37	2	35.2	11.1	5	5.4	3.8	Flooded	-	Flooded	0.0	4.5	0	16193	Surcharged
2	009875STMP	003478SMH	003476SMH	32	1.5	13.0	-7.3	3.4	3.3	Flooded	3.2	Flooded	0.2	0.3	0.0	97	0	Flooded
2	009877STMP	008030IN	003477SMH	14	1	3.6	6.5	0.7	3.2	Flooded	3.4	Flooded	0.0	0.4	0.0	478	0	Flooded
2	009878STMP	003477SMH	003476SMH	34	1	3.6	4.5	3.2	3.3	3.5	3.7	0.0	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	009918STMP	003265SMH	006094IN	134	1.5	15.8	8.9	0.2	0	1.2	-	-	-	0.0	0.0	0	0	Surcharged
2	009919STMP	006093IN	003265SMH	65	1.25	8.9	14.5	0	0.2	-	1.1	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009920STMP	006154IN	006093IN	42	1.25	8.9	8.1	0	0	-	-	1.8	-	0.0	0.0	0	0	Sufficient Capacity
2	009967STMP	008017IN	0001036ND	87	0.667	-2.7	7.2	24.1	1.3	Flooded	Flooded	Flooded	Flooded	2.6	0.1	6719	3	Flooded
2	009968STMP	008019IN	0001037ND	22	2	23.3	7.3	0.1	1	5.7	5.6	0.9	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	010015STMP	000543CB	003201SMH	26	0.833	9.8	17.5	0.3	0.2	Flooded	0.8	Flooded	-	0.2	0.0	269	0	Flooded
2	010020STMP	003201SMH	003202SMH	315	1.5	9.8	6.4	0.2	0.4	2.7	4.2	-	-	0.0	0.0	0	0	Surcharged
2	010024STMP	000544CB	003202SMH	18	1	12.1	15.0	0.3	0.4	Flooded	4.8	Flooded	-	0.2	0.0	242	0	Flooded
2	010025STMP	003202SMH	003204SMH	12	1.5	20.8	11.6	0.4	0.3	4.3	3.6	-	-	0.0	0.0	0	0	Surcharged
2	010026STMP	006044IN	003203SMH	8	1.25	5.5	8.9	0.2	0.3	1.6	2.6	0.6	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	010027STMP	003203SMH	003204SMH	191	1.25	5.5	5.2	0.3	0.3	2.7	3.8	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	010028STMP	003204SMH	003205SMH	691	2	25.8	8.2	0.3	0.5	3.2	Flooded	-	Flooded	0.0	0.4	0	3761	Surcharged
2	010031STMP	003205SMH	006036IN	247	2.25	35.3	8.8	0.5	2.4	Flooded	4.6	Flooded	0.0	0.4	0.0	3761	0	Flooded
2	010032STMP	006036IN	002911ND	4	2.25	45.7	11.4	2.4	0	4.6	2.4	0.0	-	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010058A	003472SMH	0001038ND	129	2	18.4	5.8	4.8	4.9	Flooded	Flooded	Flooded	Flooded	4.4	4.1	19130	18	Flooded
2	010058B	0001038ND	003465SMH	70	2	18.7	5.9	4.9	4.9	Flooded	Flooded	Flooded	Flooded	4.1	4.2	18	6202	Flooded
2	010060STMP	008007IN	003466SMH	29	1	-3.3	-4.1	5.1	5.1	Flooded	Flooded	Flooded	Flooded	4.6	4.7	17824	22086	Flooded
2	010061STMP	003468SMH	003466SMH	200	2	35.1	11.0	0.2	5.1	6.4	Flooded	1.8	Flooded	0.0	4.7	0	22086	Insufficient Freeboard
2	010062STMP	008008IN	003466SMH	65	1.25	4.4	4.2	5	5.1	Flooded	Flooded	Flooded	Flooded	1.6	4.7	2082	22086	Flooded
2	010067STMP	008012IN	003468SMH	36	1.75	8.0	5.8	1.1	0.2	2.9	3.9	-	1.8	0.0	0.0	0	0	Surcharged
2	010068STMP	002419SMH	003468SMH	267	2	20.7	7.7	0	0.2	0.0	3.0	-	1.8	0.0	0.0	0	0	Surcharged
2	010072STMP	008015IN	003469SMH	85	1.75	-18.1	-7.4	1.3	3.6	Flooded	5.1	Flooded	1.2	1.3	0.0	29823	0	Flooded
2	010073STMP	003469SMH	0001035ND	11	1.75	-18.2	-7.4	3.6	3.8	5.1	5.7	1.2	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	010075STMP	000493CB	003163SMH	81	1.5	12.6	11.0	1.5	1.5	2.6	Flooded	0.6	Flooded	0.0	0.5	0	2433	Insufficient Freeboard
2	010077A	003150SMH	000804ND	32	2	16.7	5.4	1.4	1.4	4.9	5.1	0.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	010077B	000804ND	003098SMH	266	2	24.3	7.6	1.4	1.4	5.1	Flooded	1.3	Flooded	0.0	1.4	0	9955	Insufficient Freeboard
2	010079B	000814ND	003161SMH	20	5 x 10	846.9	-16.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.5	0.7	87	62096	Flooded
2	010079C	000813ND	000812ND	17	5 x 10	847.2	-16.9	1.5	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.7	212	144	Flooded
2	010079D	000812ND	000814ND	7	5 x 10	845.8	-16.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.5	144	87	Flooded
2	010079E	000811ND	000810ND	15	5 x 10	852.4	-17.0	1.7	1.6	Flooded	Flooded	Flooded	Flooded	0.9	0.8	611	236	Flooded
2	010079F	000810ND	000813ND	9	5 x 10	848.9	-16.9	1.6	1.5	Flooded	Flooded	Flooded	Flooded	0.8	0.7	236	212	Flooded
2	010079G	000809ND	000811ND	106	5 x 10	430.1	-8.6	1.9	1.7	Flooded	Flooded	Flooded	Flooded	0.9	0.9	380	611	Flooded
2	010081A	000815ND	000818ND	11	5 x 15	489.1	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081B	000825ND	000828ND	28	5 x 15	504.4	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081C	000828ND	000826ND	22	5 x 15	506.7	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081D	000826ND	007760IN	106	5 x 15	514.7	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081E	000819ND	000825ND	218	5 x 15	493.9	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081F	000818ND	000819ND	28	5 x 15	501.0	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082A	003164SMH	000830ND	53	4 x 7	208.3	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082B	000829ND	003199SMH	353	4 x 7	235.7	5.9	0	0.1	-	RIM	1.7	RIM	0.0	0.0	0	0	Sufficient Capacity
2	010082C	000830ND	000829ND	452	4 x 7	208.3	6.2	0	0	-	-	-	1.7	0.0	0.0	0	0	Sufficient Capacity
2	010108STMP	003060SMH	003061SMH	18	1.5	11.8	6.6	3.4	3.5	Flooded	Flooded	Flooded	Flooded	2.0	2.5	2074	4598	Flooded
2	010110STMP	003061SMH	003062SMH	43	1.5	9.7	5.4	3.5	5.3	Flooded	Flooded	Flooded	Flooded	2.5	3.1	4598	17726	Flooded
2	010111STMP	003062SMH	003195SMH	31	1.5	9.2	-5.1	5.3	3.6	Flooded	Flooded	Flooded	Flooded	3.1	3.0	17726	10482	Flooded
2	010112STMP	003195SMH	000874ND	74	1.5	9.0	-5.0	3.6	3.5	Flooded	Flooded	Flooded	Flooded	3.0	2.3	10482	18	Flooded
2	010125STMP	000539CB	003197SMH	34	1.25	6.3	5.3	0	0	0.1	0.3	-	-	0.0	0.0	0	0	Surcharged
2	010126STMP	000538CB	003197SMH	47	1.25	11.3	9.3	0	0	0.4	0.5	-	-	0.0	0.0	0	0	Surcharged
2	010127STMP	003197SMH	000882ND	406	2.5	17.4	5.5	0	0.4	-	4.7	-	0.8	0.0	0.0	0	0	Sufficient Capacity
2	010202STMP	006122IN	000939ND	42	0.833	5.1	9.2	0.6	0	Flooded	3.5	Flooded	-	0.5	0.0	702	0	Flooded
2	010203STMP	006123IN	002912ND	92	2	8.7	6.1	0	0	-	2.4	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010208STMP	006128IN	000940ND	32	1.25	5.4	6.7	0	0	-	2.8	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010264STMP	003381SMH	006154IN	59	1.25	8.9	7.9	0	0	-	-	1.5	1.8	0.0	0.0	0	0	Sufficient Capacity
2	010414STMP	008032IN	003478SMH	11	1	4.2	5.3	0.8	3.4	Flooded	Flooded	Flooded	Flooded	0.6	0.3	2042	97	Flooded
2	010415STMP	003486SMH	003478SMH	87	1.25	10.9	8.7	3.4	3.4	4.6	Flooded	0.4	Flooded	0.0	0.3	0	97	Insufficient Freeboard
2	010416STMP	008033IN	003479SMH	178	2	-10.5	-3.3	5.1	4.7	Flooded	5.5	Flooded	-	3.9	0.0	54031	0	Flooded
2	010430STMP	003483SMH	003472SMH	152	1.25	11.5	9.1	4.8	4.8	Flooded	Flooded	Flooded	Flooded	0.5	4.4	2878	19130	Flooded
2	010436STMP	008046IN	003486SMH	54	1.25	10.8	9.8	2.7	3.4	Flooded	4.6	Flooded	0.4	0.7	0.0	2015	0	Flooded
2	010437STMP	003487SMH	008033IN	199	2	11.3	3.6	4.8	5.1	4.7	Flooded	-	Flooded	0.0	3.9	0	54031	Surcharged
2	010439STMP	003488SMH	003490SMH	41	1	6.1	7.8	0.4	0	0.9	-	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
2	010440STMP	008048IN	003488SMH	26	1	6.1	-7.5	55.4	0.4	4.2	0.9	0.8	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010441STMP	008049IN	008048IN	62	1	6.1	7.6	0.6	55.4	Flooded	4.1	Flooded	0.8	0.4	0.0	790	0	Flooded
2	010444STMP	003489SMH	003487SMH	23	2	11.3	3.8	1.5	4.8	2.8	4.7	-	-	0.0	0.0	0	0	Surcharged
2	010448STMP	003490SMH	003489SMH	9	2	6.1	9.5	0	1.5	-	2.8	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010449STMP	007994IN	0001039ND	82	2	37.1	11.6	5.4	0.3	Flooded	1.6	Flooded	-	4.5	0.0	16193	0	Flooded
2	010450STMP	006094IN	003460SMH	231	2	19.2	8.6	0	0.6	-	3.5	-	1.6	0.0	0.0	0	0	Sufficient Capacity
2	010451STMP	003460SMH	0001039ND	72	2.25	40.6	10.1	0.6	0.3	3.6	1.3	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	010460STMP	003470SMH	008019IN	119	2	23.4	7.3	0.5	0.1	5.8	5.7	0.6	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	010465A	000634CB	0001037ND	56	2	4.9	5.2	0.2	1	1.0	5.6	0.9	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	010465B	0001037ND	0001036ND	67	2	27.4	8.6	1	1.3	5.6	Flooded	0.3	Flooded	0.0	0.1	0	3	Insufficient Freeboard
2	010465C	0001036ND	0001035ND	214	2	24.8	7.8	1.3	3.8	Flooded	5.5	Flooded	0.3	0.1	0.0	3	0	Flooded
2	010465D	0001035ND	003468SMH	92	2	18.0	5.7	3.8	0.2	5.5	6.4	0.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	010466STMP	008023IN	003470SMH	49	1	8.6	10.7	0.5	0.5	Flooded	3.3	Flooded	0.6	0.4	0.0	2052	0	Flooded
2	010467STMP	003471SMH	003470SMH	115	2	18.0	5.6	0.6	0.5	6.2	5.8	-	0.6	0.0	0.0	0	0	Surcharged
2	010468STMP	002423SMH	003471SMH	60	2	18.0	9.9	0.3	0.6	4.1	6.2	-	-	0.0	0.0	0	0	Surcharged
2	010469STMP	003151SMH	000817ND	13	3	26.1	6.4	0	0	0.9	1.4	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
2	010470STMP	003152SMH	003151SMH	28	2.5	20.2	12.1	0	0	-	1.4	1.4	1.5	0.0	0.0	0	0	Sufficient Capacity
2	010474STMP	003149SMH	003150SMH	13	1.5	16.8	10.0	1.4	1.4	5.0	5.4	0.7	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	010475STMP	000518CB	000804ND	21	1	10.1	12.4	1.4	1.4	Flooded	6.1	Flooded	1.3	1.0	0.0	9846	0	Flooded
2	010476A	007761IN	000796ND	67	5 x 15	581.6	16.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476B	000796ND	000797ND	227	5 x 15	614.4	15.9	0	0.2	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476C	000797ND	000798ND	7	5 x 15	616.5	11.0	0.2	0.2	0.7	1.6	-	1.8	0.0	0.0	0	0	Surcharged
2	010476D	000798ND	000131CP	79	5 x 15	620.5	10.9	0.2	0	1.6	1.4	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	010477STMP	000519CB	003156SMH	17	1	5.7	7.2	2.1	2.1	Flooded	Flooded	Flooded	Flooded	2.1	2.0	11488	11465	Flooded
2	010478STMP	003156SMH	003167SMH	147	1	6.0	7.5	2.1	1.2	Flooded	Flooded	Flooded	Flooded	2.0	0.6	11465	2616	Flooded
2	010479STMP	003157SMH	003167SMH	21	2	44.4	14.3	0.8	1.2	Flooded	Flooded	Flooded	Flooded	0.7	0.6	7108	2616	Flooded
2	010480STMP	003167SMH	003160SMH	168	2	44.9	14.0	1.2	1.4	Flooded	Flooded	Flooded	Flooded	0.6	1.4	2616	39349	Flooded
2	010481STMP	003159SMH	003167SMH	22	1.25	13.1	18.8	0.7	1.2	1.7	Flooded	1.1	Flooded	0.0	0.6	0	2616	Insufficient Freeboard
2	010482A	003158SMH	000793ND	246	2	35.5	14.6	0	0.5	2.0	6.0	-	0.6	0.0	0.0	0	0	Surcharged
2	010482B	000793ND	003157SMH	277	2	47.8	14.9	0.5	0.8	6.0	Flooded	0.6	Flooded	0.0	0.7	0	7108	Insufficient Freeboard
2	010483STMP	003103SMH	005891IN	711	3.5	77.6	8.0	1.5	1.6	4.5	RIM	1.1	RIM	0.0	0.0	0	0	Insufficient Freeboard
2	010484A	003108SMH	000794ND	172	2	32.3	10.2	1.5	1.5	Flooded	5.2	Flooded	1.4	1.3	0.0	4780	0	Flooded
2	010484B	000794ND	003102SMH	20	2	32.4	10.3	1.5	1.5	5.3	5.2	1.4	1.0	0.0	0.0	0	0	Insufficient Freeboard
2	010567A	007760IN	000827ND	15	5 x 15	535.8	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010567B	000827ND	007761IN	129	5 x 15	566.7	13.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010568STMP	007754IN	000797ND	7	1	2.2	10.4	0	0.2	-	4.7	1.2	-	0.0	0.0	0	0	Sufficient Capacity
2	010570STMP	007765IN	003145SMH	223	1.25	8.2	6.5	0.2	0.7	4.5	Flooded	0.8	Flooded	0.0	0.4	0	590	Insufficient Freeboard
2	010572A	003089SMH	000831ND	179	1.5	12.6	-7.0	25.8	1.6	Flooded	Flooded	Flooded	Flooded	0.9	0.6	3731	8	Flooded
2	010572B	000831ND	000488CB	59	1.5	15.0	-8.4	1.6	0.9	Flooded	0.4	Flooded	1.9	0.6	0.0	8	0	Flooded
2	010573A	003161SMH	000769ND	81	5 x 10	902.4	18.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.2	62096	3301	Flooded
2	010573B	000779ND	003095SMH	70	5 x 10	907.5	18.1	1	0	1.9	-	0.6	2.0	0.0	0.0	0	0	Insufficient Freeboard
2	010573C	000778ND	000777ND	30	5 x 10	903.5	18.0	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	350	51	Flooded
2	010573D	000777ND	000776ND	29	5 x 10	904.5	18.1	1.3	1.2	Flooded	Flooded	Flooded	Flooded	0.0	0.0	51	4	Flooded
2	010573E	000776ND	000779ND	78	5 x 10	907.4	18.1	1.2	1	Flooded	1.9	Flooded	0.6	0.0	0.0	4	0	Flooded
2	010573F	000775ND	000778ND	25	5 x 10	903.2	18.0	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	208	350	Flooded
2	010573G	000774ND	000775ND	155	5 x 10	898.9	17.9	1.4	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	718	208	Flooded
2	010573H	000773ND	000774ND	32	5 x 10	896.5	17.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.0	1383	718	Flooded
2	010573I	000772ND	000773ND	31	5 x 10	895.8	17.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.2	0.1	2247	1383	Flooded
2	010573J	000771ND	000772ND	25	5 x 10	895.8	17.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.2	1654	2247	Flooded
2	010573K	000770ND	000771ND	74	5 x 10	900.4	17.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.1	1289	1654	Flooded
2	010573L	000769ND	000770ND	6	5 x 10	901.1	17.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.2	0.1	3301	1289	Flooded
2	010574A	003147SMH	000789ND	131	3.5 x 7	198.4	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010574B	000789ND	003164SMH	131	3.5 x 7	198.5	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010575STMP	000834ND	003149SMH	210	1.5	16.8	9.3	0.6	1.4	Flooded	5.0	Flooded	0.7	0.5	0.0	11	0	Flooded
2	010625STMP	003437SMH	003369SMH	28	0.833	3.7	6.7	2.7	0.7	Flooded	0.9	Flooded	0.3	2.4	0.0	6452	0	Flooded
2	010626STMP	003439SMH	003438SMH	10	1	7.5	9.4	6	5.2	Flooded	Flooded	Flooded	Flooded	5.1	5.0	7023	18582	Flooded
2	010627STMP	003466SMH	003438SMH	107	2	21.7	6.8	5.1	5.2	Flooded	Flooded	Flooded	Flooded	4.7	5.0	22086	18582	Flooded
2	010628STMP	003438SMH	003448SMH	39	2	17.7	5.4	5.2	5.2	Flooded	Flooded	Flooded	Flooded	5.0	5.0	18582	26214	Flooded
2	010635STMP	003440SMH	003448SMH	30	2	22.8	7.2	5.2	5.2	Flooded	Flooded	Flooded	Flooded	4.9	5.0	16742	26214	Flooded
2	010636STMP	003448SMH	003368SMH	102	2	32.2	10.2	5.2	5	Flooded	2.5	Flooded	0.4	5.0	0.0	26214	0	Flooded
2	010641STMP	007977IN	005983IN	65	1.25	3.6	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010642STMP	007978IN	005936IN	169	3	23.1	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010643STMP	007992IN	007978IN	24	2	3.9	1.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010646STMP	003456SMH	004003SMH	13	3	35.4	5.0	5.4	6.7	4.7	5.7	1.4	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	010647A	003450SMH	0001034ND	35	4	35.3	5.4	5	5.1	2.0	2.3	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	010647B	0001034ND	003457SMH	82	4	35.3	3.9	5.1	5.1	2.3	2.9	-	-	0.0	0.0	0	0	Surcharged
2	014016STMP	003370SMH	003368SMH	46	3	3.7	2.6	3	5	0.9	1.8	0.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	014018STMP	003368SMH	008004IN	61	2.5	23.5	5.7	5	5.1	2.3	2.3	0.4	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	014019STMP	004003SMH	003450SMH	25	4	35.4	-2.8	6.7	5	4.9	1.7	1.3	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	014922A	000815ND	000820ND	46	5 x 15	466.6	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922B	000824ND	007760IN	148	5 x 15	569.3	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922C	000823ND	000824ND	28	5 x 15	545.5	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922D	000822ND	000823ND	101	5 x 15	547.4	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922E	000821ND	000822ND	39	5 x 15	557.5	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922F	000820ND	000821ND	54	5 x 15	478.4	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014923STMP	007760IN	007761IN	146	5 x 15	580.4	14.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924A	007761IN	000795ND	46	5 x 15	571.2	16.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924B	000795ND	000801ND	262	5 x 15	606.7	16.0	0	0.2	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924C	000801ND	000799ND	10	5 x 15	620.7	10.9	0.2	0.3	0.8	0.9	-	-	0.0	0.0	0	0	Surcharged
2	014924D	000799ND	000800ND	37	5 x 15	622.5	10.7	0.3	0.3	0.9	1.2	-	-	0.0	0.0	0	0	Surcharged
2	014924E	000800ND	000290CP	23	5 x 15	621.9	9.7	0.3	0	1.2	1.4	-	-	0.0	0.0	0	0	Surcharged
2	014928STMP	0001039ND	000788ND	160	3 x 3	69.1	7.8	0.3	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
2	014930A	000291CP	000882ND	4	5 x 13	731.2	11.2	0.3	0.4	Flooded	2.2	Flooded	0.8	0.2	0.0	54420	0	Flooded
2	014930B	000882ND	000880ND	16	5 x 13	739.8	11.4	0.4	0.3	2.2	1.8	0.8	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	014930C	000880ND	000881ND	16	5 x 13	746.5	11.5	0.3	0.1	1.8	1.4	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	014930D	000881ND	000883ND	114	5 x 13	669.9	10.3	0.1	0	1.4	2.1	-	-	0.0	0.0	0	0	Surcharged
2	014930E	000883ND	003200SMH	207	5 x 13	556.4	9.5	0	0	2.1	0.6	-	2.0	0.0	0.0	0	0	Surcharged
2	014932A	000132CP	007842IN	106	5 x 16	896.9	11.2	0.3	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.0	41449	270	Flooded
2	014932B	007842IN	006101IN	96	5 x 16	901.9	11.3	0.4	0.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	270	50	Flooded
2	014932C	006101IN	007844IN	17	5 x 16	901.1	11.3	0.3	0.2	Flooded	Flooded	Flooded	Flooded	0.0	0.0	50	50	Flooded
2	014932D	007844IN	006029IN	86	5 x 16	902.0	11.3	0.2	0.1	Flooded	Flooded	Flooded	Flooded	0.0	0.0	50	632	Flooded
2	014932E	006029IN	000890ND	12	5 x 16	900.9	11.3	0.1	0.1	Flooded	2.7	Flooded	0.4	0.0	0.0	632	0	Flooded
2	014932F	000890ND	000884ND	17	5 x 16	904.1	11.3	0.1	0	2.7	2.2	0.4	0.0	0.0	0.0	0	11	Insufficient Freeboard
2	014932G	000884ND	006032IN	3	5 x 16	904.5	11.3	0	0	2.2	2.1	0.0	0.5	0.0	0.0	11	0	Insufficient Freeboard
2	014932H	006032IN	003200SMH	22	5 x 16	905.3	11.3	0	0	2.1	0.6	0.5	2.0	0.0	0.0	0	0	Insufficient Freeboard
2	014933A	003200SMH	000885ND	95	5 x 16	748.9	9.6	0	0	0.6	0.2	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	014933B	000885ND	000886ND	145	5 x 16	734.5	9.8	0	0	0.2	-	-	2.0	0.0	0.0	0	0	Surcharged
2	014933C	000886ND	003206SMH	60	5 x 16	734.0	9.9	0	0	-	-	2.0	-	0.0	0.0	0	0	Sufficient Capacity
2	014933D	003206SMH	000887ND	41	5 x 16	740.1	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933E	000887ND	000893ND	43	5 x 16	738.1	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933F	000893ND	006037IN	110	5 x 16	722.9	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933G	006037IN	000939ND	52	5 x 16	708.7	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	014933H	000939ND	003313SMH	328	5 x 16	692.8	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934A	003200SMH	002910ND	95	5 x 13	585.0	9.4	0	0	0.6	0.1	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	014934B	002910ND	002911ND	289	5 x 13	550.6	9.1	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
2	014934C	002911ND	002912ND	172	5 x 13	583.2	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934D	002912ND	000940ND	193	5 x 13	590.3	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934E	000940ND	003313SMH	142	5 x 13	594.2	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014940STMP	000874ND	008046IN	152	1.25	9.0	-7.2	3.5	2.7	Flooded	Flooded	Flooded	Flooded	2.3	0.7	18	2015	Flooded
3	008354STMP	000505CB	003120SMH	13	1	12.0	14.9	1.9	1.5	Flooded	Flooded	Flooded	Flooded	1.9	1.4	22052	62743	Flooded
3	008355STMP	003120SMH	003122SMH	203	2.5	58.2	11.7	1.5	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.9	62743	46668	Flooded
3	008358STMP	005975IN	003122SMH	38	1	8.6	12.8	1.5	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.9	3454	46668	Flooded
3	008361STMP	000507CB	003121SMH	33	1	4.9	6.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.0	0.9	2861	2688	Flooded
3	008362STMP	003121SMH	000807ND	47	1	5.1	6.6	1.4	1.6	Flooded	Flooded	Flooded	Flooded	0.9	0.2	2688	47	Flooded
3	008420A	000574CB	000918ND	10	1	2.2	3.1	0.5	0.5	1.8	1.8	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	008420B	000918ND	003398SMH	11	1	2.2	3.2	0.5	0.5	1.8	1.8	0.3	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	008426STMP	003398SMH	000919ND	30	1.25	3.5	2.8	0.5	0.5	1.6	1.8	0.3	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	008428STMP	000577CB	000919ND	17	1	5.9	7.5	0.5	0.5	Flooded	2.1	Flooded	0.5	0.4	0.0	686	0	Flooded
3	008429STMP	000919ND	003079SMH	218	1.5	7.0	5.2	0.5	0	1.6	2.7	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
3	008435STMP	003400SMH	002914ND	19	2.5	-30.3	-6.1	3	1.4	Flooded	Flooded	Flooded	Flooded	0.5	0.0	2170	31	Flooded
3	008436STMP	003401SMH	002915ND	22	2.5	40.0	8.1	2.9	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.0	2142	2	Flooded
3	008437STMP	003402SMH	000994ND	150	4 x 12	331.2	8.6	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.0	401	135	Flooded
3	008642STMP	006170IN	006172IN	27	1.75	7.4	6.1	2.7	2.8	1.0	Flooded	0.8	Flooded	0.0	2.5	0	6227	Insufficient Freeboard
3	008643STMP	006171IN	006170IN	145	1.25	7.4	6.0	0.4	2.7	Flooded	1.2	Flooded	0.8	0.3	0.0	435	0	Flooded
3	008644A	006172IN	000847ND	74	2	7.4	2.4	2.8	2.8	Flooded	2.2	Flooded	0.6	2.5	0.0	6227	0	Flooded
3	008644B	000847ND	003383SMH	162	2	7.4	2.3	2.8	2.9	2.2	Flooded	0.6	Flooded	0.0	2.8	0	14327	Insufficient Freeboard
3	008648A	003218SMH	000915ND	71	3.25 x 5	65.3	5.8	2.3	2.4	0.5	Flooded	0.2	Flooded	0.0	1.2	0	110	Insufficient Freeboard
3	008648B	000915ND	000902ND	212	3.25 x 5	61.0	5.6	2.4	2.5	Flooded	Flooded	Flooded	Flooded	1.2	0.9	110	123	Flooded
3	008648C	000902ND	003217SMH	81	3.25 x 5	61.2	5.1	2.5	2.6	Flooded	RIM	Flooded	RIM	0.9	0.0	123	0	Flooded
3	008706A	003407SMH	000950ND	11	3.25 x 5	69.1	-5.3	2.5	2.5	RIM	Flooded	RIM	Flooded	0.0	1.5	0	574	Insufficient Freeboard
3	008706B	000950ND	000949ND	25	3.25 x 5	69.0	-5.3	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.5	1.5	574	994	Flooded
3	008706C	000949ND	003406SMH	173	3.25 x 5	69.0	-5.3	2.5	1.4	Flooded	Flooded	Flooded	Flooded	1.5	0.0	994	30	Flooded
3	008711STMP	007700IN	003077SMH	172	1.25	6.9	5.6	1.7	1.4	2.0	3.4	0.6	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	008718STMP	007706IN	007707IN	104	0.667	2.0	5.6	2.2	2.2	Flooded	Flooded	Flooded	Flooded	1.8	1.3	3925	1769	Flooded
3	008719STMP	007707IN	007711IN	182	0.667	2.1	5.8	2.2	0.6	Flooded	Flooded	Flooded	Flooded	1.3	0.5	1769	385	Flooded
3	008753A	003408SMH	000953ND	23	3.25 x 5	66.9	5.2	2.6	2.6	RIM	Flooded	RIM	Flooded	0.0	1.1	0	261	Insufficient Freeboard
3	008753B	000953ND	000952ND	109	3.25 x 5	66.8	5.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.1	1.3	261	668	Flooded
3	008753C	000952ND	000951ND	105	3.25 x 5	66.8	5.2	2.6	2.6	Flooded	Flooded	Flooded	Flooded	1.3	1.5	668	630	Flooded
3	008753D	000951ND	003407SMH	11	3.25 x 5	66.7	5.2	2.6	2.5	Flooded	RIM	Flooded	RIM	1.5	0.0	630	0	Flooded
3	008754STMP	003217SMH	003408SMH	362	3.25 x 5	67.1	5.2	2.6	2.6	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	008755A	003409SMH	000978ND	156	4 x 12	339.7	8.7	1.4	1.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	263	448	Flooded
3	008755B	000978ND	003434SMH	88	4 x 12	385.6	8.0	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	448	378	Flooded
3	008756STMP	000971ND	003409SMH	42	4 x 12	338.2	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	131	263	Flooded
3	008904A	000595CB	0001045ND	121	2	14.2	9.2	0	1	-	2.0	-	0.4	0.0	0.0	0	0	Sufficient Capacity
3	008904B	0001045ND	000596CB	135	2	17.6	7.8	1	1.3	2.0	Flooded	0.4	Flooded	0.0	0.0	0	69	Insufficient Freeboard
3	008907STMP	006217IN	0001045ND	17	1	6.3	-7.9	1.4	1	Flooded	3.0	Flooded	0.4	1.1	0.0	6418	0	Flooded
3	008909STMP	000524IO	003367SMH	289	1.25	12.0	14.2	0	1	-	Flooded	1.3	Flooded	0.0	0.9	0	10673	Sufficient Capacity
3	008910STMP	000596CB	003436SMH	52	2	25.2	7.9	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	69	591	Flooded
3	008948A	003175SMH	000876ND	48	3	27.6	3.9	3.1	3.1	1.4	1.4	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	008948B	000876ND	003177SMH	119	3	27.6	3.9	3.1	3.1	1.4	1.4	-	-	0.0	0.0	0	0	Surcharged
3	008949A	003186SMH	000853ND	5	3	24.8	4.6	3	3	1.2	1.2	0.1	1.5	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	008949B	000853ND	003175SMH	145	3	17.8	2.8	3	3.1	1.2	1.3	1.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	008963STMP	000572CB	003397SMH	62	1	6.3	7.9	1	1.1	Flooded	2.9	Flooded	0.6	1.0	0.0	2971	0	Flooded
3	008965STMP	006234IN	000990ND	142	1	2.6	3.9	1.9	2.5	Flooded	4.7	Flooded	0.8	1.9	0.0	7432	0	Flooded
3	008976A	003384SMH	000846ND	33	2	12.2	3.9	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.6	1.4	10440	8	Flooded
3	008976B	000846ND	004007SMH	215	2	11.6	3.7	2.9	2.9	Flooded	Flooded	Flooded	Flooded	1.4	1.6	8	11461	Flooded
3	008978A	003385SMH	000833ND	131	1	3.7	4.6	14.6	14.7	Flooded	Flooded	Flooded	Flooded	14.4	2.5	15168	9	Flooded
3	008978B	000833ND	003384SMH	15	1	5.1	6.4	14.7	2.9	Flooded	Flooded	Flooded	Flooded	2.5	2.6	9	10440	Flooded
3	009270A	007711IN	000763ND	35	1.5	6.1	4.1	0.6	1.8	Flooded	5.5	Flooded	0.1	0.5	0.0	385	0	Flooded
3	009270B	000763ND	003397SMH	207	1.5	5.6	3.4	1.8	1.1	5.7	6.3	0.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	009271STMP	003079SMH	003078SMH	46	3	40.3	9.1	0	0.8	1.6	1.9	-	-	0.0	0.0	0	0	Surcharged
3	009272STMP	007712IN	003079SMH	24	1	5.6	9.2	0	0	-	-	0.8	-	0.0	0.0	0	0	Sufficient Capacity
3	009273STMP	003080SMH	003081SMH	34	2.5	45.0	9.1	1.8	1.8	Flooded	Flooded	Flooded	Flooded	0.7	0.9	2163	8915	Flooded
3	009274STMP	007713IN	003080SMH	25	1.25	8.7	11.0	1	1.8	Flooded	Flooded	Flooded	Flooded	1.0	0.7	4238	2163	Flooded
3	009275STMP	003081SMH	000808ND	111	2.5	45.3	9.1	1.8	2.1	Flooded	Flooded	Flooded	Flooded	0.9	0.2	8915	33	Flooded
3	009276STMP	000481CB	003166SMH	39	1.25	7.9	6.2	1.4	2.2	Flooded	Flooded	Flooded	Flooded	0.5	0.2	3671	4342	Flooded
3	009279STMP	003078SMH	003080SMH	297	2.25	39.6	12.5	0.8	1.8	2.7	Flooded	-	Flooded	0.0	0.7	0	2163	Surcharged
3	009479A	003185SMH	000842ND	28	1.5	11.4	6.3	2.2	2.6	Flooded	Flooded	Flooded	Flooded	0.6	0.5	783	1	Flooded
3	009479B	000842ND	003184SMH	101	1.5	14.0	7.8	2.6	3	Flooded	Flooded	Flooded	Flooded	0.5	1.0	1	5170	Flooded
3	009482STMP	003169SMH	003352SMH	37	2	37.5	-11.8	3.2	3.5	RIM	2.6	RIM	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009483STMP	003170SMH	003169SMH	16	1.5	12.0	-6.7	3.6	3.2	4.0	RIM	0.3	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009485STMP	007766IN	003170SMH	12	1.25	9.7	7.7	3.5	3.6	3.9	4.0	1.2	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	009486STMP	007794IN	007766IN	155	1.5	9.7	5.4	3.1	3.5	3.2	3.4	0.6	1.2	0.0	0.0	0	0	Insufficient Freeboard
3	009491STMP	003182SMH	003172SMH	168	3	27.9	3.9	3.2	3.1	Flooded	RIM	Flooded	RIM	2.4	0.0	3860	0	Flooded
3	009517A	003172SMH	000837ND	39	3.5	27.8	2.8	3.1	3.1	RIM	1.6	RIM	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	009517B	000837ND	003169SMH	287	3.5	27.3	2.7	3.1	3.2	1.6	RIM	0.2	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009518STMP	003183SMH	003173SMH	169	2	7.4	2.6	3.3	3.3	Flooded	Flooded	Flooded	Flooded	1.1	3.0	283	8218	Flooded
3	009519A	003173SMH	000836ND	26	2	9.1	2.9	3.3	3.5	Flooded	3.3	Flooded	0.0	3.0	0.0	8218	0	Flooded
3	009519B	002908ND	003170SMH	131	2	9.5	3.0	3.6	3.6	3.5	3.5	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	009519C	000836ND	002908ND	156	2	9.0	2.8	3.5	3.6	3.3	3.5	0.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	009525STMP	000525CB	000837ND	26	1	4.8	6.0	2.9	3.1	Flooded	4.1	Flooded	0.2	1.8	0.0	4345	0	Flooded
3	009541STMP	006235IN	000990ND	34	1.5	9.4	7.9	1.3	2.5	1.3	4.2	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009542A	003331SMH	000990ND	37	3.25 x 5	53.1	4.8	2.5	2.5	RIM	0.7	RIM	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	009542B	000990ND	000988ND	99	3.25 x 5	53.7	4.8	2.5	2.5	0.7	0.8	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	009543A	003332SMH	000987ND	77	3.25 x 5	52.8	4.8	2.4	2.5	RIM	0.5	RIM	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	009543B	000987ND	003331SMH	97	3.25 x 5	53.0	4.7	2.5	2.5	0.5	RIM	0.7	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009550STMP	003334SMH	000991ND	6	1.25	6.4	5.7	3	2.3	2.6	4.0	0.4	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	009552STMP	000529CB	000842ND	33	1	4.2	5.6	0.7	2.6	3.0	Flooded	0.5	Flooded	0.0	0.5	0	1	Insufficient Freeboard
3	009555STMP	000530CB	003185SMH	27	1	6.1	7.5	1	2.2	Flooded	Flooded	Flooded	Flooded	0.6	0.6	936	783	Flooded
3	009557STMP	003190SMH	003185SMH	264	1.25	5.8	5.5	1.6	2.2	2.2	Flooded	-	Flooded	0.0	0.6	0	783	Surcharged
3	009563A	003191SMH	000843ND	104	2	23.2	7.3	3.2	3.1	Flooded	2.1	Flooded	1.2	2.0	0.0	6894	0	Flooded
3	009563B	000843ND	003186SMH	5	2	22.8	7.2	3.1	3	2.5	2.2	1.2	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	009566STMP	000853ND	003187SMH	24	2	12.4	3.9	3	3.2	2.2	Flooded	1.5	Flooded	0.0	1.1	0	357	Insufficient Freeboard
3	009567STMP	003188SMH	003189SMH	39	2	10.5	3.3	3.2	3.2	Flooded	Flooded	Flooded	Flooded	3.2	3.0	22477	10909	Flooded
3	009570A	003187SMH	000844ND	205	2	12.4	3.9	3.2	3.2	Flooded	Flooded	Flooded	Flooded	1.1	2.0	357	18	Flooded
3	009570B	000844ND	003188SMH	10	2	11.3	3.6	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.0	3.2	18	22477	Flooded
3	009578STMP	007889IN	003405SMH	56	1.75	14.0	6.3	1.3	1.8	Flooded	Flooded	Flooded	Flooded	0.2	0.4	1816	1092	Flooded
3	009579STMP	003405SMH	000936ND	56	1.75	14.0	5.8	1.8	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.0	1092	14	Flooded
3	009580A	003406SMH	002916ND	153	4 x 7	250.9	10.3	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	30	64	Flooded
3	009580B	002916ND	002914ND	21	4 x 7	261.8	10.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	64	31	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009580C	002915ND	003402SMH	36	4 x 7	313.8	13.5	1.4	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.1	2	401	Flooded
3	009580D	002914ND	002915ND	4	4 x 7	286.4	11.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	31	2	Flooded
3	009688C	000936ND	003406SMH	22	4 x 7	197.1	7.4	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	14	30	Flooded
3	009692STMP	006169IN	003213SMH	39	1.25	4.7	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009693STMP	000476CB	006169IN	198	1.25	4.7	17.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009694STMP	003214SMH	003216SMH	282	2.5	23.7	4.8	2.9	3.1	2.7	Flooded	-	Flooded	0.0	2.7	0	14994	Surcharged
3	009695STMP	003214SMH	003215SMH	282	2.5	24.7	5.0	2.9	3.2	2.7	Flooded	-	Flooded	0.0	2.8	0	13512	Surcharged
3	009696STMP	000994ND	000971ND	84	4 x 12	332.5	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	135	131	Flooded
3	009702STMP	003367SMH	003208SMH	292	1.25	16.6	13.2	1	0	Flooded	-	Flooded	-	0.9	0.0	10673	0	Flooded
3	009704STMP	003429SMH	003430SMH	33	0.833	2.8	8.7	1.7	1.8	1.1	Flooded	0.9	Flooded	0.0	1.8	0	9905	Insufficient Freeboard
3	009705STMP	003430SMH	000974ND	71	0.833	5.7	10.3	1.8	2.3	Flooded	Flooded	Flooded	Flooded	1.8	2.3	9905	29	Flooded
3	009706STMP	000974ND	003428SMH	93	0.833	4.6	8.3	2.3	14.5	Flooded	Flooded	Flooded	Flooded	2.3	7.5	29	3919	Flooded
3	009707STMP	003431SMH	000977ND	163	1	3.3	4.3	0.5	0	Flooded	0.1	Flooded	-	0.4	0.0	162	0	Flooded
3	009710STMP	006207IN	003432SMH	31	1	4.1	5.2	0.2	0	0.7	-	0.3	-	0.0	0.0	0	0	Insufficient Freeboard
3	009713A	003432SMH	000977ND	18	2	10.4	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009713B	000977ND	000595CB	26	2	13.6	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009714STMP	006212IN	003432SMH	10	1	6.4	8.1	0.5	0	Flooded	-	Flooded	-	0.2	0.0	88	0	Flooded
3	009717STMP	006230IN	006231IN	43	1	9.8	7.0	0.5	2.1	Flooded	3.2	Flooded	-	0.3	0.0	1097	0	Flooded
3	009718STMP	006231IN	000989ND	15	2	9.8	5.2	2.1	2.5	2.2	3.9	-	-	0.0	0.0	0	0	Surcharged
3	009719STMP	003329SMH	001001ND	69	3.25 x 5	65.2	-5.2	2.6	2.5	0.9	0.8	-	-	0.0	0.0	0	0	Surcharged
3	009720A	003330SMH	000988ND	12	3.25 x 5	-25.5	4.9	1.2	2.5	-	0.8	-	-	0.0	0.0	0	0	Surcharged
3	009720B	000989ND	003329SMH	54	3.25 x 5	61.0	4.7	2.5	2.6	0.9	0.9	-	-	0.0	0.0	0	0	Surcharged
3	009720C	000988ND	000989ND	46	3.25 x 5	60.2	4.8	2.5	2.5	0.8	0.9	-	-	0.0	0.0	0	0	Surcharged
3	009722STMP	000601CB	003330SMH	17	1.25	5.5	10.6	0	1.2	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009737A	003383SMH	000832ND	67	2	7.6	2.4	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.8	1.7	14327	5	Flooded
3	009737B	000832ND	003384SMH	22	2	7.5	2.4	2.9	2.9	Flooded	Flooded	Flooded	Flooded	1.7	2.6	5	10440	Flooded
3	009749STMP	000622CB	000980ND	45	1.25	12.9	10.2	2.2	1.3	Flooded	Flooded	Flooded	Flooded	0.4	0.3	795	388	Flooded
3	009753A	006224IN	000981ND	66	1	5.3	6.7	3	3	Flooded	4.3	Flooded	0.1	2.6	0.0	13436	0	Flooded
3	009753B	000981ND	003327SMH	20	1	-5.5	-6.8	3	3	4.3	Flooded	0.1	Flooded	0.0	0.9	0	2102	Insufficient Freeboard
3	009754STMP	006223IN	000999ND	44	1	-8.0	-9.7	2.6	1.4	Flooded	Flooded	Flooded	Flooded	2.0	0.7	20259	939	Flooded
3	009766STMP	007779IN	003178SMH	12	2	-14.6	4.6	3.3	3.1	Flooded	Flooded	Flooded	Flooded	3.1	3.0	16510	10558	Flooded
3	009767STMP	003178SMH	003179SMH	18	2	16.3	5.2	3.1	3.1	Flooded	Flooded	Flooded	Flooded	3.0	3.0	10558	10917	Flooded
3	009768A	000845ND	003179SMH	132	2	10.7	3.4	3.2	3.1	Flooded	Flooded	Flooded	Flooded	1.8	3.0	4	10917	Flooded
3	009768B	000849ND	000845ND	33	2	10.6	3.4	3.2	3.2	Flooded	Flooded	Flooded	Flooded	1.8	1.8	6	4	Flooded
3	009768C	003189SMH	000849ND	111	2	10.6	3.4	3.2	3.2	Flooded	Flooded	Flooded	Flooded	3.0	1.8	10909	6	Flooded
3	009770STMP	003179SMH	003180SMH	71	3	27.3	3.7	3.1	3.1	Flooded	Flooded	Flooded	Flooded	3.0	3.0	10917	11162	Flooded
3	009772STMP	007780IN	000839ND	9	1.5	3.2	2.9	3.2	3.3	Flooded	Flooded	Flooded	Flooded	2.4	1.6	3037	18	Flooded
3	009773STMP	003180SMH	003181SMH	128	3	26.1	3.7	3.1	3.2	Flooded	Flooded	Flooded	Flooded	3.0	2.2	11162	2803	Flooded
3	009774STMP	003181SMH	003182SMH	18	3	27.5	-3.9	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.2	2.4	2803	3860	Flooded
3	009775STMP	003184SMH	003181SMH	46	1.5	15.4	8.6	3	3.2	Flooded	Flooded	Flooded	Flooded	1.0	2.2	5170	2803	Flooded
3	009776STMP	003177SMH	003178SMH	256	3	27.5	3.9	3.1	3.1	1.4	Flooded	-	Flooded	0.0	3.0	0	10558	Surcharged
3	009780STMP	003192SMH	003191SMH	61	2	24.6	7.8	3.1	3.2	Flooded	Flooded	Flooded	Flooded	2.0	2.0	9362	6894	Flooded
3	009781STMP	000543IO	003192SMH	66	2	23.6	7.4	3.1	3.1	Flooded	Flooded	Flooded	Flooded	2.2	2.0	32424	9362	Flooded
3	009786STMP	003193SMH	003041SMH	61	1	5.2	6.5	1.6	1.7	Flooded	4.6	Flooded	0.2	1.6	0.0	3010	0	Flooded
3	009788STMP	007793IN	003194SMH	32	1	3.3	8.8	0.9	1.4	Flooded	1.9	Flooded	0.6	0.9	0.0	2012	0	Flooded
3	009791STMP	000621CB	003356SMH	57	1	4.0	5.5	1.2	1.8	Flooded	6.0	Flooded	0.3	0.7	0.0	626	0	Flooded
3	009792STMP	003342SMH	003356SMH	222	2	10.3	3.5	1.8	1.8	Flooded	5.0	Flooded	0.3	0.4	0.0	554	0	Flooded
3	009795STMP	003397SMH	003079SMH	397	2	30.8	9.7	1.1	0	5.9	2.6	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
3	009796STMP	003356SMH	003397SMH	519	2	19.7	6.2	1.8	1.1	5.1	5.8	0.3	0.6	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009805A	003358SMH	001007ND	73	1.75	10.9	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009805B	001007ND	003359SMH	40	1.75	10.9	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009812STMP	003359SMH	003360SMH	58	1.5	10.9	10.8	0	0.5	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009813STMP	003360SMH	003364SMH	29	2	39.1	12.4	0.5	0	0.8	-	-	-	0.0	0.0	0	0	Surcharged
3	009814STMP	000626CB	003363SMH	10	1.5	4.6	4.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009817STMP	001908SMH	001909SMH	266	2	17.0	5.3	3.4	3.4	Flooded	5.9	Flooded	1.2	3.2	0.0	19813	0	Flooded
3	009818STMP	008220IN	001910SMH	25	2	29.9	-9.4	3.2	3.3	4.8	4.4	-	-	0.0	0.0	0	0	Surcharged
3	009819STMP	002674SMH	008220IN	214	2	22.2	7.0	3.2	3.2	5.8	4.7	-	-	0.0	0.0	0	0	Surcharged
3	009820STMP	008221IN	008220IN	31	1.25	8.3	11.4	0.3	3.2	0.3	1.9	-	-	0.0	0.0	0	0	Surcharged
3	009846STMP	006182IN	003385SMH	91	1	2.8	3.5	14.5	14.6	Flooded	Flooded	Flooded	Flooded	14.5	14.4	15809	15168	Flooded
3	009847STMP	003394SMH	003385SMH	127	1.25	5.4	4.4	14.5	14.6	Flooded	Flooded	Flooded	Flooded	10.7	14.4	7641	15168	Flooded
3	009851STMP	003353SMH	003354SMH	128	1.5	4.7	2.7	1.8	1.8	Flooded	3.6	Flooded	0.2	1.4	0.0	1937	0	Flooded
3	009852STMP	0001031ND	003361SMH	855	2.5	17.1	15.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009863STMP	007989IN	003446SMH	33	1	5.5	9.2	0.5	3.2	1.6	3.0	1.4	1.2	0.0	0.0	0	0	Insufficient Freeboard
3	009864STMP	007990IN	007989IN	41	1	5.5	7.0	0.5	0.5	Flooded	0.9	Flooded	1.4	0.5	0.0	725	0	Flooded
3	009865STMP	001909SMH	003446SMH	23	2.25	17.1	4.3	3.4	3.2	5.7	5.7	1.2	1.2	0.0	0.0	0	0	Insufficient Freeboard
3	009866STMP	003446SMH	003447SMH	101	2.25	17.3	4.3	3.2	3.4	5.8	Flooded	1.2	Flooded	0.0	1.8	0	4586	Insufficient Freeboard
3	009867STMP	003447SMH	003051SMH	55	2.25	19.9	4.9	3.4	3.4	Flooded	Flooded	Flooded	Flooded	1.8	2.9	4586	20297	Flooded
3	009868STMP	007991IN	003447SMH	115	1.25	3.0	3.3	3.2	3.4	2.8	Flooded	0.6	Flooded	0.0	1.8	0	4586	Insufficient Freeboard
3	009869A	003051SMH	000802ND	374	2.25	25.9	6.4	3.4	3.4	Flooded	Flooded	Flooded	Flooded	2.9	3.0	20297	27	Flooded
3	009869B	000802ND	003339SMH	6	2.25	28.6	7.1	3.4	3.5	Flooded	Flooded	Flooded	Flooded	3.0	3.3	27	47845	Flooded
3	009952STMP	007848IN	003209SMH	119	1	4.9	7.6	0	0.4	-	0.8	1.5	-	0.0	0.0	0	0	Sufficient Capacity
3	009953STMP	003209SMH	003210SMH	63	1	4.9	6.1	0.4	0.7	1.6	1.1	-	1.7	0.0	0.0	0	0	Surcharged
3	009954STMP	003210SMH	003427SMH	78	1.5	21.0	17.1	0.7	1	1.2	Flooded	1.7	Flooded	0.0	1.0	0	6790	Insufficient Freeboard
3	009958A	003427SMH	000995ND	317	1.5	23.1	12.8	1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	0.6	6790	8	Flooded
3	009958B	000995ND	003212SMH	19	1.5	24.5	13.6	1.1	1	Flooded	Flooded	Flooded	Flooded	0.6	0.6	8	2957	Flooded
3	009959STMP	003211SMH	003427SMH	55	1	7.0	13.1	0.8	1	Flooded	Flooded	Flooded	Flooded	0.3	1.0	435	6790	Flooded
3	010078A	003122SMH	000805ND	28	5 x 10	405.4	11.1	1.4	1.6	Flooded	Flooded	Flooded	Flooded	0.9	0.3	46668	29	Flooded
3	010078B	000808ND	003166SMH	27	5 x 10	429.6	8.6	2.1	2.2	Flooded	Flooded	Flooded	Flooded	0.2	0.2	33	4342	Flooded
3	010078C	000807ND	000806ND	19	5 x 10	405.9	9.7	1.6	1.7	Flooded	Flooded	Flooded	Flooded	0.2	0.2	47	58	Flooded
3	010078D	000806ND	000808ND	132	5 x 10	405.8	9.0	1.7	2.1	Flooded	Flooded	Flooded	Flooded	0.2	0.2	58	33	Flooded
3	010078E	000805ND	000807ND	28	5 x 10	405.6	10.4	1.6	1.6	Flooded	Flooded	Flooded	Flooded	0.3	0.2	29	47	Flooded
3	010079A	003166SMH	000809ND	103	5 x 10	429.6	-8.6	2.2	1.9	Flooded	Flooded	Flooded	Flooded	0.2	0.9	4342	380	Flooded
3	010080STMP	003165SMH	003122SMH	158	5 x 10	382.0	10.2	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.9	15151	46668	Flooded
3	010085STMP	003207SMH	003210SMH	210	1.5	16.6	18.7	0	0.7	-	0.9	-	1.7	0.0	0.0	0	0	Sufficient Capacity
3	010086STMP	003208SMH	003207SMH	23	1.5	16.6	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010087STMP	003194SMH	000856ND	46	1	3.1	3.8	1.4	1.7	4.4	4.6	0.6	1.4	0.0	0.0	0	0	Insufficient Freeboard
3	010088A	003041SMH	000856ND	22	1	5.2	6.5	1.7	1.7	4.6	4.6	0.2	1.4	0.0	0.0	0	0	Insufficient Freeboard
3	010088B	000856ND	003190SMH	130	1	5.8	7.2	1.7	1.6	4.6	2.4	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
3	010133A	003215SMH	000888ND	82	2.5	22.2	4.5	3.2	3.2	Flooded	2.7	Flooded	0.5	2.8	0.0	13512	0	Flooded
3	010133B	000889ND	003392SMH	23	2.5	23.8	4.8	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.6	2.9	32	22562	Flooded
3	010133C	000888ND	000848ND	64	2.5	22.6	4.6	3.2	3.2	2.7	Flooded	0.5	Flooded	0.0	2.1	0	17	Insufficient Freeboard
3	010133D	000848ND	000889ND	195	2.5	22.7	4.6	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.1	2.6	17	32	Flooded
3	010134STMP	003216SMH	003393SMH	364	2.5	25.2	5.1	3.1	3.1	Flooded	Flooded	Flooded	Flooded	2.7	2.6	14994	26708	Flooded
3	010139STMP	006178IN	000915ND	12	1	-6.1	-7.6	4	2.4	Flooded	Flooded	Flooded	Flooded	3.1	1.2	27170	110	Flooded
3	010140STMP	001001ND	003218SMH	118	3.25 x 5	65.3	-5.3	2.5	2.3	0.8	0.5	-	0.2	0.0	0.0	0	0	Surcharged
3	010226STMP	006183IN	003385SMH	72	1.25	2.1	2.4	14.5	14.6	Flooded	Flooded	Flooded	Flooded	14.5	14.4	15446	15168	Flooded
3	010271STMP	003389SMH	003401SMH	175	2.5	30.6	6.2	3.1	2.9	Flooded	Flooded	Flooded	Flooded	1.4	0.4	11731	2142	Flooded
3	010272STMP	003390SMH	003400SMH	175	2.5	29.7	6.0	3.3	3	Flooded	Flooded	Flooded	Flooded	1.5	0.5	12413	2170	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010273STMP	000562CB	000899ND	8	1.5	8.5	4.8	2	2.6	Flooded	Flooded	Flooded	Flooded	1.5	1.4	3259	22	Flooded
3	010279STMP	000564CB	003394SMH	8	1	3.2	4.7	14.5	14.5	Flooded	Flooded	Flooded	Flooded	10.7	10.7	10002	7641	Flooded
3	010280STMP	007862IN	000564CB	26	0.833	4.6	8.4	12.3	14.5	Flooded	Flooded	Flooded	Flooded	10.7	10.7	26980	10002	Flooded
3	010282STMP	000566CB	003428SMH	38	1	2.8	3.5	13.5	14.5	Flooded	Flooded	Flooded	Flooded	5.9	7.5	3314	3919	Flooded
3	010286STMP	003428SMH	003394SMH	47	1.25	5.9	4.7	14.5	14.5	Flooded	Flooded	Flooded	Flooded	7.5	10.7	3919	7641	Flooded
3	010288STMP	007867IN	003429SMH	135	0.833	2.8	5.1	1.3	1.7	Flooded	1.1	Flooded	0.9	0.9	0.0	1696	0	Flooded
3	010289STMP	003392SMH	003390SMH	381	2.5	26.9	5.5	3.2	3.3	Flooded	Flooded	Flooded	Flooded	2.9	1.5	22562	12413	Flooded
3	010290STMP	003393SMH	003389SMH	381	2.5	27.6	5.6	3.1	3.1	Flooded	Flooded	Flooded	Flooded	2.6	1.4	26708	11731	Flooded
3	010291A	006188IN	000901ND	264	2	12.9	4.1	2.1	2.5	Flooded	Flooded	Flooded	Flooded	2.0	1.3	25285	14	Flooded
3	010291B	000901ND	000900ND	23	2	13.8	4.4	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.3	1.3	14	14	Flooded
3	010291C	000900ND	000899ND	30	2	-15.2	-4.8	2.5	2.6	Flooded	Flooded	Flooded	Flooded	1.3	1.4	14	22	Flooded
3	010291D	000899ND	003395SMH	151	2	16.5	5.2	2.6	3.1	Flooded	Flooded	Flooded	Flooded	1.4	1.4	22	8605	Flooded
3	010292STMP	004007SMH	003388SMH	233	2	14.1	4.4	2.9	3	Flooded	Flooded	Flooded	Flooded	1.6	1.0	11461	2843	Flooded
3	010293A	003388SMH	000916ND	6	2	14.0	4.4	3	3	Flooded	Flooded	Flooded	Flooded	1.0	1.2	2843	477	Flooded
3	010293B	000916ND	003402SMH	89	2	15.3	4.9	3	1.3	Flooded	Flooded	Flooded	Flooded	1.2	0.1	477	401	Flooded
3	010296A	003396SMH	000917ND	31	1.5	6.6	5.4	1.2	1.2	Flooded	Flooded	Flooded	Flooded	0.5	0.3	550	16	Flooded
3	010296B	000917ND	003397SMH	220	1.5	6.7	3.7	1.2	1.1	Flooded	6.1	Flooded	0.6	0.3	0.0	16	0	Flooded
3	010299STMP	006240IN	003334SMH	166	1.25	6.4	5.2	3.3	3	Flooded	2.6	Flooded	0.4	3.1	0.0	30692	0	Flooded
3	010301A	003335SMH	000991ND	90	3.25 x 5	45.9	5.6	1.5	2.3	0.0	0.3	0.6	0.7	0.0	0.0	0	0	Insufficient Freeboard
3	010301B	000991ND	003332SMH	85	3.25 x 5	52.6	5.1	2.3	2.4	0.3	RIM	0.7	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	010302STMP	003336SMH	003335SMH	7	2.25	45.5	-11.3	3.9	1.5	Flooded	2.8	Flooded	0.6	2.8	0.0	10386	0	Flooded
3	010303STMP	003337SMH	003336SMH	39	2.25	44.6	11.1	3.5	3.9	Flooded	Flooded	Flooded	Flooded	3.3	2.8	33265	10386	Flooded
3	010306STMP	000607CB	003337SMH	5	1	4.0	5.0	3.5	3.5	Flooded	Flooded	Flooded	Flooded	2.8	3.3	4667	33265	Flooded
3	010307STMP	006239IN	003335SMH	45	1	5.3	6.7	0.8	1.5	Flooded	1.1	Flooded	0.6	0.7	0.0	2401	0	Flooded
3	010308STMP	003338SMH	003335SMH	147	1	4.4	5.5	2.5	1.5	4.7	4.0	0.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	010309STMP	007929IN	000608CB	108	1.25	9.9	9.7	1.1	1.1	Flooded	2.0	Flooded	0.9	1.1	0.0	9621	0	Flooded
3	010310STMP	006593IN	007929IN	175	1.25	5.4	4.4	0.9	1.1	Flooded	Flooded	Flooded	Flooded	0.3	1.1	239	9621	Flooded
3	010331STMP	001992SMH	003339SMH	145	2.25	28.3	7.0	3.4	3.5	Flooded	Flooded	Flooded	Flooded	1.7	3.3	3591	47845	Flooded
3	010332STMP	003339SMH	003337SMH	296	2.25	35.0	8.7	3.5	3.5	Flooded	Flooded	Flooded	Flooded	3.3	3.3	47845	33265	Flooded
3	010334STMP	006241IN	006240IN	80	1.25	3.0	3.5	2.2	3.3	0.8	Flooded	0.0	Flooded	0.0	3.1	0	30692	Insufficient Freeboard
3	010335STMP	000608CB	006240IN	164	1.25	9.9	8.0	1.1	3.3	2.4	Flooded	0.9	Flooded	0.0	3.1	0	30692	Insufficient Freeboard
3	010337STMP	003434SMH	003436SMH	171	4 x 12	341.9	7.6	1.5	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	378	591	Flooded
3	010338STMP	003327SMH	000999ND	30	1	-7.6	-9.2	3	1.4	Flooded	Flooded	Flooded	Flooded	0.9	0.7	2102	939	Flooded
3	010343STMP	006245IN	000996ND	58	0.833	4.4	11.5	2.2	1.4	Flooded	Flooded	Flooded	Flooded	2.2	1.2	14823	3128	Flooded
3	010347STMP	006273IN	003354SMH	29	1.25	8.1	6.5	1.7	1.8	Flooded	3.8	Flooded	0.2	1.7	0.0	13579	0	Flooded
3	010371STMP	000618CB	003355SMH	9	1.25	2.6	5.0	1.6	1.8	2.0	3.7	1.9	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	010372STMP	003354SMH	003355SMH	137	1.5	8.3	-4.7	1.8	1.8	3.6	3.5	0.2	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	010373STMP	003355SMH	003344SMH	52	1.5	8.6	4.8	1.8	1.8	3.5	3.8	1.9	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	010380STMP	000620CB	003356SMH	28	1	6.1	7.6	1.3	1.8	Flooded	5.3	Flooded	0.3	1.0	0.0	2830	0	Flooded
3	010382STMP	003077SMH	003356SMH	36	1.25	6.9	6.4	1.4	1.8	3.8	5.1	0.5	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	010398STMP	000628CB	003361SMH	19	1.25	9.3	7.6	0	0	1.1	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	010402STMP	003361SMH	003362SMH	30	2.5	26.5	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010403STMP	003362SMH	003363SMH	102	2.5	26.4	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404A	003363SMH	001017ND	68	3	31.0	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404B	001017ND	003365SMH	35	3	31.0	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010405STMP	003364SMH	003365SMH	108	2	39.1	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010407STMP	003365SMH	003366SMH	166	3	70.1	16.8	0	0.5	-	Flooded	-	Flooded	0.0	0.4	0	4828	Sufficient Capacity
3	010408A	003366SMH	001013ND	195	3	81.5	13.4	0.5	1.3	Flooded	Flooded	Flooded	Flooded	0.4	0.6	4828	93	Flooded
3	010408B	001013ND	003120SMH	303	3	79.1	11.3	1.3	1.5	Flooded	Flooded	Flooded	Flooded	0.6	1.4	93	62743	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010409A	003213SMH	001009ND	63	1.75	4.7	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010409B	001009ND	003358SMH	174	1.75	4.7	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010410A	003212SMH	001010ND	287	1.75	28.9	11.8	1	1.1	Flooded	1.8	Flooded	1.7	0.6	0.0	2957	0	Flooded
3	010410B	001010ND	003360SMH	72	1.75	28.9	12.0	1.1	0.5	1.8	1.1	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	010411A	007886IN	001015ND	80	1.25	9.3	7.5	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.4	1.2	9168	174	Flooded
3	010411B	001015ND	000971ND	159	1.25	9.1	7.3	1.5	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.0	174	131	Flooded
3	010412A	003436SMH	000980ND	15	5 x 10	343.5	8.6	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.0	0.3	591	388	Flooded
3	010412B	000983ND	003328SMH	16	5 x 10	357.7	8.5	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.6	539	7642	Flooded
3	010412C	000999ND	000982ND	33	5 x 10	356.5	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.7	0.6	939	805	Flooded
3	010412D	000982ND	000983ND	129	5 x 10	357.0	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.6	805	539	Flooded
3	010412E	000980ND	000999ND	130	5 x 10	344.5	8.7	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.3	0.7	388	939	Flooded
3	010455STMP	000639CB	000802ND	20	0.833	6.8	12.1	3.5	3.4	Flooded	Flooded	Flooded	Flooded	3.5	3.0	12695	27	Flooded
3	010472STMP	007748IN	000809ND	16	1.25	14.0	11.2	1.4	1.9	Flooded	Flooded	Flooded	Flooded	1.4	0.9	23568	380	Flooded
3	010576STMP	006246IN	000996ND	36	1.25	11.4	9.1	2.3	1.4	Flooded	Flooded	Flooded	Flooded	1.2	1.2	3703	3128	Flooded
3	010578A	003328SMH	000997ND	18	5 x 10	358.3	8.6	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.6	7642	498	Flooded
3	010578B	001004ND	003340SMH	14	5 x 10	379.5	9.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.5	0.6	551	10564	Flooded
3	010578C	000997ND	000984ND	21	5 x 10	359.0	8.7	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.9	498	1518	Flooded
3	010578D	000996ND	001004ND	151	5 x 10	378.1	9.3	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.5	3128	551	Flooded
3	010578E	000984ND	000996ND	125	5 x 10	360.9	8.8	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.9	1.2	1518	3128	Flooded
3	010580STMP	006247IN	001004ND	16	1.25	11.9	10.2	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.1	0.5	5004	551	Flooded
3	010581STMP	006248IN	006247IN	47	1.25	9.0	8.7	1.2	1.4	Flooded	Flooded	Flooded	Flooded	1.2	1.1	6600	5004	Flooded
3	010582STMP	007884IN	006248IN	237	1.25	8.5	6.9	1.2	1.2	Flooded	Flooded	Flooded	Flooded	0.9	1.2	4472	6600	Flooded
3	010584A	003340SMH	001003ND	15	5 x 10	379.8	10.0	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.4	10564	813	Flooded
3	010584B	001003ND	006250IN	69	5 x 10	380.5	10.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.6	813	11582	Flooded
3	010586A	006250IN	000998ND	72	5 x 10	381.3	10.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.4	11582	1065	Flooded
3	010586B	000998ND	003165SMH	41	5 x 10	381.4	10.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.7	1065	15151	Flooded
3	010596STMP	003341SMH	003342SMH	47	2	11.1	3.6	1.8	1.8	5.2	Flooded	0.1	Flooded	0.0	0.4	0	554	Insufficient Freeboard
3	010597STMP	003343SMH	003341SMH	274	1.75	8.9	4.3	1.8	1.8	3.6	5.5	1.9	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	010601STMP	003344SMH	003343SMH	82	1.75	8.9	3.9	1.8	1.8	3.5	3.6	1.9	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	010602STMP	003345SMH	003344SMH	146	1.25	3.6	5.2	1.2	1.8	Flooded	3.9	Flooded	1.9	0.5	0.0	334	0	Flooded
3	010603STMP	006260IN	003345SMH	17	1	3.7	6.5	1	1.2	Flooded	Flooded	Flooded	Flooded	0.8	0.5	1742	334	Flooded
3	010605STMP	003347SMH	003214SMH	346	3.5	40.6	5.1	2.9	2.9	1.6	1.6	-	-	0.0	0.0	0	0	Surcharged
3	010606STMP	006261IN	001001ND	125	2	12.3	8.7	0	2.5	-	3.8	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010613STMP	003348SMH	003347SMH	300	3.5	41.7	6.4	2.4	2.9	0.7	1.6	-	-	0.0	0.0	0	0	Surcharged
3	010614STMP	003350SMH	003348SMH	73	3	42.6	9.3	0	2.4	0.5	1.2	-	-	0.0	0.0	0	0	Surcharged
3	010617STMP	003351SMH	003350SMH	40	2.5	37.7	9.3	2.5	0	1.0	1.0	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618A	003352SMH	001000ND	29	2	37.5	11.9	3.5	3.3	2.6	2.1	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618B	001000ND	003351SMH	11	2	37.6	11.9	3.3	2.5	2.1	1.4	-	1.9	0.0	0.0	0	0	Surcharged
3	010879STMP	008268IN	008269IN	32	1.25	3.3	5.6	0.3	0.4	2.4	2.9	1.7	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	010880STMP	008273IN	008269IN	176	2	7.6	5.0	0.2	0.4	1.3	2.5	1.3	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	010882STMP	002692SMH	008273IN	23	1.25	4.6	6.2	0.2	0.2	1.4	1.7	1.1	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	010884STMP	008272IN	008273IN	58	1.25	3.6	3.4	0.3	0.2	1.9	2.0	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	011123STMP	001904SMH	001906SMH	269	1.75	12.8	5.2	3.3	3.3	Flooded	Flooded	Flooded	Flooded	1.6	3.2	6719	21166	Flooded
3	011124STMP	001905SMH	001904SMH	23	1.75	17.6	7.2	3.3	3.3	Flooded	Flooded	Flooded	Flooded	1.7	1.6	10548	6719	Flooded
3	011125STMP	001912SMH	001905SMH	256	1.75	8.1	4.3	3	3.3	3.0	Flooded	1.9	Flooded	0.0	1.7	0	10548	Insufficient Freeboard
3	011130STMP	001906SMH	001908SMH	17	2	9.7	3.0	3.3	3.4	Flooded	Flooded	Flooded	Flooded	3.2	3.2	21166	19813	Flooded
3	011131STMP	008218IN	001907SMH	24	1.25	3.7	7.8	3.2	3.3	2.3	Flooded	0.4	Flooded	0.0	3.2	0	22296	Insufficient Freeboard
3	011132STMP	008219IN	001907SMH	32	3	24.7	3.5	3.3	3.3	Flooded	Flooded	Flooded	Flooded	2.9	3.2	9494	22296	Flooded
3	011133STMP	001910SMH	008219IN	245	3	29.9	4.2	3.3	3.3	3.4	Flooded	-	Flooded	0.0	2.9	0	9494	Surcharged

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	011134STMP	001907SMH	001908SMH	18	2	14.5	4.6	3.3	3.4	Flooded	Flooded	Flooded	Flooded	3.2	3.2	22296	19813	Flooded
3	011144STMP	008256IN	008255IN	59	2	16.7	6.6	0.4	0.4	5.2	5.6	1.9	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	011145STMP	008269IN	008256IN	211	2	10.7	6.3	0.4	0.4	2.9	5.0	1.3	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	011146STMP	008257IN	008256IN	28	1.25	6.6	9.4	0.3	0.4	1.6	2.5	-	1.9	0.0	0.0	0	0	Surcharged
3	011517STMP	008237IN	008236IN	26	1.25	2.6	8.5	0	0.4	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
3	011535STMP	001942SMH	001992SMH	158	2	22.9	7.2	3.3	3.4	4.9	Flooded	0.2	Flooded	0.0	1.7	0	3591	Insufficient Freeboard
3	011536STMP	006582IN	006593IN	27	1.5	5.8	-3.3	1	0.9	1.3	Flooded	0.0	Flooded	0.0	0.3	0	239	Insufficient Freeboard
3	011633STMP	001961SMH	001942SMH	245	2	19.6	6.1	3.2	3.3	Flooded	4.8	Flooded	0.2	1.3	0.0	7992	0	Flooded
3	011634STMP	001975SMH	001947SMH	263	2	18.9	5.9	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.8	1.2	3977	7769	Flooded
3	011635STMP	001981SMH	001975SMH	251	2	14.5	4.8	1.3	1.4	Flooded	Flooded	Flooded	Flooded	0.6	0.8	1628	3977	Flooded
3	011637STMP	001982SMH	001981SMH	15	2	16.1	5.4	1.3	1.3	4.0	Flooded	0.1	Flooded	0.0	0.6	0	1628	Insufficient Freeboard
3	011638STMP	006587IN	001982SMH	39	2	16.1	5.1	1.3	1.3	Flooded	4.0	Flooded	0.1	0.5	0.0	1205	0	Flooded
3	011640STMP	001984SMH	006587IN	210	2	9.7	4.2	1.1	1.3	3.0	Flooded	0.3	Flooded	0.0	0.5	0	1205	Insufficient Freeboard
3	011831A	001913SMH	001110ND	63	1.5	8.1	4.5	3.1	3.1	4.0	3.7	0.9	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	011831B	001110ND	001911SMH	68	1.5	8.1	4.5	3.1	3.2	3.7	3.4	0.1	1.5	0.0	0.0	0	0	Insufficient Freeboard
3	011833STMP	001911SMH	001912SMH	25	1.5	8.1	-4.5	3.2	3	3.4	3.3	1.5	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	011834STMP	001914SMH	001913SMH	11	1.5	8.2	-4.5	3.2	3.1	4.4	4.0	0.8	0.9	0.0	0.0	0	0	Insufficient Freeboard
3	011835STMP	002673SMH	001914SMH	233	1.5	8.2	4.6	2.2	3.2	4.3	4.2	1.7	0.8	0.0	0.0	0	0	Insufficient Freeboard
3	011911STMP	002693SMH	002692SMH	25	1.25	4.5	-4.2	0.1	0.2	1.7	1.4	0.8	1.1	0.0	0.0	0	0	Insufficient Freeboard
3	011968STMP	001920SMH	002673SMH	38	1.25	8.2	7.4	1.5	2.2	4.1	4.2	1.1	1.7	0.0	0.0	0	0	Insufficient Freeboard
3	011971STMP	008235IN	002674SMH	46	1.25	4.2	8.6	0	3.2	1.4	4.2	-	-	0.0	0.0	0	0	Surcharged
3	011972STMP	008236IN	002674SMH	56	2	19.0	5.9	0.4	3.2	5.6	5.7	-	-	0.0	0.0	0	0	Surcharged
3	011973STMP	008255IN	008236IN	211	2	16.7	5.2	0.4	0.4	5.7	5.6	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	012028STMP	001946SMH	001947SMH	123	1.5	6.6	5.7	1.1	1.4	0.7	Flooded	0.8	Flooded	0.0	1.2	0	7769	Insufficient Freeboard
3	012230STMP	000140CB	001975SMH	22	0.667	4.3	11.8	2.4	1.4	Flooded	Flooded	Flooded	Flooded	2.4	0.8	13814	3977	Flooded
3	012234STMP	000142CB	001975SMH	32	0.833	3.7	8.2	1.1	1.4	Flooded	Flooded	Flooded	Flooded	0.8	0.8	808	3977	Flooded
3	014005STMP	001947SMH	001961SMH	30	2	20.9	6.6	1.4	3.2	Flooded	Flooded	Flooded	Flooded	1.2	1.3	7769	7992	Flooded
3	014015STMP	003395SMH	002916ND	55	2	-20.4	-6.4	3.1	1.4	Flooded	Flooded	Flooded	Flooded	1.4	0.0	8605	64	Flooded
3	014039A	007779IN	000839ND	56	2	7.6	-2.4	3.3	3.3	Flooded	Flooded	Flooded	Flooded	3.1	1.6	16510	18	Flooded
3	014039B	000839ND	003183SMH	151	2	7.6	-2.4	3.3	3.3	Flooded	Flooded	Flooded	Flooded	1.6	1.1	18	283	Flooded
3	014927STMP	003171SMH	002908ND	100	1	6.1	7.7	2.1	3.6	Flooded	4.5	Flooded	0.1	2.1	0.0	14072	0	Flooded
4	007729STMP	000723ND	002632SMH	54	1.25	12.3	15.3	0.1	0.3	0.3	4.3	-	0.5	0.0	0.0	0	0	Surcharged
4	007730STMP	000722ND	002632SMH	33	1.25	19.3	15.4	0.6	0.3	4.6	3.1	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	007736STMP	005620IN	002633SMH	40	1	6.3	11.1	1.2	1.2	Flooded	Flooded	Flooded	Flooded	1.0	1.2	3623	9828	Flooded
4	007737STMP	005621IN	005620IN	100	0.833	7.3	14.5	0.2	1.2	Flooded	Flooded	Flooded	Flooded	0.2	1.0	119	3623	Flooded
4	007740STMP	005623IN	002635SMH	29	1.25	11.3	9.1	1.4	0.4	Flooded	1.6	Flooded	0.3	1.2	0.0	5710	0	Flooded
4	007741STMP	002635SMH	002638SMH	128	2	41.1	14.4	0.4	0.6	3.5	Flooded	0.3	Flooded	0.0	0.4	0	546	Insufficient Freeboard
4	008186STMP	000714ND	002615SMH	142	1.5	12.0	16.0	0	0.1	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008481STMP	007630IN	000504IO	56	1.25	13.6	11.5	0.2	0	Flooded	-	Flooded	-	0.1	0.0	180	0	Flooded
4	008482STMP	007631IN	007632IN	26	0.833	5.0	10.0	0.8	0.9	Flooded	1.9	Flooded	0.6	0.8	0.0	3062	0	Flooded
4	008484STMP	007632IN	007633IN	10	0.833	5.0	9.0	0.9	0.9	1.9	1.6	0.6	1.6	0.0	0.0	0	0	Insufficient Freeboard
4	008485STMP	007633IN	000397CB	6	0.833	5.0	9.2	0.9	0.3	1.6	1.0	1.6	1.9	0.0	0.0	0	0	Insufficient Freeboard
4	008486STMP	000397CB	000714ND	33	1	12.0	15.7	0.3	0	0.8	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
4	008489STMP	002615SMH	002616SMH	65	1.5	12.1	11.7	0.1	0.3	0.8	2.5	-	0.7	0.0	0.0	0	0	Surcharged
4	008491STMP	002616SMH	000722ND	99	1.5	19.4	11.8	0.3	0.6	2.9	4.4	0.7	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	008495A	000398CB	000715ND	9	1.5	14.4	7.8	0	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
4	008495B	000715ND	007639IN	14	1.5	14.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008496STMP	007639IN	002617SMH	9	1.5	14.4	14.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008759STMP	000584CB	003410SMH	31	1.25	8.4	8.1	1.4	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.9	2344	1665	Flooded

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		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	008836STMP	002629SMH	002630SMH	36	1	11.5	14.1	0.4	0.3	Flooded	4.3	Flooded	1.4	0.2	0.0	455	0	Flooded
4	008838STMP	000412CB	000727ND	19	1	4.1	9.3	0.2	0.3	2.8	4.8	0.7	0.8	0.0	0.0	0	0	Insufficient Freeboard
4	008839STMP	005597IN	000412CB	17	1	4.2	10.5	0	0.2	-	1.0	1.7	0.7	0.0	0.0	0	0	Sufficient Capacity
4	008842STMP	005600IN	002631SMH	99	1.25	15.0	11.9	0.9	1.1	Flooded	Flooded	Flooded	Flooded	0.6	1.1	3546	8465	Flooded
4	008871STMP	005616IN	002635SMH	108	1.25	2.7	11.4	0	0.4	-	3.2	-	0.3	0.0	0.0	0	0	Sufficient Capacity
4	008908STMP	003357SMH	003435SMH	132	2	7.6	5.3	0.1	0.5	0.3	1.8	-	1.5	0.0	0.0	0	0	Surcharged
4	008919STMP	007898IN	000954ND	29	0.833	3.4	8.3	0.9	1.5	Flooded	Flooded	Flooded	Flooded	0.8	1.2	1169	1683	Flooded
4	008922STMP	000401CB	002618SMH	33	1	7.7	12.9	0.2	0.4	2.7	4.2	0.3	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	008926A	002618SMH	000737ND	39	1.5	21.5	12.0	0.4	0.4	4.3	Flooded	0.1	Flooded	0.0	0.2	0	3	Insufficient Freeboard
4	008926B	000737ND	002619SMH	28	1.5	19.6	10.9	0.4	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.2	3	418	Flooded
4	009103STMP	002617SMH	002618SMH	226	1.5	14.4	12.0	0	0.4	-	4.1	-	0.1	0.0	0.0	0	0	Sufficient Capacity
4	009120A	002619SMH	000717ND	17	1.75	24.4	10.0	0.4	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.2	418	11	Flooded
4	009120B	000718ND	002620SMH	146	1.75	29.3	12.1	0.4	0	2.7	-	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	009120C	000717ND	000718ND	57	1.75	24.4	10.1	0.4	0.4	Flooded	2.7	Flooded	0.7	0.2	0.0	11	0	Flooded
4	009121A	000403CB	000716ND	21	1.25	6.1	4.9	0.4	0.4	3.6	Flooded	0.3	Flooded	0.0	0.2	0	6	Insufficient Freeboard
4	009121B	000716ND	002619SMH	15	1.25	6.2	4.9	0.4	0.4	Flooded	Flooded	Flooded	Flooded	0.2	0.2	6	418	Flooded
4	009128A	002620SMH	000720ND	68	2	29.3	19.0	0	0.2	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009128B	000720ND	002622SMH	88	2	61.3	23.2	0.2	0.4	0.9	Flooded	-	Flooded	0.0	0.4	0	6079	Surcharged
4	009129STMP	002621SMH	000720ND	75	1.75	32.0	23.7	0	0.2	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009130STMP	002626SMH	002621SMH	90	1.5	32.0	17.7	0.4	0	5.3	-	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
4	009131STMP	002622SMH	002623SMH	139	2	56.5	19.8	0.4	0.5	Flooded	3.2	Flooded	0.4	0.4	0.0	6079	0	Flooded
4	009132STMP	002623SMH	002624SMH	80	2	56.5	19.6	0.5	0.6	3.4	Flooded	0.4	Flooded	0.0	0.6	0	9219	Insufficient Freeboard
4	009134STMP	002624SMH	002625SMH	173	2	50.4	20.3	0.6	0.7	Flooded	Flooded	Flooded	Flooded	0.6	0.6	9219	9021	Flooded
4	009135STMP	002625SMH	007940IN	593	2	46.3	14.4	0.7	0	Flooded	5.2	Flooded	-	0.6	0.0	9021	0	Flooded
4	009136STMP	002627SMH	002626SMH	35	1.5	27.9	15.9	0.3	0.4	5.0	5.0	0.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009137STMP	000407CB	002626SMH	17	1.25	4.1	7.4	0.3	0.4	3.4	5.5	0.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009138STMP	005578IN	000407CB	27	1	4.1	5.1	0.3	0.3	2.7	2.5	0.2	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	009143STMP	002628SMH	002627SMH	361	1.5	21.1	13.6	0.1	0.3	1.7	4.8	-	0.1	0.0	0.0	0	0	Surcharged
4	009146STMP	000409CB	002628SMH	25	1	3.3	12.0	0	0.1	-	1.3	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009154STMP	000410CB	000719ND	18	1	3.9	6.7	0.1	0.4	3.5	4.6	0.1	0.8	0.0	0.0	0	0	Insufficient Freeboard
4	009155A	002630SMH	000727ND	25	1.25	11.6	10.2	0.3	0.3	4.2	4.5	1.4	0.8	0.0	0.0	0	0	Insufficient Freeboard
4	009155B	000727ND	000719ND	121	1.25	14.5	11.6	0.3	0.4	4.5	4.3	0.8	0.8	0.0	0.0	0	0	Insufficient Freeboard
4	009155C	000719ND	002628SMH	78	1.25	18.3	14.6	0.4	0.1	4.3	0.9	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
4	009159A	002632SMH	000729ND	215	1.75	36.0	16.0	0.3	0.5	3.8	Flooded	0.5	Flooded	0.0	0.2	0	1	Insufficient Freeboard
4	009159B	000729ND	002635SMH	60	1.75	33.7	15.0	0.5	0.4	Flooded	3.7	Flooded	0.3	0.2	0.0	1	0	Flooded
4	009161STMP	002638SMH	002639SMH	88	2	46.0	19.2	0.6	0.6	Flooded	5.2	Flooded	0.9	0.4	0.0	546	0	Flooded
4	009162STMP	005630IN	002638SMH	49	1.25	14.9	12.1	0.7	0.6	2.3	Flooded	0.8	Flooded	0.0	0.4	0	546	Insufficient Freeboard
4	009165STMP	005633IN	000730ND	12	1.25	7.4	12.6	0.2	0.7	2.5	7.7	0.8	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009166STMP	005634IN	005633IN	28	1.25	7.4	9.3	0.2	0.2	1.4	2.0	0.5	0.8	0.0	0.0	0	0	Insufficient Freeboard
4	009170A	002640SMH	0001041ND	80	2	53.3	16.6	0.7	0.8	Flooded	6.4	Flooded	0.1	0.6	0.0	1407	0	Flooded
4	009170B	0001041ND	006640IN	371	2	55.4	17.3	0.8	0	7.8	-	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
4	009171A	002639SMH	000730ND	127	2	46.0	17.6	0.6	0.7	5.3	7.0	0.9	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009171B	000730ND	002640SMH	348	2	51.2	17.7	0.7	0.7	7.0	Flooded	0.6	Flooded	0.0	0.6	0	1407	Insufficient Freeboard
4	009396STMP	002633SMH	005623IN	286	1.25	9.8	7.9	1.2	1.4	Flooded	Flooded	Flooded	Flooded	1.2	1.2	9828	5710	Flooded
4	009494A	003413SMH	000955ND	86	1.75	8.2	3.4	2.3	2.6	Flooded	Flooded	Flooded	Flooded	1.9	1.8	7515	69	Flooded
4	009494B	000955ND	003412SMH	103	1.75	13.3	5.5	2.6	1.5	Flooded	Flooded	Flooded	Flooded	1.8	1.4	69	17921	Flooded
4	009498STMP	000973ND	003414SMH	250	2	10.8	4.0	1.8	2.4	0.7	Flooded	0.6	Flooded	0.0	1.9	0	6153	Insufficient Freeboard
4	009499STMP	003414SMH	003416SMH	70	2	10.6	3.4	2.4	2.5	Flooded	Flooded	Flooded	Flooded	1.9	2.0	6153	10254	Flooded
4	009503STMP	003415SMH	003416SMH	47	1.25	8.6	7.0	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.6	2.0	1948	10254	Flooded

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		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	009504A	003416SMH	000956ND	63	2	14.0	4.4	2.5	2.5	Flooded	Flooded	Flooded	Flooded	2.0	2.1	10254	152	Flooded
4	009504B	000956ND	003417SMH	33	2	22.7	7.2	2.5	2.5	Flooded	Flooded	Flooded	Flooded	2.1	1.4	152	4426	Flooded
4	009508STMP	003417SMH	000966ND	24	2	22.7	7.2	2.5	1.5	Flooded	3.9	Flooded	0.0	1.4	0.0	4426	0	Flooded
4	009509STMP	003420SMH	003418SMH	108	2.5	20.4	4.1	1.7	1.5	Flooded	Flooded	Flooded	Flooded	0.9	1.1	3437	12215	Flooded
4	009510STMP	003419SMH	006189IN	4	2	23.8	-7.5	2	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.1	11944	3490	Flooded
4	009511STMP	006197IN	000970ND	16	0.833	7.1	13.0	0.7	0.7	Flooded	0.5	Flooded	-	0.7	0.0	3597	0	Flooded
4	009514STMP	000594CB	003425SMH	52	1.25	3.6	-2.8	0	0	0.3	-	-	-	0.0	0.0	0	0	Surcharged
4	009656STMP	002017SMH	002018SMH	5	2	39.5	12.5	1.1	1	Flooded	Flooded	Flooded	Flooded	0.5	0.6	1826	1239	Flooded
4	009658A	002019SMH	002907ND	30	3	64.8	16.7	0	0.6	-	1.0	2.0	0.5	0.0	0.0	0	0	Sufficient Capacity
4	009658B	002907ND	002018SMH	185	3	120.6	19.2	0.6	1	1.4	Flooded	0.5	Flooded	0.0	0.6	0	1239	Insufficient Freeboard
4	009659A	006640IN	001171ND	20	2	27.0	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009659B	001171ND	006645IN	28	2	26.9	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009660STMP	006640IN	002019SMH	57	2	34.8	16.3	0	0	-	-	-	2.0	0.0	0.0	0	0	Sufficient Capacity
4	009688A	003412SMH	000954ND	19	4 x 7	194.2	6.9	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.4	1.2	17921	1683	Flooded
4	009688B	000954ND	000936ND	137	4 x 7	194.7	7.0	1.5	1.4	Flooded	Flooded	Flooded	Flooded	1.2	0.0	1683	14	Flooded
4	009689STMP	000587CB	003413SMH	36	1.25	5.0	-4.1	2.2	2.3	Flooded	Flooded	Flooded	Flooded	1.6	1.9	2778	7515	Flooded
4	009697STMP	006201IN	000973ND	49	1	2.9	3.9	2	1.8	Flooded	1.7	Flooded	0.6	1.2	0.0	2031	0	Flooded
4	009698STMP	003426SMH	000973ND	46	1.5	8.7	4.9	1.9	1.8	Flooded	1.2	Flooded	0.6	0.2	0.0	41	0	Flooded
4	009699STMP	006202IN	003426SMH	16	1.25	8.7	7.1	1.7	1.9	Flooded	Flooded	Flooded	Flooded	0.4	0.2	597	41	Flooded
4	009700STMP	006204IN	006202IN	60	1.25	10.0	8.1	1.5	1.7	2.0	Flooded	1.1	Flooded	0.0	0.4	0	597	Insufficient Freeboard
4	009802STMP	007910IN	003357SMH	141	1.25	7.5	8.8	0	0.1	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009904STMP	006594IN	001148ND	31	1.25	7.8	6.3	3.2	3.6	Flooded	Flooded	Flooded	Flooded	3.0	2.9	19059	23	Flooded
4	009996B	001152ND	001174ND	45	1	9.7	12.2	4.3	3.2	Flooded	Flooded	Flooded	Flooded	3.5	3.1	23	52	Flooded
4	010033STMP	006189IN	000966ND	15	2	23.7	7.5	1.6	1.5	Flooded	3.9	Flooded	0.0	1.1	0.0	3490	0	Flooded
4	010034A	003418SMH	000966ND	26	4 x 7	152.7	5.8	1.5	1.5	Flooded	1.9	Flooded	0.0	1.1	0.0	12215	0	Flooded
4	010034B	000966ND	003412SMH	168	4 x 7	171.8	6.8	1.5	1.5	1.9	Flooded	0.0	Flooded	0.0	1.4	0	17921	Insufficient Freeboard
4	010035STMP	006194IN	003420SMH	184	2.25	14.5	5.8	0	1.7	0.3	Flooded	-	Flooded	0.0	0.9	0	3437	Surcharged
4	010036STMP	003421SMH	003418SMH	225	4 x 7	173.3	6.2	1.4	1.5	Flooded	Flooded	Flooded	Flooded	0.1	1.1	4707	12215	Flooded
4	010037STMP	001968SMH	003421SMH	78	4 x 7	265.9	-9.5	1.4	1.4	Flooded	Flooded	Flooded	Flooded	0.1	0.1	2567	4707	Flooded
4	010038STMP	006190IN	003421SMH	282	1.5	7.9	4.5	1.6	1.4	Flooded	Flooded	Flooded	Flooded	1.5	0.1	5401	4707	Flooded
4	010041STMP	000590CB	000968ND	16	1	3.5	8.2	0.5	1.5	1.1	4.8	1.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
4	010046A	003423SMH	000968ND	54	2	21.6	6.8	1.5	1.5	Flooded	3.8	Flooded	1.8	0.5	0.0	2476	0	Flooded
4	010046B	000968ND	003419SMH	207	2	24.6	7.8	1.5	2	3.8	Flooded	1.8	Flooded	0.0	1.4	0	11944	Insufficient Freeboard
4	010047A	003435SMH	000967ND	214	2	20.3	7.2	0.5	1.5	1.8	3.7	1.5	1.2	0.0	0.0	0	0	Insufficient Freeboard
4	010047B	000967ND	003423SMH	12	2	20.1	6.3	1.5	1.5	3.9	Flooded	1.2	Flooded	0.0	0.5	0	2476	Insufficient Freeboard
4	010048STMP	003410SMH	003423SMH	206	1.25	8.1	6.5	1.4	1.5	Flooded	Flooded	Flooded	Flooded	0.9	0.5	1665	2476	Flooded
4	010050STMP	003424SMH	006194IN	10	2.25	14.2	6.3	0.5	0	0.2	0.3	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
4	010053STMP	003425SMH	003424SMH	48	1.5	10.5	10.7	0	0.5	-	0.9	-	1.8	0.0	0.0	0	0	Sufficient Capacity
4	010054STMP	000970ND	003425SMH	13	1.25	7.1	5.7	0.7	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
4	010318A	003492SMH	0001040ND	33	2.25	56.6	14.2	1	1	0.9	0.5	0.6	1.7	0.0	0.0	0	0	Insufficient Freeboard
4	010318B	0001040ND	004000SMH	46	2.25	56.6	14.2	1	0	0.8	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	010319STMP	007939IN	003492SMH	22	2.25	56.6	14.2	1	1	Flooded	0.8	Flooded	0.6	0.9	0.0	934	0	Flooded
4	010323STMP	003493SMH	007939IN	119	2.25	55.6	13.9	1	1	Flooded	Flooded	Flooded	Flooded	0.9	0.9	3751	934	Flooded
4	010324STMP	003494SMH	003493SMH	174	2.25	56.4	14.0	1	1	Flooded	Flooded	Flooded	Flooded	1.0	0.9	31416	3751	Flooded
4	010326STMP	007940IN	003494SMH	10	2	74.3	23.3	0	1	5.2	Flooded	-	Flooded	0.0	1.0	0	31416	Surcharged
4	010349STMP	007944IN	007948IN	31	1.25	17.8	14.4	0.8	0.8	Flooded	3.9	Flooded	0.0	0.7	0.0	5353	0	Flooded
4	010353STMP	007948IN	0001041ND	10	1.25	17.9	16.7	0.8	0.8	4.5	8.5	0.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	010356STMP	003441SMH	003442SMH	146	1.75	11.1	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010358STMP	002631SMH	003441SMH	129	1	11.1	13.8	1.1	0	Flooded	-	Flooded	-	1.1	0.0	8465	0	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	010359A	003442SMH	0001042ND	110	1.75	22.1	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010359B	0001042ND	003443SMH	16	1.75	22.0	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010360STMP	003443SMH	002021SMH	346	2	48.0	21.0	0	0.2	-	5.6	-	0.1	0.0	0.0	0	0	Sufficient Capacity
4	010361STMP	003444SMH	003443SMH	43	1.5	26.1	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010366STMP	007955IN	003444SMH	26	1.5	21.2	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010368STMP	003445SMH	007955IN	35	1.5	21.2	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010370STMP	007958IN	003445SMH	178	1.5	21.2	17.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	011022STMP	000125CB	001966SMH	81	1	6.9	8.6	0.1	2.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	7	140	Flooded
4	011023STMP	006552IN	000125CB	27	1	6.3	9.4	0	0.1	0.4	Flooded	0.1	Flooded	0.0	0.0	0	7	Insufficient Freeboard
4	011258STMP	006645IN	002019SMH	9	2	29.9	9.6	0	0	-	-	-	2.0	0.0	0.0	0	0	Sufficient Capacity
4	011260STMP	002023SMH	001185ND	118	1.25	11.0	8.8	1.1	0.6	Flooded	Flooded	Flooded	Flooded	1.0	0.6	12793	66	Flooded
4	011261STMP	006647IN	002023SMH	71	1	4.2	6.8	0.7	1.1	0.7	Flooded	0.6	Flooded	0.0	1.0	0	12793	Insufficient Freeboard
4	011263STMP	006654IN	001185ND	115	1	2.2	5.6	0	0.6	-	Flooded	-	Flooded	0.0	0.6	0	66	Sufficient Capacity
4	011264STMP	006656IN	001186ND	63	2.5	21.0	8.0	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.5	8615	30	Flooded
4	011266STMP	002021SMH	002024SMH	49	2	47.6	14.9	0.2	0.2	5.9	5.3	0.1	1.4	0.0	0.0	0	0	Insufficient Freeboard
4	011383A	001970SMH	001151ND	99	3	82.8	11.5	2.5	2.7	Flooded	Flooded	Flooded	Flooded	2.0	1.3	26219	5	Flooded
4	011383B	001151ND	001969SMH	19	3	82.8	11.6	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.3	1.9	5	7732	Flooded
4	011385STMP	006553IN	000128CB	27	1	6.5	8.3	2.1	2.2	Flooded	Flooded	Flooded	Flooded	1.9	1.5	1472	1613	Flooded
4	011386STMP	000128CB	001151ND	41	1.25	10.5	8.5	2.2	2.7	Flooded	Flooded	Flooded	Flooded	1.5	1.3	1613	5	Flooded
4	011390A	001974SMH	001137ND	44	2	43.7	13.6	3.6	3.8	Flooded	Flooded	Flooded	Flooded	2.5	2.1	30536	45	Flooded
4	011390B	001137ND	001970SMH	126	2	44.0	13.8	3.8	2.5	Flooded	Flooded	Flooded	Flooded	2.1	2.0	45	26219	Flooded
4	011391STMP	001971SMH	001970SMH	33	3	83.7	12.1	2.2	2.5	Flooded	Flooded	Flooded	Flooded	2.2	2.0	83935	26219	Flooded
4	011392A	001973SMH	001135ND	8	2	10.7	3.4	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.1	1.9	5946	30	Flooded
4	011392B	001135ND	001944SMH	262	2	13.3	4.2	2.4	2.5	Flooded	Flooded	Flooded	Flooded	1.9	1.9	30	11290	Flooded
4	011441STMP	006540IN	001962SMH	204	2	20.0	6.3	2.2	2.6	4.5	Flooded	0.0	Flooded	0.0	2.3	0	9974	Insufficient Freeboard
4	011442STMP	001944SMH	001943SMH	237	1.75	16.2	6.6	2.5	2.8	Flooded	Flooded	Flooded	Flooded	1.9	2.2	11290	5795	Flooded
4	011443STMP	001962SMH	006548IN	52	2.5	34.1	-6.9	2.6	2.5	Flooded	Flooded	Flooded	Flooded	2.3	2.1	9974	6762	Flooded
4	011444A	006548IN	001131ND	276	2.5	31.1	6.3	2.5	2.9	Flooded	Flooded	Flooded	Flooded	2.1	0.6	6762	1	Flooded
4	011444B	001131ND	001963SMH	27	2.5	30.9	6.3	2.9	2.9	Flooded	Flooded	Flooded	Flooded	0.6	2.0	1	11647	Flooded
4	011447STMP	001963SMH	001965SMH	195	2.5	33.1	6.7	2.9	2.2	Flooded	RIM	Flooded	RIM	2.0	0.0	11647	0	Flooded
4	011449STMP	000123CB	001131ND	34	0.833	2.9	5.2	2.3	2.9	Flooded	Flooded	Flooded	Flooded	1.9	0.6	3736	1	Flooded
4	011450STMP	001966SMH	001965SMH	139	3	112.6	15.8	2.5	2.2	Flooded	RIM	Flooded	RIM	0.0	0.0	140	0	Flooded
4	011451STMP	001965SMH	001968SMH	127	4	120.6	9.7	2.2	1.4	RIM	Flooded	RIM	Flooded	0.0	0.1	0	2567	Insufficient Freeboard
4	011452STMP	001967SMH	001966SMH	49	3	104.7	14.7	2.3	2.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	89	140	Flooded
4	011453STMP	001969SMH	001967SMH	255	3	85.9	12.0	2.7	2.3	Flooded	Flooded	Flooded	Flooded	1.9	0.0	7732	89	Flooded
4	011454STMP	000124CB	001967SMH	34	1.5	19.5	10.9	0	2.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	2	89	Flooded
4	011632A	001988SMH	001136ND	275	2	26.4	8.2	3.6	3.9	Flooded	Flooded	Flooded	Flooded	3.1	2.5	30020	40	Flooded
4	011632B	001136ND	001974SMH	53	2	29.0	9.1	3.9	3.6	Flooded	Flooded	Flooded	Flooded	2.5	2.5	40	30536	Flooded
4	011671STMP	002015SMH	002014SMH	12	1.5	10.4	-5.9	0.3	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
4	011672A	002011SMH	001167ND	15	1.25	15.1	12.7	0.2	0	0.7	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
4	011672B	001167ND	002014SMH	319	1.25	9.9	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	011674STMP	002013SMH	002012SMH	211	2	20.2	12.1	0	1.9	-	Flooded	-	Flooded	0.0	1.8	0	34482	Sufficient Capacity
4	011675STMP	006639IN	002016SMH	5	1.25 x 2	27.5	8.3	1.8	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.3	18132	29672	Flooded
4	011676STMP	002016SMH	002017SMH	81	2	39.5	12.4	1.6	1.1	Flooded	Flooded	Flooded	Flooded	1.3	0.5	29672	1826	Flooded
4	012008STMP	000111CB	006540IN	99	0.833	4.7	8.4	1.8	2.2	Flooded	3.6	Flooded	0.0	1.8	0.0	11212	0	Flooded
4	012010STMP	000112CB	001943SMH	4	0.833	5.1	9.1	2.5	2.8	Flooded	Flooded	Flooded	Flooded	2.5	2.2	6874	5795	Flooded
4	012049STMP	002018SMH	001971SMH	452	3	100.9	14.2	1	2.2	Flooded	Flooded	Flooded	Flooded	0.6	2.2	1239	83935	Flooded
4	012137A	002012SMH	001169ND	7	2	18.9	6.0	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.6	34482	27	Flooded
4	012137B	001169ND	006639IN	40	2	21.0	6.7	1.9	1.8	Flooded	Flooded	Flooded	Flooded	1.6	1.4	27	18132	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	012138STMP	002014SMH	002013SMH	74	2	20.2	18.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	012188STMP	001943SMH	006540IN	41	1.75	18.0	-7.4	2.8	2.2	Flooded	4.7	Flooded	0.0	2.2	0.0	5795	0	Flooded
4	012190STMP	000133CB	001134ND	23	0.833	3.5	11.0	2.3	2.4	Flooded	Flooded	Flooded	Flooded	2.1	1.9	7261	34	Flooded
4	012193A	001983SMH	001134ND	261	1.75	12.3	5.0	2.2	2.4	4.0	Flooded	0.6	Flooded	0.0	1.9	0	34	Insufficient Freeboard
4	012193B	001134ND	001973SMH	15	1.75	10.8	4.4	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.9	1.1	34	5946	Flooded
4	012195STMP	000136CB	001974SMH	43	1.25	15.0	11.9	3.2	3.6	Flooded	Flooded	Flooded	Flooded	2.8	2.5	24280	30536	Flooded
4	012209A	001185ND	001174ND	587	2	44.2	14.2	0.6	3.2	Flooded	Flooded	Flooded	Flooded	0.6	3.1	66	52	Flooded
4	012209B	001174ND	002022SMH	44	2	39.1	12.2	3.2	3.4	Flooded	Flooded	Flooded	Flooded	3.1	3.2	52	46289	Flooded
4	012212STMP	002024SMH	001186ND	198	2	61.3	19.6	0.2	0.6	5.3	Flooded	1.4	Flooded	0.0	0.5	0	30	Insufficient Freeboard
4	012218STMP	006566IN	000134CB	23	0.833	3.4	7.0	2.3	2.5	Flooded	Flooded	Flooded	Flooded	2.2	1.8	2295	2726	Flooded
4	012219STMP	000134CB	001136ND	56	1.25	4.8	4.9	2.5	3.9	Flooded	Flooded	Flooded	Flooded	1.8	2.5	2726	40	Flooded
4	012220STMP	006567IN	000135CB	33	0.833	4.7	10.0	2.1	2.4	Flooded	Flooded	Flooded	Flooded	1.9	1.8	3590	4032	Flooded
4	012221STMP	000135CB	001137ND	41	1.25	8.4	6.7	2.4	3.8	Flooded	Flooded	Flooded	Flooded	1.8	2.1	4032	45	Flooded
4	012222STMP	000137CB	000136CB	25	0.833	8.6	15.4	3.4	3.2	Flooded	Flooded	Flooded	Flooded	3.4	2.8	14942	24280	Flooded
4	012223STMP	006568IN	000137CB	10	0.833	6.2	11.2	3.8	3.4	Flooded	Flooded	Flooded	Flooded	3.8	3.4	14199	14942	Flooded
4	012226STMP	000138CB	001136ND	45	0.667	3.8	10.6	4.8	3.9	Flooded	Flooded	Flooded	Flooded	4.5	2.5	9052	40	Flooded
4	012247STMP	001987SMH	001983SMH	270	1.75	6.4	4.9	0	2.2	-	4.0	-	0.6	0.0	0.0	0	0	Sufficient Capacity
4	012248STMP	000152CB	001983SMH	31	0.833	4.2	8.8	0.8	2.2	Flooded	4.2	Flooded	0.6	0.6	0.0	906	0	Flooded
4	012249STMP	000149CB	001983SMH	20	0.833	3.4	8.0	0.6	2.2	Flooded	4.2	Flooded	0.6	0.3	0.0	81	0	Flooded
4	012262A	002022SMH	001148ND	37	2	28.9	9.1	3.4	3.6	Flooded	Flooded	Flooded	Flooded	3.2	2.9	46289	23	Flooded
4	012262B	001148ND	001988SMH	20	2	25.8	8.1	3.6	3.6	Flooded	Flooded	Flooded	Flooded	2.9	3.1	23	30020	Flooded
4	012264STMP	000158CB	001152ND	37	0.667	4.2	-11.5	6	4.3	Flooded	Flooded	Flooded	Flooded	5.5	3.5	25406	23	Flooded
4	012280STMP	006623IN	001965SMH	76	0.833	4.5	8.1	0.9	2.2	Flooded	RIM	Flooded	RIM	0.9	0.0	2220	0	Flooded
4	012304STMP	001186ND	001185ND	187	2	50.2	15.8	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.6	30	66	Flooded
4	014000STMP	004000SMH	002907ND	82	2.25	56.8	22.9	0	0.6	-	2.1	-	0.5	0.0	0.0	0	0	Sufficient Capacity
5	007707A	002646SMH	000735ND	81	1.75	15.0	6.2	3.2	3.2	Flooded	3.1	Flooded	0.0	2.9	0.0	3313	0	Flooded
5	007707B	000735ND	000736ND	306	1.75	15.0	6.2	3.2	3.2	3.1	Flooded	0.0	Flooded	0.0	2.0	0	28	Insufficient Freeboard
5	007707C	000736ND	002647SMH	56	1.75	16.4	6.8	3.2	3.1	Flooded	Flooded	Flooded	Flooded	2.0	1.8	28	1333	Flooded
5	007710STMP	000428CB	000736ND	37	1.25	4.0	4.1	2.3	3.2	Flooded	Flooded	Flooded	Flooded	2.3	2.0	3082	28	Flooded
5	007713STMP	005655IN	007684IN	71	1.25	11.5	18.2	0	0	-	-	-	1.1	0.0	0.0	0	0	Sufficient Capacity
5	007742STMP	007531IN	002645SMH	31	1.25	6.0	9.9	1	2.5	0.8	Flooded	1.6	Flooded	0.0	0.6	0	986	Insufficient Freeboard
5	007895STMP	000472CB	000754ND	10	1	4.7	7.4	2.4	3.2	Flooded	Flooded	Flooded	Flooded	1.9	1.2	5286	10	Flooded
5	007897STMP	000122CP	000123CP	20	1	11.6	14.8	0	0	3.1	3.2	-	-	0.0	0.0	0	0	Surcharged
5	007898A	000124CP	000755ND	20	5.35	547.9	24.7	0	0	-	-	1.5	-	0.0	0.0	0	0	Sufficient Capacity
5	007898B	000755ND	000125CP	37	5.35	567.6	28.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007899STMP	002877SMH	000755ND	4	1.5	22.0	12.3	0.8	0	3.8	3.1	0.3	-	0.0	0.0	0	0	Insufficient Freeboard
5	007900STMP	002885SMH	002877SMH	145	1.5	25.2	14.1	0.2	0.8	Flooded	3.6	Flooded	0.3	0.1	0.0	32	0	Flooded
5	007916STMP	002879SMH	002881SMH	87	1.5	6.8	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007917STMP	005719IN	002880SMH	78	1.25	7.4	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007918STMP	002880SMH	002881SMH	28	1.25	7.4	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007919STMP	002881SMH	002882SMH	90	1.5	14.2	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007920STMP	002882SMH	002883SMH	101	1.5	14.2	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007921STMP	002883SMH	002884SMH	145	1.5	14.2	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007924STMP	002884SMH	002885SMH	93	1.5	14.2	14.8	0	0.2	-	Flooded	-	Flooded	0.0	0.1	0	32	Sufficient Capacity
5	008306STMP	005679IN	000464CB	35	1	5.1	8.2	0.1	0.4	0.1	Flooded	0.4	Flooded	0.0	0.2	0	255	Insufficient Freeboard
5	008307STMP	005681IN	000464CB	50	1	5.9	9.3	0	0.4	-	Flooded	0.7	Flooded	0.0	0.2	0	255	Sufficient Capacity
5	008308STMP	005680IN	003025SMH	70	1	9.8	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008311STMP	000464CB	005680IN	4	1	9.8	12.5	0.4	0	Flooded	-	Flooded	-	0.2	0.0	255	0	Flooded
5	008315STMP	003025SMH	003028SMH	139	1.5	12.7	16.7	0	0.4	-	4.7	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	008449STMP	005701IN	000527IO	116	1.75	28.9	15.4	0	0	-	2.8	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008450STMP	003035SMH	003034SMH	53	1.75	22.3	14.3	1.9	3.3	1.5	Flooded	0.4	Flooded	0.0	0.8	0	2591	Insufficient Freeboard
5	008451STMP	003036SMH	003035SMH	105	1.75	19.1	7.9	3.2	1.9	2.2	1.3	0.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
5	008452A	003034SMH	000750ND	102	1.75	21.3	8.7	3.3	3.4	Flooded	Flooded	Flooded	Flooded	0.8	1.3	2591	44	Flooded
5	008452B	000750ND	003039SMH	508	1.75	20.6	8.5	3.4	0	Flooded	-	Flooded	-	1.3	0.0	44	0	Flooded
5	008453STMP	003039SMH	003040SMH	339	1.75	20.6	18.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008454STMP	003040SMH	002876SMH	78	1.75	20.6	21.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008455STMP	002876SMH	005701IN	49	1.75	28.9	23.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008466STMP	007684IN	003033SMH	75	1.5	11.5	19.2	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
5	008474STMP	002650SMH	000510IO	48	1.75	35.6	14.7	0	0	1.7	-	-	-	0.0	0.0	0	0	Surcharged
5	008475STMP	000742ND	002650SMH	216	1.5	27.3	18.7	0	0	-	1.6	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008570STMP	007675IN	007670IN	296	2	43.2	18.5	0	0	-	0.3	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008576STMP	000120CP	000121CP	97	5	447.9	28.2	0	0	-	1.8	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008581STMP	007680IN	000521IO	105	1.5	29.8	16.7	0.5	0	3.0	-	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
5	008585STMP	003033SMH	000522IO	92	1.25	11.5	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008600STMP	003019SMH	000743ND	56	1.25	11.1	-8.9	0.5	0.1	3.9	2.1	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
5	008601A	000462CB	000743ND	37	1.25	8.7	13.5	0	0.1	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008601B	000743ND	000511IO	134	1.25	19.6	16.4	0.1	0	2.1	-	-	-	0.0	0.0	0	0	Surcharged
5	008676STMP	003026SMH	007653IN	15	1.25	8.6	8.2	0	0.1	0.3	0.5	-	-	0.0	0.0	0	0	Surcharged
5	008677STMP	007653IN	007655IN	37	1.25	15.0	12.2	0.1	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
5	008682STMP	007655IN	003028SMH	39	1.25	15.0	23.1	0	0.4	-	4.9	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008683STMP	005703IN	003027SMH	45	1.25	8.7	18.0	0	0.4	-	1.9	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008684STMP	003028SMH	007656IN	99	1.5	27.6	16.2	0.4	0.5	4.7	Flooded	-	Flooded	0.0	0.5	0	5293	Surcharged
5	008685STMP	007656IN	007680IN	179	1.5	29.8	16.9	0.5	0.5	Flooded	3.0	Flooded	0.5	0.5	0.0	5293	0	Flooded
5	008694STMP	000470CB	003035SMH	29	1	3.7	4.6	1.4	1.9	Flooded	1.5	Flooded	0.4	0.1	0.0	7	0	Flooded
5	008799A	002613SMH	000725ND	53	1.25	9.7	8.4	2.5	2.9	Flooded	Flooded	Flooded	Flooded	1.2	2.2	5635	19	Flooded
5	008799B	000725ND	002643SMH	48	1.25	7.1	5.7	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.2	2.5	19	5528	Flooded
5	008804A	002584SMH	000712ND	72	1	7.9	10.4	0.8	0.8	Flooded	3.0	Flooded	0.1	0.6	0.0	496	0	Flooded
5	008804B	000712ND	002613SMH	256	1	7.6	9.9	0.8	2.5	3.0	Flooded	0.1	Flooded	0.0	1.2	0	5635	Insufficient Freeboard
5	008851STMP	000414CB	000726ND	34	0.833	3.8	6.9	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.9	2.4	2686	6	Flooded
5	008868STMP	000453CB	007531IN	40	1.25	6.0	-4.9	0	1	1.4	0.8	-	1.6	0.0	0.0	0	0	Surcharged
5	009050STMP	000454CB	000453CB	32	1.25	6.0	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009055STMP	000456CB	002584SMH	21	1	8.2	10.2	0.8	0.8	Flooded	Flooded	Flooded	Flooded	0.7	0.6	2506	496	Flooded
5	009094STMP	002649SMH	000742ND	51	1.25	27.2	21.9	0	0	3.9	-	-	-	0.0	0.0	0	0	Surcharged
5	009108STMP	003029SMH	003019SMH	156	1.5	11.4	9.9	0	0.5	-	3.6	-	1.5	0.0	0.0	0	0	Sufficient Capacity
5	009116STMP	007669IN	000518IO	41	2	42.9	13.6	0	0	0.8	0.3	-	-	0.0	0.0	0	0	Surcharged
5	009117STMP	007670IN	007669IN	38	2	43.0	14.5	0	0	0.4	0.8	-	-	0.0	0.0	0	0	Surcharged
5	009176STMP	000424CB	000732ND	19	1	2.6	3.2	2.6	3.1	Flooded	Flooded	Flooded	Flooded	0.6	2.6	167	22	Flooded
5	009201STMP	005691IN	000471CB	28	1	2.4	4.6	0.3	0.6	0.2	0.5	0.3	0.4	0.0	0.0	0	0	Insufficient Freeboard
5	009202STMP	000471CB	003036SMH	30	1	2.4	3.0	0.6	3.2	2.9	3.0	0.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
5	009203A	002647SMH	000734ND	44	1.75	16.4	6.8	3.1	3.1	Flooded	Flooded	Flooded	Flooded	1.8	1.9	1333	10	Flooded
5	009203B	000754ND	000753ND	22	1.75	18.5	7.6	3.2	3.2	Flooded	2.9	Flooded	0.1	1.2	0.0	10	0	Flooded
5	009203C	000753ND	003036SMH	274	1.75	18.5	7.6	3.2	3.2	2.9	2.1	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
5	009203D	000734ND	000754ND	195	1.75	16.4	6.8	3.1	3.2	Flooded	Flooded	Flooded	Flooded	1.9	1.2	10	10	Flooded
5	009213STMP	003027SMH	003026SMH	116	1.25	8.6	6.9	0.4	0	2.0	0.2	-	-	0.0	0.0	0	0	Surcharged
5	009397STMP	000415CB	002643SMH	27	1.25	6.0	4.8	2.6	2.9	Flooded	Flooded	Flooded	Flooded	2.3	2.5	2623	5528	Flooded
5	009402A	002643SMH	000732ND	87	1.5	10.2	6.2	2.9	3.1	Flooded	Flooded	Flooded	Flooded	2.5	2.6	5528	22	Flooded
5	009402B	000733ND	002646SMH	47	1.5	14.0	7.8	3.2	3.2	Flooded	Flooded	Flooded	Flooded	3.0	2.9	17	3313	Flooded
5	009402C	000732ND	000726ND	120	1.5	11.1	6.2	3.1	3.2	Flooded	Flooded	Flooded	Flooded	2.6	2.4	22	6	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	009402D	000726ND	000733ND	136	1.5	11.7	6.6	3.2	3.2	Flooded	Flooded	Flooded	Flooded	2.4	3.0	6	17	Flooded
5	009404A	000731ND	000724ND	112	1.5	8.6	4.8	2.9	2.9	3.5	Flooded	0.7	Flooded	0.0	2.0	0	22	Insufficient Freeboard
5	009404B	000724ND	002643SMH	127	1.5	6.9	3.8	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.0	2.5	22	5528	Flooded
5	009415STMP	002644SMH	002645SMH	182	1.25	3.7	3.8	2.5	2.5	Flooded	Flooded	Flooded	Flooded	1.5	0.6	3021	986	Flooded
5	009417STMP	002645SMH	000731ND	140	1.25	5.2	4.1	2.5	2.9	Flooded	3.7	Flooded	0.7	0.6	0.0	986	0	Flooded
5	009418STMP	000423CB	000731ND	19	1	3.8	4.7	1.5	2.9	Flooded	4.0	Flooded	0.7	0.9	0.0	1511	0	Flooded
6	007127STMP	005483IN	005484IN	9	1	6.1	-7.7	2.1	1.5	Flooded	Flooded	Flooded	Flooded	2.1	1.5	11563	2472	Flooded
6	007128STMP	005484IN	005485IN	7	1	5.0	6.8	1.5	0	Flooded	-	Flooded	0.6	1.5	0.0	2472	0	Flooded
6	007129STMP	005485IN	005486IN	6	1	5.0	15.7	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	007130STMP	005486IN	002559SMH	29	1.5	5.1	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133A	000695ND	000694ND	185	2.5	0.0	0.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133B	000694ND	000689ND	60	2.5	8.8	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133C	000689ND	002559SMH	167	2.5	8.8	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007135STMP	005490IN	005491IN	7	1	4.2	-5.3	1	0.7	Flooded	Flooded	Flooded	Flooded	1.0	0.7	3605	526	Flooded
6	007136STMP	005491IN	005492IN	6	1	3.8	-5.0	0.7	0	Flooded	-	Flooded	0.7	0.7	0.0	526	0	Flooded
6	007137STMP	005492IN	000445CB	17	1	3.8	14.3	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007186STMP	005403IN	000439CB	4	1	1.4	8.5	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007187STMP	005405IN	005404IN	9	1	7.4	11.1	0.3	0.1	Flooded	1.2	Flooded	1.8	0.3	0.0	490	0	Flooded
6	007189STMP	005408IN	005407IN	18	1	4.8	11.9	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	007190STMP	005407IN	002566SMH	5	1	4.8	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007191STMP	005409IN	005408IN	11	1	4.8	6.5	0.5	0	Flooded	-	Flooded	0.5	0.5	0.0	1038	0	Flooded
6	007193STMP	005411IN	005412IN	17	1	7.1	9.3	1.1	0	Flooded	-	Flooded	0.4	1.1	0.0	6544	0	Flooded
6	007380STMP	000446CB	002560SMH	36	2	3.8	5.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007381STMP	000445CB	000446CB	50	2	3.8	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007382STMP	002559SMH	002560SMH	58	2.5	13.8	5.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007386STMP	005499IN	005500IN	7	1	8.8	11.1	1	0.4	Flooded	0.1	Flooded	-	0.9	0.0	8153	0	Flooded
6	007387STMP	005500IN	000694ND	35	1	8.8	14.8	0.4	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
6	007388STMP	005502IN	000011PD	101	1	0.0	0.0	0	0.2	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007389STMP	005503IN	002561SMH	43	2	9.0	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007390STMP	007526IN	005503IN	220	2	4.9	4.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007459STMP	002562SMH	002561SMH	237	1.25	6.3	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007460STMP	002561SMH	000011PD	22	2	15.1	15.7	0	0.2	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007461STMP	005504IN	005505IN	90	1.25	6.5	7.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007462STMP	002563SMH	002537SMH	85	3.5	72.3	7.5	1	1	3.3	Flooded	1.6	Flooded	0.0	1.0	0	22577	Insufficient Freeboard
6	007463STMP	002564SMH	002563SMH	179	3.5	72.3	8.8	1	1	RIM	3.3	RIM	1.6	0.0	0.0	0	0	Insufficient Freeboard
6	007464STMP	002553SMH	002564SMH	129	3.5	72.3	8.2	0.4	1	2.4	RIM	1.9	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	007466STMP	000448CB	000449CB	226	1	7.3	9.5	0.5	0.5	2.9	1.8	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	007467STMP	005506IN	000448CB	11	0.833	5.7	13.5	0.5	0.5	Flooded	3.1	Flooded	0.6	0.5	0.0	1374	0	Flooded
6	007468STMP	005507IN	000448CB	11	0.833	3.6	11.0	0.1	0.5	Flooded	3.1	Flooded	0.6	0.1	0.0	5	0	Flooded
6	007469STMP	005508IN	005509IN	61	1.25	10.0	8.1	0.2	0.2	1.3	1.2	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
6	007470STMP	005509IN	002535SMH	43	1.25	9.9	8.0	0.2	0.1	1.2	1.4	-	-	0.0	0.0	0	0	Surcharged
6	007471STMP	002534SMH	002535SMH	30	2.5	31.0	13.4	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007472STMP	002587SMH	002534SMH	90	2.5	31.0	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007473STMP	007513IN	007512IN	32	1	3.9	6.4	0	0	-	-	0.2	0.6	0.0	0.0	0	0	Sufficient Capacity
6	007474STMP	007514IN	007513IN	40	1	3.9	7.5	0	0	-	-	0.4	0.2	0.0	0.0	0	0	Sufficient Capacity
6	007477STMP	007519IN	007518IN	11	1.5	9.0	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007599STMP	005399IN	000682ND	71	1	2.0	3.3	0.2	0.2	0.7	1.3	1.6	2.0	0.0	0.0	0	0	Insufficient Freeboard
6	007600STMP	005400IN	005401IN	11	1	1.8	-3.3	0	0	-	-	0.3	0.7	0.0	0.0	0	0	Sufficient Capacity
6	007601STMP	005401IN	002565SMH	68	1	1.8	6.4	0	0	-	1.0	0.7	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	007602STMP	005402IN	002565SMH	42	2.5	38.0	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007603STMP	002566SMH	005402IN	221	2.5	38.0	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007604STMP	000439CB	005404IN	31	1.25	1.4	4.3	0	0.1	-	0.9	-	1.8	0.0	0.0	0	0	Sufficient Capacity
6	007702STMP	000457CB	002585SMH	46	1	5.4	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007704STMP	007539IN	007538IN	9	0.833	5.4	10.2	2	0	Flooded	-	Flooded	0.5	2.0	0.0	12462	0	Flooded
6	007717STMP	005658IN	000508IO	19	1.75	36.5	24.0	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007719STMP	005659IN	005660IN	11	0.833	2.9	5.4	0.2	0	Flooded	-	Flooded	0.8	0.2	0.0	40	0	Flooded
6	007720STMP	005660IN	000738ND	5	0.833	2.9	10.4	0	0	-	6.4	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	007721STMP	000429CB	000738ND	21	2	6.1	7.0	0	0	-	5.3	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007722STMP	005661IN	000429CB	8	0.833	6.1	12.0	0.3	0	Flooded	-	Flooded	-	0.2	0.0	176	0	Flooded
6	007723A	000506IO	000738ND	31	6.17 x 4.5	185.7	7.4	0	0	1.2	1.1	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	007723B	000738ND	000507IO	41	6.17 x 4.5	224.4	11.4	0	0	1.1	-	-	-	0.0	0.0	0	0	Surcharged
6	007728STMP	007487IN	007486IN	49	1	6.4	8.1	0.4	0.4	Flooded	0.8	Flooded	1.0	0.4	0.0	711	0	Flooded
6	008061STMP	005412IN	000440CB	12	1	7.1	14.7	0	0	-	0.0	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008063STMP	000440CB	002570SMH	22	1.25	7.2	9.4	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008065STMP	005415IN	005416IN	10	1	4.7	6.6	0.3	0	Flooded	-	Flooded	0.5	0.3	0.0	362	0	Flooded
6	008066STMP	005416IN	002568SMH	15	1	4.7	11.9	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008067STMP	002568SMH	002569SMH	11	1.25	4.7	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008069STMP	002569SMH	002570SMH	26	1.25	4.8	8.8	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008070STMP	005418IN	005419IN	7	1	5.5	7.6	0.1	0	Flooded	-	Flooded	0.4	0.1	0.0	68	0	Flooded
6	008071STMP	002572SMH	002570SMH	122	1.5	18.5	11.1	0.3	0	0.8	0.5	-	-	0.0	0.0	0	0	Surcharged
6	008072A	002570SMH	000679ND	40	2	29.7	12.9	0	0.4	-	0.6	-	1.6	0.0	0.0	0	0	Sufficient Capacity
6	008072B	000679ND	002571SMH	59	2	34.4	13.8	0.4	0.7	0.6	1.2	1.6	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008073STMP	005419IN	000441CB	34	1	5.5	12.3	0	0.5	-	1.9	0.4	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008074STMP	000441CB	000679ND	10	1	5.5	6.9	0.5	0.4	1.9	1.6	1.1	1.6	0.0	0.0	0	0	Insufficient Freeboard
6	008075STMP	002509SMH	002572SMH	107	1.5	18.6	11.3	0.3	0.3	1.0	0.8	-	-	0.0	0.0	0	0	Surcharged
6	008076STMP	007516IN	004906SMH	270	5	9.0	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008077STMP	007518IN	007516IN	96	1.5	9.0	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008086STMP	002510SMH	002509SMH	115	1.5	18.5	10.8	0.3	0.3	1.6	1.0	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
6	008088A	002512SMH	000680ND	28	1.5	18.8	10.5	0.8	0.8	3.5	3.0	0.8	1.0	0.0	0.0	0	0	Insufficient Freeboard
6	008088B	000680ND	002510SMH	86	1.5	18.6	10.4	0.8	0.3	3.0	1.6	1.0	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	008092STMP	005433IN	002512SMH	25	1.25	6.8	8.8	0.4	0.8	2.4	3.8	1.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008093STMP	005431IN	005432IN	7	1	6.6	8.7	1.2	0	Flooded	-	Flooded	0.3	1.2	0.0	5993	0	Flooded
6	008094STMP	005432IN	005433IN	5	1	6.7	15.6	0	0.4	-	2.7	0.3	1.6	0.0	0.0	0	0	Sufficient Capacity
6	008095STMP	005434IN	005435IN	11	1	4.5	6.0	0.2	0	Flooded	-	Flooded	0.2	0.2	0.0	157	0	Flooded
6	008096STMP	005435IN	005436IN	7	1	4.5	7.0	0	0	-	-	0.2	0.6	0.0	0.0	0	0	Sufficient Capacity
6	008097STMP	005436IN	000443CB	18	1	4.5	14.4	0	0.3	-	2.2	0.6	2.0	0.0	0.0	0	0	Sufficient Capacity
6	008098STMP	005437IN	000443CB	19	1	1.0	6.3	0	0.3	-	2.2	0.8	2.0	0.0	0.0	0	0	Sufficient Capacity
6	008099STMP	005438IN	005437IN	6	1	1.0	-3.1	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	008102STMP	002513SMH	002512SMH	112	1.25	8.7	8.8	0.4	0.8	2.1	3.8	1.7	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008103STMP	005444IN	002513SMH	34	1	8.5	11.4	0.5	0.4	2.0	2.4	1.1	1.7	0.0	0.0	0	0	Insufficient Freeboard
6	008104STMP	005447IN	002514SMH	122	2.5	24.2	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008107STMP	005446IN	005445IN	6	1	8.4	10.9	1.9	0.2	Flooded	Flooded	Flooded	Flooded	1.9	0.2	17013	81	Flooded
6	008108STMP	005445IN	005444IN	8	1	8.5	15.3	0.2	0.5	Flooded	2.0	Flooded	1.1	0.2	0.0	81	0	Flooded
6	008110STMP	002511SMH	002507SMH	216	3	49.7	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008111STMP	002507SMH	002508SMH	37	3	49.8	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008112STMP	002508SMH	002524SMH	254	3	50.1	13.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008113STMP	000443CB	002512SMH	35	1.25	5.4	7.9	0.3	0.8	2.0	3.8	2.0	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008114STMP	002514SMH	002511SMH	111	3	49.5	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008116STMP	002515SMH	002514SMH	62	3	25.9	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008117STMP	002518SMH	002515SMH	358	3	25.7	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008118STMP	005448IN	005447IN	32	2	24.0	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008119STMP	005505IN	002516SMH	51	1.25	15.0	12.1	0	1	2.0	1.1	-	1.2	0.0	0.0	0	0	Surcharged
6	008120STMP	002516SMH	005448IN	14	1.25	15.0	12.2	1	0	1.2	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008121STMP	002517SMH	005448IN	30	2	9.0	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008122STMP	000011PD	005505IN	58	1.5	-0.6	-3.5	0.2	0	4.5	2.5	-	-	0.0	0.0	0	0	Surcharged
6	008123STMP	002519SMH	002518SMH	435	3	25.7	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008124STMP	005449IN	002519SMH	28	1.25	4.0	10.3	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008125STMP	002521SMH	002520SMH	31	1.25	5.4	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008127STMP	005479IN	002521SMH	91	1.25	5.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008129STMP	005452IN	005451IN	49	1	5.7	-7.4	23.7	0	2.0	-	-	-	0.0	0.0	0	0	Surcharged
6	008130STMP	005451IN	005454IN	81	1.25	5.7	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008131STMP	005453IN	005452IN	90	1	5.7	7.1	0.8	23.7	Flooded	2.0	Flooded	-	0.7	0.0	2889	0	Flooded
6	008132STMP	005454IN	002523SMH	103	1.5	5.7	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008133STMP	007578IN	007580IN	73	1	5.8	7.3	0.3	0.3	Flooded	1.9	Flooded	0.8	0.3	0.0	809	0	Flooded
6	008135STMP	007580IN	007581IN	15	1.25	5.8	6.1	0.3	0.4	1.6	2.5	0.8	1.2	0.0	0.0	0	0	Insufficient Freeboard
6	008136B	000681ND	002525SMH	49	1.25	8.1	13.5	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008137STMP	007581IN	007582IN	45	1.25	5.9	4.7	0.4	0.4	2.5	2.6	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008138STMP	002523SMH	007583IN	80	1.75	5.8	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008139STMP	007586IN	007583IN	216	1.25	7.9	9.0	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008140STMP	007583IN	007584IN	49	2	13.4	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008141STMP	007582IN	007584IN	181	1.5	15.4	8.6	0.4	0	2.4	0.1	-	-	0.0	0.0	0	0	Surcharged
6	008142STMP	007584IN	007585IN	107	2.5	30.9	9.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008143STMP	007585IN	002530SMH	83	2.5	33.6	8.7	0	0	-	-	-	1.4	0.0	0.0	0	0	Sufficient Capacity
6	008144STMP	007587IN	007586IN	12	1.25	8.0	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008145STMP	002524SMH	002527SMH	318	3	49.9	19.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008166STMP	007592IN	007593IN	9	1.25	8.1	-6.6	0.2	0	0.4	-	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008167STMP	007593IN	000681ND	21	1.25	8.1	7.2	0	0	-	-	0.8	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008170STMP	002525SMH	002526SMH	230	1.25	8.1	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008172STMP	002565SMH	002533SMH	308	2.5	39.8	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008173STMP	002532SMH	005404IN	137	2	10.4	6.2	0	0.1	-	0.2	-	1.8	0.0	0.0	0	0	Sufficient Capacity
6	008174STMP	002530SMH	002566SMH	269	2.5	33.5	8.2	0	0	-	-	1.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008175STMP	005397IN	007597IN	7	1	5.9	-7.8	1.1	0	Flooded	-	Flooded	0.5	1.1	0.0	4999	0	Flooded
6	008176STMP	007597IN	000444CB	7	1	5.9	13.0	0	1.1	-	0.8	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008178STMP	000444CB	002528SMH	8	1.25	5.9	-5.0	1.1	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
6	008180STMP	002528SMH	002531SMH	73	1.5	5.9	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008183STMP	002531SMH	005456IN	109	2	5.9	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008184STMP	005456IN	002532SMH	137	2	10.5	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008185STMP	002533SMH	002551SMH	303	2.5	39.6	10.3	0	0	-	-	-	2.0	0.0	0.0	0	0	Sufficient Capacity
6	008188STMP	005458IN	002553SMH	13	3	7.7	-1.9	1	0.4	3.1	0.9	1.4	1.9	0.0	0.0	0	0	Insufficient Freeboard
6	008224STMP	005459IN	005458IN	29	1	1.1	5.3	0.1	1	0.1	5.1	1.7	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	008225STMP	005475IN	005459IN	100	1	1.1	6.2	0	0.1	-	0.1	1.3	1.7	0.0	0.0	0	0	Sufficient Capacity
6	008272STMP	002520SMH	002519SMH	11	3	22.9	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008273STMP	002560SMH	002520SMH	220	2.75	17.5	9.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008274STMP	002551SMH	002552SMH	13	3	39.4	7.1	0	0.6	2.1	2.3	2.0	2.0	0.0	0.0	0	0	Insufficient Freeboard
6	008275STMP	002552SMH	002553SMH	45	3.5	68.6	10.0	0.6	0.4	1.8	2.4	2.0	1.9	0.0	0.0	0	0	Insufficient Freeboard
6	008276STMP	005480IN	005479IN	131	1	5.4	-7.1	0.6	0	3.3	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008277STMP	005481IN	005480IN	38	1	5.4	6.8	0.6	0.6	Flooded	3.3	Flooded	1.2	0.4	0.0	1021	0	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008291STMP	002601SMH	002602SMH	94	2	28.2	10.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008295STMP	000385CB	002602SMH	16	1.25	8.5	8.9	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008320STMP	005662IN	000430CB	7	0.833	8.3	16.4	1	0.9	Flooded	Flooded	Flooded	Flooded	1.0	0.9	4953	8475	Flooded
6	008321STMP	000430CB	000741ND	9	1	11.5	16.2	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.9	0.6	8475	28	Flooded
6	008322STMP	000431CB	000740ND	37	1.25	10.0	10.8	0.5	0.6	3.3	Flooded	0.5	Flooded	0.0	0.4	0	10	Insufficient Freeboard
6	008441STMP	002605SMH	000499IO	56	5	174.7	20.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442A	002606SMH	000710ND	108	4	151.4	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442B	000710ND	002605SMH	19	4	151.4	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008443STMP	002607SMH	002605SMH	136	3	26.6	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008444STMP	000708ND	000500IO	30	1.25	14.5	18.4	0	0	-	1.0	1.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008602STMP	007559IN	007560IN	6	1	7.2	11.2	0.3	1.9	Flooded	1.8	Flooded	0.4	0.3	0.0	460	0	Flooded
6	008603STMP	007560IN	000744ND	12	1	7.2	-9.2	1.9	0	1.8	-	0.4	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008604STMP	007562IN	007561IN	185	1.25	9.6	8.5	0.3	6.1	Flooded	2.7	Flooded	-	0.3	0.0	387	0	Flooded
6	008639STMP	007498IN	005564IN	29	1.25	9.7	8.9	0.3	0.2	0.3	0.4	-	-	0.0	0.0	0	0	Surcharged
6	008640STMP	007506IN	005564IN	75	1.25	3.4	6.8	0	0.2	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008656STMP	002585SMH	002586SMH	26	1.5	5.4	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008657STMP	002586SMH	002596SMH	128	1.5	9.4	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008658STMP	000459CB	002586SMH	43	1	5.0	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008660STMP	007542IN	000459CB	14	0.833	5.0	13.6	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008661STMP	002596SMH	002598SMH	123	1.5	9.4	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008663STMP	000460CB	002597SMH	30	1.25	14.4	17.1	0	0.2	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008664STMP	007543IN	000460CB	12	1	14.4	20.4	0.7	0	Flooded	-	Flooded	-	0.7	0.0	7431	0	Flooded
6	008666STMP	007545IN	007546IN	40	1.25	5.2	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008667STMP	002599SMH	007545IN	134	1.25	5.2	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008668STMP	007546IN	002597SMH	12	1.25	5.2	11.6	0	0.2	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008672A	002597SMH	000703ND	56	1.5	28.3	17.2	0.2	0.2	0.5	0.3	-	-	0.0	0.0	0	0	Surcharged
6	008672B	000703ND	002601SMH	125	1.5	28.0	16.5	0.2	0	0.3	0.2	-	-	0.0	0.0	0	0	Surcharged
6	008673STMP	007563IN	002599SMH	105	1	5.2	11.4	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008720STMP	007568IN	000385CB	26	0.833	8.2	15.0	1.1	0	Flooded	0.3	Flooded	-	1.1	0.0	9588	0	Flooded
6	008721STMP	002602SMH	003020SMH	19	2.25	36.0	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722A	003020SMH	000704ND	27	2.25	36.1	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722B	000704ND	000745ND	98	2.25	36.1	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008726STMP	000449CB	000388CB	96	1.25	7.3	6.2	0.5	0.6	1.5	1.7	-	1.5	0.0	0.0	0	0	Surcharged
6	008727STMP	000387CB	000388CB	52	1	9.9	12.3	1.1	0.6	Flooded	2.0	Flooded	1.5	0.3	0.0	122	0	Flooded
6	008728STMP	007571IN	000387CB	16	0.833	6.1	13.2	1.1	1.1	Flooded	Flooded	Flooded	Flooded	1.1	0.3	4882	122	Flooded
6	008729STMP	007572IN	000387CB	10	0.833	5.1	12.3	1.1	1.1	Flooded	Flooded	Flooded	Flooded	1.1	0.3	5653	122	Flooded
6	008730STMP	000388CB	000389CB	110	1.25	14.4	12.5	0.6	0.6	1.7	1.3	1.5	1.3	0.0	0.0	0	0	Insufficient Freeboard
6	008731A	000389CB	000706ND	100	1.25	14.3	13.7	0.6	0.6	1.3	2.0	1.3	0.2	0.0	0.0	0	0	Insufficient Freeboard
6	008731B	000706ND	000390CB	252	1.25	14.3	11.7	0.6	1.3	2.0	Flooded	0.2	Flooded	0.0	1.1	0	2756	Insufficient Freeboard
6	008734STMP	000390CB	002604SMH	46	1.25	14.5	11.6	1.3	1.3	Flooded	1.8	Flooded	0.9	1.1	0.0	2756	0	Flooded
6	008735STMP	007573IN	000390CB	12	0.833	6.5	14.7	1.2	1.3	Flooded	Flooded	Flooded	Flooded	1.0	1.1	1061	2756	Flooded
6	008736STMP	007574IN	007573IN	10	0.833	3.4	6.5	2.5	1.2	Flooded	Flooded	Flooded	Flooded	1.8	1.0	1422	1061	Flooded
6	008737STMP	007575IN	007574IN	5	0.833	2.9	-5.4	3.1	2.5	Flooded	Flooded	Flooded	Flooded	3.0	1.8	4792	1422	Flooded
6	008738STMP	007576IN	007575IN	7	0.833	3.6	6.6	3.1	3.1	Flooded	Flooded	Flooded	Flooded	3.1	3.0	10278	4792	Flooded
6	008739STMP	002604SMH	000708ND	45	1.25	14.5	12.1	1.3	0	1.8	-	0.9	1.5	0.0	0.0	0	0	Insufficient Freeboard
6	008771STMP	007503IN	007502IN	9	0.833	3.8	-7.1	1.3	0	Flooded	-	Flooded	0.5	1.2	0.0	4390	0	Flooded
6	008772STMP	007505IN	007504IN	8	0.833	5.3	9.8	2.7	0	Flooded	-	Flooded	0.3	2.5	0.0	15604	0	Flooded
6	008773STMP	007507IN	007506IN	8	0.833	3.4	12.5	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008774STMP	007508IN	007507IN	10	0.833	3.4	7.2	0.6	0	Flooded	-	Flooded	0.6	0.6	0.0	1122	0	Flooded

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008775STMP	002545SMH	007509IN	63	2	23.5	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008776STMP	007509IN	007515IN	98	2.5	27.4	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008777STMP	007510IN	007509IN	10	0.833	4.3	12.4	0	0	-	0.5	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008779STMP	007512IN	002587SMH	40	1	3.9	12.3	0	0	-	0.3	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008791STMP	002608SMH	002606SMH	252	3.5	151.4	15.7	1.1	0	Flooded	-	Flooded	-	0.9	0.0	4024	0	Flooded
6	008792A	002610SMH	000711ND	7	3	8.1	4.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008792B	000711ND	002611SMH	305	3	16.8	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008857STMP	002591SMH	002590SMH	167	1.5	4.9	2.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008860STMP	007530IN	002591SMH	47	1.5	4.9	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008861STMP	005517IN	007530IN	194	1	4.9	6.3	1.2	0	Flooded	-	Flooded	-	1.2	0.0	5813	0	Flooded
6	008862STMP	005519IN	005518IN	19	1	6.3	7.9	0.5	0.6	Flooded	1.8	Flooded	1.7	0.5	0.0	1289	0	Flooded
6	008863STMP	005518IN	005520IN	184	1.25	6.3	-5.2	0.6	0	1.6	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
6	008864STMP	005520IN	002562SMH	53	1.25	6.3	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008876STMP	005547IN	005546IN	19	0.833	2.7	11.1	0	0	-	0.3	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	008877STMP	005548IN	005547IN	14	0.833	2.7	-5.2	0.6	0	Flooded	-	Flooded	0.7	0.6	0.0	587	0	Flooded
6	008878STMP	005549IN	002545SMH	278	2	23.5	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008882STMP	005554IN	005553IN	39	1.5	16.7	9.7	0.4	0.4	0.8	0.8	-	-	0.0	0.0	0	0	Surcharged
6	008883STMP	005556IN	005554IN	35	1.25	3.2	6.2	0	0.4	-	1.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008884STMP	005564IN	005554IN	135	1.5	13.3	9.3	0.2	0.4	0.1	0.8	-	-	0.0	0.0	0	0	Surcharged
6	008885STMP	005555IN	005554IN	8	0.833	1.4	8.2	0	0.4	-	1.5	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	008887STMP	005558IN	005556IN	38	1	3.2	6.1	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008888STMP	005561IN	005558IN	29	1	3.2	4.4	0.1	0	0.0	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	008891STMP	005562IN	005561IN	12	0.833	3.2	9.9	0	0.1	-	0.2	0.6	1.8	0.0	0.0	0	0	Sufficient Capacity
6	008892STMP	005563IN	005562IN	9	0.833	3.2	6.1	0.5	0	Flooded	-	Flooded	0.6	0.5	0.0	531	0	Flooded
6	009032STMP	007486IN	007488IN	161	1	6.1	7.8	0.4	0	0.8	-	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
6	009033STMP	007488IN	002580SMH	60	1.25	6.1	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034A	002580SMH	000700ND	130	1.25	6.1	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034B	000700ND	002581SMH	28	1.25	6.1	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009037A	002581SMH	000744ND	317	1.5	9.9	13.6	0	0	-	-	-	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009037B	000744ND	000740ND	191	1.5	16.9	15.9	0	0.6	-	Flooded	0.8	Flooded	0.0	0.4	0	10	Sufficient Capacity
6	009037C	000740ND	000741ND	82	1.5	28.0	17.5	0.6	0.9	Flooded	Flooded	Flooded	Flooded	0.4	0.6	10	28	Flooded
6	009037D	000741ND	005658IN	322	1.5	25.0	14.1	0.9	0	Flooded	-	Flooded	-	0.6	0.0	28	0	Flooded
6	009038STMP	002582SMH	002581SMH	168	1	3.9	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009042STMP	002583SMH	002582SMH	30	1	3.9	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009043STMP	007493IN	002583SMH	14	1	3.9	10.2	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009044STMP	007495IN	007494IN	8	1	4.0	-5.1	1.2	0.2	Flooded	Flooded	Flooded	Flooded	1.2	0.2	3679	22	Flooded
6	009045STMP	007494IN	007493IN	10	1	3.9	-5.3	0.2	0	Flooded	-	Flooded	0.5	0.2	0.0	22	0	Flooded
6	009046STMP	007497IN	007496IN	75	1	5.7	8.0	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.4	0.4	609	220	Flooded
6	009047STMP	007496IN	007495IN	118	1	5.7	7.1	0.6	1.2	Flooded	Flooded	Flooded	Flooded	0.4	1.2	220	3679	Flooded
6	009058STMP	002648SMH	000431CB	87	1.5	9.7	8.8	0	0.5	-	3.1	1.6	0.5	0.0	0.0	0	0	Sufficient Capacity
6	009059STMP	005512IN	000698ND	9	1.25	6.8	7.9	0	0	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009060STMP	005513IN	005512IN	8	0.833	6.8	15.6	0	0	-	-	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	009061STMP	005515IN	002538SMH	6	1	8.4	10.5	1.5	1	Flooded	Flooded	Flooded	Flooded	1.4	0.7	9670	4496	Flooded
6	009062STMP	005516IN	005515IN	6	0.833	5.5	10.4	1.5	1.5	Flooded	Flooded	Flooded	Flooded	1.5	1.4	5291	9670	Flooded
6	009064STMP	002538SMH	005541IN	41	2.5	75.8	15.3	1	1.1	Flooded	Flooded	Flooded	Flooded	0.7	1.0	4496	13201	Flooded
6	009066STMP	002539SMH	002542SMH	264	2.5	52.8	15.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067A	002540SMH	000698ND	149	2.5	40.8	14.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067B	000698ND	002539SMH	19	2.5	47.3	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009068STMP	005514IN	002539SMH	33	0.833	0.4	4.1	0	0	-	0.8	0.9	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	009069STMP	002571SMH	002541SMH	61	2	34.4	16.9	0.7	1	1.2	Flooded	0.9	Flooded	0.0	0.7	0	4450	Insufficient Freeboard
6	009070STMP	002541SMH	000697ND	56	2	32.3	10.1	1	1.1	Flooded	Flooded	Flooded	Flooded	0.7	0.8	4450	49	Flooded
6	009073STMP	005544IN	002542SMH	20	1	6.5	9.3	0.2	0	0.1	0.8	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	009088STMP	007616IN	002611SMH	32	0.833	5.8	11.2	0.2	0	Flooded	-	Flooded	-	0.2	0.0	158	0	Flooded
6	009089STMP	007617IN	007616IN	20	0.833	6.5	13.6	0	0.2	-	Flooded	0.3	Flooded	0.0	0.2	0	158	Sufficient Capacity
6	009090STMP	000432CB	000740ND	17	1.25	8.3	6.6	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.4	0.4	1113	10	Flooded
6	009091STMP	007561IN	002648SMH	18	1.25	9.6	-7.8	6.1	0	2.7	-	-	1.6	0.0	0.0	0	0	Surcharged
6	009179STMP	005545IN	005544IN	9	0.833	6.6	12.9	0.2	0.2	Flooded	0.2	Flooded	1.9	0.2	0.0	190	0	Flooded
6	009180STMP	002542SMH	002543SMH	274	3	59.3	13.2	0	1	-	2.6	-	0.3	0.0	0.0	0	0	Sufficient Capacity
6	009181STMP	002543SMH	002544SMH	125	3.5	59.3	7.6	1	1.1	2.1	RIM	0.3	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	009182STMP	002612SMH	002609SMH	58	3	50.0	13.3	0.8	1.1	1.2	Flooded	-	Flooded	0.0	0.8	0	9246	Surcharged
6	009183STMP	005546IN	005549IN	26	2	19.4	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009184STMP	005553IN	005546IN	161	1.5	16.7	9.6	0.4	0	0.8	-	-	-	0.0	0.0	0	0	Surcharged
6	009185STMP	007501IN	007498IN	33	1.25	9.2	7.5	1.1	0.3	0.9	0.3	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	009186STMP	007499IN	007498IN	13	0.833	1.0	6.4	0	0.3	-	0.8	0.8	-	0.0	0.0	0	0	Sufficient Capacity
6	009187STMP	007500IN	007499IN	10	0.833	1.0	-3.0	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009188STMP	007504IN	007501IN	9	0.833	5.3	13.0	0	1.1	-	1.4	0.3	1.9	0.0	0.0	0	0	Sufficient Capacity
6	009189STMP	007502IN	007501IN	5	0.833	3.8	10.7	0	1.1	-	1.4	0.5	1.9	0.0	0.0	0	0	Sufficient Capacity
6	009191STMP	005665IN	000432CB	6	0.833	6.6	15.2	0.5	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.4	1218	1113	Flooded
6	009192STMP	007524IN	007519IN	87	1	9.0	11.2	0.7	0	2.1	0.2	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
6	009193STMP	007525IN	007524IN	9	1	9.0	11.2	0.7	0.7	Flooded	1.8	Flooded	1.3	0.7	0.0	4500	0	Flooded
6	009195STMP	007528IN	007526IN	98	2	4.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009196STMP	002589SMH	007528IN	80	1.5	4.9	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009197STMP	007538IN	000457CB	16	0.833	5.4	14.2	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009372STMP	002535SMH	002536SMH	16	2.5	40.7	8.4	0.1	0.1	0.1	0.1	-	-	0.0	0.0	0	0	Surcharged
6	009373STMP	002536SMH	002540SMH	202	2.5	40.7	8.7	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
6	009374STMP	005511IN	000450CB	34	0.833	6.5	13.5	3.7	3.9	Flooded	Flooded	Flooded	Flooded	3.7	3.5	29737	3169	Flooded
6	009376STMP	000450CB	002539SMH	26	0.833	5.7	10.2	3.9	0	Flooded	0.8	Flooded	-	3.5	0.0	3169	0	Flooded
6	009377STMP	002590SMH	002589SMH	61	1.5	4.9	-3.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009379STMP	002611SMH	002607SMH	47	3	22.6	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009380STMP	007604IN	002607SMH	21	0.833	4.4	15.0	0	0	-	0.5	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	009381STMP	007605IN	007604IN	11	0.833	4.4	9.3	0.9	0	Flooded	-	Flooded	0.6	0.9	0.0	3171	0	Flooded
6	009382STMP	002544SMH	002608SMH	125	3.5	154.2	15.9	1.1	1.1	RIM	Flooded	RIM	Flooded	0.0	0.9	0	4024	Insufficient Freeboard
6	009383STMP	007606IN	002608SMH	13	1.25	6.5	5.6	1.1	1.1	Flooded	Flooded	Flooded	Flooded	0.4	0.9	262	4024	Flooded
6	009385STMP	007607IN	007606IN	6	1	6.6	10.8	1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	0.4	3723	262	Flooded
6	009387STMP	007610IN	002544SMH	33	2.5	88.1	17.8	1.1	1.1	Flooded	RIM	Flooded	RIM	1.0	0.0	14843	0	Flooded
6	009388STMP	005541IN	007610IN	625	2.5	69.4	15.0	1.1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	1.0	13201	14843	Flooded
6	009389STMP	002527SMH	002612SMH	47	3	50.0	18.4	0	0.8	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009390STMP	002609SMH	002544SMH	24	3	48.8	7.5	1.1	1.1	Flooded	RIM	Flooded	RIM	0.8	0.0	9246	0	Flooded
6	009391STMP	002526SMH	002610SMH	106	1.25	8.1	14.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009392STMP	007611IN	000711ND	5	1.25	8.8	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009393STMP	007612IN	007611IN	7	0.833	8.8	17.2	0.2	0	Flooded	0.1	Flooded	-	0.2	0.0	130	0	Flooded
6	009394STMP	007613IN	007610IN	29	1	9.8	14.5	2.1	1.1	Flooded	Flooded	Flooded	Flooded	2.1	1.0	29911	14843	Flooded
6	014900STMP	005457IN	002552SMH	359	2	29.4	9.8	0.4	0.6	3.0	3.3	1.7	2.0	0.0	0.0	0	0	Insufficient Freeboard
6	014901A	005404IN	000682ND	18	2	18.5	8.3	0.1	0.2	0.2	0.3	1.8	2.0	0.0	0.0	0	0	Insufficient Freeboard
6	014901B	000682ND	005457IN	294	2	20.1	8.9	0.2	0.4	0.3	3.0	2.0	1.7	0.0	0.0	0	0	Insufficient Freeboard
6	014917STMP	002537SMH	000697ND	10	3	53.1	7.5	1	1.1	Flooded	Flooded	Flooded	Flooded	1.0	0.8	22577	49	Flooded
6	014918STMP	000697ND	002538SMH	9	3	82.4	11.6	1.1	1	Flooded	Flooded	Flooded	Flooded	0.8	0.7	49	4496	Flooded
6	014957STMP	007515IN	002587SMH	200	2.5	27.4	6.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

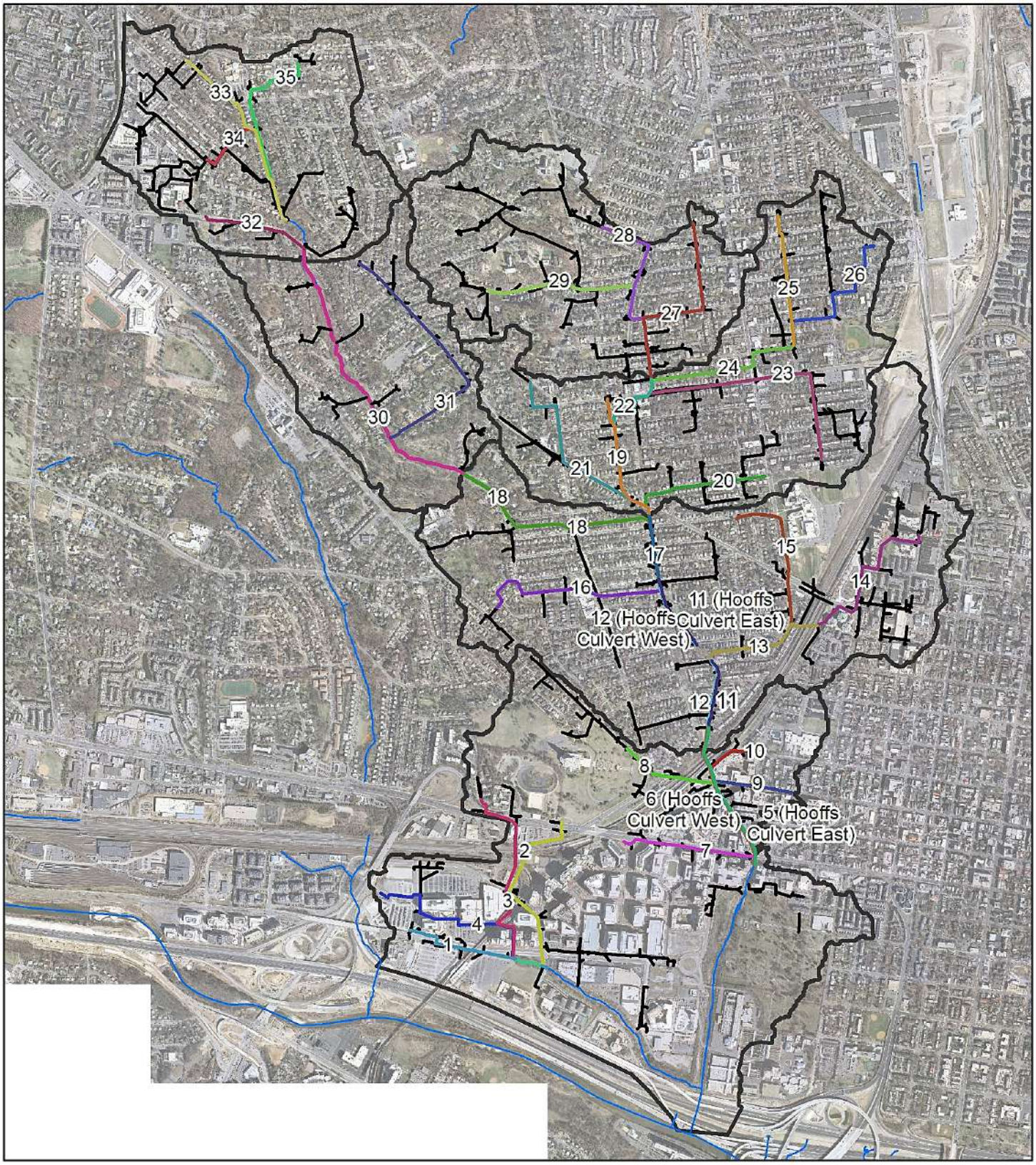
TABLE 1

Hooffs Run Scenario 3 (Projected Year 2100 IDF and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	**DGravityMain FacilityID**	**US**	**DS**	**Length (ft)**	**Diameter/ Height x Width (ft)**	**Maximum Flow (ft3/s)**	**Maximum Velocity (fps)**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**Summary Pipe Condition**
6	014958STMP	000745ND	000738ND	338	2.25	35.9	15.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014959STMP	002598SMH	002597SMH	145	1.5	9.4	9.9	0	0.2	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014960STMP	004906SMH	004907SMH	21	2	9.0	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014961STMP	004907SMH	004908SMH	46	2	9.0	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014963STMP	004908SMH	004909SMH	77	2	9.0	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014964STMP	004909SMH	004910SMH	120	2	9.0	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014965STMP	004910SMH	002517SMH	26	2	9.0	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 2
Hooffs Run Scenario 3 Outfall Boundary Conditions: Year 2100 Boundary Conditions

Node ID	Location	Boundary Condition
000080CP	Old Cameron Run	Computed Tide Coefficeints
000302IO	Old Cameron Run	Computed Tide Coefficeints
000306IO	Old Cameron Run	Computed Tide Coefficeints
000341IO	Hooffs Run	Computed Tide Coefficeints
000342IO	Hooffs Run	Computed Tide Coefficeints
Hooffs_632	Hooffs Run	Computed Tide Coefficeints



Legend

Profiles

	4	9	14	19	24	29	34
N/A	5	10	15	20	25	30	35
1	6	11	16	21	26	31	City of Alexandria Streams
2	7	12	17	22	27	32	
3	8	13	18	23	28	33	Hooffs Run Subwatersheds

Hooffs Run Profile Locations

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

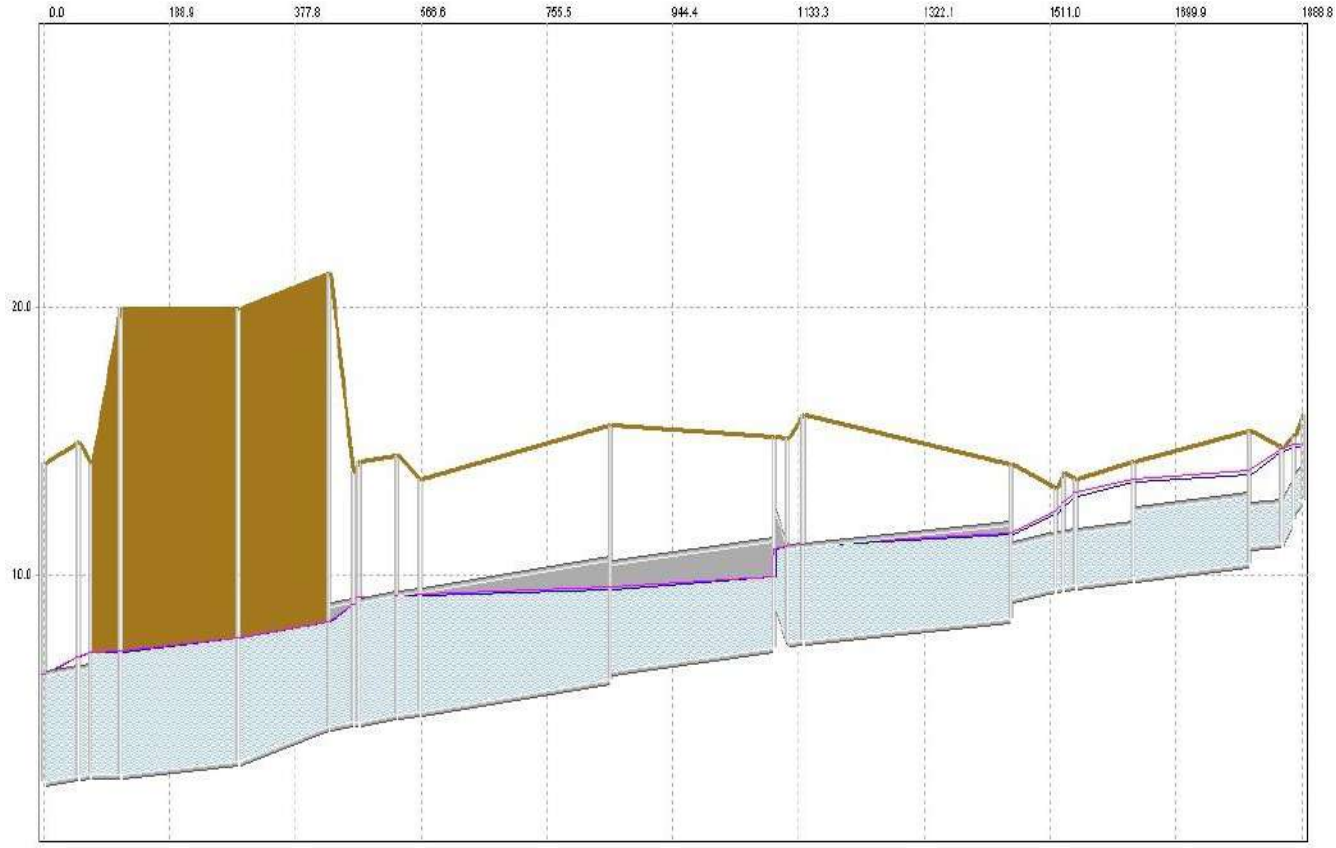
0 750 1,500 3,000
Feet

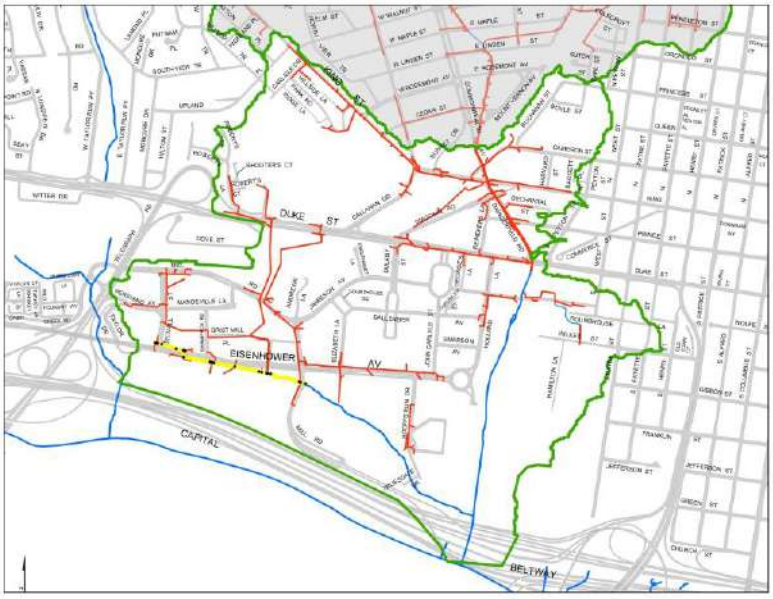
N

CH2MHILL

FIGURE 1

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 1 from 000080CP to 004837IN





Surface Flooding

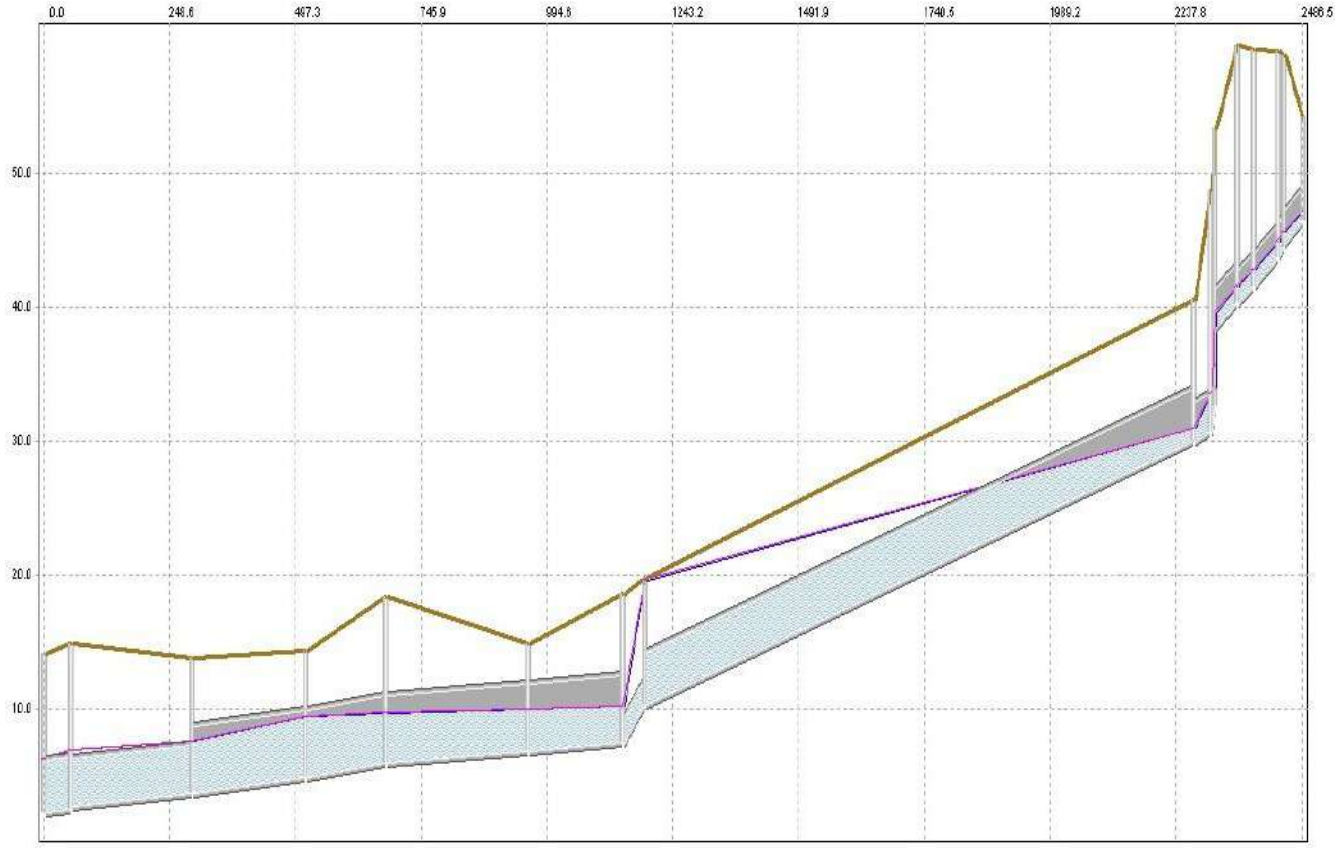
Peak Hydraulic Grade Line

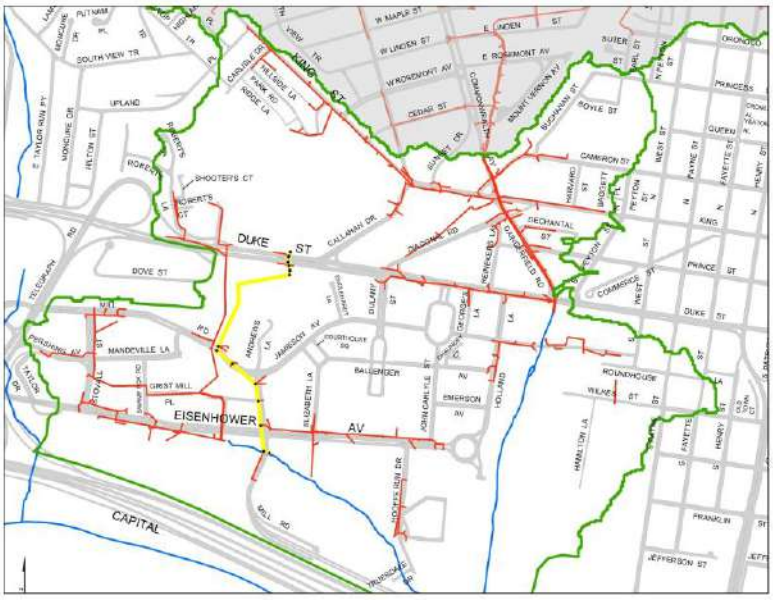
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 2

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 2 from 000080CP to 006016IN





Surface Flooding

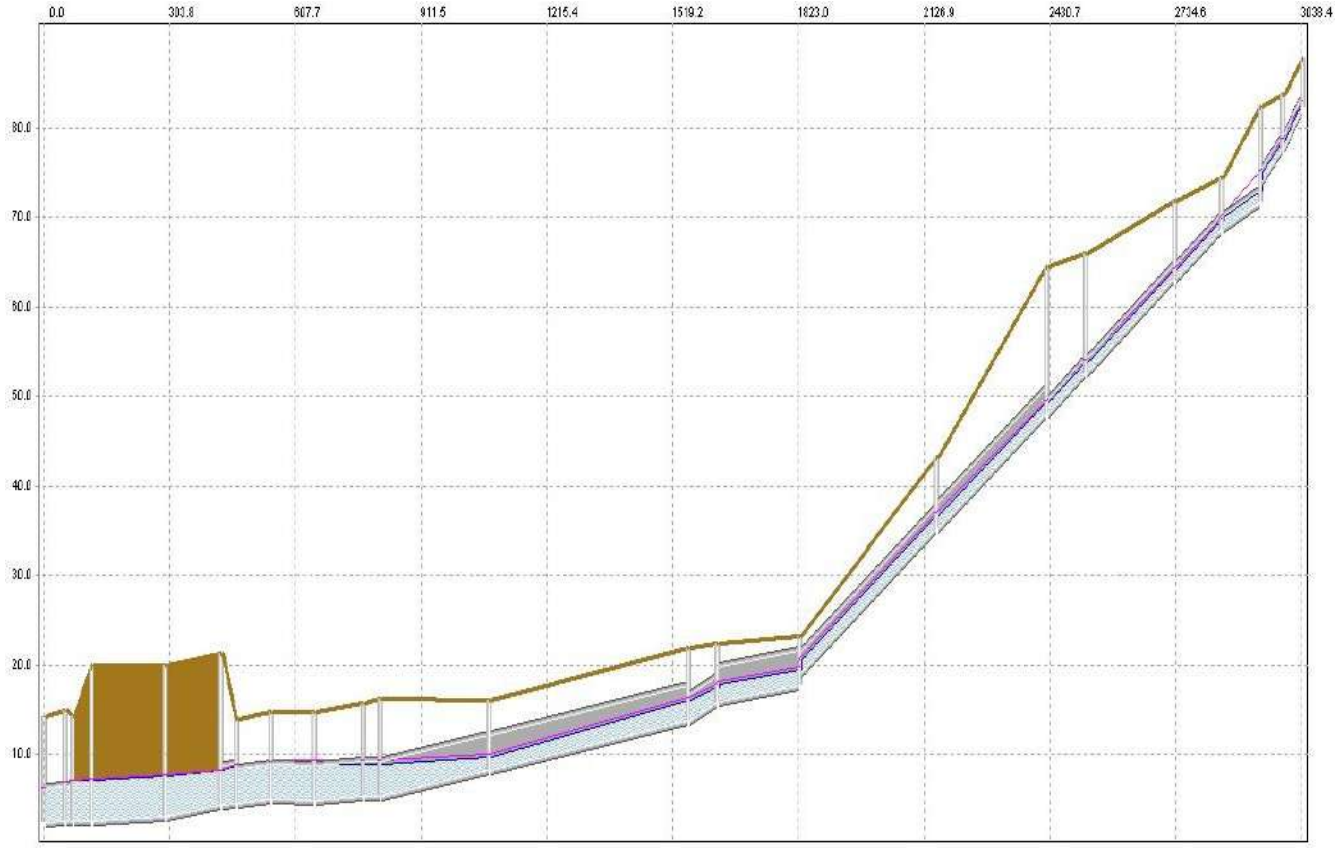
Peak Hydraulic Grade Line

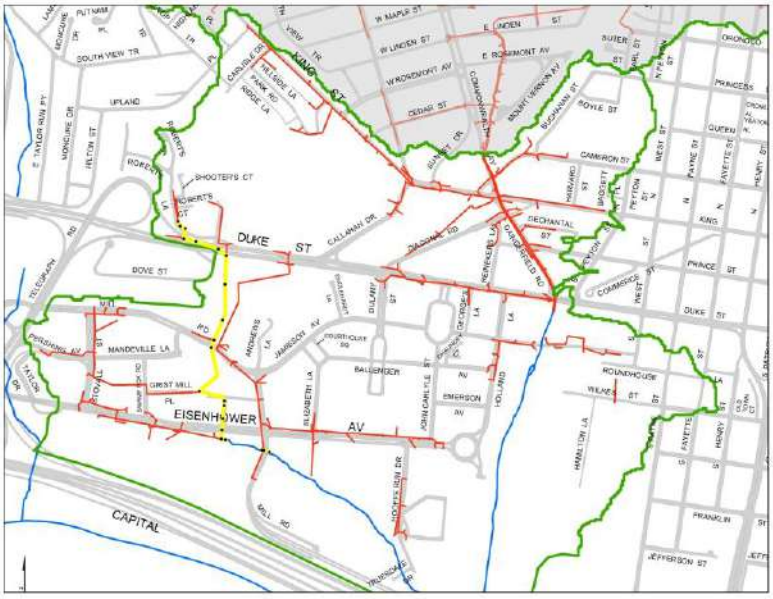
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 3

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 3 from 000080CP to 000658IN





Surface Flooding

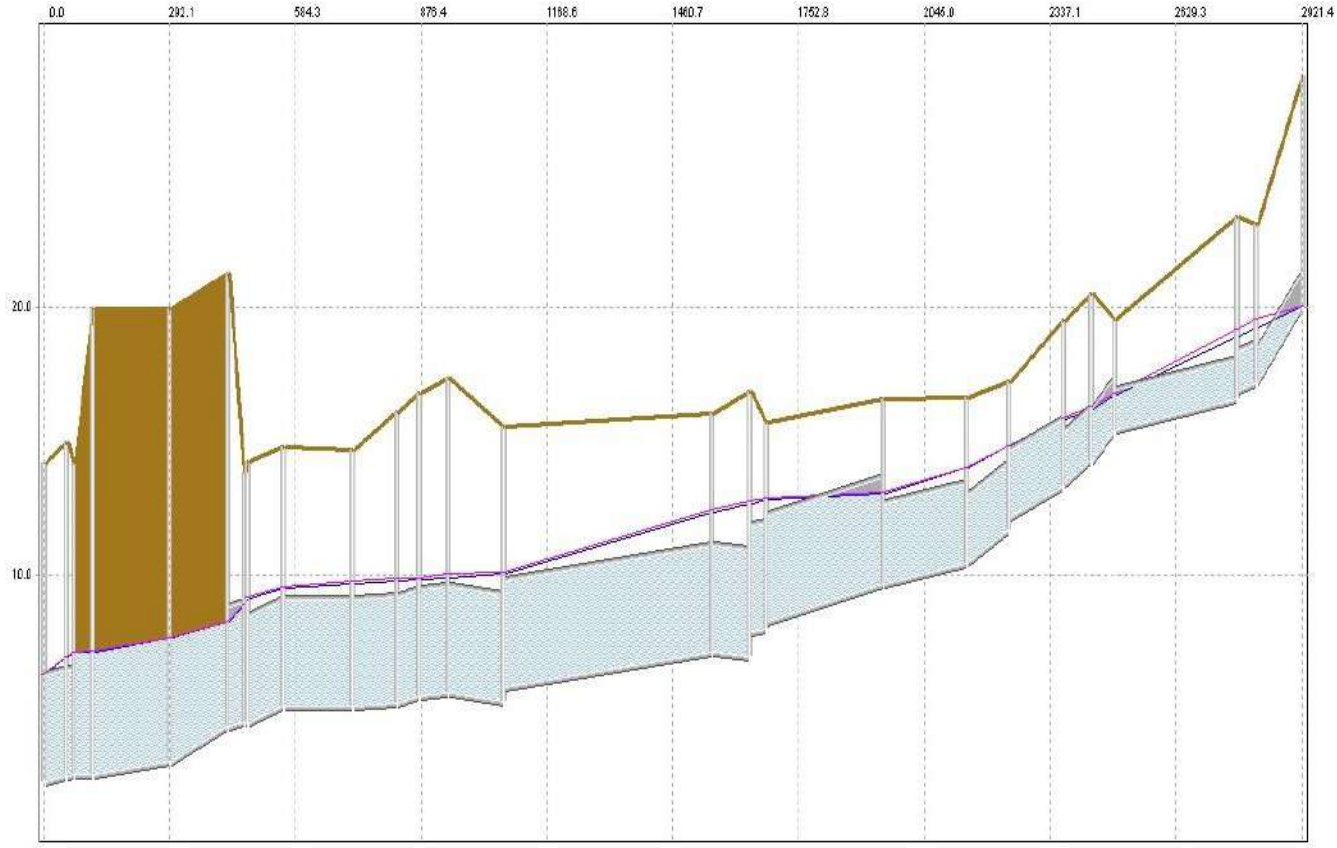
Peak Hydraulic Grade Line

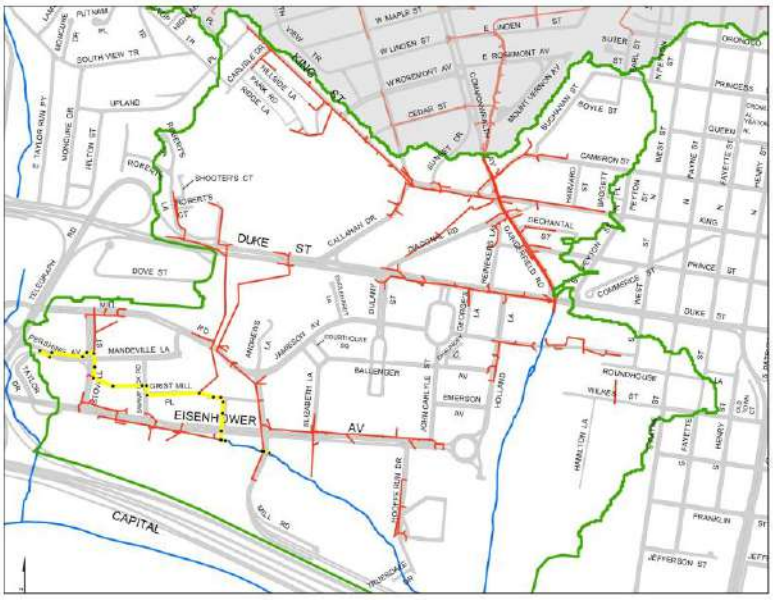
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 4

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 4 from 000080CP to 004860IN





Surface Flooding

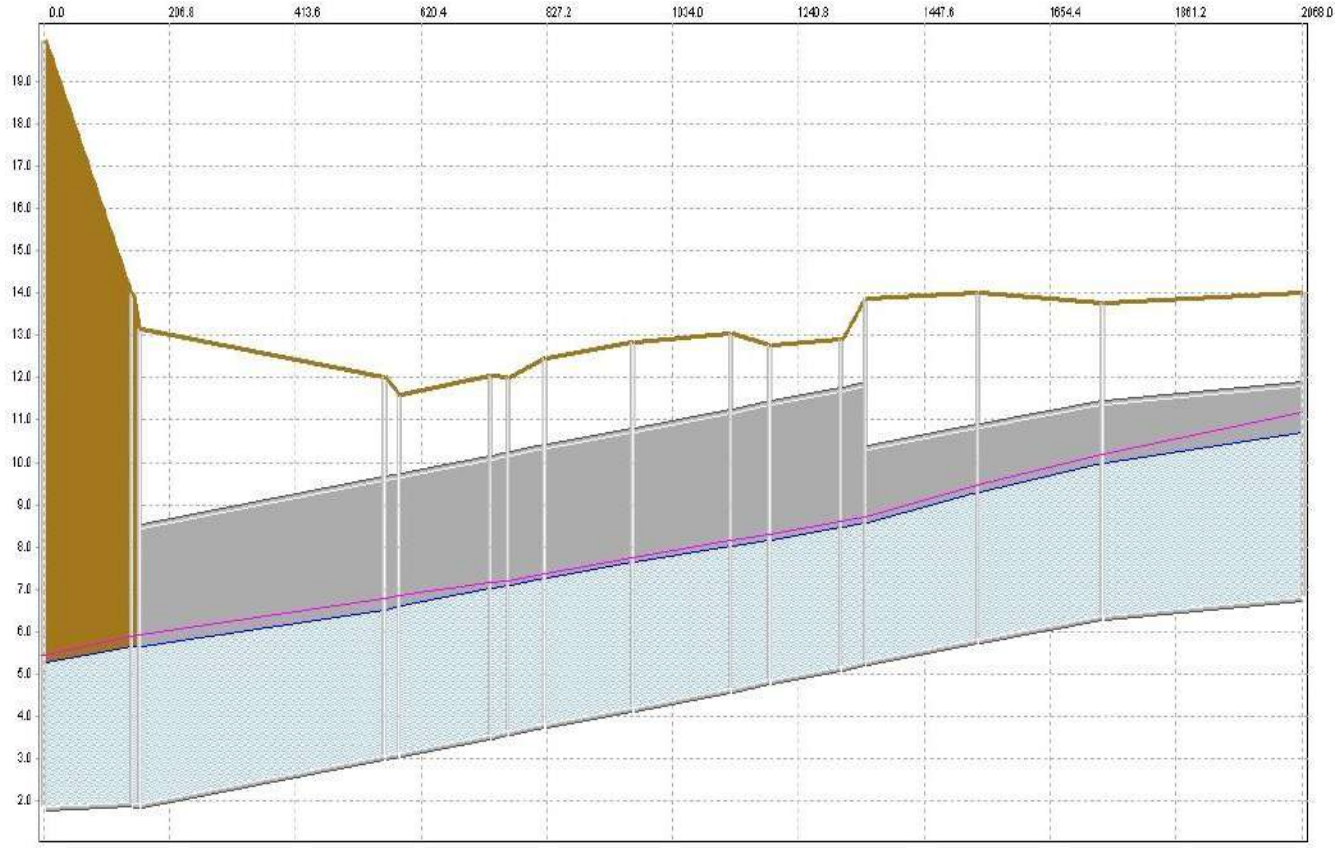
Peak Hydraulic Grade Line

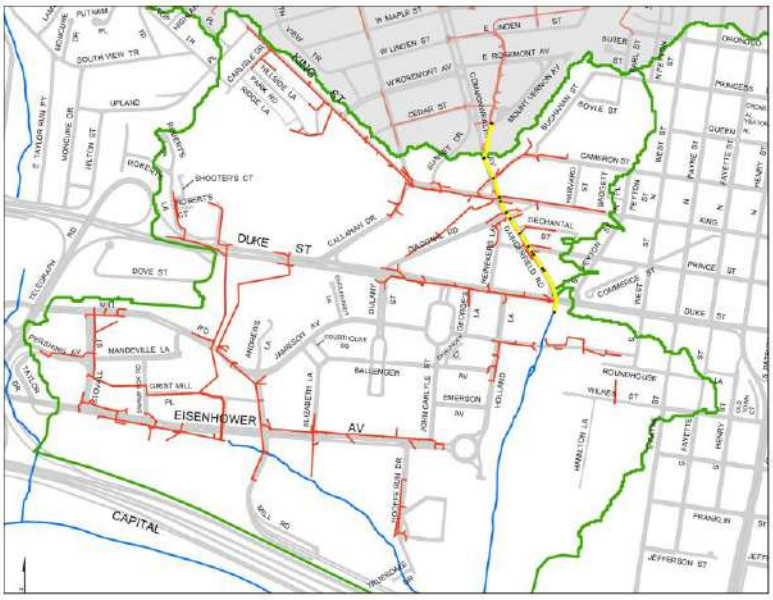
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 5

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 5 from 000293CP to 000939ND





Surface Flooding

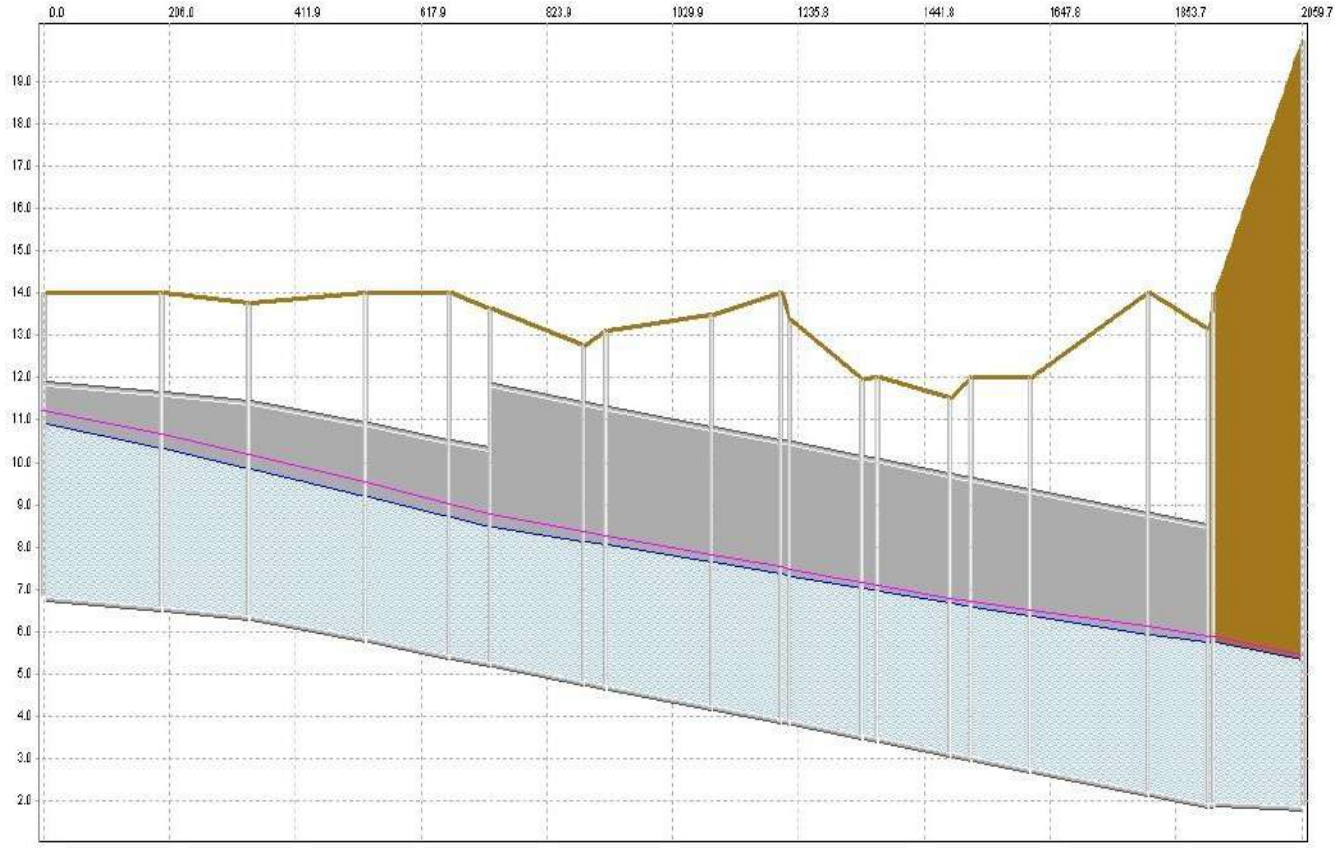
Peak Hydraulic Grade Line

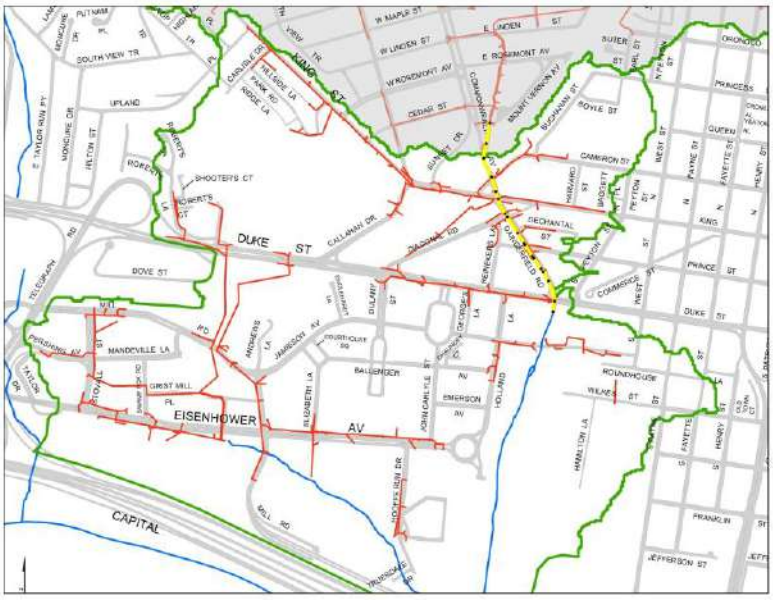
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 6

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 6 from 000292CP to 002912ND





Surface Flooding

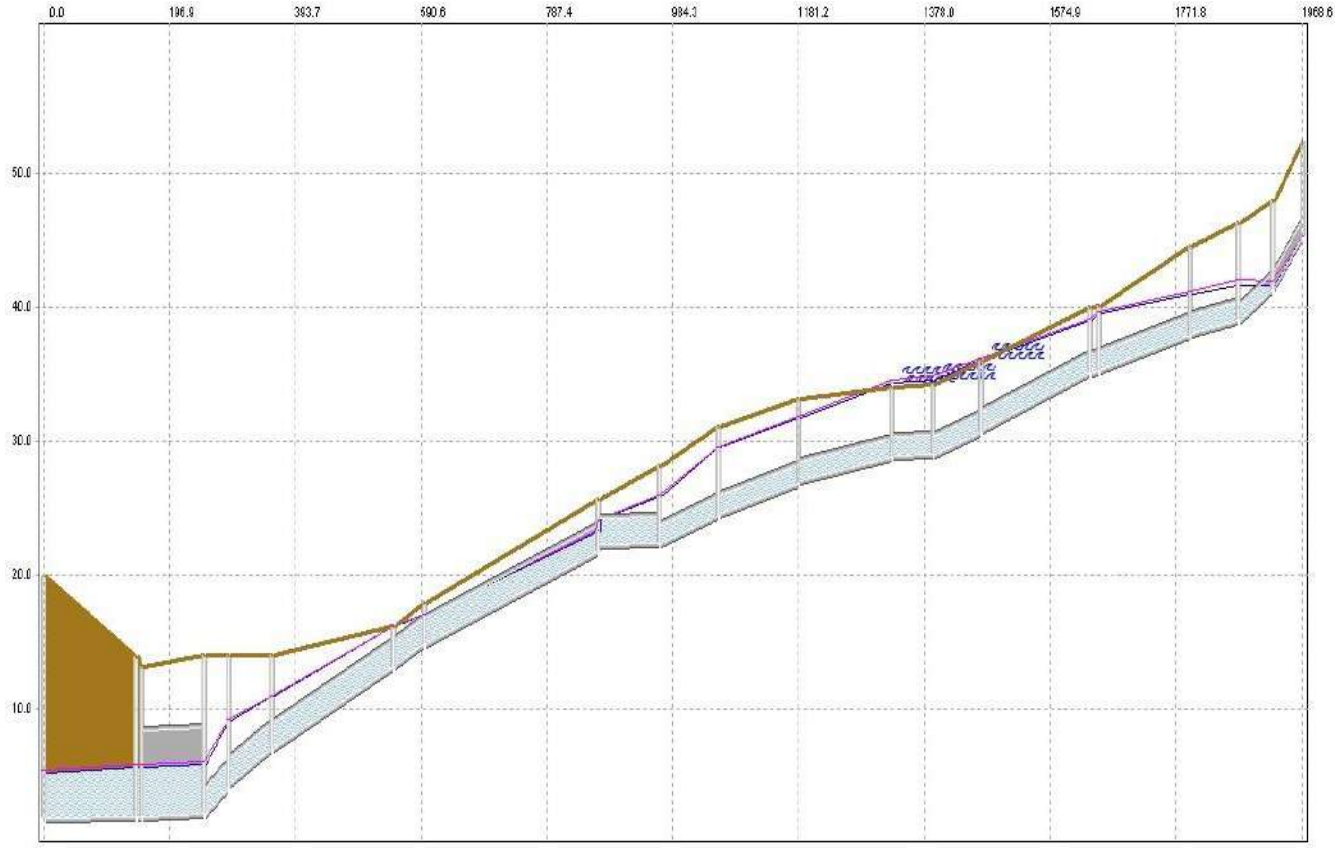
Peak Hydraulic Grade Line

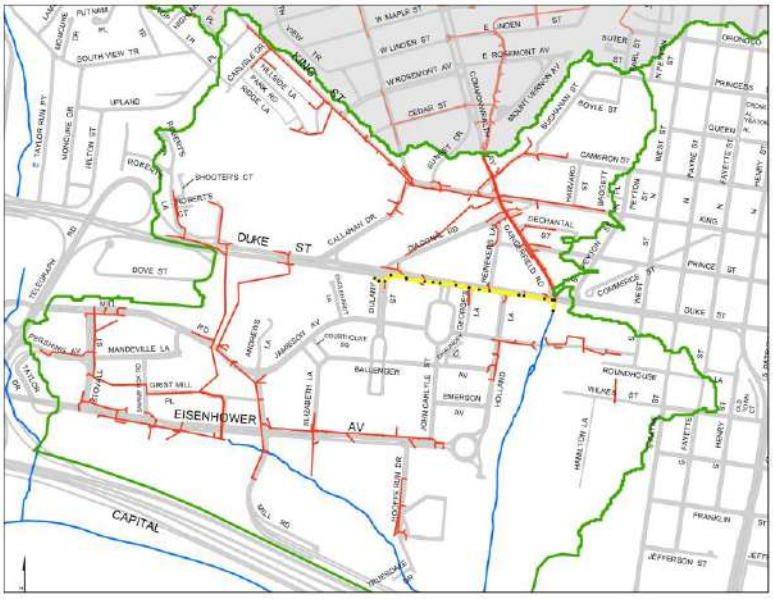
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 7

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 7 from 000292CP to 004975IN





Surface Flooding

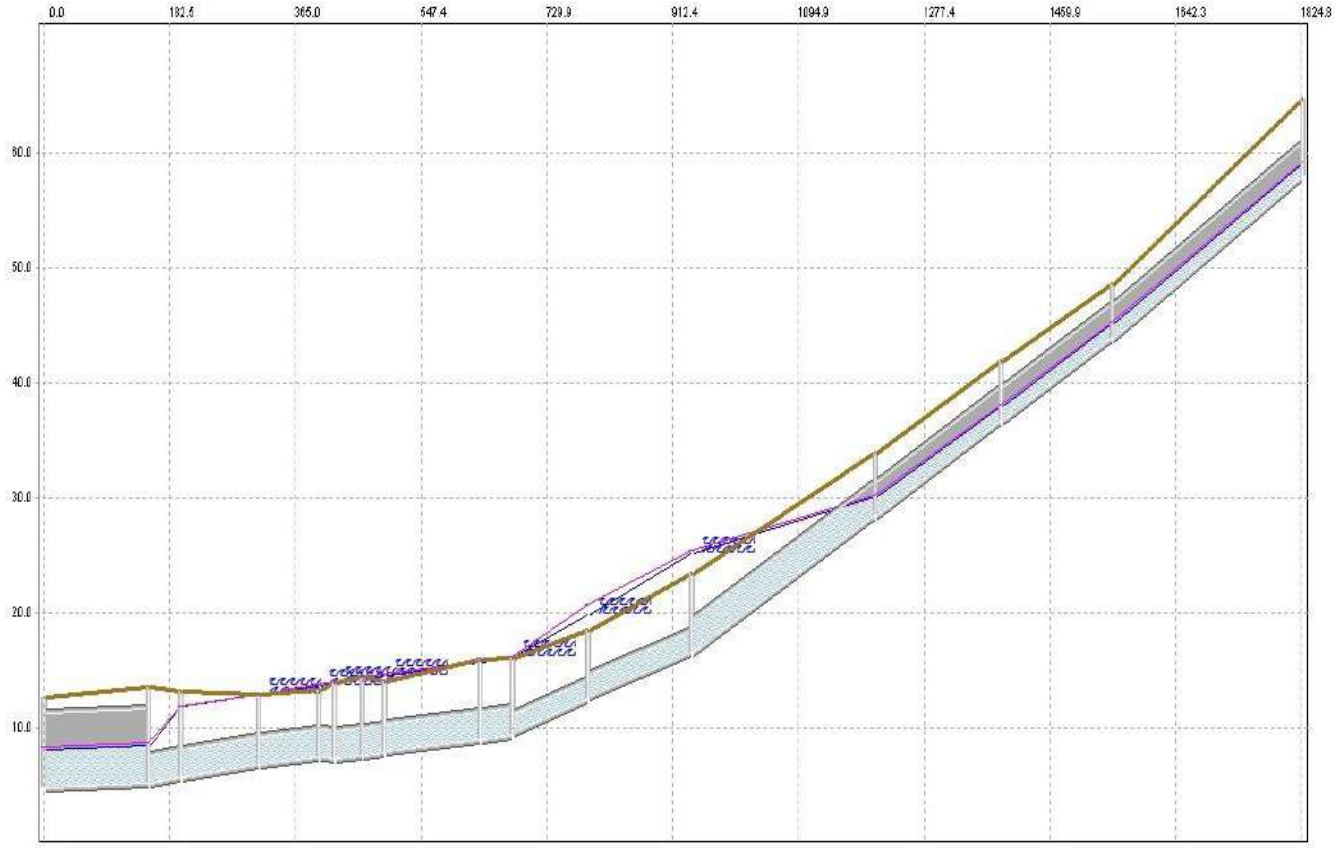
Peak Hydraulic Grade Line

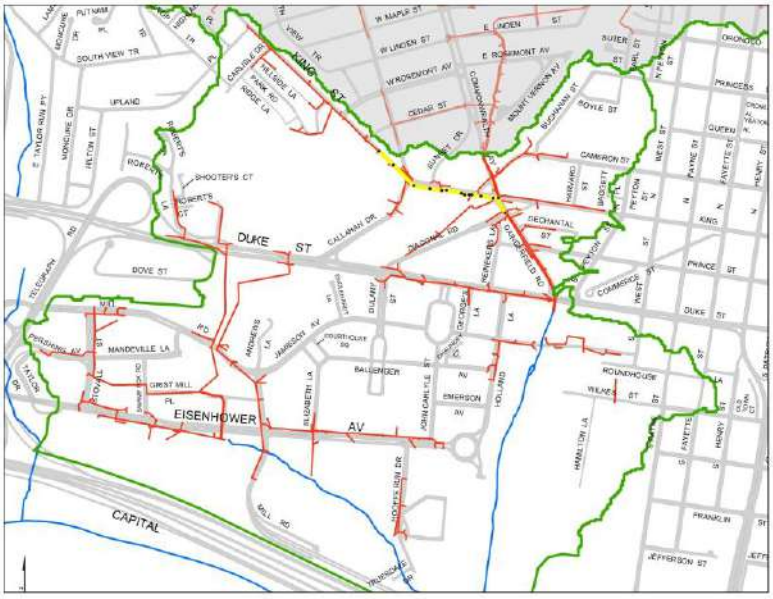
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 8

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 8 from 002913ND to 000912ND





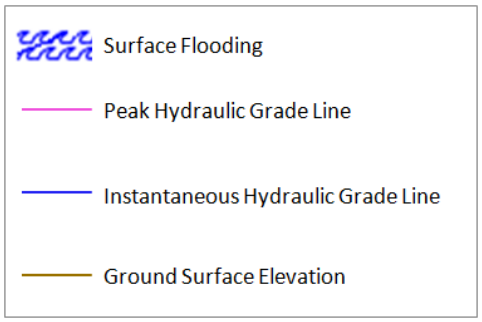
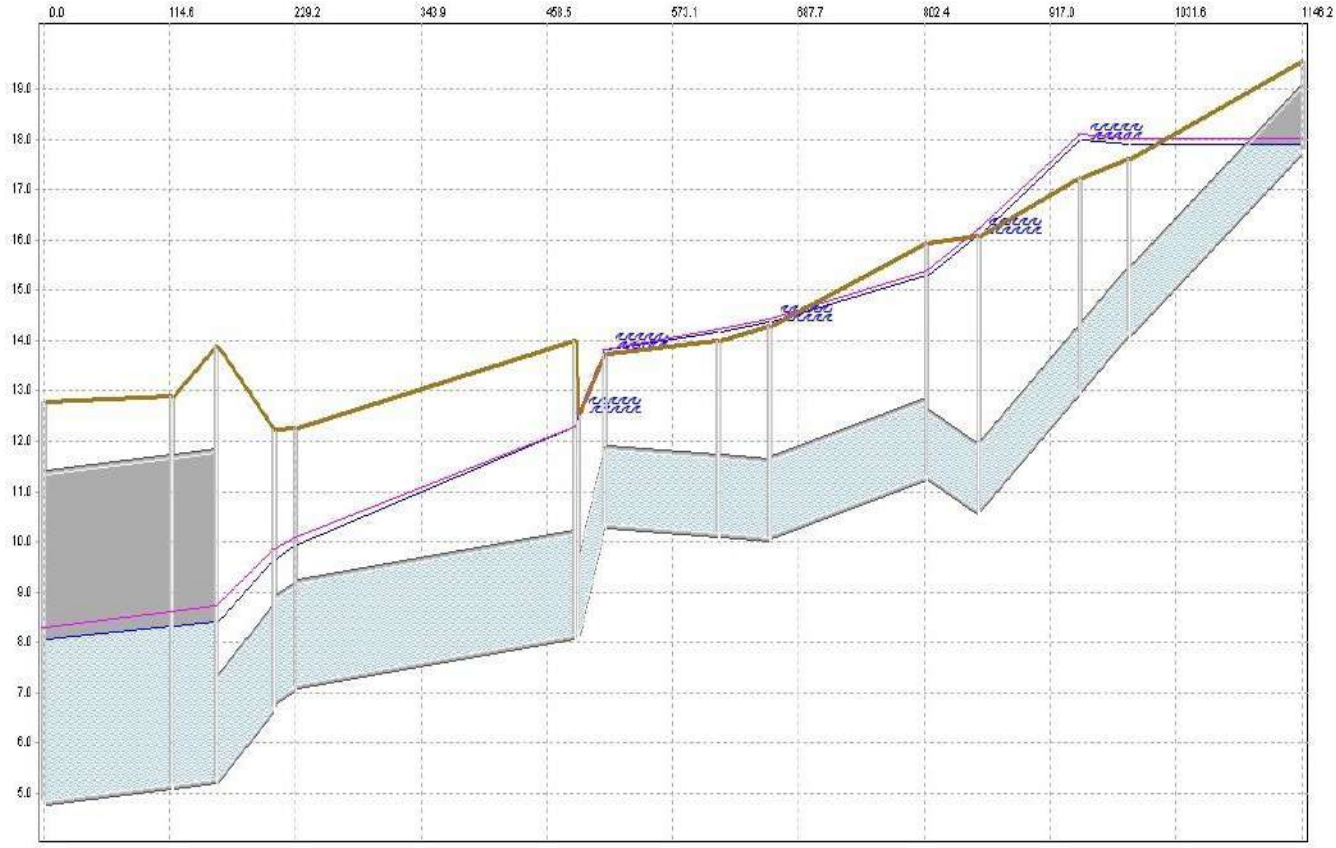
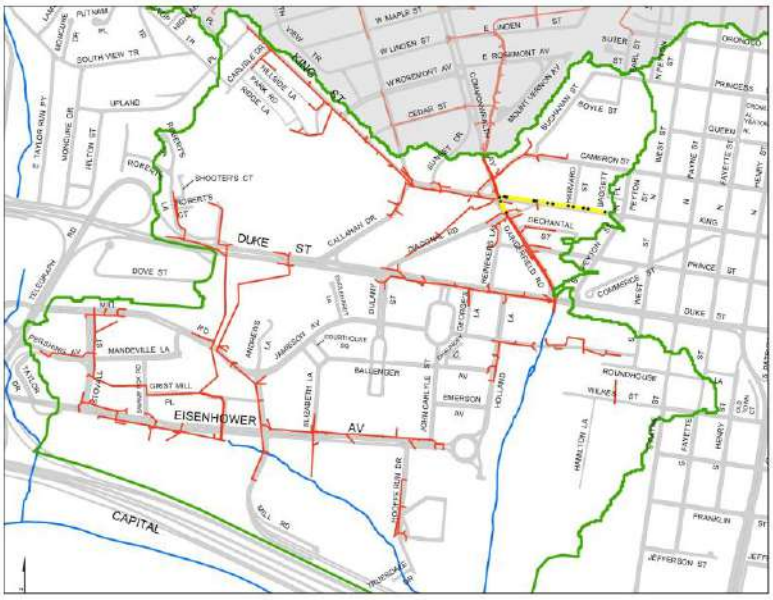


FIGURE 9

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 9 from 000958ND to 000944ND





Surface Flooding

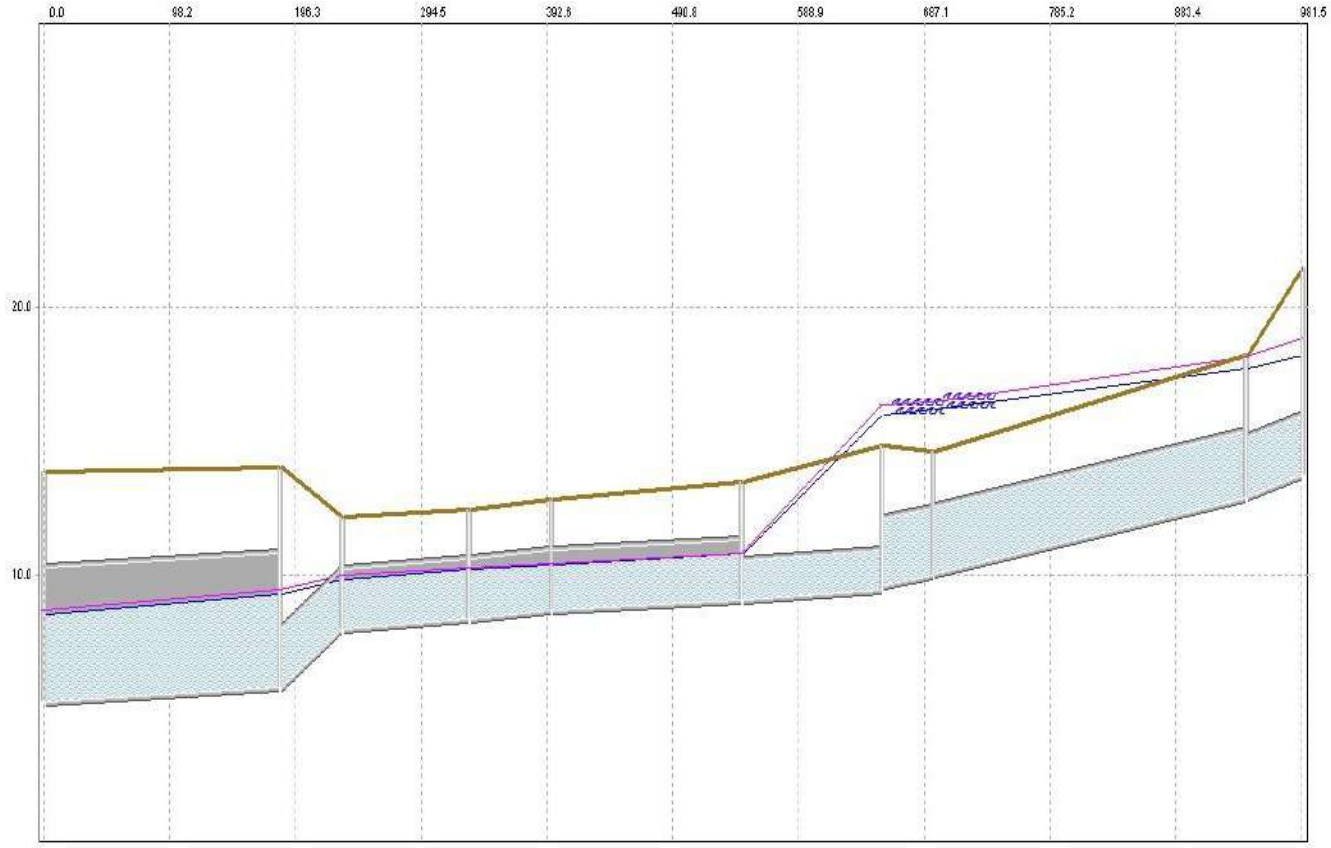
Peak Hydraulic Grade Line

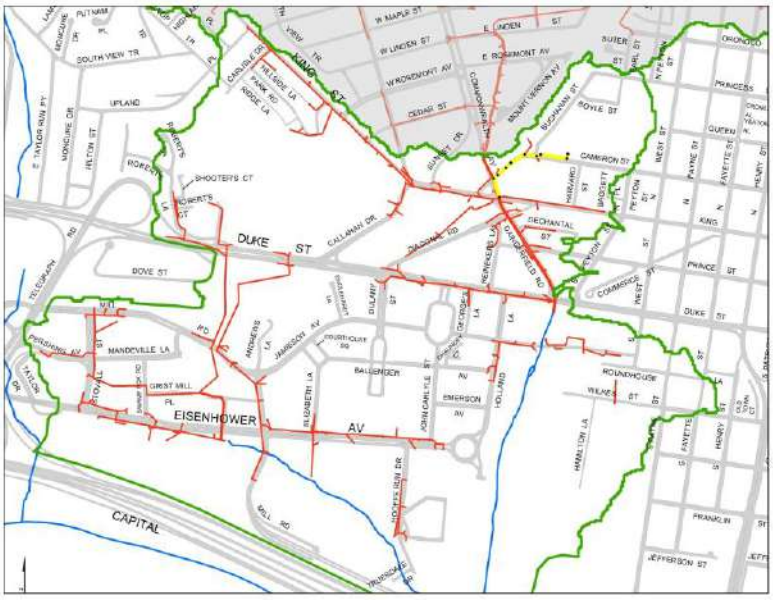
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 10

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 10 from 000960ND to 006100IN





Surface Flooding

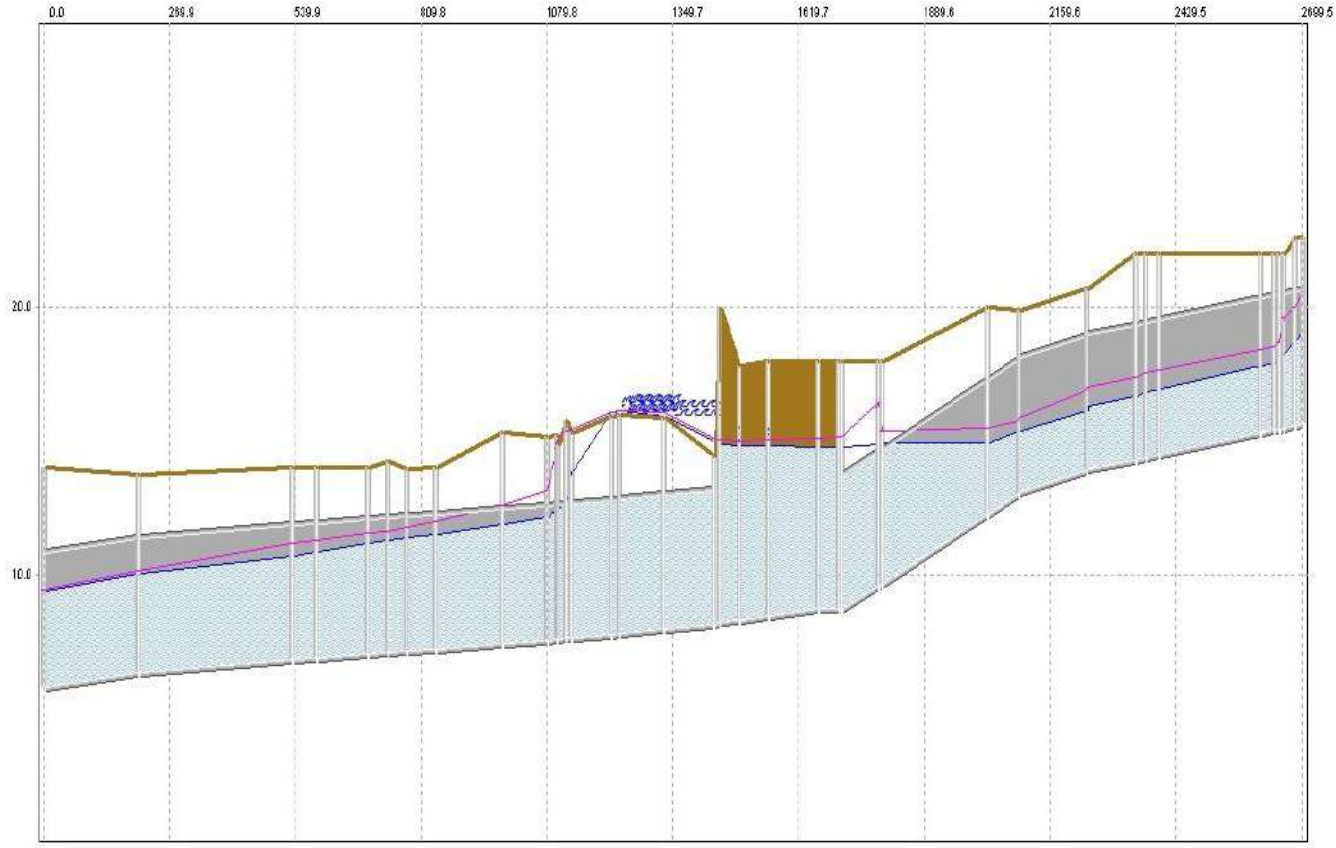
Peak Hydraulic Grade Line

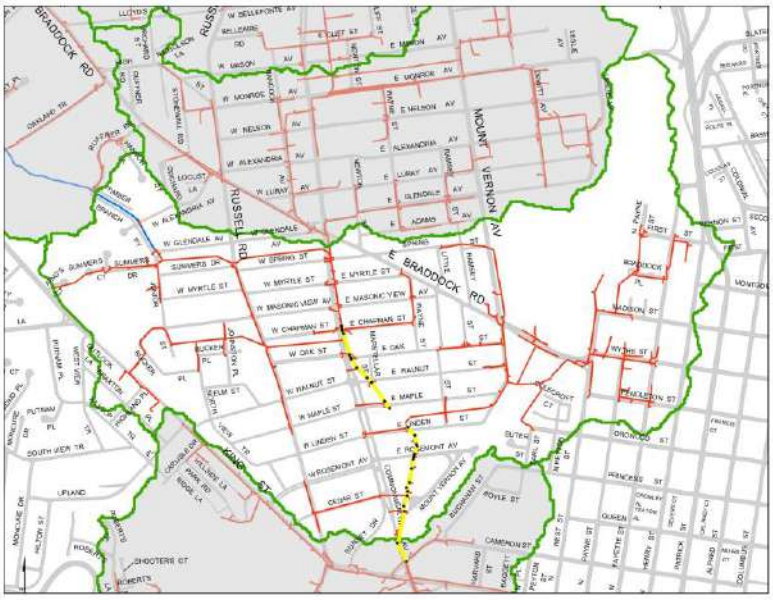
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 11

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 11 from 000946ND to 003095SMH





Surface Flooding

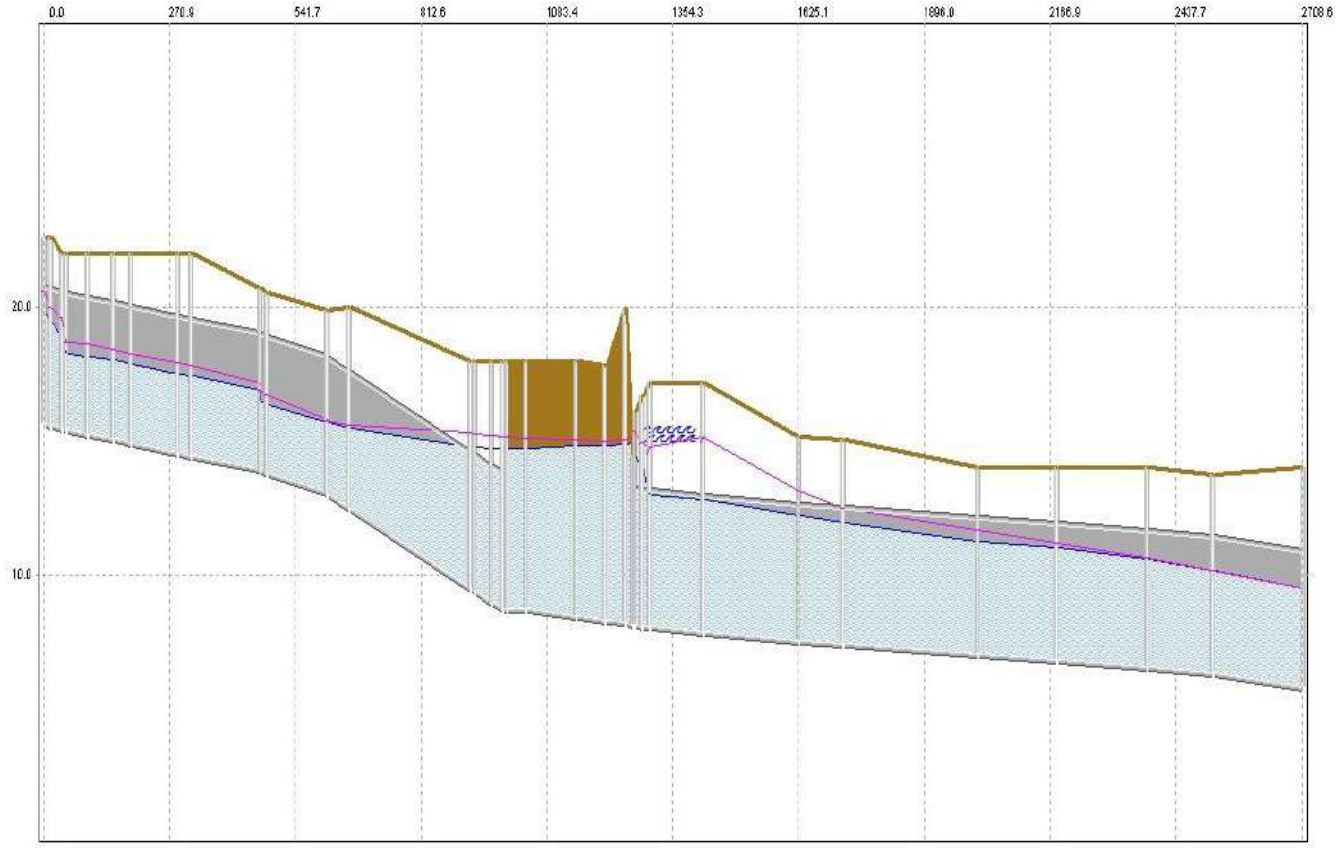
Peak Hydraulic Grade Line

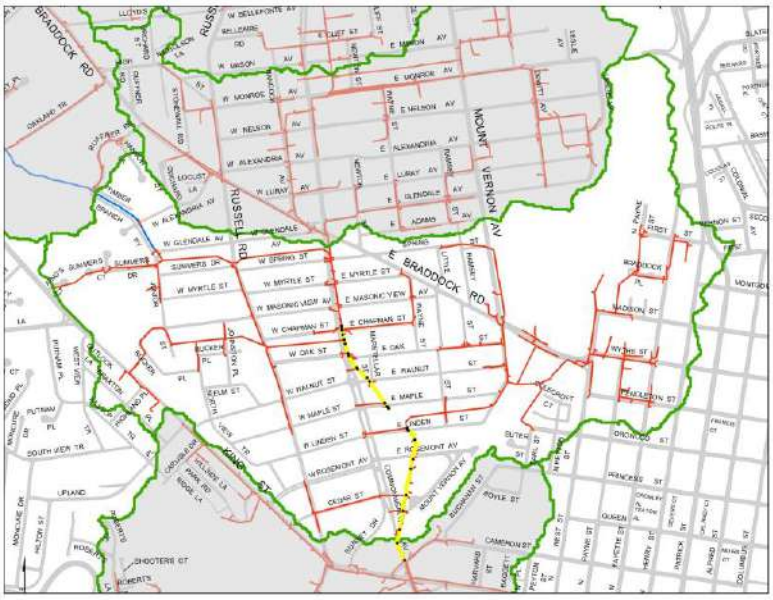
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 12

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 12 from 000945ND to 003095SMH





Surface Flooding

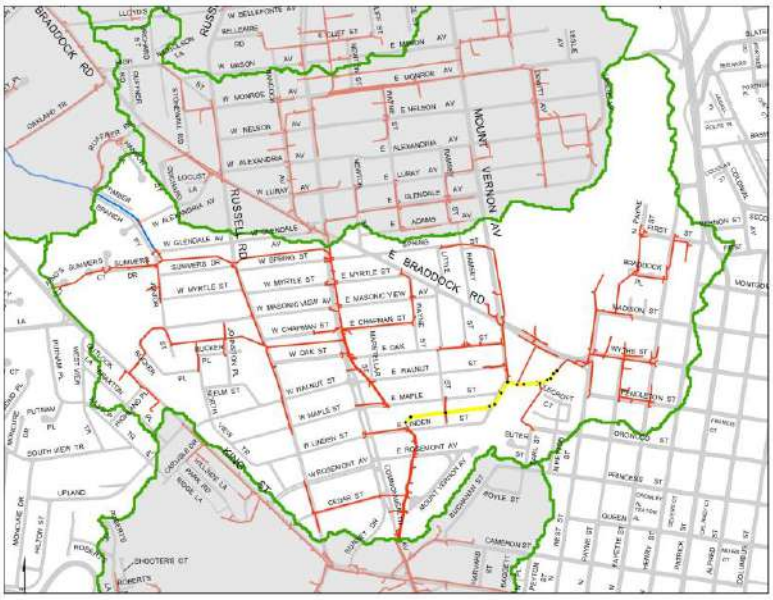
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 13

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 13 from 000546IOto 003457SMH



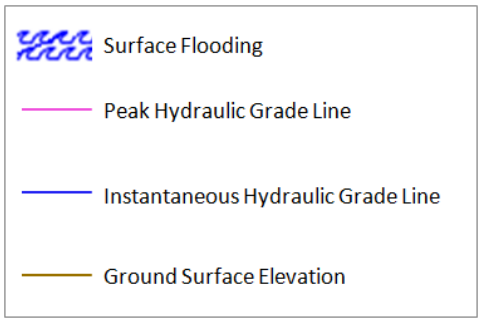
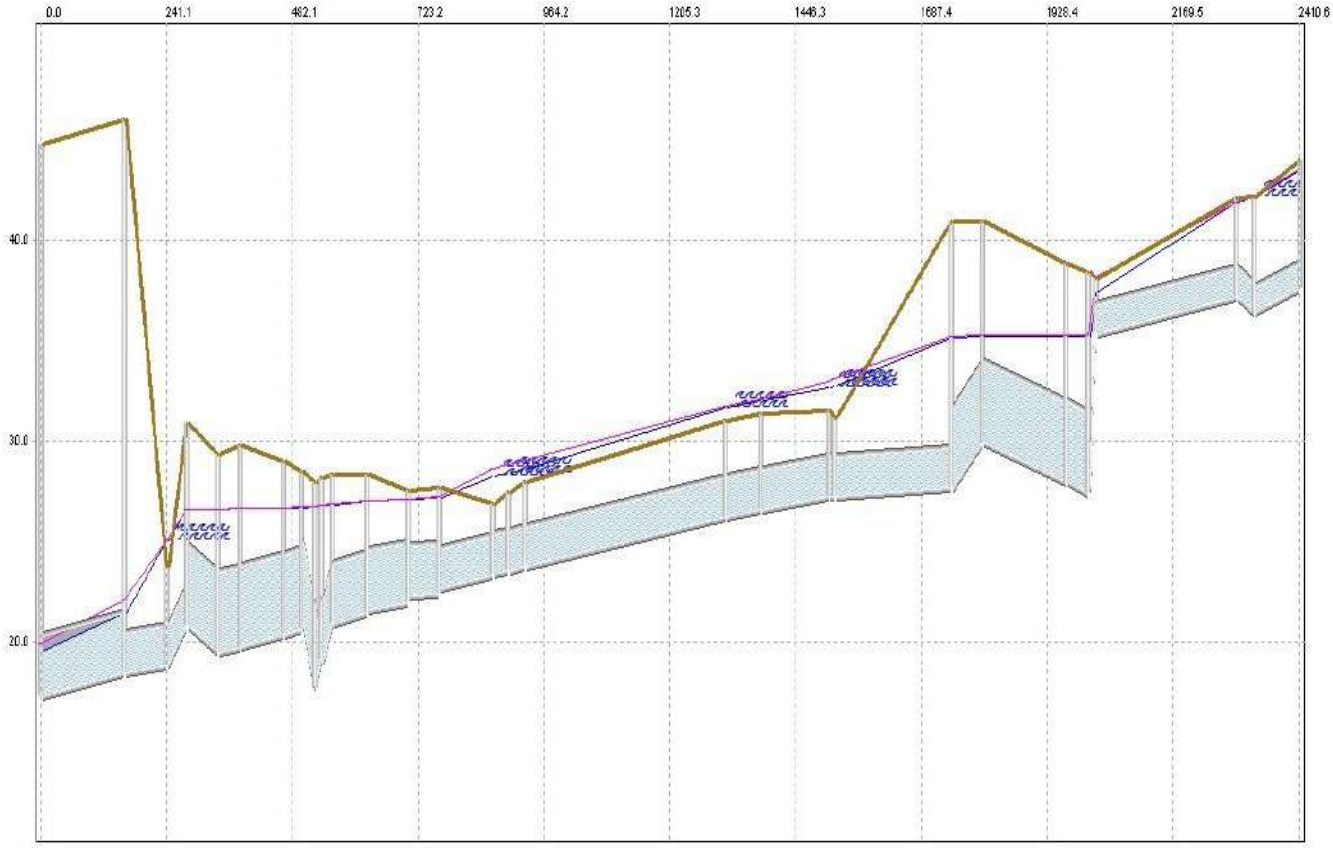
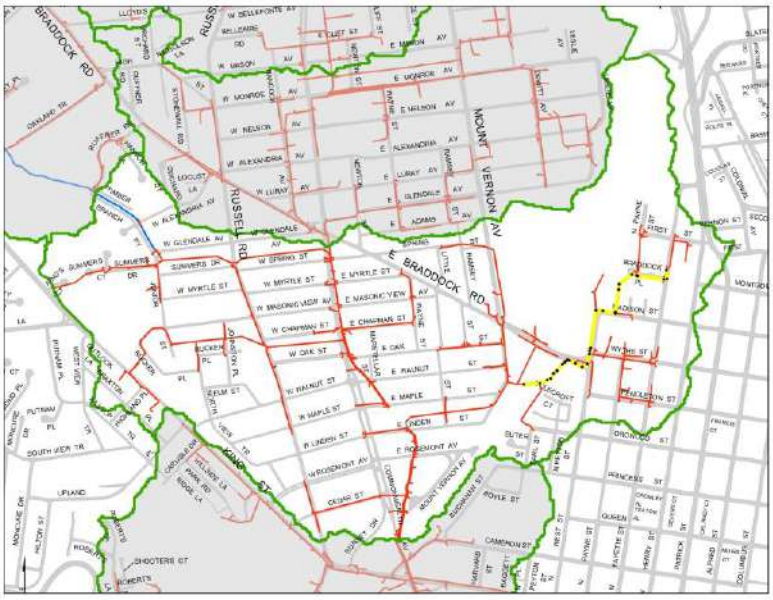


FIGURE 14

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 14 from 000788ND to 003486SMH





Surface Flooding

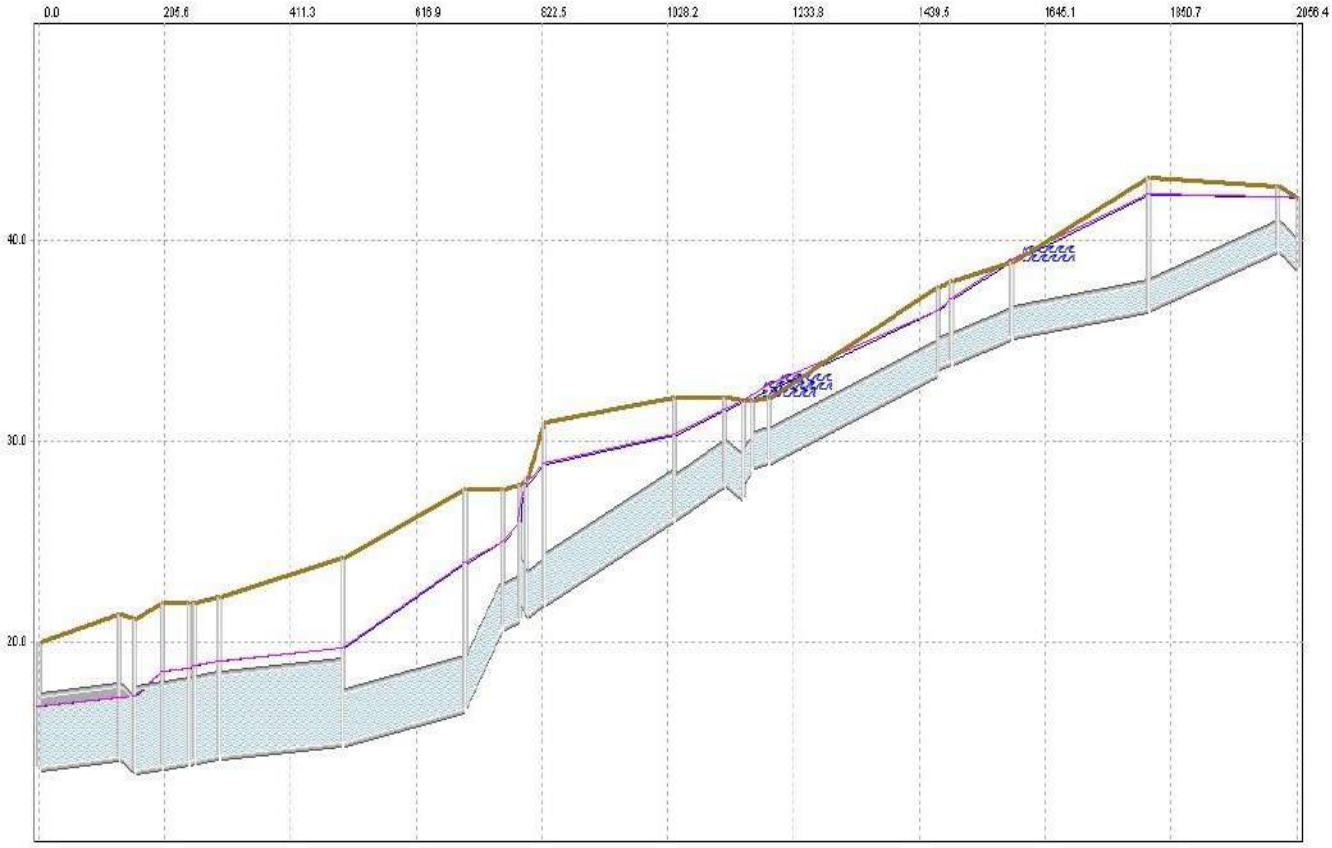
Peak Hydraulic Grade Line

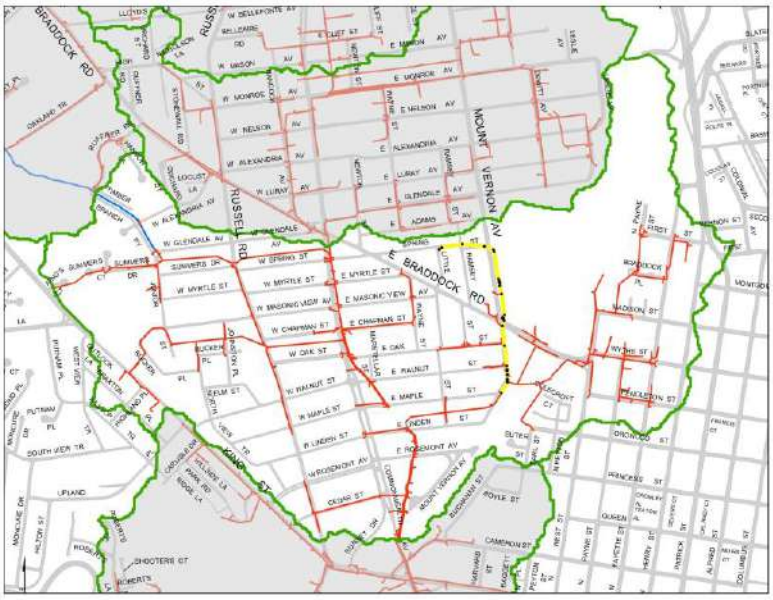
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 15

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 15 from 000789ND to 007762IN





Surface Flooding

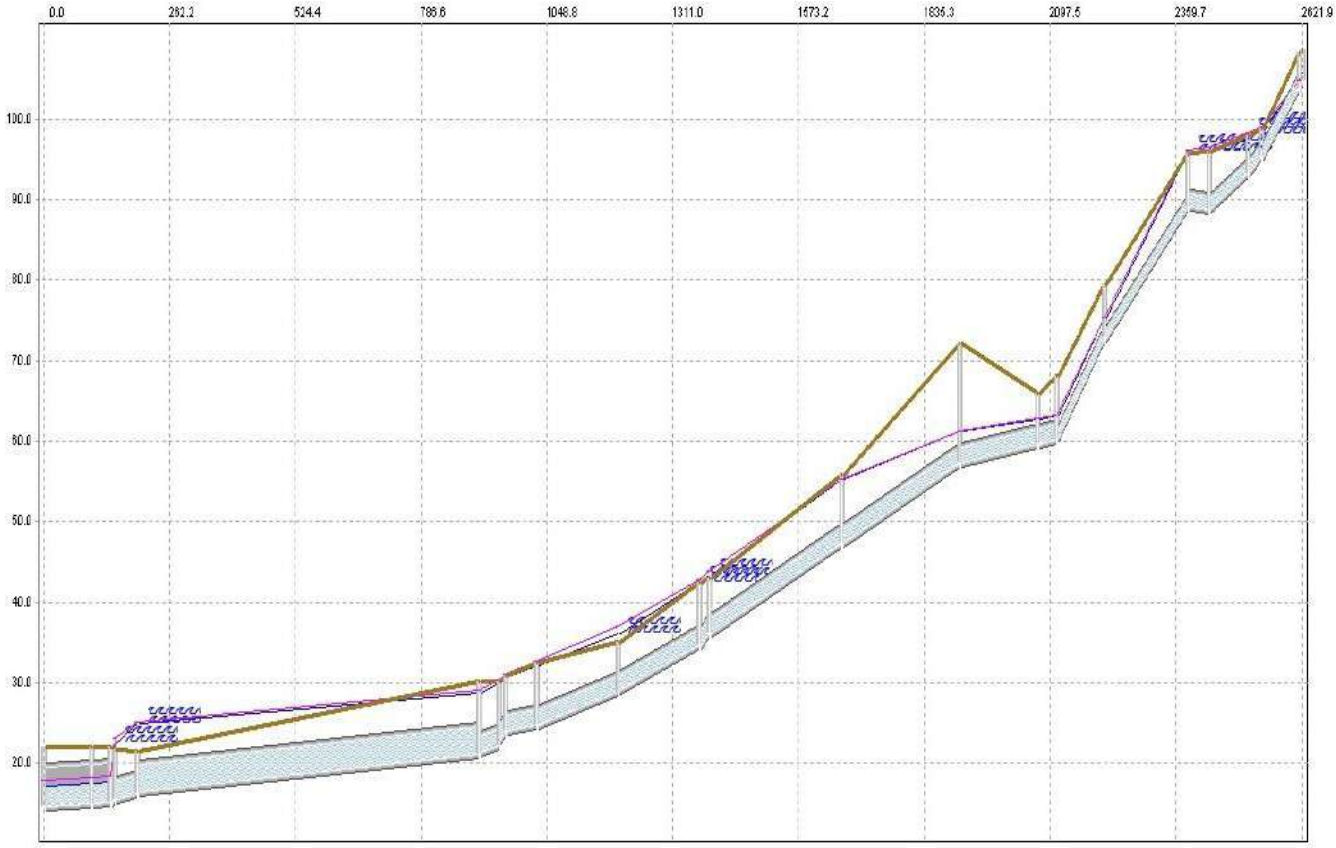
Peak Hydraulic Grade Line

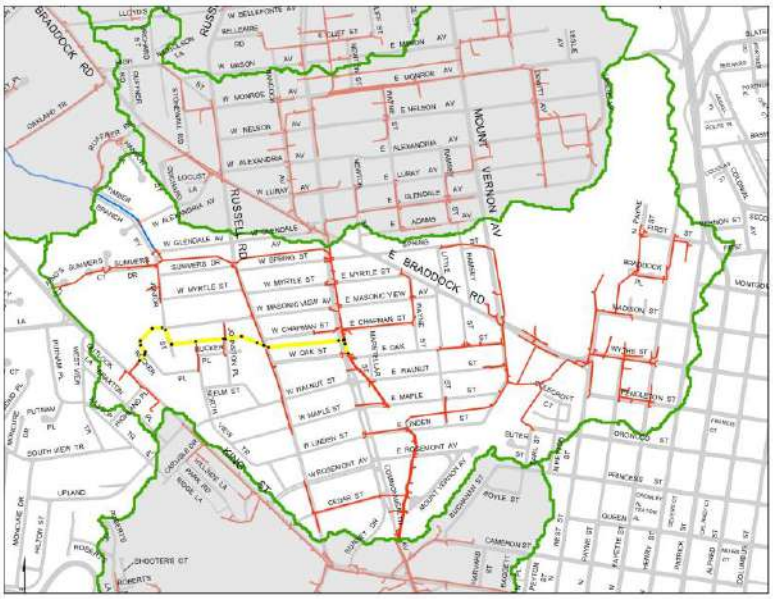
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 16

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 16 from 000823ND to 002912SMH





Surface Flooding

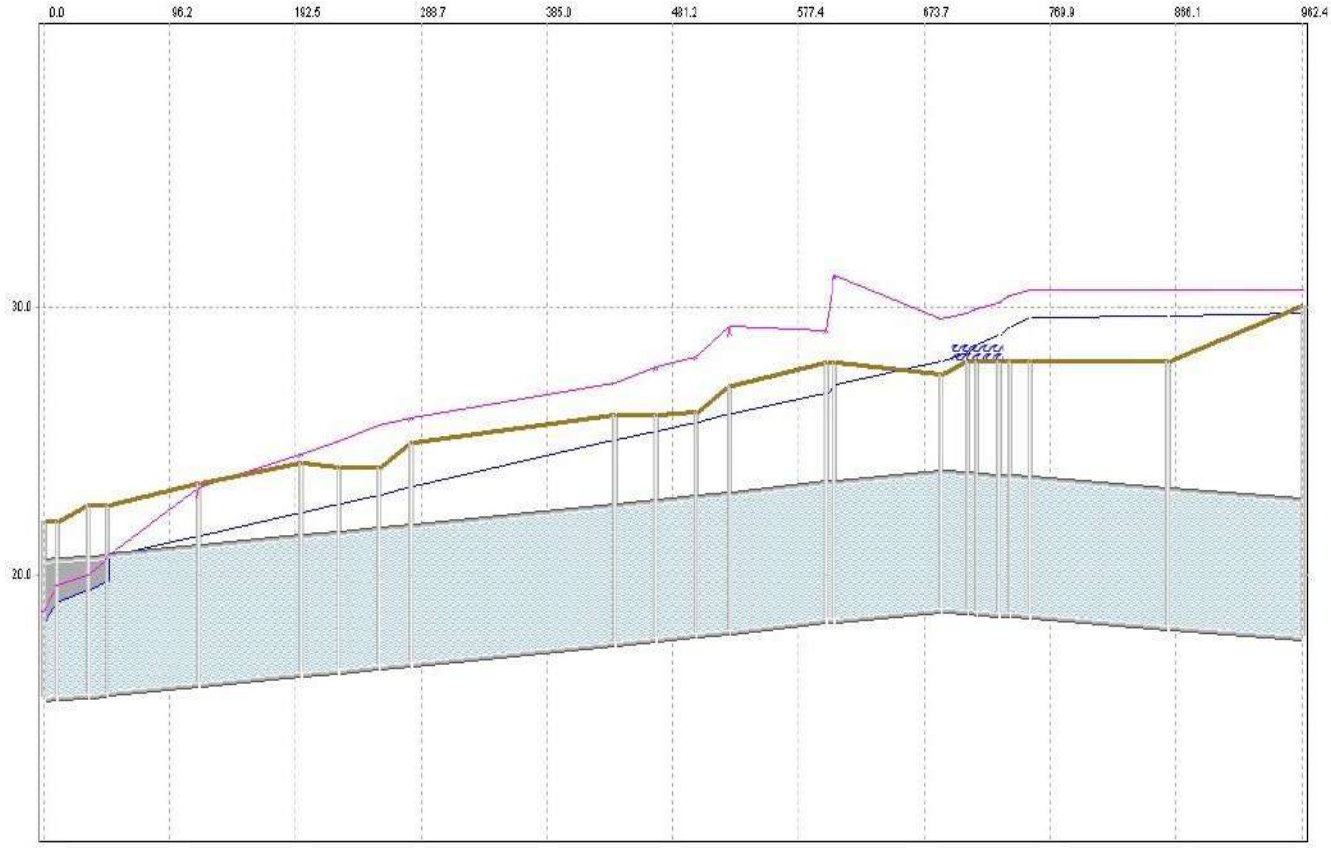
Peak Hydraulic Grade Line

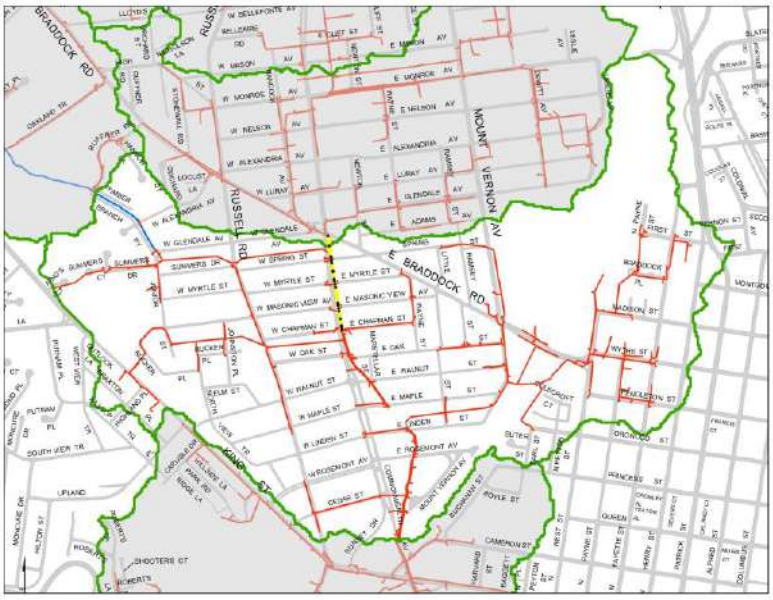
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 17

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 17 from 000815ND to 003166SMH





Surface Flooding

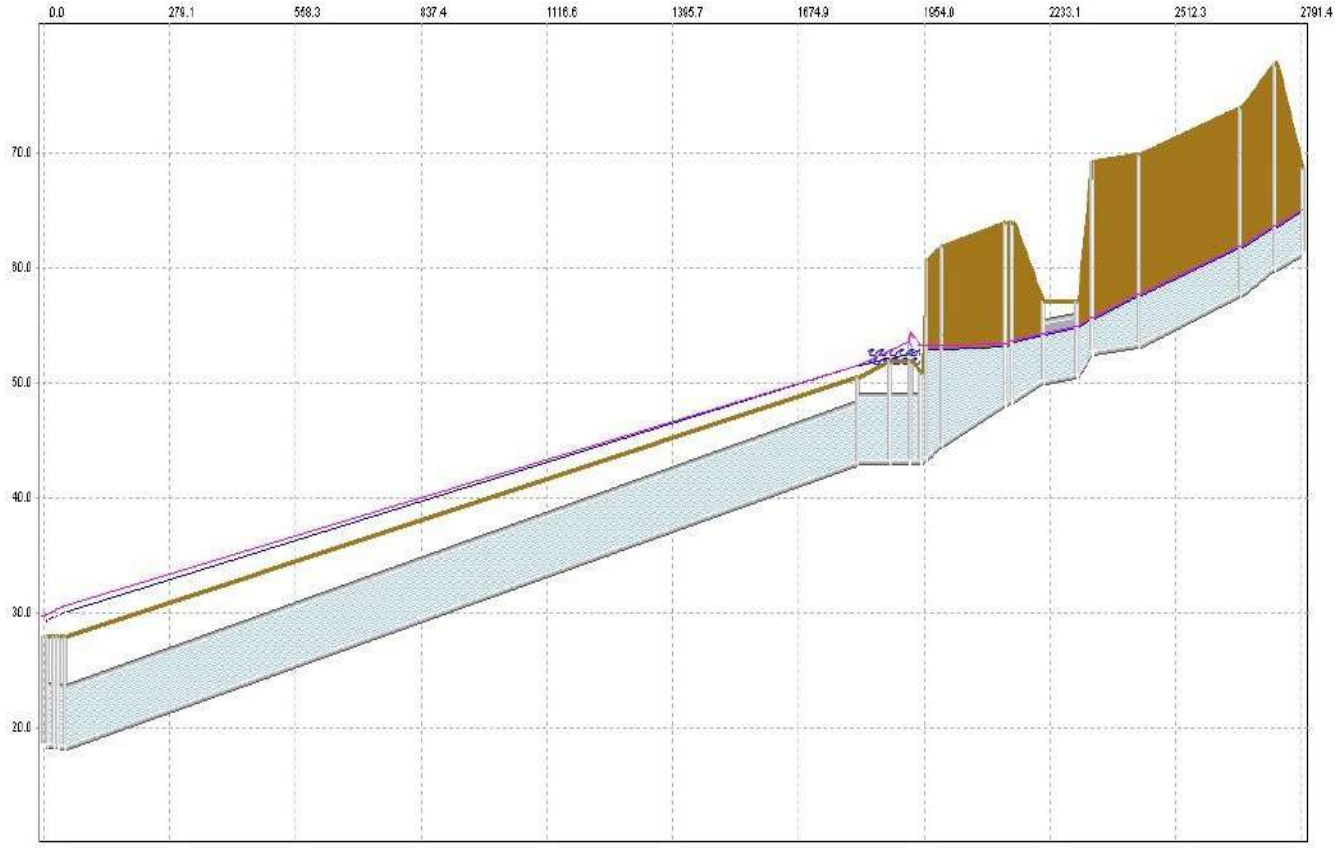
Peak Hydraulic Grade Line

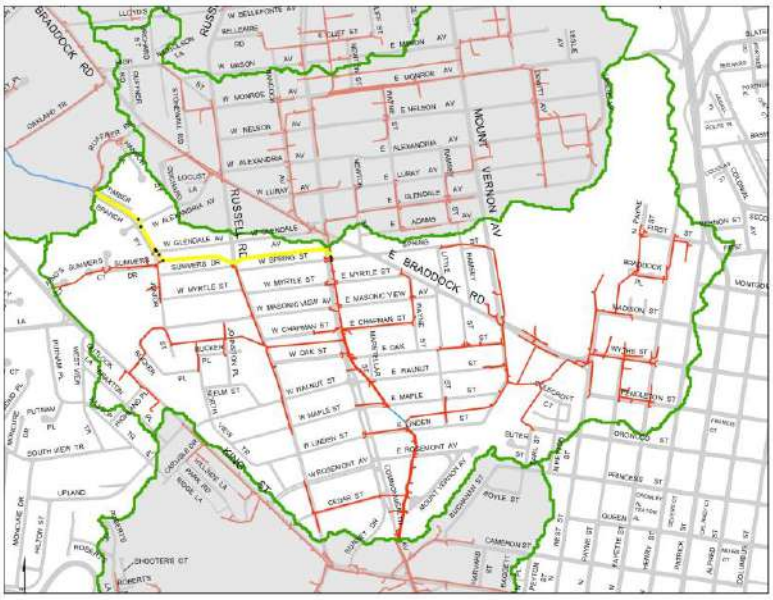
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 18

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 18 from 000814ND to 000125CP





Surface Flooding

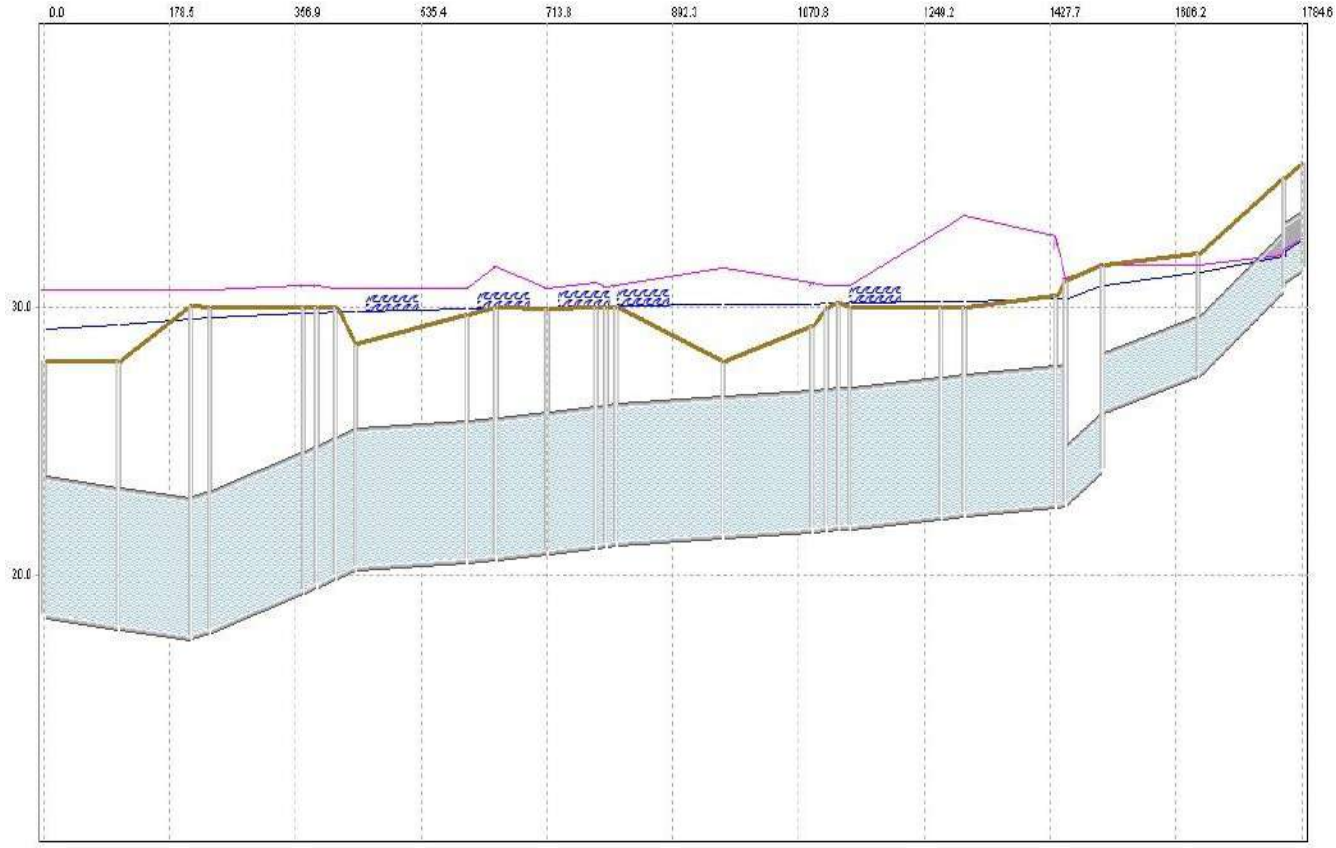
Peak Hydraulic Grade Line

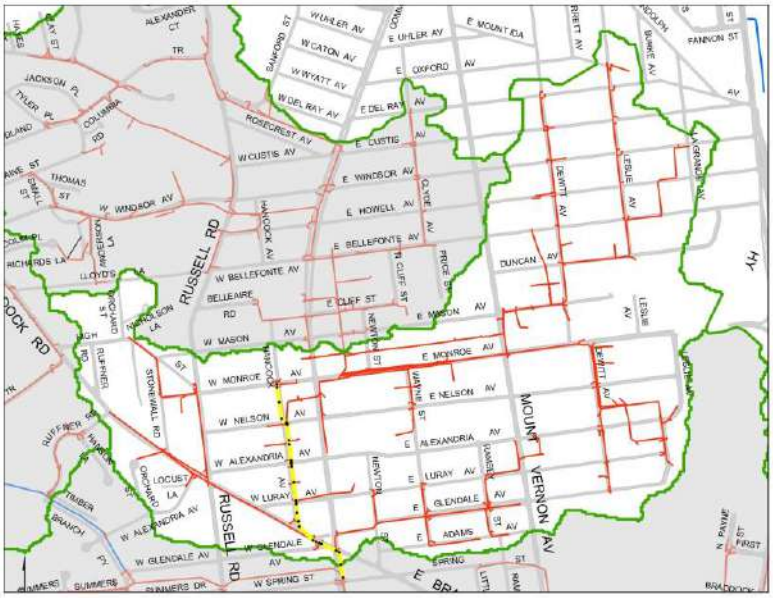
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 19

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 19 from 000811ND to 000977ND





Surface Flooding

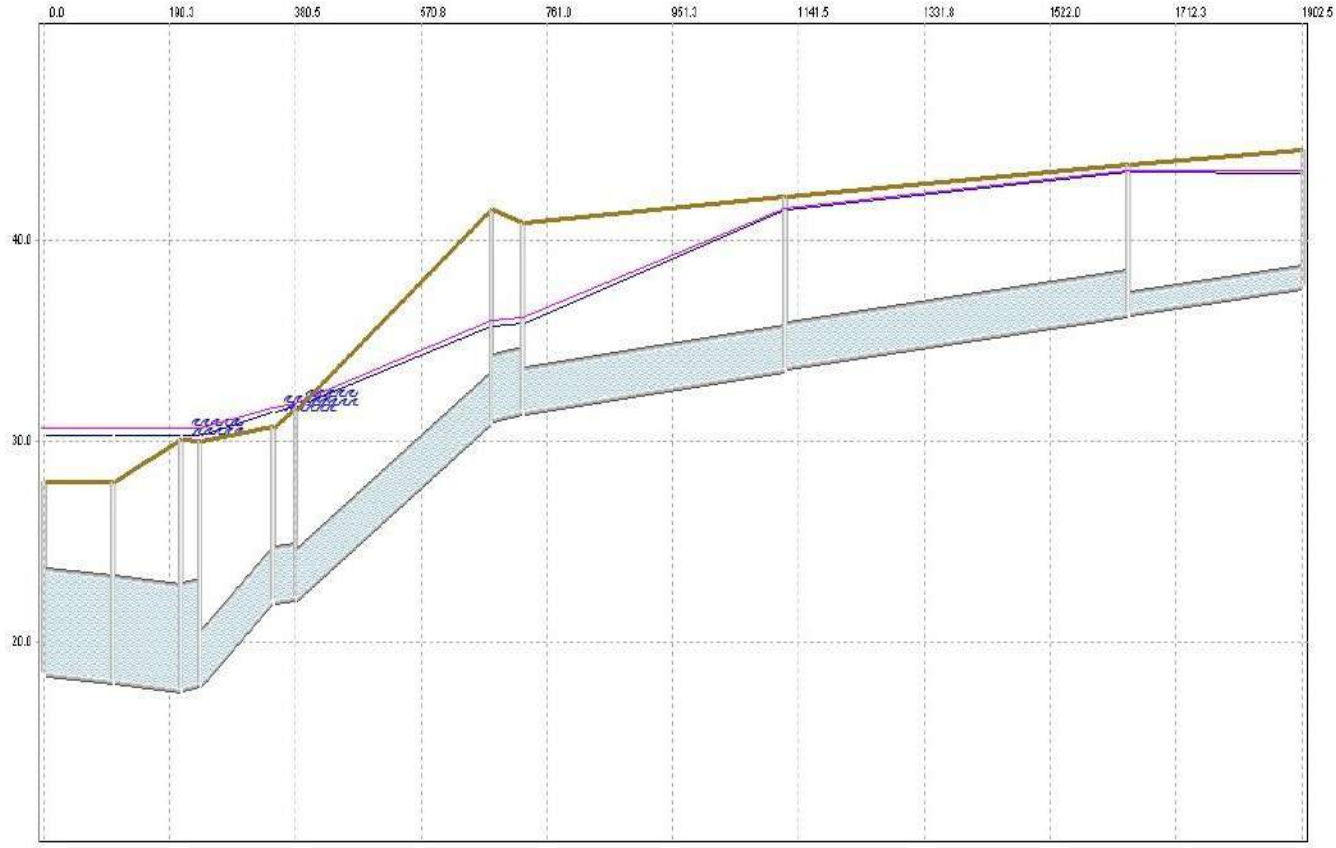
Peak Hydraulic Grade Line

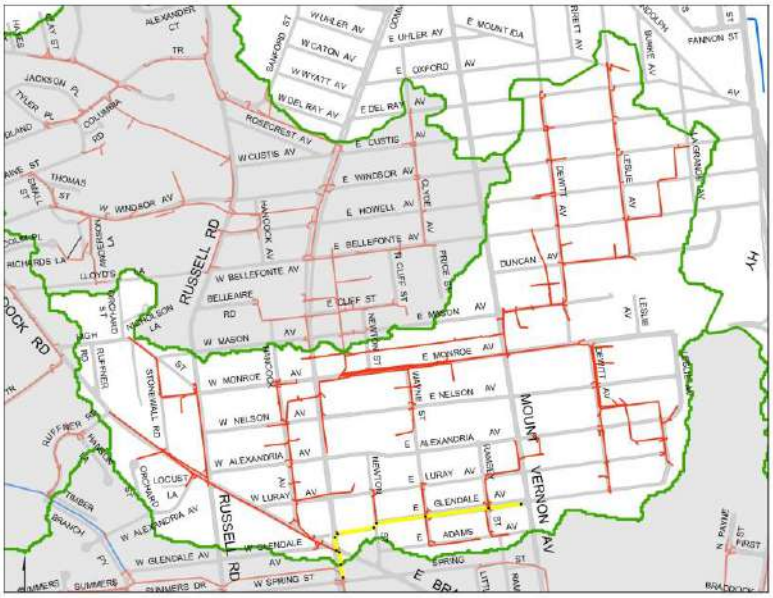
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 20

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 20 from 000811ND to 001005ND





Surface Flooding

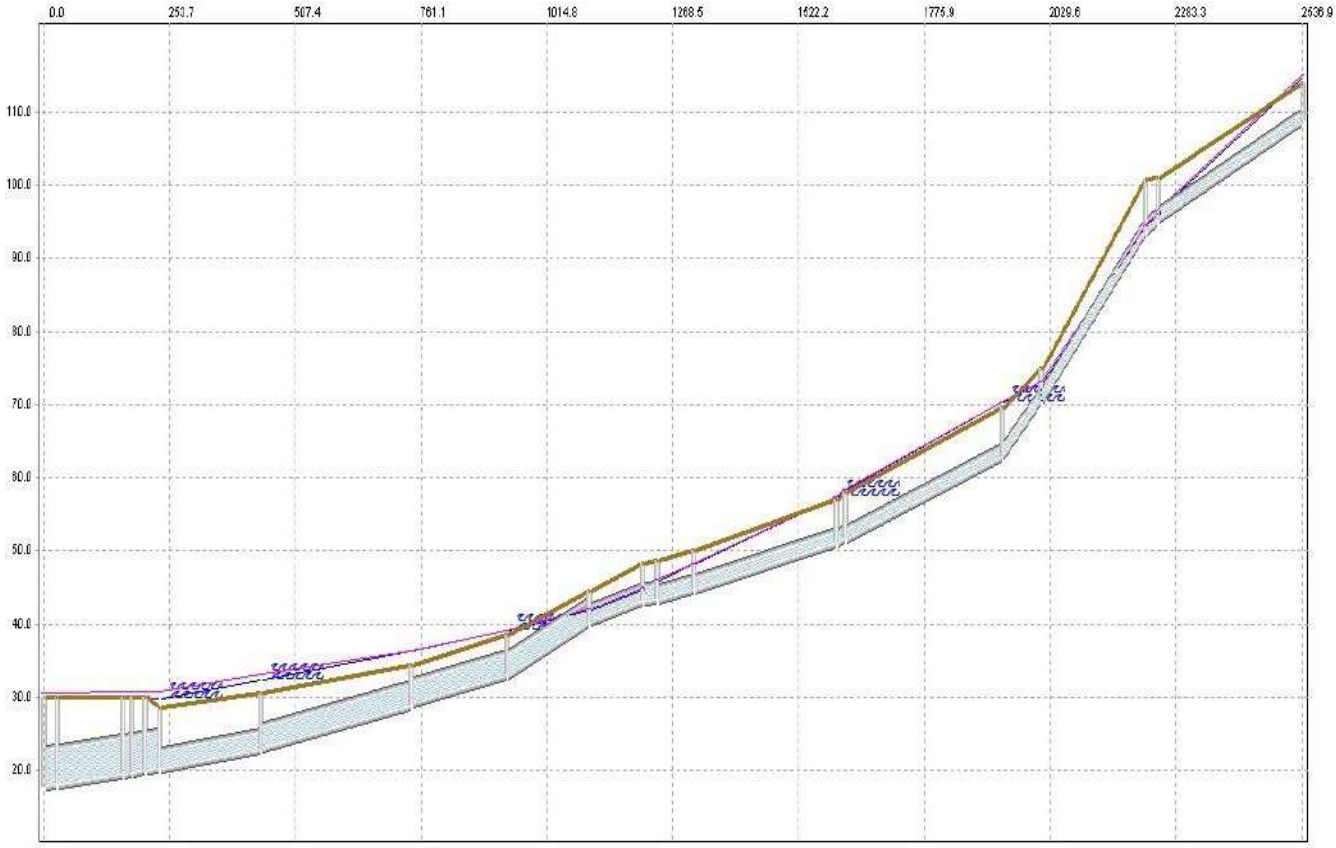
Peak Hydraulic Grade Line

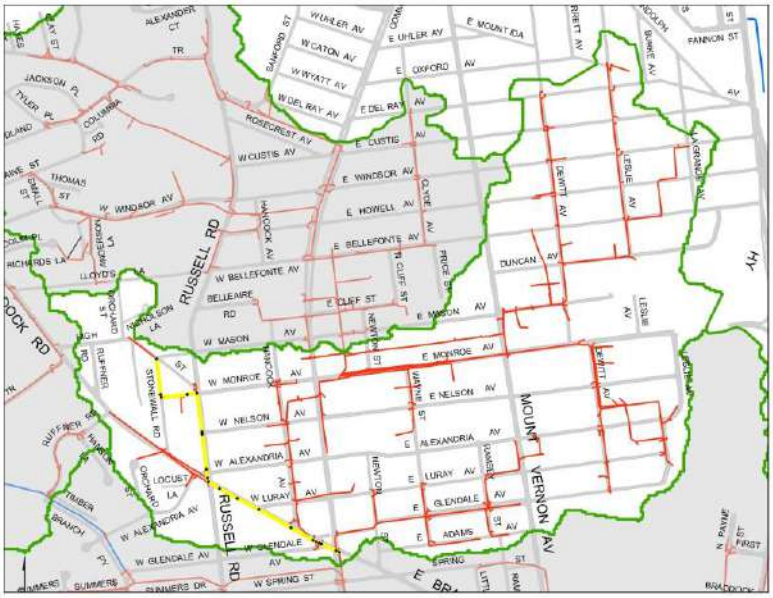
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 21

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 21 from 003166SMH to 003367SMH





Surface Flooding

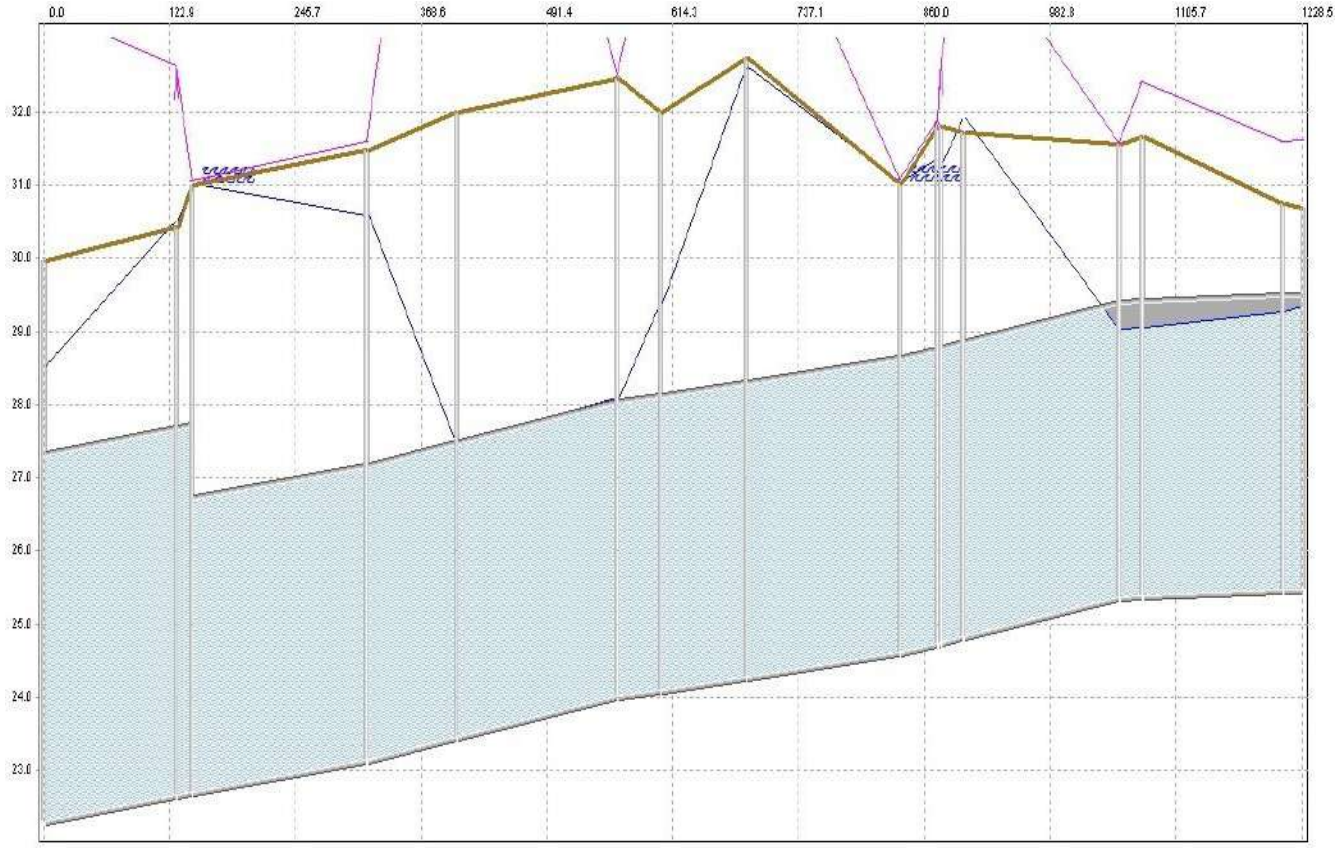
Peak Hydraulic Grade Line

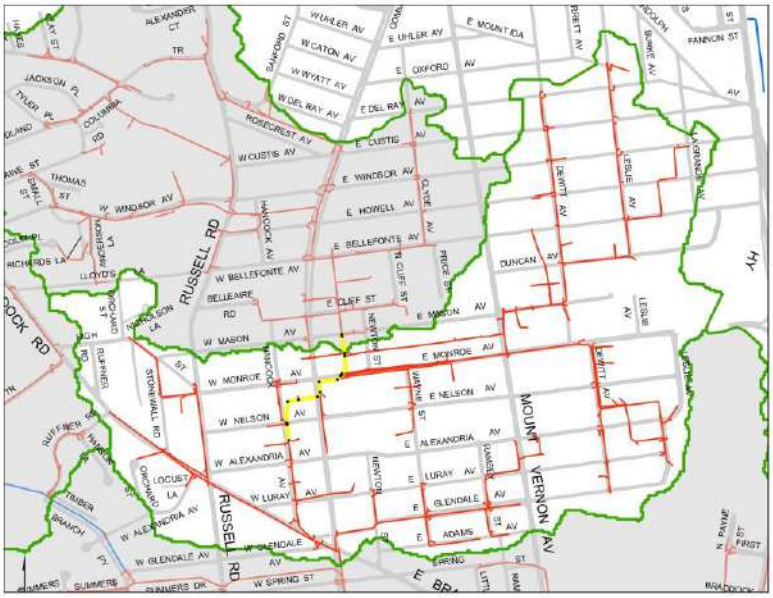
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 22

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 22 from 000999ND to 003412SMH





Surface Flooding

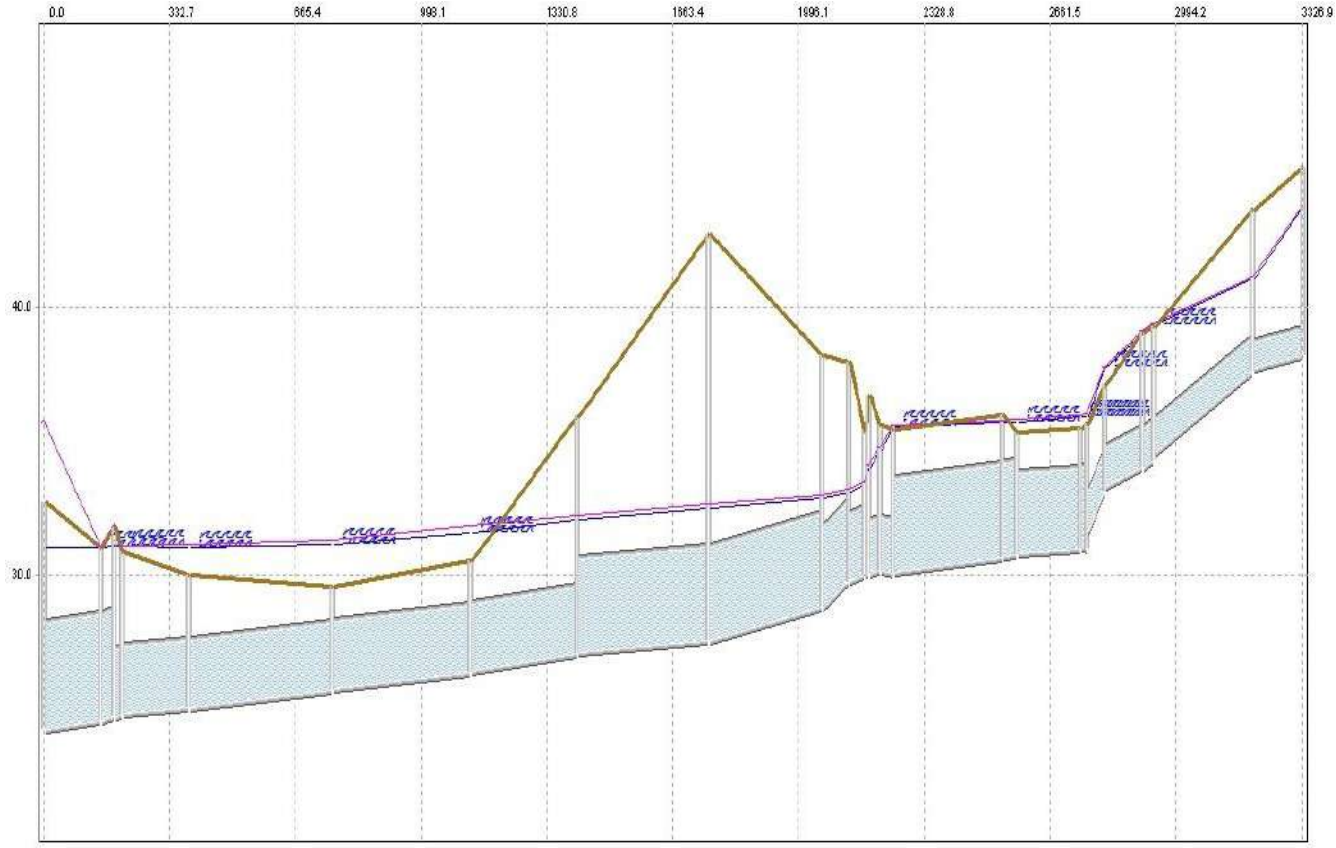
Peak Hydraulic Grade Line

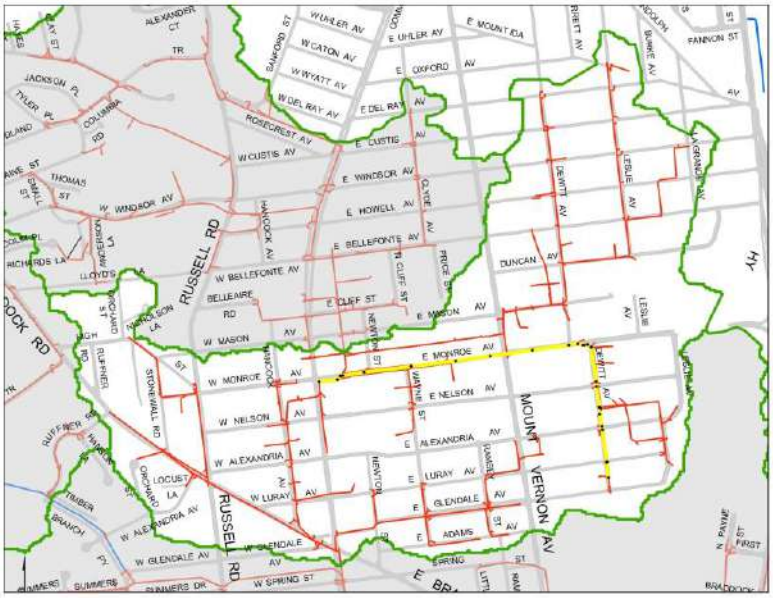
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 23

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 23 from 000994ND to 000856ND





Surface Flooding

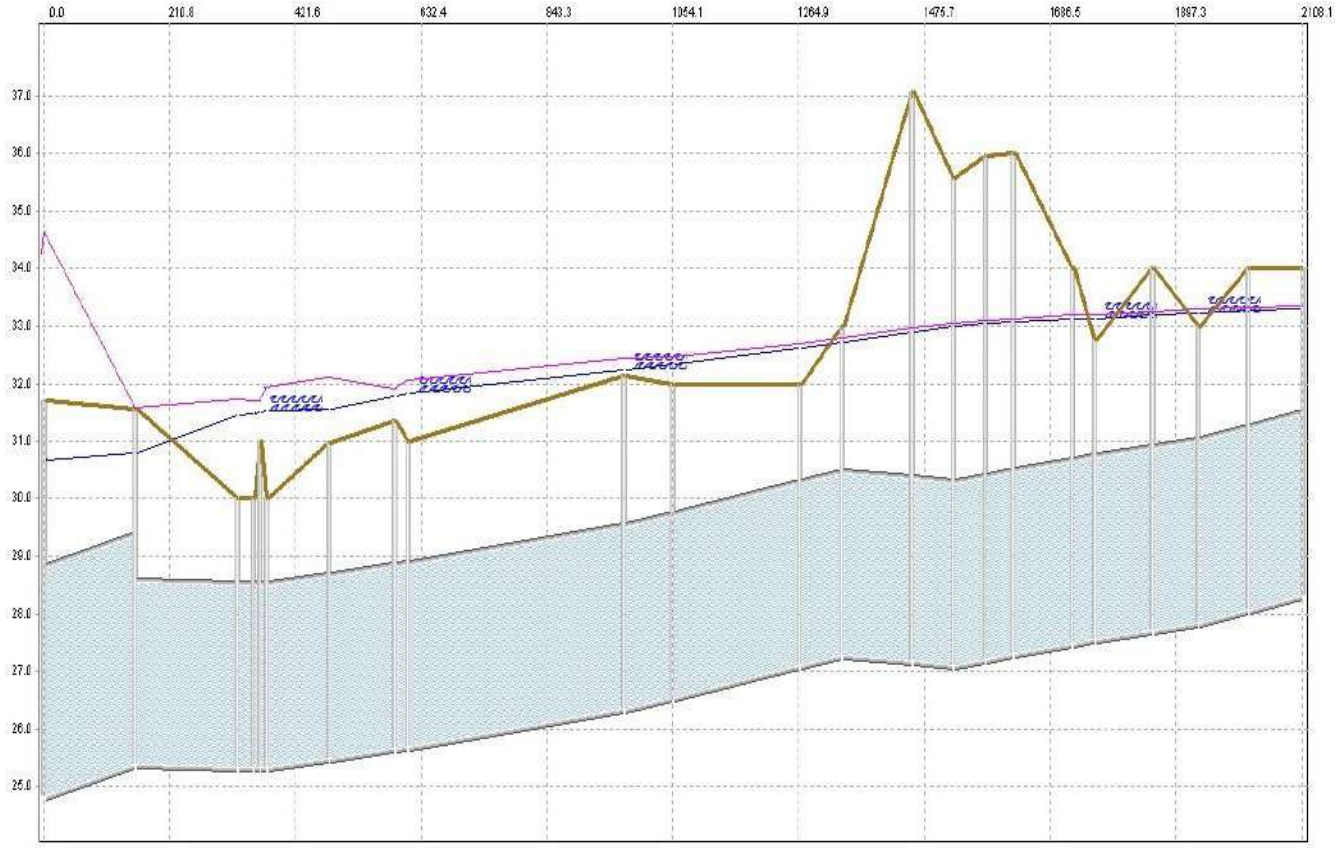
Peak Hydraulic Grade Line

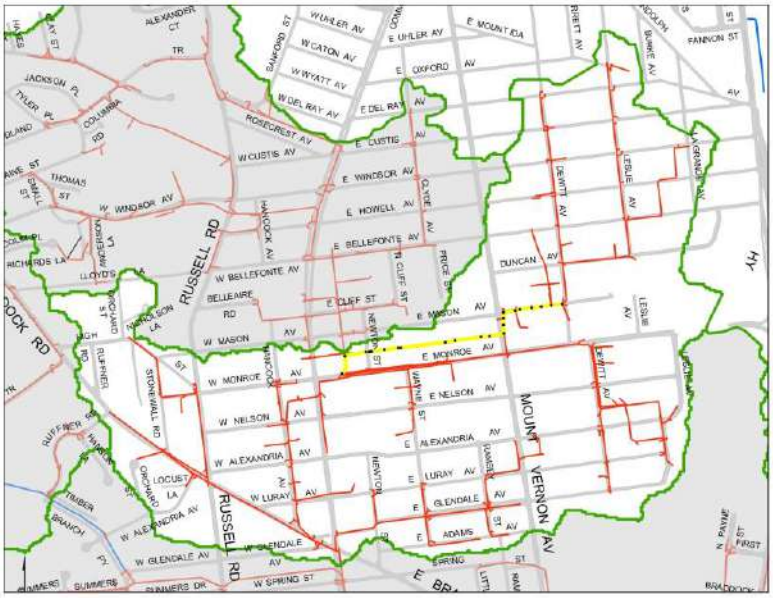
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 24

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 24 from 002916ND to 003335SMH





Surface Flooding

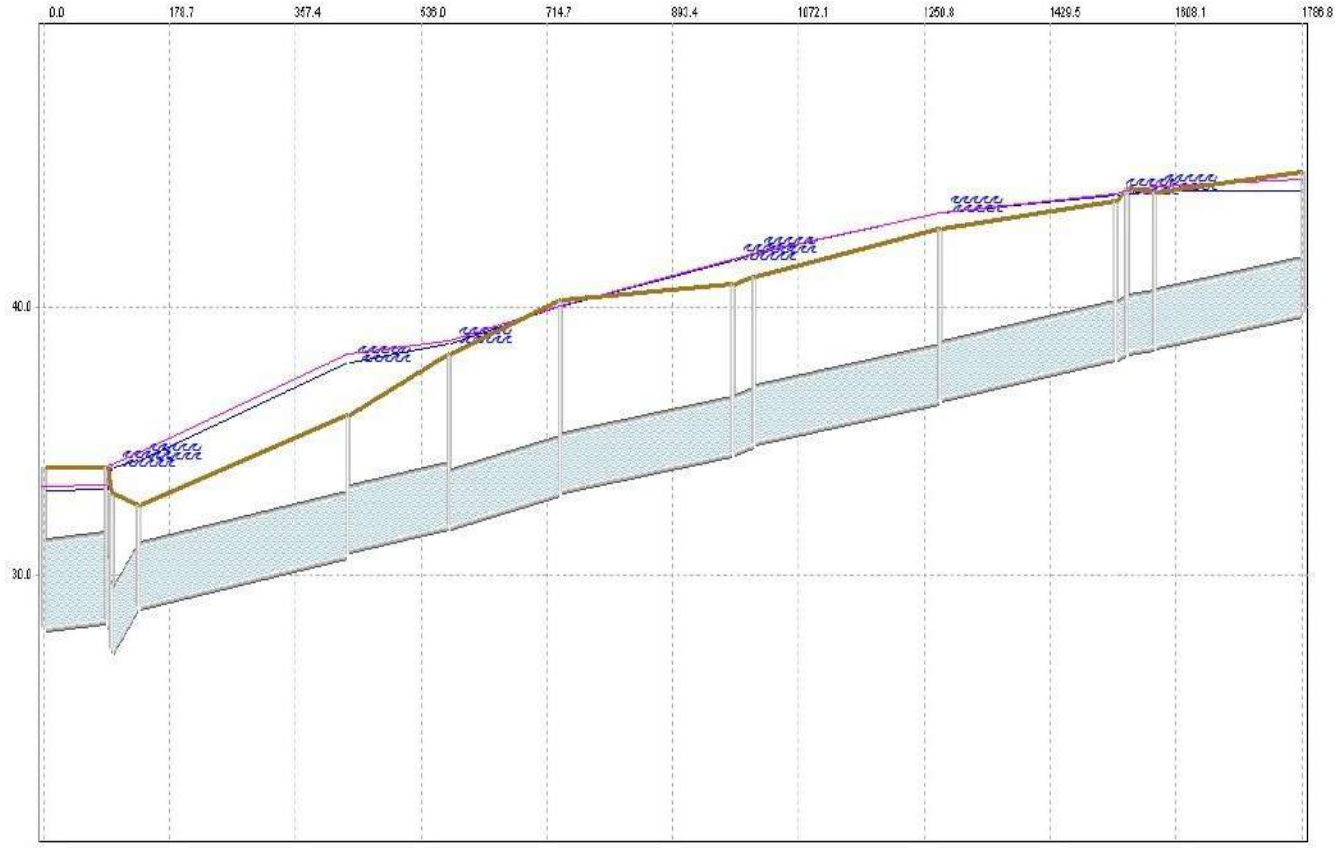
Peak Hydraulic Grade Line

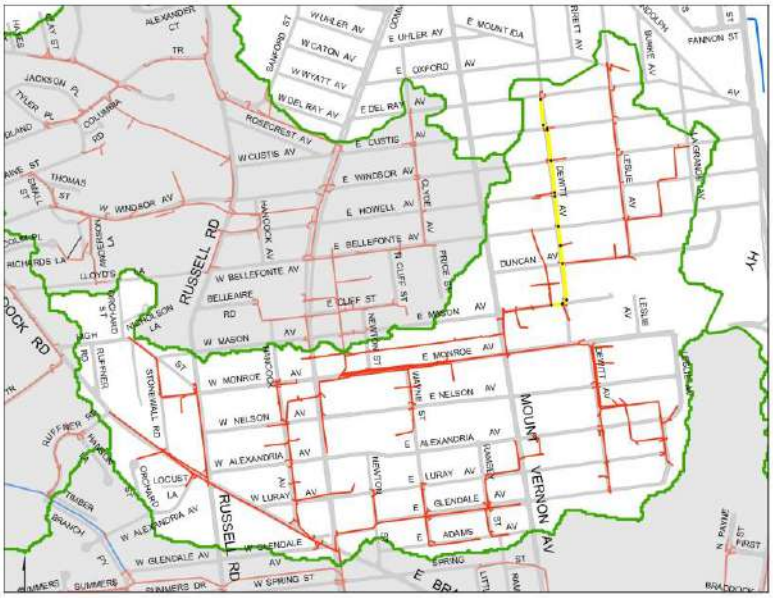
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 25

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 25 from 000991ND to 001984SMH





Surface Flooding

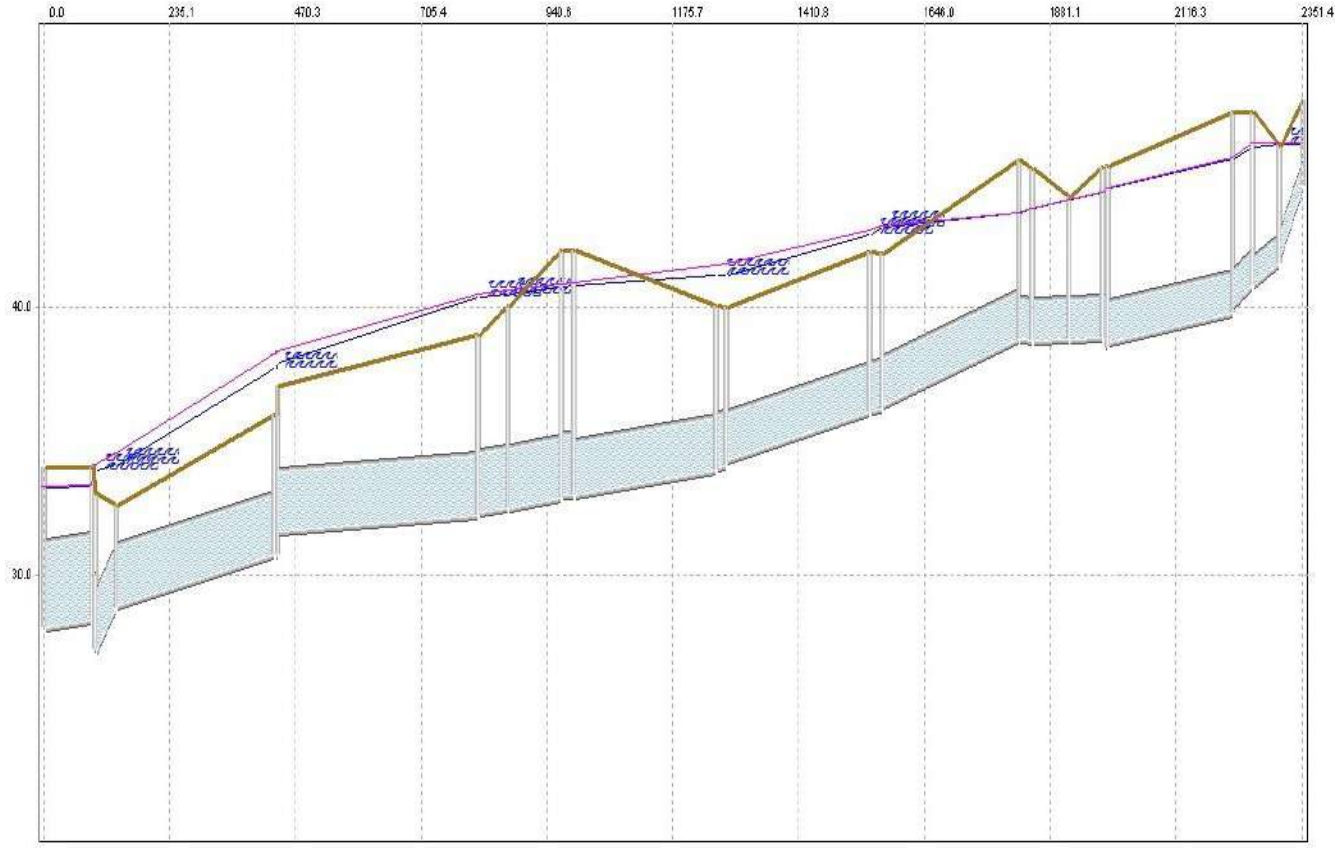
Peak Hydraulic Grade Line

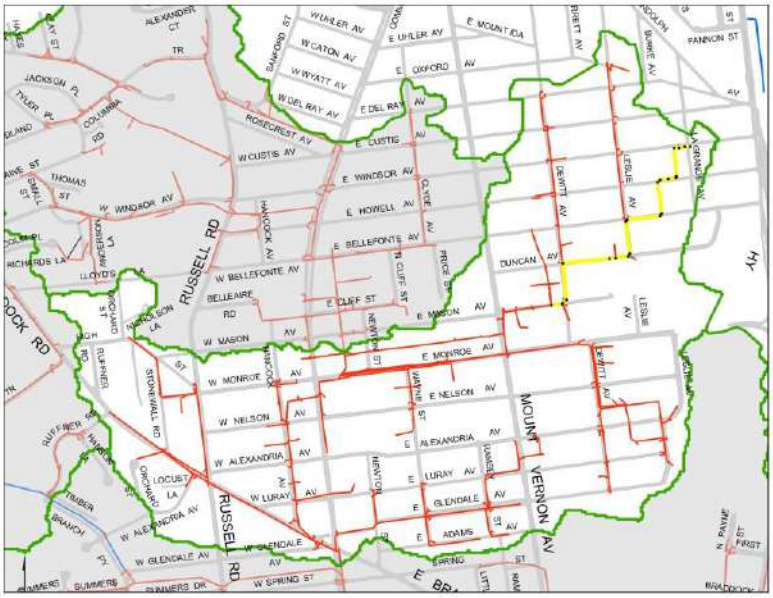
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 26

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 26 from 000991ND to 000107CB





Surface Flooding

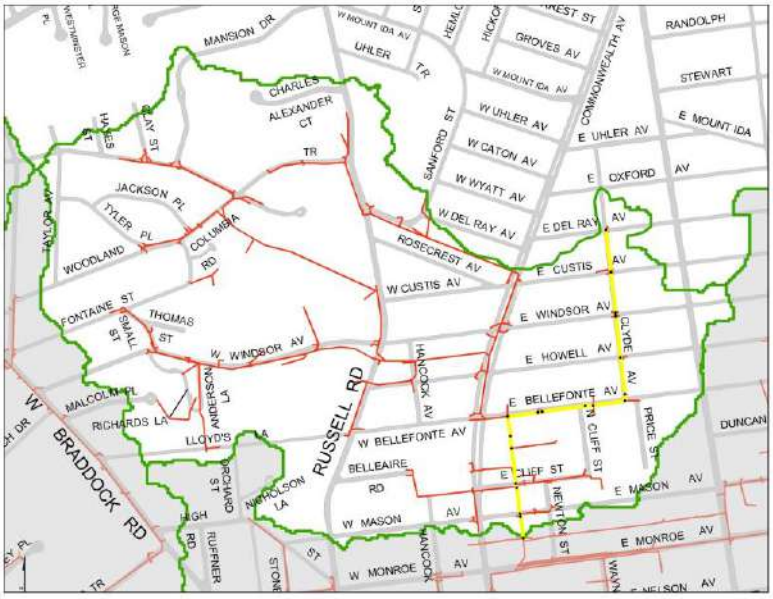
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 27

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 27 from 000936ND to 001987SMH



Surface Flooding

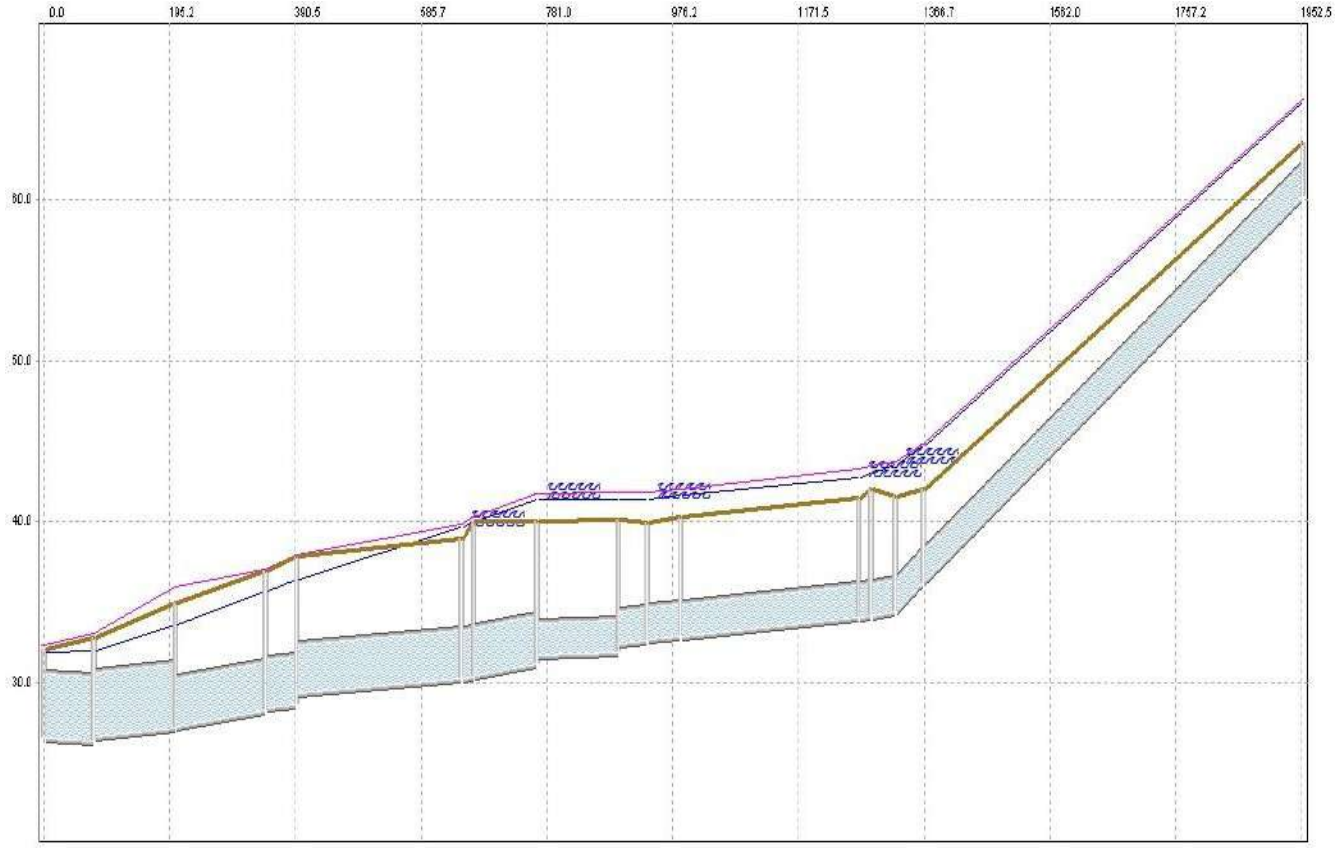
Peak Hydraulic Grade Line

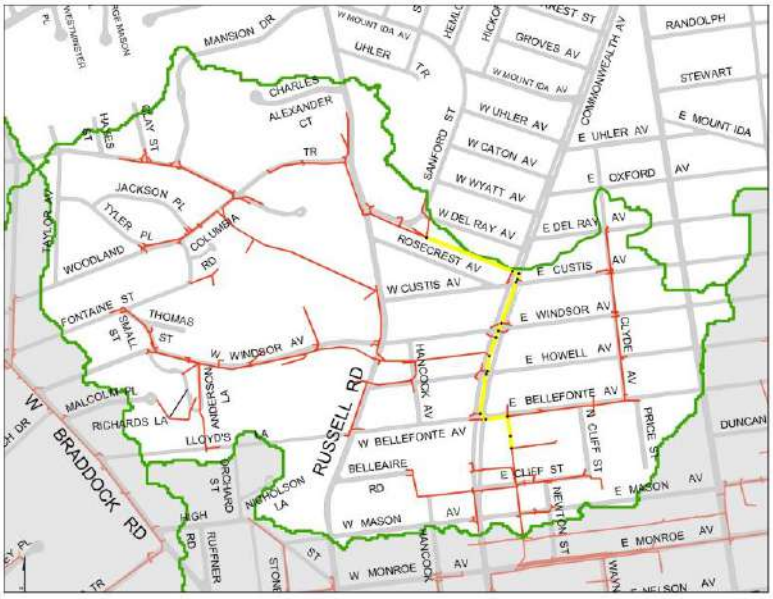
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 28

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 28 from 003421SMH to 001185ND





Surface Flooding

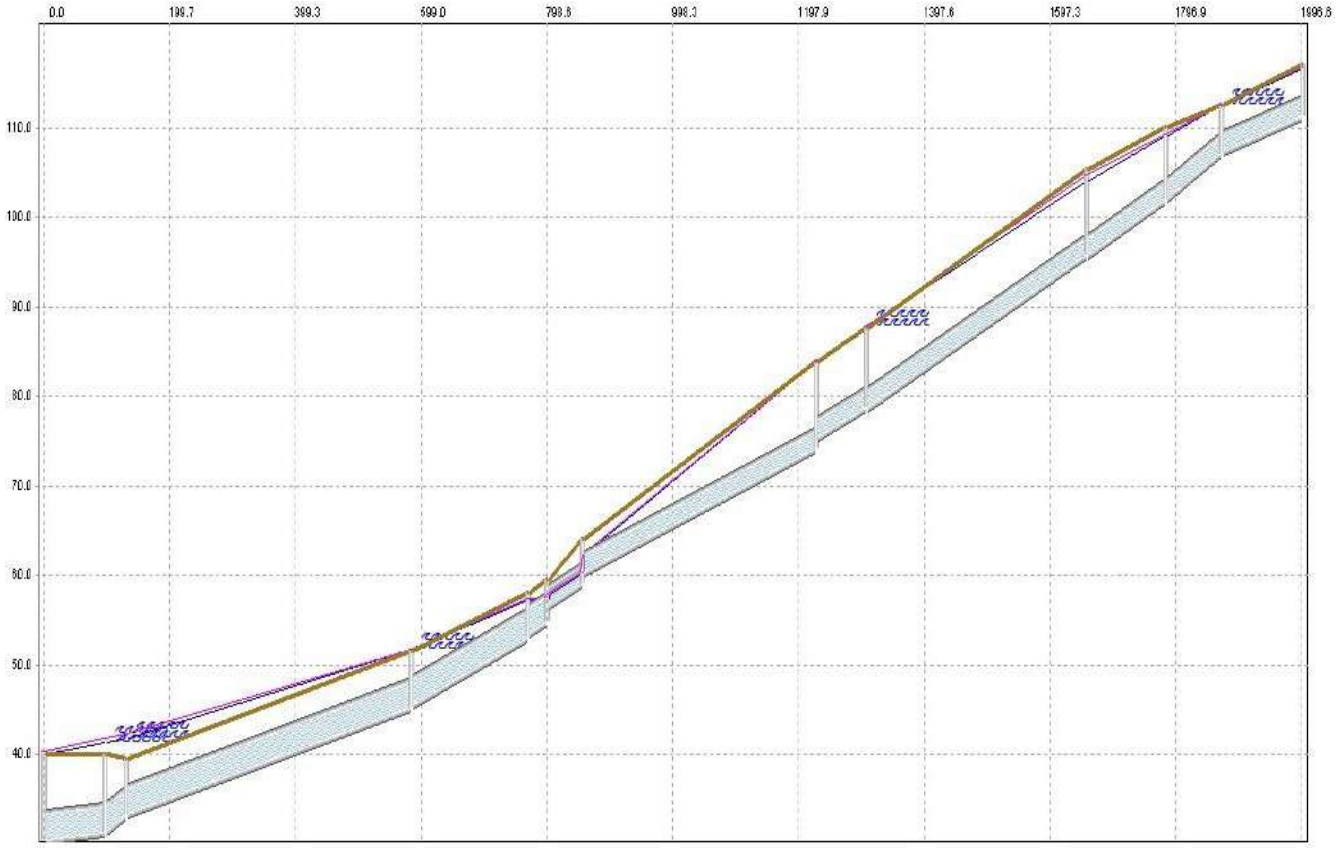
Peak Hydraulic Grade Line

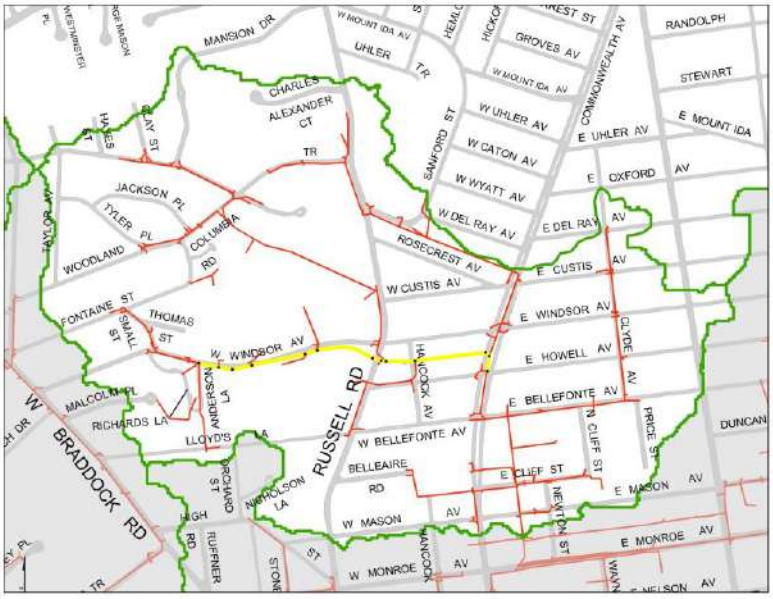
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 29

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 29 from 001151ND to 002635SMH





Surface Flooding

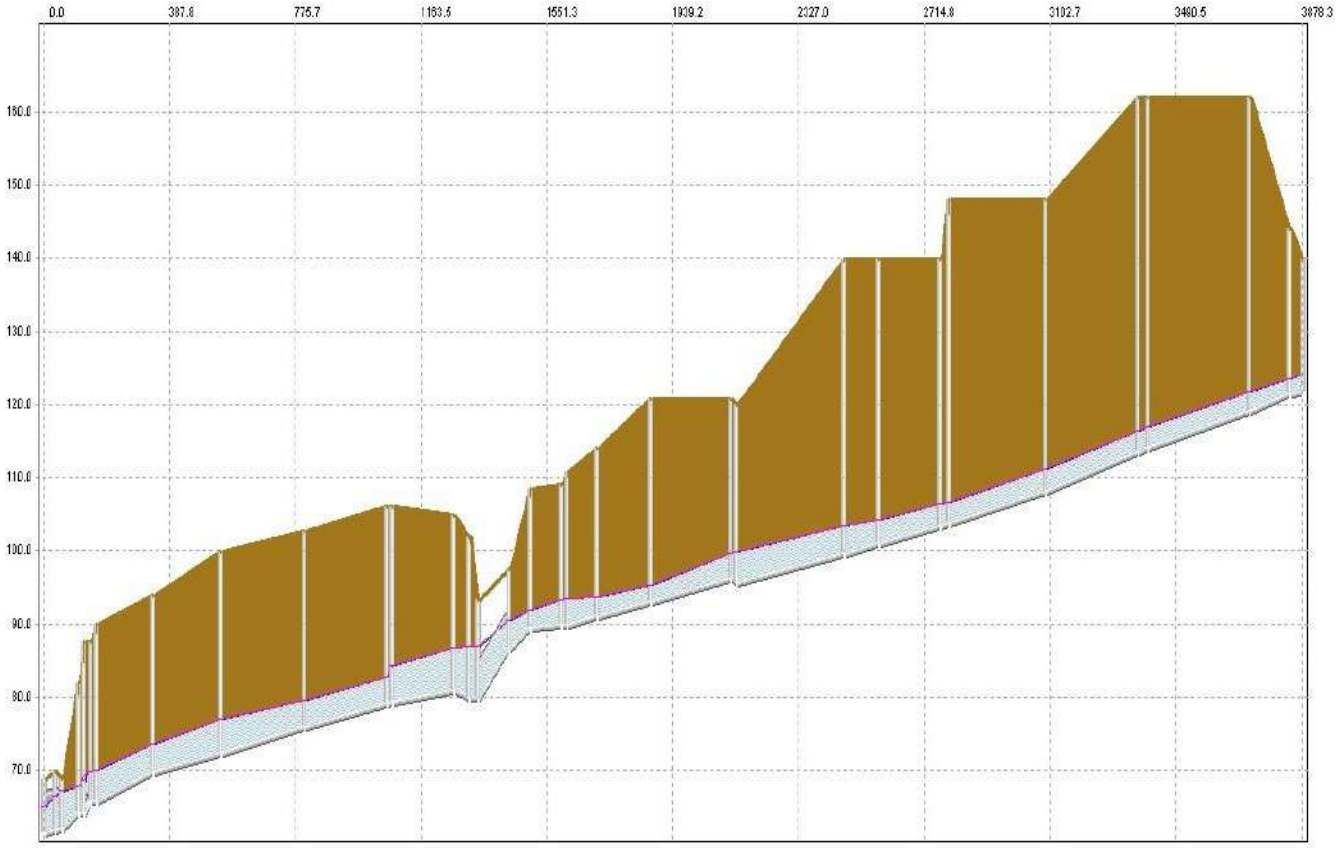
Peak Hydraulic Grade Line

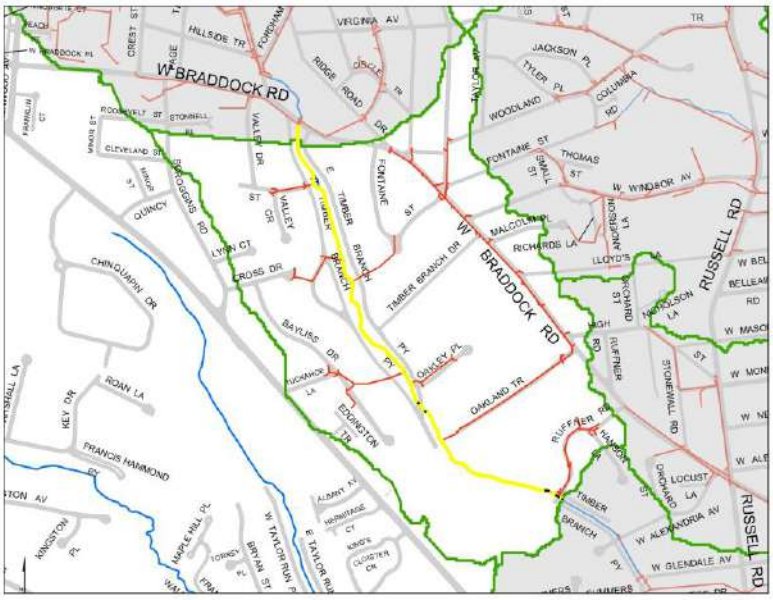
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 30

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 30 from 000125CP to 000508IO





Surface Flooding

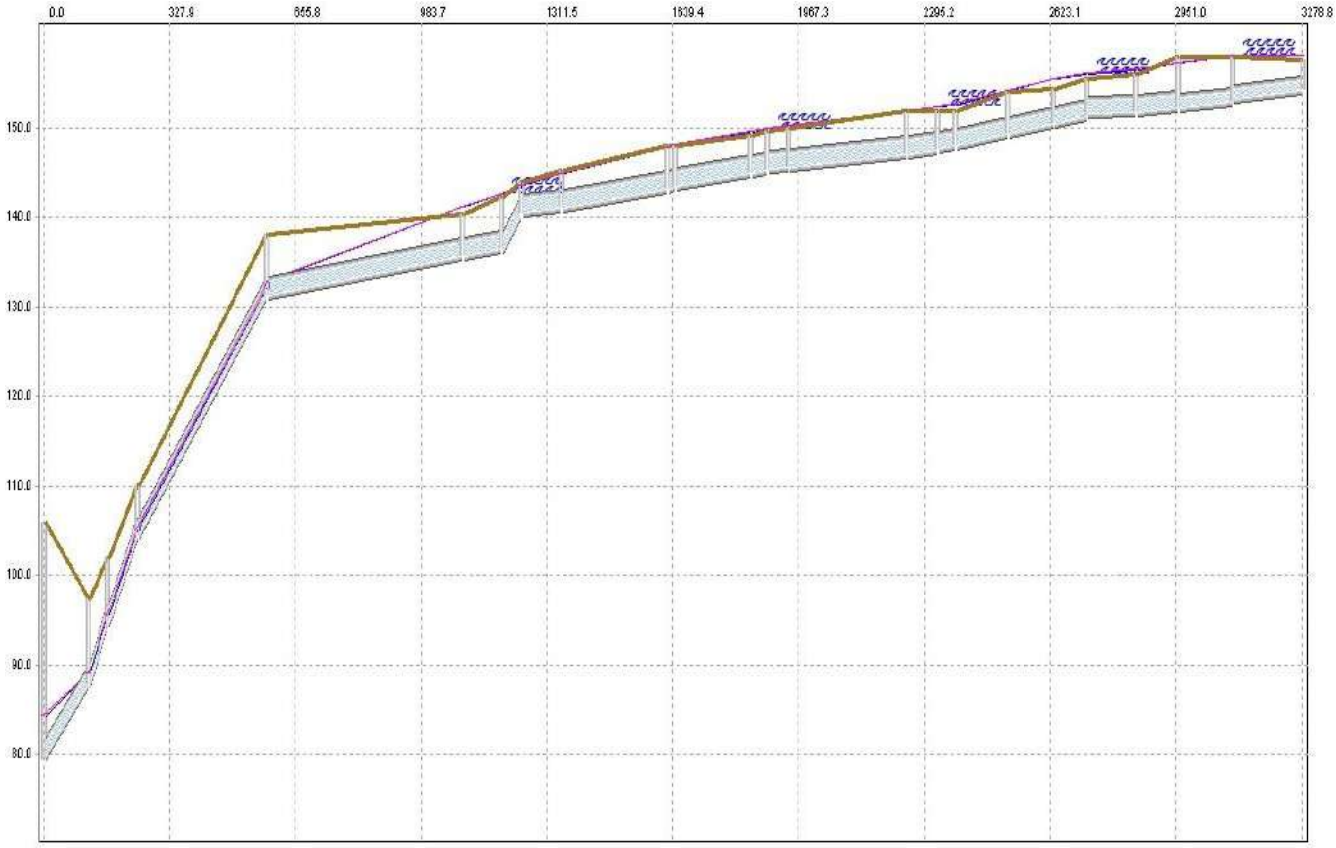
Peak Hydraulic Grade Line

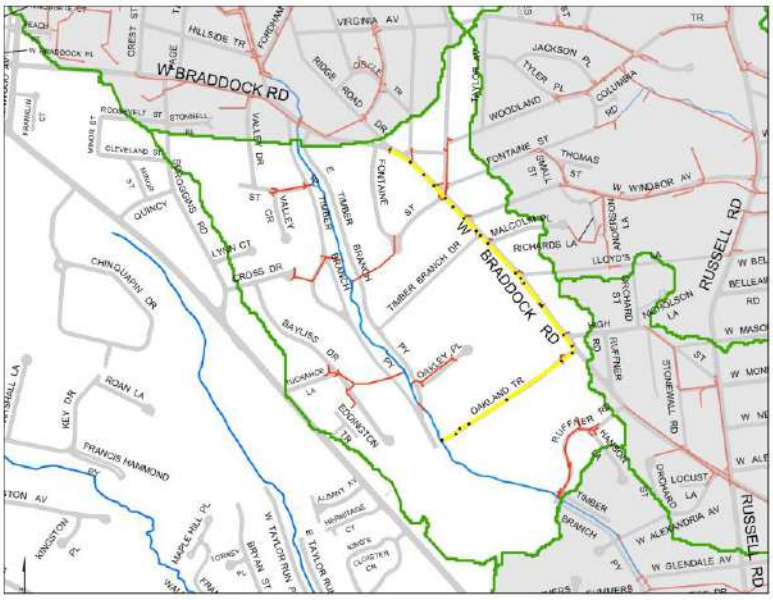
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 31

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 31 from 000527IO to 002644SMH





Surface Flooding

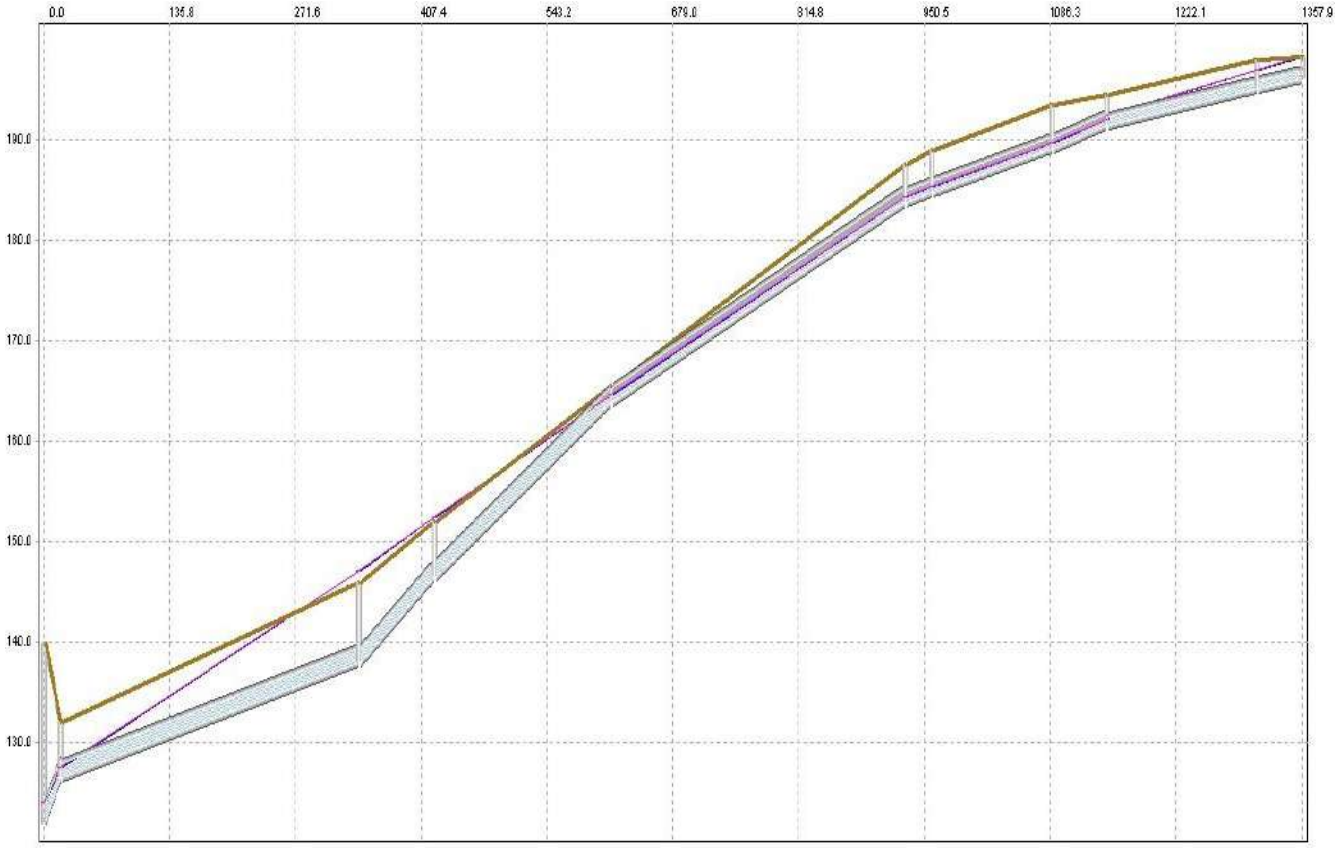
Peak Hydraulic Grade Line

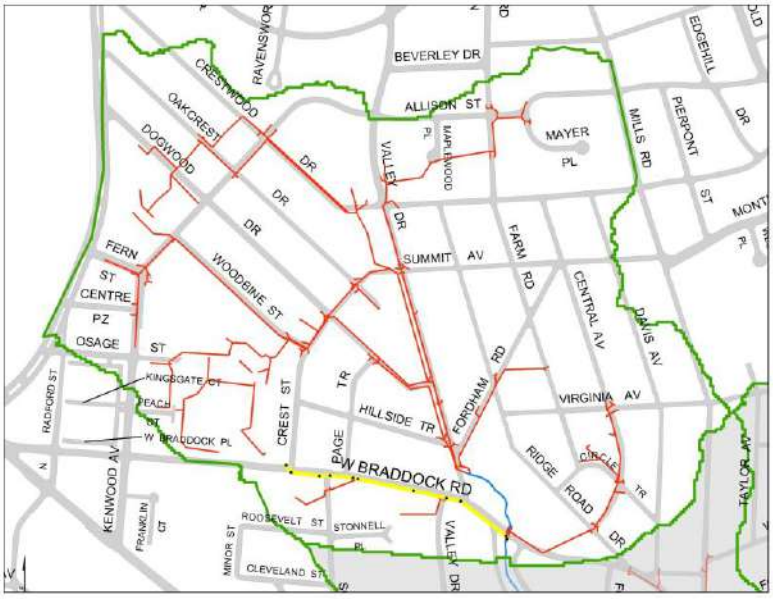
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 32

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 32 from 000508IO to 007487IN





Surface Flooding

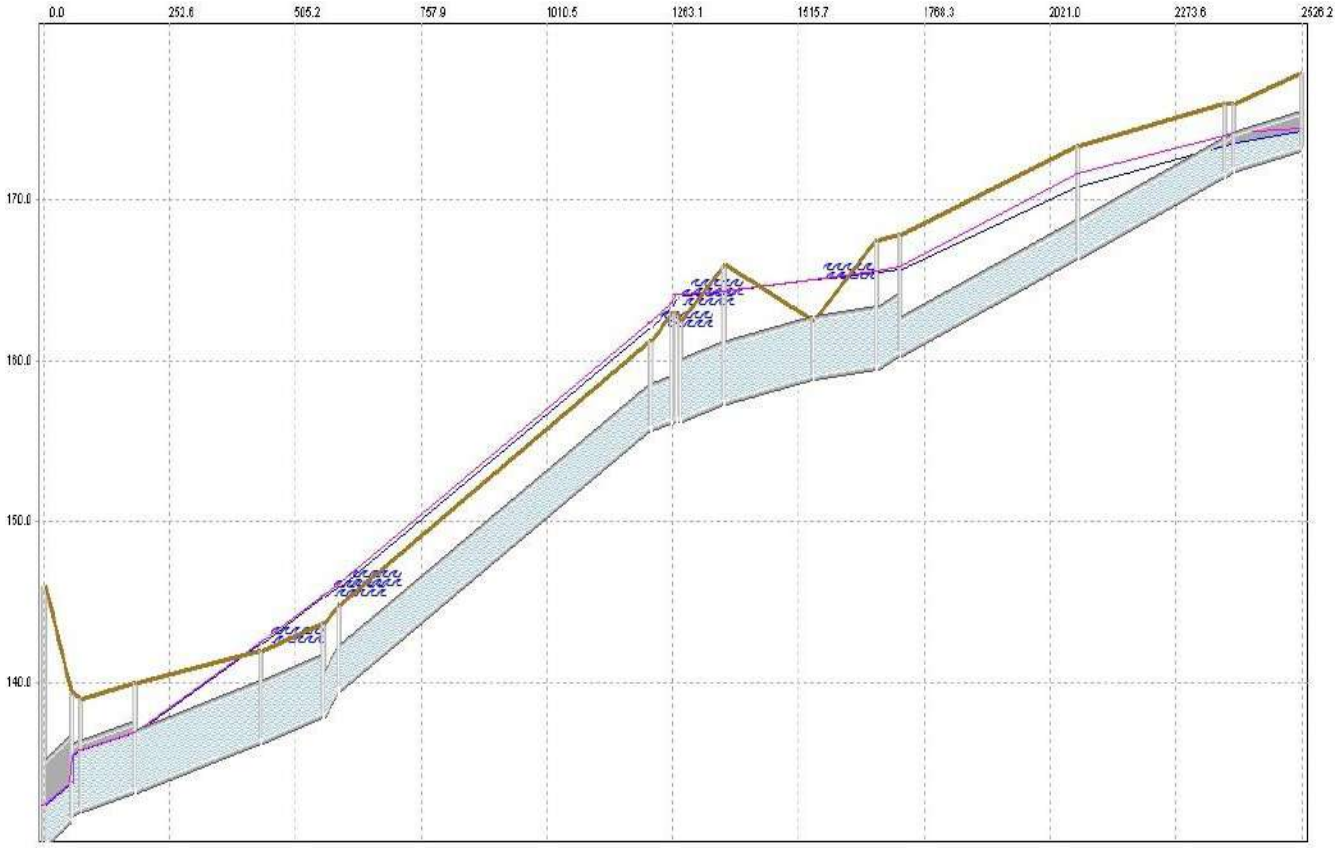
Peak Hydraulic Grade Line

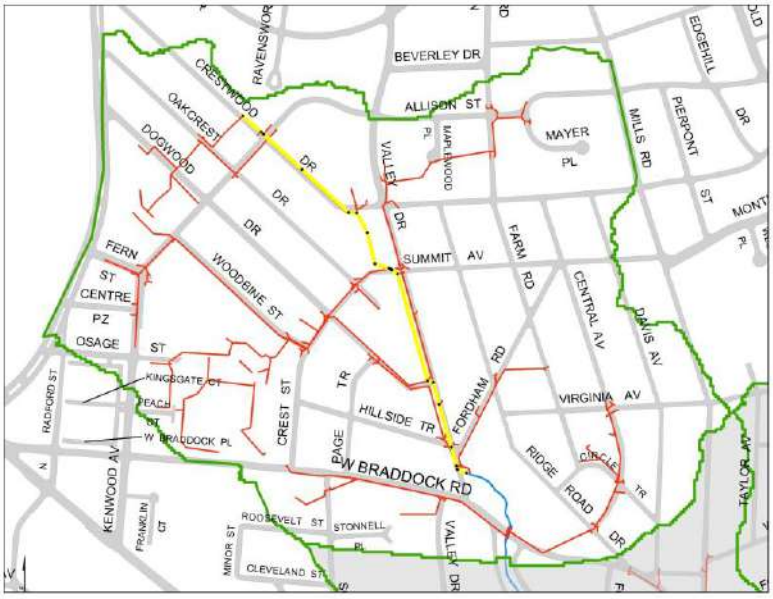
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 33

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 33 from 000499IO to 002532SMH





Surface Flooding

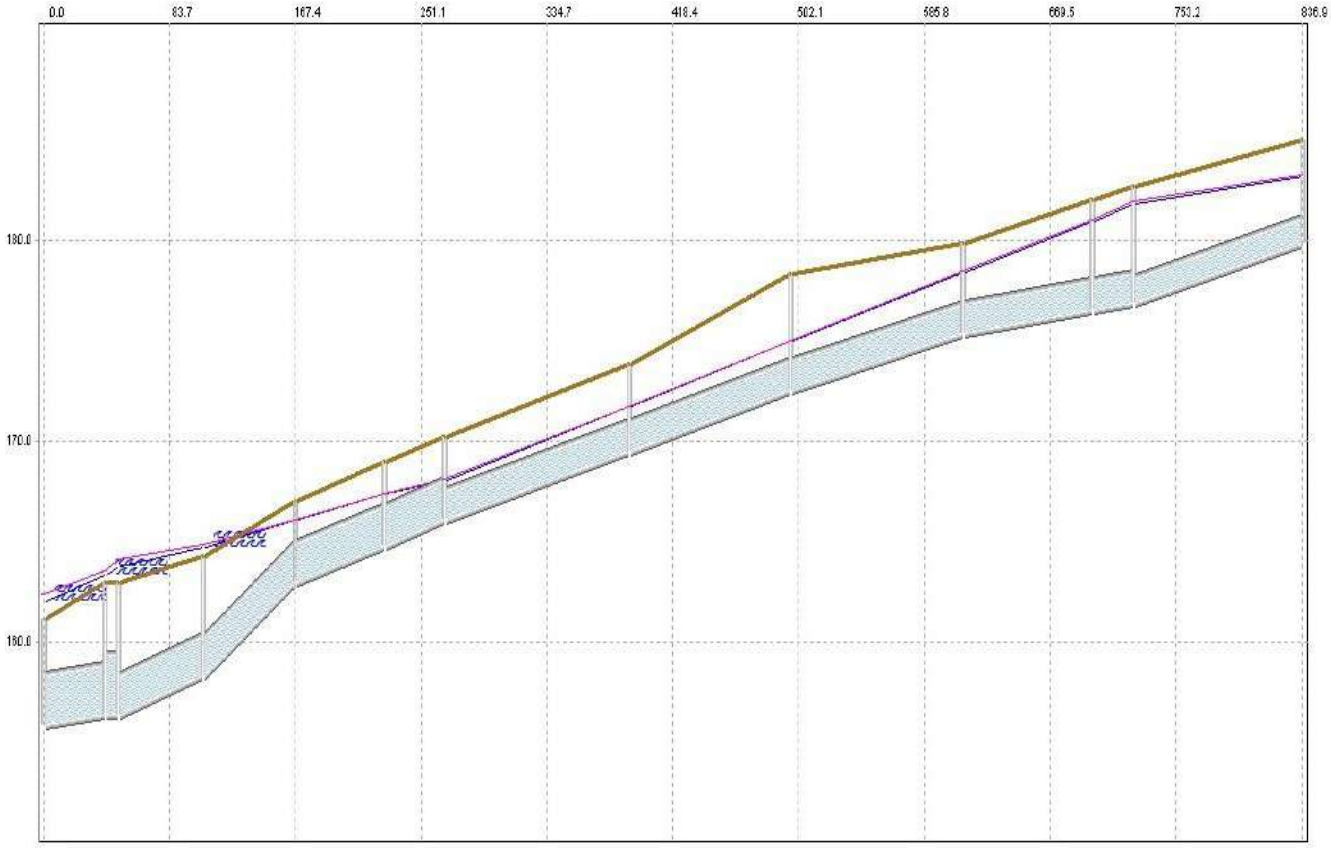
Peak Hydraulic Grade Line

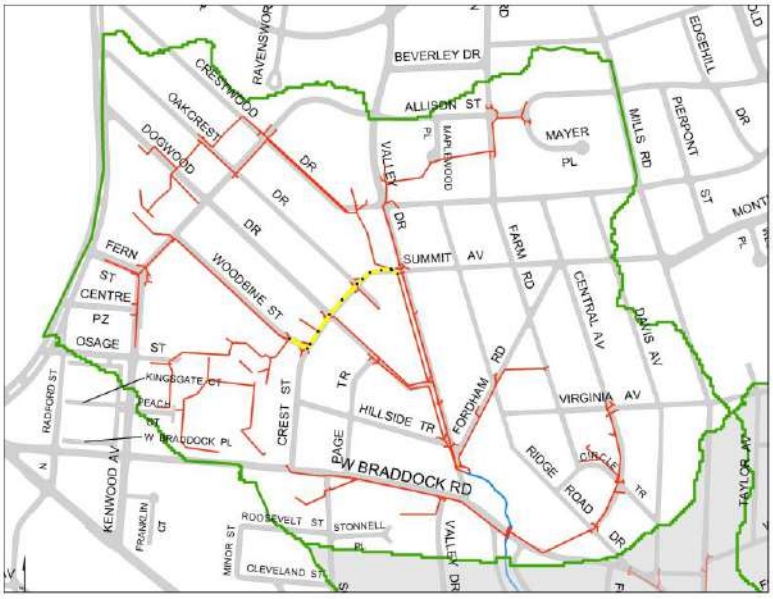
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 34

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 34 from 005541IN to 002513SMH





Surface Flooding

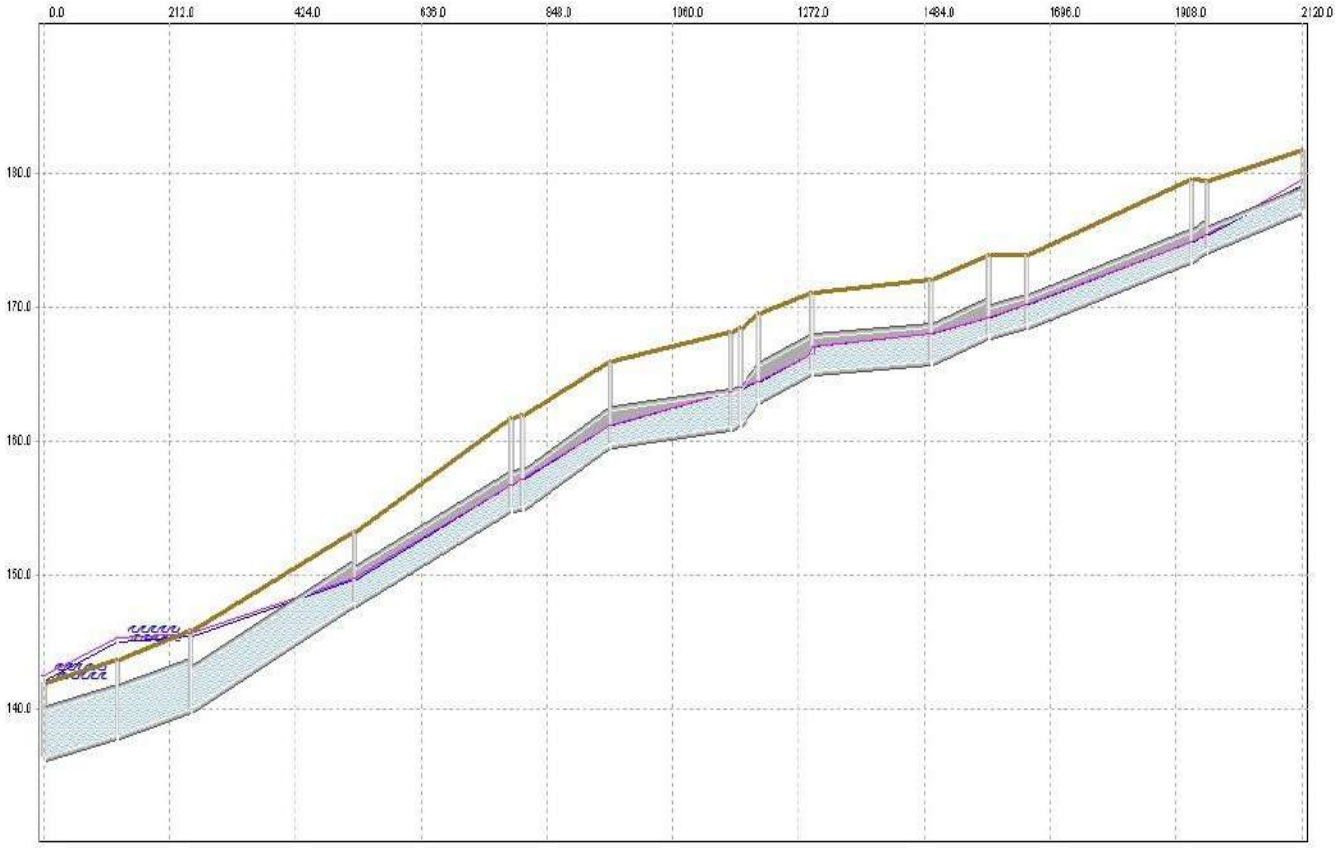
Peak Hydraulic Grade Line

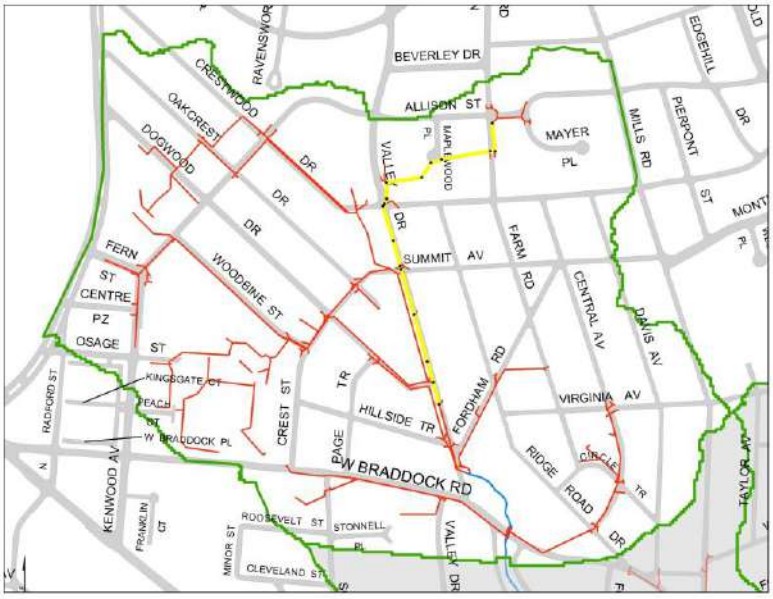
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 35

Scenario 3: Year 2100 IDF, Year 2100 Boundary Condition - Profile 35 from 002608SMH to 005553IN





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

Attachment J
Detailed Model Results:
June 2006 Storm Event

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	000604STMP	000658IN	000246SMH	48	1.5	20.2	18.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000605STMP	000246SMH	000029CB	51	1.5	25.9	17.6	0	0	-	0.3	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000650STMP	000029CB	000660IN	96	1.5	25.9	14.5	0	0	2.8	-	-	-	0.0	0.0	0	0	Surcharged
1	000651STMP	000660IN	000002ND	112	1.75	30.2	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000652STMP	000661IN	000660IN	37	1.25	4.3	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000654STMP	000657IN	000658IN	111	1.25	6.9	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	000655STMP	000653IN	000658IN	292	1.5	13.2	16.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004691STMP	001541SMH	004855IN	166	2.5	21.6	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004912STMP	004838IN	001535SMH	17	1.5	9.9	5.7	0.3	1	1.1	1.8	0.6	0.3	0.0	0.0	0	0	Insufficient Freeboard
1	004913STMP	004796IN	004794IN	157	2.5	3.5	3.0	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	004915STMP	004850IN	004852IN	86	2	17.4	5.5	0.4	0.5	1.5	1.2	0.9	0.7	0.0	0.0	0	0	Insufficient Freeboard
1	004916STMP	004847IN	001535SMH	54	1.5	6.2	3.5	0.4	1	1.6	1.8	1.4	0.3	0.0	0.0	0	0	Insufficient Freeboard
1	004918STMP	004855IN	001540SMH	22	2.5	21.0	8.9	0	0.1	0.5	0.9	-	-	0.0	0.0	0	0	Surcharged
1	004919STMP	004831IN	004830IN	55	2	21.3	9.3	0.1	0.1	1.0	1.6	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
1	004920STMP	004862IN	004859IN	45	1.5	10.5	5.9	0.3	0.3	2.7	2.5	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	004927STMP	001542SMH	001541SMH	87	2.5	17.8	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005047STMP	004893IN	001551SMH	65	1.5	7.4	8.9	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	005048STMP	004897IN	000626ND	47	2.5	-1.3	1.3	0.5	0.1	1.1	2.2	-	-	0.0	0.0	0	0	Surcharged
1	005050STMP	004902IN	001558SMH	11	1.5	8.6	4.8	0.3	0	0.5	1.5	-	-	0.0	0.0	0	0	Surcharged
1	006194STMP	004959IN	001647SMH	11	1.25	10.4	8.3	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	006196STMP	001647SMH	001617SMH	134	2	10.3	5.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006222STMP	001608SMH	001633SMH	32	1.25	6.9	6.0	1.7	2.1	2.9	3.1	1.5	1.4	0.0	0.0	0	0	Insufficient Freeboard
1	006225STMP	001636SMH	001611SMH	146	1.5	17.3	9.6	2.2	1.1	Flooded	3.4	Flooded	1.2	1.7	0.0	8084	0	Flooded
1	006226STMP	001637SMH	001636SMH	64	1.5	15.9	8.8	2.3	2.2	Flooded	Flooded	Flooded	Flooded	1.8	1.7	9628	8084	Flooded
1	006228STMP	001638SMH	001637SMH	76	1.5	13.8	8.3	2	2.3	Flooded	Flooded	Flooded	Flooded	0.7	1.8	2488	9628	Flooded
1	006229STMP	001612SMH	001638SMH	14	1.25	8.0	8.7	1.9	2	Flooded	Flooded	Flooded	Flooded	1.0	0.7	3074	2488	Flooded
1	006230STMP	001639SMH	001640SMH	29	1.25	6.5	5.1	1.4	1.5	7.3	Flooded	0.6	Flooded	0.0	1.3	0	2302	Insufficient Freeboard
1	006232STMP	001611SMH	001633SMH	125	1.5	17.3	9.7	1.1	2.1	3.6	3.6	1.2	1.4	0.0	0.0	0	0	Insufficient Freeboard
1	006234STMP	001633SMH	001609SMH	93	1.5	21.9	12.2	2.1	2	3.6	1.9	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
1	006235STMP	001665SMH	001642SMH	159	5	132.7	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006241STMP	001642SMH	001643SMH	225	5	152.4	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006245STMP	004970IN	001642SMH	50	1.25	7.6	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006246STMP	004971IN	004976IN	102	1.25	7.4	6.1	0.3	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
1	006247STMP	004972IN	001643SMH	47	1.25	3.2	3.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006248STMP	001643SMH	000640ND	239	3.667 x 6	155.5	7.1	0	0.6	0.5	0.6	-	-	0.0	0.0	0	0	Surcharged
1	006390STMP	001679SMH	001680SMH	107	2.8333 x 4.333	21.5	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006391STMP	005014IN	001679SMH	121	1.25	4.0	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006397STMP	001682SMH	005006IN	62	3	35.3	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006398STMP	005006IN	001683SMH	66	3	35.3	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006399STMP	001683SMH	005007IN	40	3.5	42.1	10.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006401STMP	001684SMH	001685SMH	38	3.5	45.7	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006402STMP	005013IN	001684SMH	125	1.25	3.6	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006408STMP	001661SMH	001689SMH	14	1.5	17.4	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006409STMP	001687SMH	001688SMH	113	3.5	55.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006412STMP	001688SMH	001689SMH	36	4.5	55.2	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006414STMP	001689SMH	001690SMH	121	4.5	105.2	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006415STMP	000647ND	001689SMH	174	3.5	33.1	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006416STMP	001690SMH	000306IO	296	5	113.0	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006421STMP	004939IN	001639SMH	53	1.25	6.5	10.4	1.3	1.4	3.1	6.1	0.4	0.6	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006422STMP	004940IN	004939IN	50	1.25	6.5	7.5	1.2	1.3	1.3	1.9	0.7	0.4	0.0	0.0	0	0	Insufficient Freeboard
1	006423STMP	001591SMH	001592SMH	147	4	101.6	9.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006424STMP	001616SMH	001591SMH	131	4	90.7	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006426STMP	001592SMH	001593SMH	154	4	101.5	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006428STMP	001593SMH	000342IO	62	5 x 6.5	107.5	16.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006474STMP	001595SMH	001591SMH	76	1.5	11.2	14.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006479STMP	001596SMH	001597SMH	12	3	23.4	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006481STMP	001597SMH	001586SMH	180	3	23.4	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006493STMP	004951IN	001606SMH	11	1.25	6.9	5.6	0.7	0.7	Flooded	1.9	Flooded	0.3	0.3	0.0	317	0	Flooded
1	006494STMP	001606SMH	001607SMH	26	1.25	6.9	6.4	0.7	1.1	1.9	2.1	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
1	006495STMP	001607SMH	001608SMH	93	1.25	6.9	6.3	1.1	1.7	2.1	2.9	0.7	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	006497STMP	001635SMH	001649SMH	273	2	31.3	12.7	0	0.1	-	0.1	-	0.9	0.0	0.0	0	0	Sufficient Capacity
1	006498STMP	001609SMH	001635SMH	95	2	31.4	10.0	2	0	1.5	-	-	-	0.0	0.0	0	0	Surcharged
1	006501STMP	001614SMH	001612SMH	22	1.25	7.3	5.9	1.9	1.9	3.0	Flooded	0.1	Flooded	0.0	1.0	0	3074	Insufficient Freeboard
1	006505STMP	001617SMH	001616SMH	99	4	87.2	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006507STMP	001589SMH	001645SMH	39	2	37.6	11.9	0.5	0	3.1	2.1	-	-	0.0	0.0	0	0	Surcharged
1	006817STMP	001538SMH	004794IN	67	2	23.7	7.5	0.4	0	0.7	0.3	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	006855STMP	001535SMH	004845IN	49	1.5	14.1	7.9	1	0.3	1.8	1.1	0.3	1.7	0.0	0.0	0	0	Insufficient Freeboard
1	006857STMP	001539SMH	004843IN	100	2.5	41.8	8.5	0.1	0.2	1.8	2.0	1.2	1.6	0.0	0.0	0	0	Insufficient Freeboard
1	006858STMP	004843IN	004009SMH	194	3	51.6	7.4	0.2	0	1.5	1.2	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
1	006864STMP	004798IN	004796IN	28	1.25	3.5	4.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006866STMP	004792IN	004794IN	26	1.5	11.6	7.4	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006869STMP	004830IN	001540SMH	65	2	21.0	7.3	0.1	0.1	1.6	1.9	-	-	0.0	0.0	0	0	Surcharged
1	006870STMP	001540SMH	001539SMH	125	2.5	41.7	9.2	0.1	0.1	1.5	1.4	-	1.2	0.0	0.0	0	0	Surcharged
1	006871STMP	004809IN	001541SMH	233	2	3.9	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006873STMP	001545SMH	001568SMH	44	2	65.3	20.3	1.1	0	Flooded	0.8	Flooded	-	0.4	0.0	3533	0	Flooded
1	006877STMP	004859IN	004831IN	284	1.5	10.4	5.9	0.3	0.1	2.8	1.4	-	1.2	0.0	0.0	0	0	Surcharged
1	006886STMP	004839IN	004838IN	98	1.25	9.8	7.9	0.3	0.3	Flooded	1.3	Flooded	0.6	0.3	0.0	838	0	Flooded
1	006903STMP	001558SMH	001557SMH	21	3.5	47.2	-5.3	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
1	006906STMP	001557SMH	001556SMH	246	4	54.1	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908A	004794IN	000607ND	311	3.5	38.7	4.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006908B	000607ND	001558SMH	23	3.5	38.7	4.0	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006918STMP	004808IN	001575SMH	98	2	7.3	7.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006919STMP	001575SMH	001542SMH	76	2.5	7.3	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006925STMP	001574SMH	004808IN	114	1.75	7.3	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942A	001568SMH	000615ND	187	5	65.5	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006942B	000615ND	001665SMH	280	5	77.3	7.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006953STMP	001556SMH	009001IN	285	4.5	65.5	5.8	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006959STMP	001584SMH	004925IN	51	3	69.4	9.6	0.6	0.3	0.7	0.2	-	1.7	0.0	0.0	0	0	Surcharged
1	006967STMP	004925IN	004926IN	70	3	69.4	9.6	0.3	0	0.2	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	006970STMP	004926IN	001582SMH	29	3	73.5	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006972STMP	001582SMH	001583SMH	75	3	73.5	11.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006973STMP	001583SMH	004928IN	99	4	73.6	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006975STMP	004928IN	004931IN	73	4	80.2	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006978STMP	004931IN	000341IO	63	4	80.2	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006980STMP	004933IN	001585SMH	15	1.25	5.8	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006982STMP	001585SMH	001596SMH	31	1.25	5.8	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006983STMP	001586SMH	001584SMH	86	3	60.7	11.1	0	0.6	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006984STMP	000338IO	001586SMH	43	3	35.3	21.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	006994STMP	001676SMH	001677SMH	83	2	12.6	5.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006995STMP	001677SMH	001678SMH	72	2.8333 x 4.333	17.5	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006998STMP	001678SMH	001679SMH	34	2.8333 x 4.333	17.5	8.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	006999STMP	001648SMH	001638SMH	170	1.5	13.9	8.2	1.1	2	2.5	Flooded	0.9	Flooded	0.0	0.7	0	2488	Insufficient Freeboard
1	007000STMP	001649SMH	001650SMH	48	2	31.4	13.8	0.1	0.4	0.1	0.9	0.9	0.0	0.0	0.0	0	0	Insufficient Freeboard
1	007001STMP	001650SMH	001652SMH	189	2	37.4	14.3	0.4	1	1.0	2.0	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	007002STMP	001651SMH	001650SMH	10	1.25	9.7	-7.9	1.1	0.4	Flooded	1.7	Flooded	0.0	0.2	0.0	216	0	Flooded
1	007003STMP	006001IN	001651SMH	35	1.25	9.7	9.8	0.4	1.1	Flooded	Flooded	Flooded	Flooded	0.4	0.2	1251	216	Flooded
1	007004STMP	001652SMH	001589SMH	68	2	37.5	14.2	1	0.5	2.0	2.8	-	-	0.0	0.0	0	0	Surcharged
1	007005STMP	001653SMH	001645SMH	35	4	-38.1	7.2	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007006STMP	001640SMH	001653SMH	415	0.833	4.3	7.7	1.5	0	Flooded	2.2	Flooded	-	1.3	0.0	2302	0	Flooded
1	007035STMP	004479IN	000640ND	274	2	15.2	7.1	0	0.6	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007194STMP	001657SMH	001648SMH	14	1.5	13.9	7.8	1.1	1.1	2.9	2.5	0.5	0.9	0.0	0.0	0	0	Insufficient Freeboard
1	007195STMP	001658SMH	001657SMH	142	1.5	11.3	7.1	0.3	1.1	1.8	2.8	-	0.5	0.0	0.0	0	0	Surcharged
1	007196STMP	001660SMH	001658SMH	76	1.5	11.2	7.1	0.2	0.3	1.6	1.6	-	-	0.0	0.0	0	0	Surcharged
1	007200STMP	004977IN	004972IN	71	1.25	3.2	7.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007205A	000079CP	000640ND	18	4 x 7	277.2	9.9	0	0.6	0.7	0.6	-	-	0.0	0.0	0	0	Surcharged
1	007205B	000640ND	000080CP	53	4 x 7	444.4	15.9	0.6	0	0.6	-	-	-	0.0	0.0	0	0	Surcharged
1	007211STMP	004985IN	001665SMH	127	3	35.3	9.2	0	0	-	0.9	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007213STMP	004987IN	000344IO	184	2	35.3	11.3	1.8	0	Flooded	-	Flooded	1.4	1.2	0.0	7992	0	Flooded
1	007214STMP	004988IN	004987IN	45	2	39.1	12.3	1.6	1.8	Flooded	Flooded	Flooded	Flooded	1.3	1.2	18029	7992	Flooded
1	007215STMP	004976IN	004981IN	127	1.25	7.4	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007216STMP	004981IN	004982IN	62	1.5	7.4	-4.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007217STMP	004982IN	001661SMH	182	1.5	7.4	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007234STMP	001675SMH	004998IN	18	1.5	8.7	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007236STMP	004998IN	005000IN	34	1.5	8.7	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007237STMP	005000IN	001676SMH	38	2	8.7	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007238STMP	005001IN	001676SMH	14	1.25	3.9	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007267STMP	004469IN	004470IN	51	1.75	10.7	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007269STMP	004470IN	001694SMH	39	2.5	37.6	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007270STMP	004474IN	004470IN	244	2.5	26.9	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007271STMP	001694SMH	000302IO	21	2.5	42.3	15.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007272STMP	004475IN	001694SMH	189	1.75	4.7	7.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007274STMP	004472IN	004474IN	54	1.25	10.6	8.5	0.9	0	Flooded	-	Flooded	-	0.4	0.0	495	0	Flooded
1	007275STMP	004476IN	004474IN	245	2	12.4	6.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	007276STMP	004477IN	004476IN	49	1.25	12.4	9.9	1.1	0	Flooded	-	Flooded	-	0.4	0.0	1332	0	Flooded
1	007718A	003261SMH	000927ND	63	1.5	16.4	11.2	0.4	0.6	2.5	3.5	0.8	1.0	0.0	0.0	0	0	Insufficient Freeboard
1	007718B	000927ND	000926ND	65	1.5	16.4	10.5	0.6	1.4	3.5	4.8	1.0	0.5	0.0	0.0	0	0	Insufficient Freeboard
1	007718C	000926ND	003262SMH	35	1.5	16.3	9.1	1.4	2	4.8	Flooded	0.5	Flooded	0.0	0.4	0	2110	Insufficient Freeboard
1	008525STMP	007859IN	000909ND	20	1.25	17.4	16.3	0.1	0	1.6	2.6	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
1	008702STMP	006006IN	000896ND	27	1.25	5.7	14.2	0	0	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956A	000960ND	000961ND	41	6.5 x 21	832.6	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956B	000961ND	000958ND	117	6.5 x 21	835.6	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956C	000958ND	000963ND	65	6.5 x 21	830.6	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956D	000963ND	000964ND	161	6.5 x 21	835.4	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956E	000964ND	000897ND	143	6.5 x 21	844.6	11.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956F	000897ND	000903ND	61	6.5 x 21	846.1	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008956G	000903ND	003230SMH	29	6.5 x 21	845.5	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008972STMP	006019IN	001657SMH	104	1.5	4.2	3.3	0.6	1.1	2.2	2.9	-	0.5	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	008994STMP	003291SMH	000912ND	29	0.833	6.8	15.2	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008996STMP	003294SMH	003292SMH	41	1	4.6	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	008997STMP	003292SMH	000913ND	12	1	4.6	5.8	0	0	0.9	1.2	-	-	0.0	0.0	0	0	Surcharged
1	009002STMP	003279SMH	003280SMH	267	1.5	11.6	12.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009003STMP	003280SMH	003281SMH	352	1.5	23.5	16.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009004STMP	003281SMH	003282SMH	127	2	36.5	18.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009005STMP	003282SMH	003283SMH	204	2	36.5	18.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006A	003283SMH	000910ND	27	3	45.0	17.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009006B	000910ND	006053IN	72	3	45.0	18.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009007STMP	006053IN	003285SMH	89	3	55.7	19.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008A	003285SMH	000911ND	55	3	55.7	19.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009008B	000911ND	003289SMH	275	3	55.7	19.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009A	003289SMH	000912ND	162	3	69.2	19.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009009B	000913ND	003273SMH	266	3	80.4	14.2	0	4.6	-	Flooded	-	Flooded	0.0	4.6	0	93066	Sufficient Capacity
1	009009C	000912ND	000913ND	182	3	75.9	19.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009010STMP	003293SMH	003263SMH	76	2	26.7	10.9	2.7	5.3	Flooded	Flooded	Flooded	Flooded	1.7	4.4	12564	83929	Flooded
1	009011STMP	003262SMH	003293SMH	177	2	33.8	10.6	2	2.7	Flooded	Flooded	Flooded	Flooded	0.4	1.7	2110	12564	Flooded
1	009515STMP	003234SMH	003226SMH	32	2.5	55.9	17.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009623STMP	003263SMH	003273SMH	6	2	23.6	7.4	5.3	4.6	Flooded	Flooded	Flooded	Flooded	4.4	4.6	83929	93066	Flooded
1	009724STMP	003233SMH	003232SMH	93	1.5	5.5	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009725STMP	006027IN	003233SMH	12	1.5	5.5	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009726STMP	006023IN	006025IN	182	1.5	17.5	9.7	1.9	2	Flooded	Flooded	Flooded	Flooded	1.8	1.5	19668	2847	Flooded
1	009727STMP	006022IN	006023IN	371	1.25	13.4	11.1	0.5	1.9	Flooded	Flooded	Flooded	Flooded	0.4	1.8	1327	19668	Flooded
1	009728A	000895ND	000904ND	113	6.5 x 17	679.3	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728B	000904ND	000896ND	14	6.5 x 17	679.8	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009728C	000896ND	003231SMH	119	6.5 x 17	685.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729A	003231SMH	000905ND	25	6.5 x 17	684.8	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009729B	000905ND	003227SMH	119	6.5 x 17	686.4	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730A	003227SMH	000906ND	33	6.5 x 17	688.8	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009730B	000906ND	003229SMH	97	6.5 x 17	691.9	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009731STMP	003230SMH	003228SMH	151	6.5 x 21	849.6	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732A	003228SMH	000909ND	22	6.5 x 21	872.3	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009732B	000909ND	000293CP	403	6.5 x 21	872.5	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734A	003229SMH	001645SMH	194	6.5 x 17	692.5	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009734B	001645SMH	000292CP	98	6.5 x 17	733.1	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009848STMP	006052IN	003283SMH	25	1	8.7	11.0	1.2	0	Flooded	-	Flooded	-	0.6	0.0	1241	0	Flooded
1	009910A	003274SMH	000929ND	46	2.5	44.1	8.9	5.5	5.5	Flooded	Flooded	Flooded	Flooded	2.5	1.6	4315	5	Flooded
1	009910B	000929ND	003278SMH	140	2.5	45.6	9.2	5.5	5.6	Flooded	Flooded	Flooded	Flooded	1.6	2.8	5	7904	Flooded
1	009911STMP	006089IN	003274SMH	26	1	4.4	8.7	1.3	5.5	Flooded	Flooded	Flooded	Flooded	0.8	2.5	1602	4315	Flooded
1	009935STMP	006100IN	006136IN	44	2.25	46.5	11.6	3.2	3.6	3.6	Flooded	1.8	Flooded	0.0	0.6	0	6115	Insufficient Freeboard
1	009937STMP	003275SMH	003273SMH	67	1	7.5	9.4	5.2	4.6	Flooded	Flooded	Flooded	Flooded	4.8	4.6	22542	93066	Flooded
1	009944STMP	003226SMH	003386SMH	44	3	58.9	18.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009945STMP	003386SMH	003387SMH	10	3	58.9	12.9	0	0.3	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	009946STMP	003387SMH	000976ND	34	3	58.9	8.8	0.3	0	0.8	-	-	-	0.0	0.0	0	0	Surcharged
1	010129STMP	003225SMH	003234SMH	48	2.5	55.8	18.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010130STMP	006015IN	003225SMH	38	1.25	3.3	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010141STMP	003224SMH	003223SMH	14	2	5.5	6.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010142STMP	003223SMH	000897ND	22	2	5.5	8.0	0	0	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010144STMP	003232SMH	003224SMH	79	2	5.5	5.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010146STMP	003284SMH	006053IN	9	1	10.8	13.6	0.3	0	Flooded	0.3	Flooded	-	0.2	0.0	258	0	Flooded
1	010148STMP	003286SMH	003287SMH	123	0.833	5.5	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010149A	003239SMH	000922ND	81	0.667	-4.0	-10.2	4.6	8.9	Flooded	Flooded	Flooded	Flooded	2.5	5.6	7684	167	Flooded
1	010149B	000922ND	003286SMH	109	0.667	5.5	14.0	8.9	0	Flooded	-	Flooded	-	5.6	0.0	167	0	Flooded
1	010150STMP	003287SMH	003284SMH	238	1	11.6	16.3	0	0.3	-	Flooded	-	Flooded	0.0	0.2	0	258	Sufficient Capacity
1	010167STMP	006086IN	003274SMH	107	1.75	-3.3	3.6	4.5	5.5	2.3	Flooded	-	Flooded	0.0	2.5	0	4315	Surcharged
1	010168STMP	003273SMH	003264SMH	150	2	43.6	13.6	4.6	5.5	Flooded	Flooded	Flooded	Flooded	4.6	5.5	93066	102583	Flooded
1	010169STMP	003264SMH	003274SMH	109	1.75	40.8	16.6	5.5	5.5	Flooded	Flooded	Flooded	Flooded	5.5	2.5	102583	4315	Flooded
1	010173STMP	003277SMH	003274SMH	51	2.5	6.9	5.5	5.4	5.5	Flooded	Flooded	Flooded	Flooded	2.8	2.5	5657	4315	Flooded
1	010174STMP	006109IN	003277SMH	97	1	2.0	4.3	4.9	5.4	Flooded	Flooded	Flooded	Flooded	1.9	2.8	1682	5657	Flooded
1	010176A	003278SMH	000938ND	31	2.5	47.6	9.6	5.6	5.6	Flooded	Flooded	Flooded	Flooded	2.8	1.5	7904	44	Flooded
1	010176B	000938ND	003301SMH	40	2.5	47.4	9.6	5.6	5.6	Flooded	Flooded	Flooded	Flooded	1.5	1.9	44	3094	Flooded
1	010177STMP	006110IN	000938ND	6	1	2.5	4.3	5.5	5.6	Flooded	Flooded	Flooded	Flooded	2.7	1.5	4853	44	Flooded
1	010178STMP	003302SMH	006111IN	175	2	20.2	6.4	3	4.8	3.1	3.6	1.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
1	010179STMP	006112IN	003302SMH	30	2	20.2	7.8	2.3	3	2.6	3.0	0.3	1.2	0.0	0.0	0	0	Insufficient Freeboard
1	010180STMP	006113IN	006112IN	13	1.75	20.2	9.2	2	2.3	Flooded	2.8	Flooded	0.3	0.5	0.0	518	0	Flooded
1	010181STMP	006025IN	006113IN	217	1.75	17.7	7.3	2	2	Flooded	Flooded	Flooded	Flooded	1.5	0.5	2847	518	Flooded
1	010183STMP	006115IN	003303SMH	44	2 x 3	13.0	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010185STMP	003303SMH	003305SMH	73	2 x 3	13.0	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010189STMP	003305SMH	000962ND	24	2 x 3	13.0	8.9	0	0	-	0.7	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010190STMP	006118IN	002913ND	43	1.25	10.8	11.2	0	0	0.1	2.5	-	-	0.0	0.0	0	0	Surcharged
1	010191STMP	006119IN	006118IN	165	1.25	10.8	8.7	0.4	0	2.7	0.0	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
1	010194STMP	003309SMH	003310SMH	67	1	4.2	5.2	5.9	5.6	Flooded	Flooded	Flooded	Flooded	0.6	2.5	790	6964	Flooded
1	010195STMP	003301SMH	003310SMH	23	2.5	49.0	-9.9	5.6	5.6	Flooded	Flooded	Flooded	Flooded	1.9	2.5	3094	6964	Flooded
1	010196STMP	003310SMH	003311SMH	87	2.5	50.5	10.2	5.6	5.6	Flooded	Flooded	Flooded	Flooded	2.5	1.6	6964	2353	Flooded
1	010197STMP	003311SMH	003312SMH	113	2.5	52.2	10.6	5.6	5.5	Flooded	3.9	Flooded	1.0	1.6	0.0	2353	0	Flooded
1	010198STMP	006111IN	003312SMH	32	2.5	20.2	4.4	4.8	5.5	3.1	3.4	0.6	1.0	0.0	0.0	0	0	Insufficient Freeboard
1	010199STMP	003312SMH	000959ND	46	2.5	63.0	12.8	5.5	0	3.9	1.2	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
1	010211STMP	006131IN	003313SMH	13	1	7.7	10.1	0.4	0	1.4	3.0	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
1	010216STMP	006133IN	003311SMH	61	1	3.4	6.7	1.8	5.6	1.0	Flooded	0.4	Flooded	0.0	1.6	0	2353	Insufficient Freeboard
1	010217STMP	006134IN	000941ND	36	1	2.6	9.3	0	0	-	2.8	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010218STMP	003322SMH	003317SMH	100	2 x 3.167	41.9	7.0	0.3	0.2	-	-	1.5	1.8	0.0	0.0	0	0	Insufficient Freeboard
1	010219STMP	003317SMH	000946ND	48	2 x 3.167	42.2	10.2	0.2	0	-	0.7	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
1	010222STMP	006136IN	006137IN	244	2.5	37.1	7.5	3.6	4.6	Flooded	Flooded	Flooded	Flooded	0.6	4.4	6115	70293	Flooded
1	010223STMP	006137IN	003318SMH	40	2.5	33.3	6.7	4.6	4.6	Flooded	Flooded	Flooded	Flooded	4.4	4.2	70293	44164	Flooded
1	010227STMP	003318SMH	003320SMH	109	1.5	21.2	11.7	4.6	0.3	Flooded	1.2	Flooded	1.7	4.2	0.0	44164	0	Flooded
1	010228STMP	006138IN	003320SMH	109	1.5	17.0	9.5	0.7	0.3	Flooded	0.9	Flooded	1.7	0.2	0.0	247	0	Flooded
1	010230STMP	003320SMH	003321SMH	148	2 x 3.167	35.9	5.8	0.3	0.2	-	-	1.7	1.7	0.0	0.0	0	0	Insufficient Freeboard
1	010231STMP	003321SMH	003322SMH	64	2 x 3.167	35.9	6.5	0.2	0.3	-	-	1.7	1.5	0.0	0.0	0	0	Insufficient Freeboard
1	010235STMP	003325SMH	003324SMH	47	1.25	11.6	-9.3	4.4	2.1	Flooded	2.9	Flooded	0.5	1.0	0.0	2096	0	Flooded
1	010236STMP	003324SMH	003372SMH	143	1.5	11.6	6.5	2.1	2.4	2.7	Flooded	0.5	Flooded	0.0	0.7	0	1258	Insufficient Freeboard
1	010238STMP	003371SMH	003325SMH	92	1.25	10.5	8.4	2.2	4.4	Flooded	Flooded	Flooded	Flooded	1.8	1.0	12897	2096	Flooded
1	010243STMP	006143IN	000963ND	126	1	4.7	5.9	1.1	0	2.4	2.6	-	-	0.0	0.0	0	0	Surcharged
1	010246A	003372SMH	000948ND	46	1.5	13.6	-7.6	2.4	2.3	Flooded	Flooded	Flooded	Flooded	0.7	0.6	1258	10	Flooded
1	010246B	000948ND	003373SMH	103	1.5	13.3	-7.5	2.3	1.2	Flooded	Flooded	Flooded	Flooded	0.6	0.3	10	397	Flooded
1	010248STMP	003373SMH	003374SMH	24	1.5	21.5	13.0	1.2	1.4	Flooded	Flooded	Flooded	Flooded	0.3	0.2	397	83	Flooded
1	010249A	003374SMH	000957ND	3	2	21.4	6.8	1.4	1.3	Flooded	2.1	Flooded	1.7	0.2	0.0	83	0	Flooded
1	010249B	000957ND	003376SMH	254	2	21.4	6.8	1.3	1.3	2.1	1.0	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
1	010251STMP	003376SMH	003375SMH	19	2	21.4	7.4	1.3	1.3	1.0	1.0	-	-	0.0	0.0	0	0	Surcharged

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	010252STMP	003375SMH	000960ND	53	2	21.4	7.6	1.3	0	1.2	1.6	-	-	0.0	0.0	0	0	Surcharged
1	010254STMP	006149IN	000961ND	53	1	1.6	4.7	0	0	-	2.6	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010261STMP	006152IN	000964ND	86	1.25	11.5	9.3	0.5	0	2.2	2.4	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
1	010267STMP	006157IN	006015IN	115	1.25	3.3	6.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010268STMP	003382SMH	003225SMH	13	2.5	32.3	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010269STMP	006016IN	003382SMH	36	2.5	24.2	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	010456STMP	003495SMH	006052IN	91	1	10.5	16.4	0	1.2	-	Flooded	-	Flooded	0.0	0.6	0	1241	Sufficient Capacity
1	010457STMP	008054IN	003495SMH	94	1	10.5	14.1	0.4	0	Flooded	-	Flooded	-	0.4	0.0	970	0	Flooded
1	010459STMP	003496SMH	003280SMH	119	1	12.0	14.9	0.8	0	Flooded	0.2	Flooded	-	0.3	0.0	537	0	Flooded
1	014020STMP	004845IN	004850IN	174	2.5	17.4	4.0	0.3	0.4	0.8	1.0	1.7	0.9	0.0	0.0	0	0	Insufficient Freeboard
1	014021STMP	004008SMH	001538SMH	12	2	23.7	7.5	0.4	0.4	1.0	0.7	1.2	1.1	0.0	0.0	0	0	Insufficient Freeboard
1	014022A	009001IN	000626ND	34	4.5	65.7	4.1	0.1	0.1	0.1	0.2	-	-	0.0	0.0	0	0	Surcharged
1	014022B	000626ND	002901ND	57	4.5	75.2	4.6	0.1	0.2	0.2	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014022C	002900ND	000575IO	38	4.5	277.2	17.3	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
1	014022D	002901ND	002900ND	8	4.5	182.9	11.1	0.2	0.1	0.4	0.1	-	-	0.0	0.0	0	0	Surcharged
1	014023STMP	004009SMH	004010SMH	271	4	52.0	6.6	0	0.2	0.2	1.2	-	-	0.0	0.0	0	0	Surcharged
1	014024STMP	004010SMH	004011SMH	39	4	89.3	7.2	0.2	0.2	1.5	1.5	-	-	0.0	0.0	0	0	Surcharged
1	014025STMP	004011SMH	004012SMH	88	4	89.3	-7.1	0.2	0.3	2.4	1.9	-	-	0.0	0.0	0	0	Surcharged
1	014026STMP	004012SMH	004013SMH	481	4	89.4	7.1	0.3	0.2	1.9	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014027STMP	004013SMH	004014SMH	131	4 x 6	107.8	-4.5	0.2	0.2	1.1	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014028STMP	004014SMH	004015SMH	67	4 x 6	107.8	4.5	0.2	0.2	0.6	0.7	-	-	0.0	0.0	0	0	Surcharged
1	014029STMP	004015SMH	004016SMH	51	4 x 6	107.8	4.5	0.2	0.3	0.7	0.9	-	-	0.0	0.0	0	0	Surcharged
1	014030STMP	004016SMH	004019SMH	104	4 x 6	107.8	4.5	0.3	0.3	0.9	0.9	-	-	0.0	0.0	0	0	Surcharged
1	014031STMP	002902ND	004017SMH	262	4 x 6	91.8	7.3	0	0.2	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014032STMP	004017SMH	004018SMH	41	4 x 6	91.8	-3.8	0.2	0.1	0.5	0.4	-	-	0.0	0.0	0	0	Surcharged
1	014033STMP	004018SMH	004020SMH	120	4 x 6	94.9	4.0	0.1	0.2	0.4	0.7	-	-	0.0	0.0	0	0	Surcharged
1	014034STMP	004019SMH	001554SMH	161	4 x 6	107.8	4.5	0.3	0.2	0.9	0.7	-	-	0.0	0.0	0	0	Surcharged
1	014035STMP	004020SMH	001555SMH	104	4 x 6	94.9	-4.0	0.2	0.2	0.7	0.5	-	-	0.0	0.0	0	0	Surcharged
1	014036STMP	001554SMH	002901ND	82	4 x 6	107.8	4.5	0.2	0.2	0.7	0.9	-	-	0.0	0.0	0	0	Surcharged
1	014037STMP	001555SMH	002900ND	83	4 x 6	94.9	4.0	0.2	0.1	0.5	0.6	-	-	0.0	0.0	0	0	Surcharged
1	014902STMP	001680SMH	001682SMH	116	2.8333 x 4.333	35.3	4.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014903STMP	005007IN	004006SMH	57	3.5	42.2	9.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014904STMP	004006SMH	001684SMH	120	3.5	42.2	9.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014905STMP	001685SMH	001687SMH	116	3.5	55.1	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014906STMP	004852IN	004008SMH	19	2	23.7	7.5	0.5	0.4	1.2	1.0	0.7	1.2	0.0	0.0	0	0	Insufficient Freeboard
1	014926STMP	001551SMH	001557SMH	54	1.5	7.3	5.5	0.1	0	0.1	1.3	-	-	0.0	0.0	0	0	Surcharged
1	014931A	000959ND	002913ND	153	6.5 x 17	669.3	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931B	002913ND	000962ND	36	6.5 x 17	666.5	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014931C	000962ND	000895ND	173	6.5 x 17	676.7	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935A	003313SMH	000946ND	205	5 x 16	792.8	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014935B	000946ND	000960ND	184	5 x 16	819.1	13.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936A	003313SMH	000945ND	192	5 x 13	612.5	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936B	000945ND	000941ND	136	5 x 13	605.4	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014936C	000941ND	000959ND	67	5 x 13	611.7	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014942STMP	000976ND	001545SMH	1083	4 x 5	81.2	10.3	0	1.1	-	Flooded	-	Flooded	0.0	0.4	0	3533	Sufficient Capacity
1	014944STMP	001901CB	001902CB	57	1	8.4	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014945STMP	001902CB	004901SMH	323	1	8.4	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014946STMP	004901SMH	004902SMH	79	1.5	8.4	11.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014948STMP	004902SMH	009912IN	99	3	29.9	16.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
1	014949STMP	002917ND	009911IN	331	2.5	75.0	20.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014950STMP	009911IN	004903SMH	199	4	85.8	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014951STMP	004818IN	004903SMH	101	1.5	6.0	5.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014952STMP	004903SMH	001569SMH	70	3	91.8	15.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014953STMP	001569SMH	002902ND	480	4	92.0	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014954STMP	000002ND	004904SMH	217	1.75	30.1	16.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014955STMP	004904SMH	009912IN	93	1.75	35.1	16.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
1	014956STMP	009912IN	002917ND	265	3	75.0	20.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007414STMP	002413SMH	002423SMH	59	1.25	4.8	11.9	0	0.5	-	4.2	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007415STMP	005209IN	002413SMH	6	0.833	4.8	10.8	0	0	-	-	0.7	-	0.0	0.0	0	0	Sufficient Capacity
2	007417STMP	005210IN	005211IN	32	1	9.9	-12.1	2.2	0.6	Flooded	4.3	Flooded	-	0.4	0.0	969	0	Flooded
2	007761STMP	005995IN	003133SMH	43	1.25	13.2	10.6	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.5	1.3	8058	8232	Flooded
2	007771STMP	005211IN	002423SMH	17	2	10.0	8.2	0.6	0.5	3.3	3.9	-	-	0.0	0.0	0	0	Surcharged
2	007772A	002416SMH	0001028ND	33	1.5	20.9	11.7	0.3	0.4	2.2	1.9	-	-	0.0	0.0	0	0	Surcharged
2	007772B	0001028ND	002419SMH	18	1.5	20.8	11.7	0.4	0.2	2.0	1.3	-	-	0.0	0.0	0	0	Surcharged
2	007785STMP	005224IN	002423SMH	110	1.25	3.5	7.0	0	0.5	-	2.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	007866STMP	007225IN	007224IN	48	1.25	6.6	5.3	6.3	6.6	Flooded	Flooded	Flooded	Flooded	2.9	3.5	4730	9464	Flooded
2	007867STMP	002459SMH	007224IN	167	1.25	4.6	4.0	4.8	6.6	Flooded	Flooded	Flooded	Flooded	3.3	3.5	11686	9464	Flooded
2	007868STMP	007224IN	007226IN	31	1.25	7.6	6.1	6.6	6.8	Flooded	Flooded	Flooded	Flooded	3.5	3.6	9464	7251	Flooded
2	007869STMP	007226IN	007227IN	109	1.25	8.8	7.1	6.8	8	Flooded	Flooded	Flooded	Flooded	3.6	3.8	7251	4814	Flooded
2	007870STMP	007227IN	003062SMH	33	1.25	8.8	7.1	8	11	Flooded	Flooded	Flooded	Flooded	3.8	6.7	4814	34692	Flooded
2	008279STMP	005855IN	000773ND	20	1	6.1	9.8	3	3.4	Flooded	Flooded	Flooded	Flooded	1.0	0.0	1702	205	Flooded
2	008289STMP	005862IN	000812ND	12	1	8.1	10.1	3.5	3.7	Flooded	Flooded	Flooded	Flooded	3.0	2.1	9104	442	Flooded
2	008324STMP	003163SMH	003107SMH	196	2	23.7	8.2	3.7	3.9	Flooded	Flooded	Flooded	Flooded	1.5	3.5	12957	40007	Flooded
2	008327STMP	003168SMH	000493CB	225	1.25	10.5	8.5	4.5	3.5	Flooded	Flooded	Flooded	Flooded	3.6	0.7	19823	1018	Flooded
2	008333STMP	005927IN	003159SMH	112	1.25	8.8	8.3	0	1.8	1.1	2.4	-	0.4	0.0	0.0	0	0	Surcharged
2	008334STMP	005928IN	003109SMH	47	1	12.9	16.3	0.7	0	Flooded	-	Flooded	-	0.7	0.0	3427	0	Flooded
2	008335STMP	003109SMH	000793ND	112	1.5	12.9	15.4	0	1.4	-	Flooded	-	Flooded	0.0	0.4	0	31	Sufficient Capacity
2	008339STMP	000496CB	000829ND	126	1.25	7.4	6.0	2.1	1.7	Flooded	Flooded	Flooded	Flooded	1.3	0.9	3693	108	Flooded
2	008345STMP	003117SMH	003118SMH	210	2.25	26.0	7.4	0.6	0.6	1.5	2.0	0.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	008366STMP	003123SMH	003143SMH	22	1.25	10.2	8.2	1.6	1.3	2.2	1.9	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	008395STMP	005846IN	000773ND	87	1.25	8.3	7.7	3.3	3.4	Flooded	Flooded	Flooded	Flooded	2.2	0.0	2797	205	Flooded
2	008396STMP	005847IN	005843IN	35	1	3.7	4.8	2.3	2.3	Flooded	Flooded	Flooded	Flooded	2.2	2.2	2588	2498	Flooded
2	008402STMP	000485CB	003089SMH	28	1	5.9	7.3	2.9	34.9	Flooded	Flooded	Flooded	Flooded	1.6	2.1	1416	6055	Flooded
2	008403STMP	003148SMH	003089SMH	204	1	5.9	7.4	4.9	34.9	4.0	Flooded	0.5	Flooded	0.0	2.1	0	6055	Insufficient Freeboard
2	008405STMP	005876IN	000831ND	24	1	3.9	5.5	1.5	4.6	Flooded	Flooded	Flooded	Flooded	1.1	1.6	2435	12	Flooded
2	008408STMP	000487CB	003090SMH	19	1.25	2.7	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008409STMP	003090SMH	000816ND	706	2	17.9	8.0	0	0	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008410STMP	000488CB	003090SMH	10	1.25	15.5	12.6	2	0	0.8	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	008413STMP	005881IN	000826ND	40	1	6.1	10.1	0	0	-	2.5	1.5	-	0.0	0.0	0	0	Sufficient Capacity
2	008500STMP	005980IN	005981IN	27	2	44.7	14.1	1	1	3.6	3.1	1.0	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	008501STMP	003124SMH	005980IN	10	2	44.6	-14.0	2.6	1	Flooded	2.8	Flooded	1.0	0.5	0.0	2697	0	Flooded
2	008502STMP	003144SMH	003124SMH	31	2	43.0	13.5	2.1	2.6	5.5	Flooded	1.5	Flooded	0.0	0.5	0	2697	Insufficient Freeboard
2	008505STMP	005981IN	003129SMH	61	2.25	44.7	16.5	1	1.8	2.9	5.8	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	008507STMP	005983IN	005984IN	63	1.5	22.8	12.8	0.5	0.4	2.3	1.2	-	-	0.0	0.0	0	0	Surcharged
2	008508STMP	003128SMH	005983IN	68	1.25	17.4	-13.8	1.6	0.5	6.0	2.6	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
2	008511STMP	000514CB	000827ND	113	1.25	7.4	6.0	1.1	0	1.4	2.6	-	-	0.0	0.0	0	0	Surcharged
2	008514STMP	000515CB	007743IN	51	1.25	13.2	10.4	2.6	5.7	Flooded	5.8	Flooded	0.0	2.3	0.0	10938	0	Flooded
2	008515STMP	007743IN	000516CB	42	1.25	13.2	-10.6	5.7	2.6	5.9	4.3	0.0	0.6	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008516STMP	000516CB	000801ND	194	1.5	13.2	8.4	2.6	1.9	4.0	6.6	0.6	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	008517STMP	003105SMH	003152SMH	40	1.25	8.8	7.2	2.3	0	1.4	0.7	1.0	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	008527STMP	003462SMH	003456SMH	22	3	39.1	7.1	11.6	12.9	3.5	5.2	0.8	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	008528STMP	003457SMH	003458SMH	43	4	38.3	3.0	11.7	11.9	3.4	3.6	-	-	0.0	0.0	0	0	Surcharged
2	008529STMP	003458SMH	003459SMH	60	4	37.9	-3.0	11.9	11.1	3.6	2.3	-	-	0.0	0.0	0	0	Surcharged
2	008530STMP	003463SMH	003462SMH	66	3	39.2	7.9	11.4	11.6	3.3	3.5	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	008531STMP	008004IN	003463SMH	78	3	32.7	5.6	11.3	11.4	Flooded	3.1	Flooded	0.6	1.0	0.0	644	0	Flooded
2	008532STMP	003464SMH	003463SMH	39	2	15.8	6.4	11.5	11.4	3.2	3.5	0.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	008533STMP	000633CB	003439SMH	29	1	6.6	-8.3	13.8	14.1	Flooded	Flooded	Flooded	Flooded	11.8	11.3	12672	17410	Flooded
2	008534A	003465SMH	0001033ND	383	2	20.5	6.5	11.1	11.9	Flooded	Flooded	Flooded	Flooded	8.8	9.6	15460	47	Flooded
2	008534B	0001033ND	003440SMH	31	2	21.2	6.7	11.9	11.9	Flooded	Flooded	Flooded	Flooded	9.6	10.9	47	39588	Flooded
2	008536STMP	008024IN	003472SMH	10	2	18.6	5.9	11	11	Flooded	Flooded	Flooded	Flooded	10.6	9.8	85038	44679	Flooded
2	008537STMP	003474SMH	008024IN	225	2	23.6	7.4	10.4	11	6.2	Flooded	-	Flooded	0.0	10.6	0	85038	Surcharged
2	008538STMP	003475SMH	003473SMH	160	4	23.0	-1.9	10.2	6.4	3.9	2.0	-	-	0.0	0.0	0	0	Surcharged
2	008539STMP	003473SMH	003474SMH	59	4	32.5	7.4	6.4	10.4	2.0	4.2	-	-	0.0	0.0	0	0	Surcharged
2	008540STMP	003479SMH	003475SMH	43	4	20.8	-1.6	10.6	10.2	4.5	4.0	-	-	0.0	0.0	0	0	Surcharged
2	008544STMP	005984IN	007978IN	44	2	29.7	9.4	0.4	0	0.8	0.6	-	-	0.0	0.0	0	0	Surcharged
2	008545STMP	003131SMH	003129SMH	46	2	18.2	10.0	0	1.8	2.7	5.9	-	-	0.0	0.0	0	0	Surcharged
2	008546STMP	003130SMH	003131SMH	39	2	18.2	9.5	0.6	0	2.0	2.6	-	-	0.0	0.0	0	0	Surcharged
2	008547STMP	005988IN	003130SMH	38	2	18.2	7.6	0	0.6	1.7	1.8	-	-	0.0	0.0	0	0	Surcharged
2	008550STMP	005991IN	005988IN	22	2	11.6	-3.7	0.6	0	2.0	1.6	-	-	0.0	0.0	0	0	Surcharged
2	008553STMP	005992IN	005991IN	55	1.5	11.6	10.2	0.4	0.6	0.6	2.4	-	-	0.0	0.0	0	0	Surcharged
2	008554STMP	003132SMH	005992IN	98	1.25	11.8	-9.5	1.6	0.4	3.8	0.8	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	008556STMP	005994IN	003132SMH	40	1.25	11.9	9.5	1.2	1.6	Flooded	3.8	Flooded	0.9	0.5	0.0	1627	0	Flooded
2	008557STMP	003134SMH	003144SMH	212	2.25	37.1	10.7	1.5	2.1	2.5	5.2	1.3	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	008558STMP	007718IN	003134SMH	83	2	29.2	10.6	1.4	1.5	2.1	2.7	0.1	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	008560STMP	003137SMH	007718IN	30	2	29.2	-9.2	1.7	1.4	Flooded	2.1	Flooded	0.1	0.6	0.0	3083	0	Flooded
2	008563STMP	007721IN	003137SMH	16	1.5	22.1	12.4	1.6	1.7	Flooded	Flooded	Flooded	Flooded	1.1	0.6	6825	3083	Flooded
2	008566STMP	003138SMH	007721IN	27	1.5	20.8	11.7	1.7	1.6	Flooded	Flooded	Flooded	Flooded	1.4	1.1	10519	6825	Flooded
2	008567STMP	007736IN	000796ND	36	1.5	7.5	9.1	0	0.9	0.1	4.0	-	-	0.0	0.0	0	0	Surcharged
2	008627STMP	000509CB	000787ND	8	1	6.9	8.6	1.2	0.5	Flooded	2.5	Flooded	1.0	0.2	0.0	138	0	Flooded
2	008629STMP	007729IN	003145SMH	13	1	7.0	-8.8	1.7	1.6	Flooded	Flooded	Flooded	Flooded	1.3	0.8	5303	2467	Flooded
2	008630STMP	003145SMH	003123SMH	98	1.25	10.2	8.2	1.6	1.6	Flooded	2.1	Flooded	0.6	0.8	0.0	2467	0	Flooded
2	008632STMP	005935IN	003147SMH	96	4	111.8	10.7	0	0.6	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008633STMP	003118SMH	003119SMH	41	2.5	26.5	8.3	0.6	0.8	1.7	3.4	-	-	0.0	0.0	0	0	Surcharged
2	008634STMP	003129SMH	003119SMH	201	2.5	59.3	11.9	1.8	0.8	5.8	3.8	-	-	0.0	0.0	0	0	Surcharged
2	008635STMP	003143SMH	003138SMH	277	1.5	12.8	7.7	1.3	1.7	2.0	Flooded	0.8	Flooded	0.0	1.4	0	10519	Insufficient Freeboard
2	008636STMP	003119SMH	003112SMH	201	4	84.4	6.6	0.8	1.2	2.3	2.4	-	1.5	0.0	0.0	0	0	Surcharged
2	008766STMP	003454SMH	003465SMH	181	1.5	10.4	5.9	0.3	11.1	0.9	Flooded	-	Flooded	0.0	8.8	0	15460	Surcharged
2	008784STMP	005868IN	000813ND	70	1.25	12.7	12.9	3.3	3.9	Flooded	Flooded	Flooded	Flooded	3.2	2.3	21127	897	Flooded
2	008787STMP	000484CB	003089SMH	23	1.25	7.1	5.7	2.1	34.9	Flooded	Flooded	Flooded	Flooded	1.5	2.1	3063	6055	Flooded
2	008817STMP	005785IN	002906SMH	45	1.5	11.9	18.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008829STMP	002908SMH	002906SMH	179	1.25	12.9	10.4	0	0	1.9	-	-	-	0.0	0.0	0	0	Surcharged
2	008899STMP	007843IN	000883ND	41	1	6.7	10.5	0.4	1.2	Flooded	Flooded	Flooded	Flooded	0.1	0.0	122	499	Flooded
2	008915A	002909SMH	000759ND	22	1.25	8.2	-6.6	1.3	0.6	3.1	2.5	-	-	0.0	0.0	0	0	Surcharged
2	008915B	000759ND	002908SMH	13	1.25	8.2	-6.6	0.6	0	2.5	1.9	-	-	0.0	0.0	0	0	Surcharged
2	008916STMP	005792IN	002909SMH	12	1.25	8.1	6.6	0.5	1.3	3.3	3.1	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	008920STMP	003133SMH	003134SMH	46	1.25	15.3	12.4	1.9	1.5	Flooded	3.3	Flooded	1.3	1.3	0.0	8232	0	Flooded
2	008938STMP	003072SMH	003086SMH	164	1.5	29.3	22.4	0	0.5	-	2.6	-	0.2	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	008941STMP	002919SMH	003072SMH	207	1.5	22.1	23.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	008943STMP	003063SMH	002919SMH	83	1.5	22.1	13.0	0.4	0	2.4	-	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
2	008981STMP	006028IN	000890ND	35	1	7.6	9.5	2.8	1.9	Flooded	Flooded	Flooded	Flooded	1.6	0.1	3634	4580	Flooded
2	009074STMP	000537IO	003070SMH	79	1.5	28.0	20.4	0	0.4	-	2.0	0.8	0.4	0.0	0.0	0	0	Sufficient Capacity
2	009075STMP	005820IN	003071SMH	21	1.5	28.0	20.7	0.4	1.6	1.1	Flooded	1.1	Flooded	0.0	1.0	0	8418	Insufficient Freeboard
2	009076STMP	003071SMH	003084SMH	228	2	26.4	8.2	1.6	1.7	Flooded	Flooded	Flooded	Flooded	1.0	1.0	8418	6476	Flooded
2	009223STMP	005793IN	005792IN	190	1.25	8.1	6.5	0.4	0.5	Flooded	2.6	Flooded	1.6	0.3	0.0	539	0	Flooded
2	009228STMP	002906SMH	002912SMH	157	1.5	24.8	22.1	0	0.3	-	0.4	-	1.9	0.0	0.0	0	0	Sufficient Capacity
2	009229STMP	002912SMH	002913SMH	6	1.5	24.8	14.3	0.3	0	0.4	-	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	009230STMP	002913SMH	002910SMH	78	1.5	24.8	18.2	0	1.4	-	Flooded	-	Flooded	0.0	0.9	0	6090	Sufficient Capacity
2	009231STMP	002910SMH	002914SMH	27	1.5	19.2	14.9	1.4	1.6	Flooded	Flooded	Flooded	Flooded	0.9	1.2	6090	6857	Flooded
2	009234STMP	002914SMH	002915SMH	83	1.5	15.8	12.3	1.6	1.7	Flooded	Flooded	Flooded	Flooded	1.2	1.6	6857	11562	Flooded
2	009235STMP	002915SMH	002916SMH	44	1.75	25.5	-10.4	1.7	1.7	Flooded	Flooded	Flooded	Flooded	1.6	1.4	11562	8686	Flooded
2	009236STMP	002916SMH	002917SMH	174	1.25	23.5	18.6	1.7	1.3	Flooded	3.3	Flooded	-	1.4	0.0	8686	0	Flooded
2	009238STMP	005775IN	003066SMH	208	1.5	3.6	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009245STMP	000128CP	000129CP	76	5 x 8	730.3	18.4	0	0	0.2	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
2	009249STMP	005813IN	003063SMH	37	1.5	22.1	12.3	0.4	0.4	3.2	2.4	0.6	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	009251STMP	003064SMH	005813IN	184	1.5	3.6	7.2	0	0.4	-	3.2	-	0.6	0.0	0.0	0	0	Sufficient Capacity
2	009252STMP	003065SMH	003064SMH	93	1.5	3.6	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009253STMP	003066SMH	003065SMH	55	1.5	3.6	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009254STMP	002917SMH	003068SMH	100	1.25	24.0	20.9	1.3	0.5	3.3	4.4	-	1.9	0.0	0.0	0	0	Surcharged
2	009258STMP	003067SMH	003158SMH	160	2	24.2	11.3	0.5	0	4.1	5.0	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
2	009259STMP	003068SMH	003067SMH	40	2	24.0	9.6	0.5	0.5	4.0	4.1	1.9	0.2	0.0	0.0	0	0	Insufficient Freeboard
2	009263STMP	003069SMH	003071SMH	99	1.5	7.9	6.9	1.2	1.6	Flooded	Flooded	Flooded	Flooded	0.8	1.0	2578	8418	Flooded
2	009264STMP	003070SMH	005820IN	45	1.5	28.0	15.7	0.4	0.4	2.1	0.6	0.4	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	009286STMP	003083SMH	003082SMH	28	2	47.0	14.8	1.8	1.8	Flooded	Flooded	Flooded	Flooded	1.0	1.1	8834	26321	Flooded
2	009287STMP	003082SMH	005833IN	44	2	54.6	17.0	1.8	0.8	Flooded	Flooded	Flooded	Flooded	1.1	0.7	26321	31714	Flooded
2	009288STMP	003084SMH	003083SMH	6	2	30.8	9.6	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.0	1.0	6476	8834	Flooded
2	009289STMP	003085SMH	003083SMH	9	1.5	21.2	11.8	1.7	1.8	Flooded	Flooded	Flooded	Flooded	1.2	1.0	7675	8834	Flooded
2	009290A	003086SMH	000767ND	50	1.5	29.3	17.9	0.5	1.4	2.7	Flooded	0.2	Flooded	0.0	0.5	0	9	Insufficient Freeboard
2	009290B	000767ND	003085SMH	35	1.5	24.6	16.7	1.4	1.7	Flooded	Flooded	Flooded	Flooded	0.5	1.2	9	7675	Flooded
2	009300A	000130CP	000764ND	21	5.5 x 8	956.6	21.7	1	1.3	Flooded	Flooded	Flooded	Flooded	1.0	0.8	161621	2514	Flooded
2	009300B	000764ND	000765ND	3	5.5 x 8	942.5	21.4	1.3	1.3	Flooded	Flooded	Flooded	Flooded	0.8	0.7	2514	1043	Flooded
2	009300C	000765ND	000766ND	44	5.5 x 8	942.7	21.4	1.3	1.1	Flooded	Flooded	Flooded	Flooded	0.7	0.7	1043	456	Flooded
2	009300D	000766ND	005833IN	73	5.5 x 8	939.2	21.3	1.1	0.8	Flooded	Flooded	Flooded	Flooded	0.7	0.7	456	31714	Flooded
2	009304STMP	005843IN	005846IN	25	1.25	5.2	5.4	2.3	3.3	Flooded	Flooded	Flooded	Flooded	2.2	2.2	2498	2797	Flooded
2	009307STMP	005885IN	000825ND	37	1.5	5.4	5.2	0	0	-	1.9	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009309STMP	003091SMH	000823ND	53	1.25	3.2	7.0	0	0	-	2.2	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009315STMP	005891IN	003093SMH	46	2.5	93.7	18.8	4.2	4.9	RIM	Flooded	RIM	Flooded	0.0	3.9	0	41490	Insufficient Freeboard
2	009317STMP	003093SMH	000821ND	9	2.5	86.1	17.3	4.9	0	Flooded	0.8	Flooded	-	3.9	0.0	41490	0	Flooded
2	009320A	003095SMH	000817ND	14	5 x 10	875.7	21.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009320B	000817ND	000816ND	24	5 x 10	884.8	23.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009320C	000816ND	000815ND	11	5 x 10	911.4	26.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009326STMP	005899IN	000777ND	24	1	4.3	8.4	1.4	2.9	0.9	6.2	0.8	0.3	0.0	0.0	0	0	Insufficient Freeboard
2	009330STMP	003097SMH	000776ND	13	1.5	7.5	5.6	0	2.6	2.7	5.7	0.4	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	009331STMP	005903IN	003097SMH	82	1.25	5.9	6.8	0.5	0	0.6	2.9	0.7	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	009338STMP	003098SMH	003099SMH	15	2.25	29.7	7.4	3.6	3.7	Flooded	Flooded	Flooded	Flooded	3.3	3.2	19616	17457	Flooded
2	009341STMP	005909IN	003101SMH	12	2	37.1	14.3	3.8	3.9	Flooded	Flooded	Flooded	Flooded	2.8	2.8	6774	6190	Flooded
2	009342STMP	003100SMH	005909IN	66	2	36.5	11.4	3.4	3.8	Flooded	Flooded	Flooded	Flooded	2.8	2.8	8101	6774	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	009343STMP	003160SMH	003100SMH	170	2	37.7	11.8	3.5	3.4	Flooded	Flooded	Flooded	Flooded	3.1	2.8	84539	8101	Flooded
2	009345STMP	003101SMH	003103SMH	44	2.25	56.6	14.0	3.9	3.9	Flooded	6.1	Flooded	0.5	2.8	0.0	6190	0	Flooded
2	009346A	003099SMH	000768ND	212	2.25	28.9	7.2	3.7	3.9	Flooded	Flooded	Flooded	Flooded	3.2	1.9	17457	5	Flooded
2	009346B	000768ND	003101SMH	96	2.25	29.3	7.3	3.9	3.9	Flooded	Flooded	Flooded	Flooded	1.9	2.8	5	6190	Flooded
2	009348STMP	003102SMH	003103SMH	35	2	33.1	10.4	4	3.9	5.8	6.4	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	009359STMP	005921IN	003106SMH	6	1	3.6	8.2	0	0	-	0.4	1.0	1.2	0.0	0.0	0	0	Sufficient Capacity
2	009360STMP	003106SMH	000779ND	11	1.5	5.7	4.2	0	2.3	2.0	4.5	1.2	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	009361STMP	003104SMH	003105SMH	207	1.25	8.5	6.9	2.3	2.3	Flooded	1.3	Flooded	1.0	2.1	0.0	3525	0	Flooded
2	009362STMP	003107SMH	003108SMH	98	2	28.3	8.8	3.9	3.8	Flooded	Flooded	Flooded	Flooded	3.5	3.2	40007	14421	Flooded
2	009363STMP	008027IN	003479SMH	15	1.5	18.6	16.7	1.6	10.6	Flooded	6.7	Flooded	-	0.5	0.0	1142	0	Flooded
2	009364STMP	003476SMH	008027IN	268	1.5	13.8	7.8	7.1	1.6	3.4	Flooded	0.0	Flooded	0.0	0.5	0	1142	Insufficient Freeboard
2	009365STMP	006034IN	000885ND	41	0.833	5.1	10.8	0.9	0.3	Flooded	6.9	Flooded	0.1	0.9	0.0	1971	0	Flooded
2	009366STMP	000512CB	003148SMH	98	1	5.8	7.2	4.8	4.9	Flooded	4.0	Flooded	0.5	3.8	0.0	7489	0	Flooded
2	009369STMP	003141SMH	003147SMH	25	3.5 x 7	95.5	-3.9	1	0.6	2.2	1.5	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	009421STMP	005934IN	000829ND	107	1	5.7	7.2	3	1.7	Flooded	Flooded	Flooded	Flooded	2.5	0.9	16223	108	Flooded
2	009422STMP	000788ND	005935IN	70	3.5	71.7	9.1	0.2	0	0.3	0.4	-	-	0.0	0.0	0	0	Surcharged
2	009423STMP	005936IN	005935IN	265	3	38.6	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	009430STMP	003111SMH	003112SMH	19	1.25	6.7	8.3	0.5	1.2	1.8	3.9	-	1.5	0.0	0.0	0	0	Surcharged
2	009431A	003112SMH	000792ND	41	4	96.4	7.6	1.2	1.3	2.4	2.4	1.5	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	009431B	000792ND	000791ND	9	4	96.9	7.7	1.3	1.2	2.4	2.4	1.4	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	009431C	000791ND	000790ND	44	4	96.1	7.6	1.2	1.3	2.4	2.4	1.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	009431D	000790ND	003141SMH	46	4	95.8	7.5	1.3	1	2.4	1.6	1.7	1.9	0.0	0.0	0	0	Insufficient Freeboard
2	009443STMP	000787ND	003111SMH	143	1.25	6.8	5.5	0.5	0.5	2.3	1.6	1.0	-	0.0	0.0	0	0	Insufficient Freeboard
2	009444STMP	005946IN	003142SMH	53	1.25	10.9	8.7	1.2	0.7	Flooded	2.6	Flooded	0.5	0.5	0.0	1966	0	Flooded
2	009456STMP	005957IN	003114SMH	13	1	6.2	7.9	0.9	0.7	Flooded	0.8	Flooded	0.0	0.7	0.0	1136	0	Flooded
2	009457STMP	003114SMH	003116SMH	28	1	6.2	7.7	0.7	0.6	0.9	Flooded	0.0	Flooded	0.0	0.5	0	1829	Insufficient Freeboard
2	009462STMP	003115SMH	003116SMH	14	2	18.7	5.9	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.5	0.5	2078	1829	Flooded
2	009463STMP	003142SMH	003115SMH	251	1.5	10.5	5.9	0.7	0.6	2.4	Flooded	0.5	Flooded	0.0	0.5	0	2078	Insufficient Freeboard
2	009464A	003116SMH	000781ND	29	2	23.7	7.5	0.6	0.6	Flooded	1.4	Flooded	0.9	0.5	0.0	1829	0	Flooded
2	009464B	000781ND	000780ND	37	2	23.9	7.6	0.6	0.6	1.4	1.6	0.9	1.1	0.0	0.0	0	0	Insufficient Freeboard
2	009464C	000780ND	003117SMH	66	2	23.8	7.5	0.6	0.6	1.6	1.7	1.1	0.0	0.0	0.0	0	0	Insufficient Freeboard
2	009469STMP	006035IN	000887ND	42	1	5.5	10.8	0	0.1	-	3.9	1.1	0.3	0.0	0.0	0	0	Sufficient Capacity
2	009481STMP	005833IN	000811ND	1757	5 x 8	690.2	19.8	0.8	4.6	Flooded	Flooded	Flooded	Flooded	0.7	2.6	31714	2947	Flooded
2	009625STMP	007751IN	000816ND	29	1	8.8	11.5	1.9	0	Flooded	2.7	Flooded	-	1.6	0.0	6260	0	Flooded
2	009634STMP	007745IN	000800ND	34	1.25	2.9	7.0	1.2	2.1	0.8	7.1	0.1	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	009743STMP	003199SMH	000546IO	74	4	250.4	15.0	1.8	0	RIM	4.2	RIM	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	009854A	007963IN	0001032ND	45	1	6.9	8.6	3.5	4.2	Flooded	Flooded	Flooded	Flooded	2.2	2.6	9848	18	Flooded
2	009854B	0001032ND	003437SMH	275	1	4.6	5.8	4.2	6.3	Flooded	Flooded	Flooded	Flooded	2.6	5.8	18	16050	Flooded
2	009870STMP	003368SMH	003464SMH	107	2	13.3	4.4	11.1	11.5	Flooded	3.2	Flooded	0.2	0.8	0.0	1913	0	Flooded
2	009871STMP	003369SMH	003370SMH	13	1.75	6.5	9.0	4.4	7.9	Flooded	Flooded	Flooded	Flooded	2.9	2.9	2451	7320	Flooded
2	009873STMP	003459SMH	007994IN	37	2	37.8	11.9	11.1	12.9	4.3	Flooded	-	Flooded	0.0	9.9	0	39505	Surcharged
2	009875STMP	003478SMH	003476SMH	32	1.5	13.1	-7.3	7.9	7.1	Flooded	3.4	Flooded	0.0	0.6	0.0	933	0	Flooded
2	009877STMP	008030IN	003477SMH	14	1	3.2	7.1	1.5	4.8	Flooded	3.4	Flooded	0.0	0.6	0.0	563	0	Flooded
2	009878STMP	003477SMH	003476SMH	34	1	3.2	3.9	4.8	7.1	3.5	3.9	0.0	0.0	0.0	0.0	0	0	Insufficient Freeboard
2	009918STMP	003265SMH	006094IN	134	1.5	20.2	11.2	0.5	0.2	Flooded	2.3	Flooded	-	0.1	0.0	259	0	Flooded
2	009919STMP	006093IN	003265SMH	65	1.25	10.1	13.9	0	0.5	-	Flooded	1.7	Flooded	0.0	0.1	0	259	Sufficient Capacity
2	009920STMP	006154IN	006093IN	42	1.25	10.1	8.1	0.1	0	0.1	-	1.5	1.7	0.0	0.0	0	0	Insufficient Freeboard
2	009967STMP	008017IN	0001036ND	87	0.667	-2.7	7.2	20.8	3.1	Flooded	Flooded	Flooded	Flooded	6.3	0.3	14290	14	Flooded
2	009968STMP	008019IN	0001037ND	22	2	21.2	6.6	0.3	2.6	6.2	Flooded	0.4	Flooded	0.0	0.1	0	3	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010015STMP	000543CB	003201SMH	26	0.833	10.2	18.3	0.8	0.6	Flooded	1.2	Flooded	-	0.6	0.0	1521	0	Flooded
2	010020STMP	003201SMH	003202SMH	315	1.5	10.3	6.5	0.6	1	3.0	4.6	-	1.6	0.0	0.0	0	0	Surcharged
2	010024STMP	000544CB	003202SMH	18	1	11.8	14.9	0.7	1	Flooded	5.2	Flooded	1.6	0.5	0.0	1636	0	Flooded
2	010025STMP	003202SMH	003204SMH	12	1.5	21.2	11.8	1	0.7	4.7	4.1	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
2	010026STMP	006044IN	003203SMH	8	1.25	6.0	8.7	0.6	0.6	Flooded	Flooded	Flooded	Flooded	0.2	0.2	65	82	Flooded
2	010027STMP	003203SMH	003204SMH	191	1.25	6.0	5.1	0.6	0.7	Flooded	4.3	Flooded	-	0.2	0.0	82	0	Flooded
2	010028STMP	003204SMH	003205SMH	691	2	25.7	8.3	0.7	1.3	3.7	Flooded	-	Flooded	0.0	0.9	0	9768	Surcharged
2	010031STMP	003205SMH	006036IN	247	2.25	35.2	8.8	1.3	6.6	Flooded	Flooded	Flooded	Flooded	0.9	0.7	9768	3509	Flooded
2	010032STMP	006036IN	002911ND	4	2.25	48.7	12.1	6.6	0.1	Flooded	Flooded	Flooded	Flooded	0.7	0.0	3509	215	Flooded
2	010058A	003472SMH	0001038ND	129	2	18.5	5.8	11	11.1	Flooded	Flooded	Flooded	Flooded	9.8	8.6	44679	47	Flooded
2	010058B	0001038ND	003465SMH	70	2	18.8	6.0	11.1	11.1	Flooded	Flooded	Flooded	Flooded	8.6	8.8	47	15460	Flooded
2	010060STMP	008007IN	003466SMH	29	1	-3.0	-3.7	11.4	11.7	Flooded	Flooded	Flooded	Flooded	10.1	10.1	39783	50482	Flooded
2	010061STMP	003468SMH	003466SMH	200	2	35.5	11.1	0.5	11.7	7.2	Flooded	1.0	Flooded	0.0	10.1	0	50482	Insufficient Freeboard
2	010062STMP	008008IN	003466SMH	65	1.25	2.8	4.3	11.1	11.7	Flooded	Flooded	Flooded	Flooded	4.5	10.1	7051	50482	Flooded
2	010067STMP	008012IN	003468SMH	36	1.75	8.7	6.8	2.8	0.5	3.7	4.7	1.3	1.0	0.0	0.0	0	0	Insufficient Freeboard
2	010068STMP	002419SMH	003468SMH	267	2	20.5	7.7	0.2	0.5	0.9	3.7	-	1.0	0.0	0.0	0	0	Surcharged
2	010072STMP	008015IN	003469SMH	85	1.75	-17.2	-7.0	3.1	9	Flooded	5.8	Flooded	0.4	2.9	0.0	59427	0	Flooded
2	010073STMP	003469SMH	0001035ND	11	1.75	-17.2	-7.0	9	9.2	5.8	Flooded	0.4	Flooded	0.0	0.3	0	8	Insufficient Freeboard
2	010075STMP	000493CB	003163SMH	81	1.5	12.1	11.0	3.5	3.7	Flooded	Flooded	Flooded	Flooded	0.7	1.5	1018	12957	Flooded
2	010077A	003150SMH	000804ND	32	2	16.6	5.3	3.5	3.5	Flooded	5.6	Flooded	0.9	0.7	0.0	355	0	Flooded
2	010077B	000804ND	003098SMH	266	2	24.5	7.7	3.5	3.6	5.6	Flooded	0.9	Flooded	0.0	3.3	0	19616	Insufficient Freeboard
2	010079B	000814ND	003161SMH	20	5 x 10	866.5	-17.2	3.7	3.6	Flooded	Flooded	Flooded	Flooded	1.6	2.3	129	61569	Flooded
2	010079C	000813ND	000812ND	17	5 x 10	871.4	-17.3	3.9	3.7	Flooded	Flooded	Flooded	Flooded	2.3	2.1	897	442	Flooded
2	010079D	000812ND	000814ND	7	5 x 10	868.3	-17.3	3.7	3.7	Flooded	Flooded	Flooded	Flooded	2.1	1.6	442	129	Flooded
2	010079E	000811ND	000810ND	15	5 x 10	881.3	-17.5	4.6	4.5	Flooded	Flooded	Flooded	Flooded	2.6	2.5	2947	1107	Flooded
2	010079F	000810ND	000813ND	9	5 x 10	876.5	-17.4	4.5	3.9	Flooded	Flooded	Flooded	Flooded	2.5	2.3	1107	897	Flooded
2	010079G	000809ND	000811ND	106	5 x 10	449.4	-9.0	4.9	4.6	Flooded	Flooded	Flooded	Flooded	2.8	2.6	2118	2947	Flooded
2	010081A	000815ND	000818ND	11	5 x 15	467.2	10.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081B	000825ND	000828ND	28	5 x 15	482.5	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081C	000828ND	000826ND	22	5 x 15	486.1	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081D	000826ND	007760IN	106	5 x 15	496.6	11.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081E	000819ND	000825ND	218	5 x 15	476.2	11.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010081F	000818ND	000819ND	28	5 x 15	479.8	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010082A	003164SMH	000830ND	53	4 x 7	218.5	6.1	1	1	0.9	1.0	0.6	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	010082B	000829ND	003199SMH	353	4 x 7	238.7	5.5	1.7	1.8	Flooded	RIM	Flooded	RIM	0.9	0.0	108	0	Flooded
2	010082C	000830ND	000829ND	452	4 x 7	216.9	5.9	1	1.7	1.0	Flooded	1.8	Flooded	0.0	0.9	0	108	Insufficient Freeboard
2	010108STMP	003060SMH	003061SMH	18	1.5	9.1	5.1	7.6	8.9	Flooded	Flooded	Flooded	Flooded	4.7	5.3	5608	9305	Flooded
2	010110STMP	003061SMH	003062SMH	43	1.5	9.0	5.0	8.9	11	Flooded	Flooded	Flooded	Flooded	5.3	6.7	9305	34692	Flooded
2	010111STMP	003062SMH	003195SMH	31	1.5	9.2	-5.1	11	9.8	Flooded	Flooded	Flooded	Flooded	6.7	6.4	34692	21246	Flooded
2	010112STMP	003195SMH	000874ND	74	1.5	9.5	-5.3	9.8	9.2	Flooded	Flooded	Flooded	Flooded	6.4	5.1	21246	24	Flooded
2	010125STMP	000539CB	003197SMH	34	1.25	8.6	6.9	0.8	1.7	Flooded	3.0	Flooded	1.4	0.0	0.0	0	0	Flooded
2	010126STMP	000538CB	003197SMH	47	1.25	12.1	9.8	0.4	1.7	Flooded	3.2	Flooded	1.4	0.2	0.0	84	0	Flooded
2	010127STMP	003197SMH	000882ND	406	2.5	20.8	5.1	1.7	2.1	2.4	Flooded	1.4	Flooded	0.0	0.7	0	26955	Insufficient Freeboard
2	010202STMP	006122IN	000939ND	42	0.833	5.4	11.0	1.9	0	Flooded	3.7	Flooded	-	1.8	0.0	7790	0	Flooded
2	010203STMP	006123IN	002912ND	92	2	11.3	6.2	0	0	-	3.1	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010208STMP	006128IN	000940ND	32	1.25	7.7	7.4	0.3	0	0.4	3.2	-	-	0.0	0.0	0	0	Surcharged
2	010264STMP	003381SMH	006154IN	59	1.25	10.1	8.2	0.1	0.1	0.5	0.1	0.8	1.5	0.0	0.0	0	0	Insufficient Freeboard
2	010414STMP	008032IN	003478SMH	11	1	4.1	5.1	2.2	7.9	Flooded	Flooded	Flooded	Flooded	1.2	0.6	2858	933	Flooded
2	010415STMP	003486SMH	003478SMH	87	1.25	10.6	8.5	8	7.9	4.8	Flooded	0.2	Flooded	0.0	0.6	0	933	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010416STMP	008033IN	003479SMH	178	2	10.1	3.2	13.1	10.6	Flooded	6.2	Flooded	-	8.9	0.0	121328	0	Flooded
2	010430STMP	003483SMH	003472SMH	152	1.25	10.9	8.6	10.7	11	Flooded	Flooded	Flooded	Flooded	0.9	9.8	5420	44679	Flooded
2	010436STMP	008046IN	003486SMH	54	1.25	10.6	10.1	5.6	8	Flooded	4.8	Flooded	0.2	1.5	0.0	4284	0	Flooded
2	010437STMP	003487SMH	008033IN	199	2	11.0	3.4	10.8	13.1	5.4	Flooded	-	Flooded	0.0	8.9	0	121328	Surcharged
2	010439STMP	003488SMH	003490SMH	41	1	6.1	7.8	1.1	0	0.9	-	1.4	-	0.0	0.0	0	0	Insufficient Freeboard
2	010440STMP	008048IN	003488SMH	26	1	6.1	-7.6	46.9	1.1	4.2	0.9	0.8	1.4	0.0	0.0	0	0	Insufficient Freeboard
2	010441STMP	008049IN	008048IN	62	1	6.1	7.6	1.5	46.9	Flooded	4.1	Flooded	0.8	0.5	0.0	1109	0	Flooded
2	010444STMP	003489SMH	003487SMH	23	2	11.0	4.4	5	10.8	3.4	5.3	-	-	0.0	0.0	0	0	Surcharged
2	010448STMP	003490SMH	003489SMH	9	2	6.1	9.8	0	5	-	3.4	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010449STMP	007994IN	0001039ND	82	2	38.8	12.1	12.9	0.8	Flooded	2.7	Flooded	-	9.9	0.0	39505	0	Flooded
2	010450STMP	006094IN	003460SMH	231	2	24.2	8.9	0.2	1.3	1.9	Flooded	-	Flooded	0.0	0.0	0	7	Surcharged
2	010451STMP	003460SMH	0001039ND	72	2.25	44.6	11.1	1.3	0.8	Flooded	2.4	Flooded	-	0.0	0.0	7	0	Flooded
2	010460STMP	003470SMH	008019IN	119	2	21.4	6.7	0.9	0.3	6.2	6.2	0.2	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	010465A	000634CB	0001037ND	56	2	5.6	5.1	0.4	2.6	1.5	Flooded	0.3	Flooded	0.0	0.1	0	3	Insufficient Freeboard
2	010465B	0001037ND	0001036ND	67	2	26.6	8.3	2.6	3.1	Flooded	Flooded	Flooded	Flooded	0.1	0.3	3	14	Flooded
2	010465C	0001036ND	0001035ND	214	2	23.9	7.5	3.1	9.2	Flooded	Flooded	Flooded	Flooded	0.3	0.3	14	8	Flooded
2	010465D	0001035ND	003468SMH	92	2	18.2	5.7	9.2	0.5	Flooded	7.2	Flooded	1.0	0.3	0.0	8	0	Flooded
2	010466STMP	008023IN	003470SMH	49	1	8.6	10.7	0.8	0.9	Flooded	3.7	Flooded	0.2	0.6	0.0	2952	0	Flooded
2	010467STMP	003471SMH	003470SMH	115	2	16.8	5.2	1.3	0.9	6.5	6.2	-	0.2	0.0	0.0	0	0	Surcharged
2	010468STMP	002423SMH	003471SMH	60	2	16.8	9.7	0.5	1.3	4.3	6.4	-	-	0.0	0.0	0	0	Surcharged
2	010469STMP	003151SMH	000817ND	13	3	-24.9	5.9	0	0	0.4	1.1	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	010470STMP	003152SMH	003151SMH	28	2.5	14.9	9.8	0	0	-	0.9	1.8	1.9	0.0	0.0	0	0	Sufficient Capacity
2	010474STMP	003149SMH	003150SMH	13	1.5	16.7	9.8	3.4	3.5	5.4	Flooded	0.2	Flooded	0.0	0.7	0	355	Insufficient Freeboard
2	010475STMP	000518CB	000804ND	21	1	10.8	13.2	3.5	3.5	Flooded	6.6	Flooded	0.9	2.6	0.0	28469	0	Flooded
2	010476A	007761IN	000796ND	67	5 x 15	556.8	16.4	0	0.9	-	0.5	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010476B	000796ND	000797ND	227	5 x 15	585.8	15.7	0.9	1.9	0.5	2.7	-	0.6	0.0	0.0	0	0	Surcharged
2	010476C	000797ND	000798ND	7	5 x 15	587.2	10.8	1.9	1.9	2.7	2.7	0.6	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	010476D	000798ND	000131CP	79	5 x 15	590.3	10.7	1.9	0	2.7	3.5	0.7	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	010477STMP	000519CB	003156SMH	17	1	5.8	7.2	5.1	5	Flooded	Flooded	Flooded	Flooded	4.8	4.7	27070	27330	Flooded
2	010478STMP	003156SMH	003167SMH	147	1	6.3	7.9	5	3.1	Flooded	Flooded	Flooded	Flooded	4.7	1.5	27330	10900	Flooded
2	010479STMP	003157SMH	003167SMH	21	2	44.9	14.4	2.1	3.1	Flooded	Flooded	Flooded	Flooded	1.7	1.5	21056	10900	Flooded
2	010480STMP	003167SMH	003160SMH	168	2	43.1	13.5	3.1	3.5	Flooded	Flooded	Flooded	Flooded	1.5	3.1	10900	84539	Flooded
2	010481STMP	003159SMH	003167SMH	22	1.25	11.4	16.1	1.8	3.1	2.4	Flooded	0.4	Flooded	0.0	1.5	0	10900	Insufficient Freeboard
2	010482A	003158SMH	000793ND	246	2	38.3	14.5	0	1.4	5.0	Flooded	-	Flooded	0.0	0.4	0	31	Surcharged
2	010482B	000793ND	003157SMH	277	2	50.9	15.8	1.4	2.1	Flooded	Flooded	Flooded	Flooded	0.4	1.7	31	21056	Flooded
2	010483STMP	003103SMH	005891IN	711	3.5	78.5	8.1	3.9	4.2	5.0	RIM	0.5	RIM	0.0	0.0	0	0	Insufficient Freeboard
2	010484A	003108SMH	000794ND	172	2	33.0	10.3	3.8	4	Flooded	5.9	Flooded	0.7	3.2	0.0	14421	0	Flooded
2	010484B	000794ND	003102SMH	20	2	33.0	10.4	4	4	6.0	5.7	0.7	0.4	0.0	0.0	0	0	Insufficient Freeboard
2	010567A	007760IN	000827ND	15	5 x 15	512.1	12.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010567B	000827ND	007761IN	129	5 x 15	544.4	13.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010568STMP	007754IN	000797ND	7	1	2.9	9.1	0	1.9	-	6.7	0.5	0.6	0.0	0.0	0	0	Sufficient Capacity
2	010570STMP	007765IN	003145SMH	223	1.25	8.4	6.7	0.5	1.6	4.8	Flooded	0.4	Flooded	0.0	0.8	0	2467	Insufficient Freeboard
2	010572A	003089SMH	000831ND	179	1.5	12.9	-7.1	34.9	4.6	Flooded	Flooded	Flooded	Flooded	2.1	1.6	6055	12	Flooded
2	010572B	000831ND	000488CB	59	1.5	15.5	-8.7	4.6	2	Flooded	0.5	Flooded	1.8	1.6	0.0	12	0	Flooded
2	010573A	003161SMH	000769ND	81	5 x 10	864.4	17.2	3.6	3.6	Flooded	Flooded	Flooded	Flooded	2.3	0.0	61569	1614	Flooded
2	010573B	000779ND	003095SMH	70	5 x 10	875.5	17.5	2.3	0	1.0	-	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
2	010573C	000778ND	000777ND	30	5 x 10	871.3	17.4	3.1	2.9	Flooded	2.2	Flooded	0.3	0.0	0.0	18	0	Flooded
2	010573D	000777ND	000776ND	29	5 x 10	872.1	17.4	2.9	2.6	2.2	2.2	0.3	0.7	0.0	0.0	0	0	Insufficient Freeboard
2	010573E	000776ND	000779ND	78	5 x 10	873.9	17.5	2.6	2.3	2.2	1.0	0.7	1.5	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	010573F	000775ND	000778ND	25	5 x 10	871.3	17.4	3.2	3.1	3.0	Flooded	0.2	Flooded	0.0	0.0	3	18	Insufficient Freeboard
2	010573G	000774ND	000775ND	155	5 x 10	870.4	17.4	3.4	3.2	Flooded	3.0	Flooded	0.2	0.0	0.0	34	3	Flooded
2	010573H	000773ND	000774ND	32	5 x 10	870.4	17.4	3.4	3.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	205	34	Flooded
2	010573I	000772ND	000773ND	31	5 x 10	864.4	17.2	3.5	3.4	Flooded	Flooded	Flooded	Flooded	0.0	0.0	726	205	Flooded
2	010573J	000771ND	000772ND	25	5 x 10	864.5	17.2	3.5	3.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	294	726	Flooded
2	010573K	000770ND	000771ND	74	5 x 10	865.5	17.2	3.5	3.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	91	294	Flooded
2	010573L	000769ND	000770ND	6	5 x 10	864.3	17.2	3.6	3.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	1614	91	Flooded
2	010574A	003147SMH	000789ND	131	3.5 x 7	204.5	9.3	0.6	1.1	1.5	1.4	-	1.2	0.0	0.0	0	0	Surcharged
2	010574B	000789ND	003164SMH	131	3.5 x 7	204.4	9.3	1.1	1	1.4	1.3	1.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	010575STMP	000834ND	003149SMH	210	1.5	16.7	9.2	1.6	3.4	Flooded	5.4	Flooded	0.2	1.0	0.0	21	0	Flooded
2	010625STMP	003437SMH	003369SMH	28	0.833	3.9	7.0	6.3	4.4	Flooded	Flooded	Flooded	Flooded	5.8	2.9	16050	2451	Flooded
2	010626STMP	003439SMH	003438SMH	10	1	8.0	10.0	14.1	11.7	Flooded	Flooded	Flooded	Flooded	11.3	11.0	17410	42539	Flooded
2	010627STMP	003466SMH	003438SMH	107	2	22.1	7.0	11.7	11.7	Flooded	Flooded	Flooded	Flooded	10.1	11.0	50482	42539	Flooded
2	010628STMP	003438SMH	003448SMH	39	2	18.4	5.8	11.7	11.7	Flooded	Flooded	Flooded	Flooded	11.0	11.2	42539	60310	Flooded
2	010635STMP	003440SMH	003448SMH	30	2	24.3	7.7	11.9	11.7	Flooded	Flooded	Flooded	Flooded	10.9	11.2	39588	60310	Flooded
2	010636STMP	003448SMH	003368SMH	102	2	34.6	11.0	11.7	11.1	Flooded	Flooded	Flooded	Flooded	11.2	0.8	60310	1913	Flooded
2	010641STMP	007977IN	005983IN	65	1.25	5.9	6.4	0.3	0.5	Flooded	2.3	Flooded	-	0.1	0.0	45	0	Flooded
2	010642STMP	007978IN	005936IN	169	3	33.6	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	010643STMP	007992IN	007978IN	24	2	4.1	3.0	0.3	0	0.5	0.6	-	-	0.0	0.0	0	0	Surcharged
2	010646STMP	003456SMH	004003SMH	13	3	39.5	5.5	12.9	14	5.2	6.2	0.9	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	010647A	003450SMH	0001034ND	35	4	40.0	5.6	11	11.4	2.5	2.8	1.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
2	010647B	0001034ND	003457SMH	82	4	39.0	4.0	11.4	11.7	2.8	3.4	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
2	014016STMP	003370SMH	003368SMH	46	3	9.5	3.1	7.9	11.1	Flooded	Flooded	Flooded	Flooded	2.9	0.8	7320	1913	Flooded
2	014018STMP	003368SMH	008004IN	61	2.5	31.2	6.3	11.1	11.3	Flooded	Flooded	Flooded	Flooded	0.8	1.0	1913	644	Flooded
2	014019STMP	004003SMH	003450SMH	25	4	39.5	-3.1	14	11	5.4	2.2	0.8	1.3	0.0	0.0	0	0	Insufficient Freeboard
2	014922A	000815ND	000820ND	46	5 x 15	451.2	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922B	000824ND	007760IN	148	5 x 15	544.7	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922C	000823ND	000824ND	28	5 x 15	529.2	11.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922D	000822ND	000823ND	101	5 x 15	527.2	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922E	000821ND	000822ND	39	5 x 15	527.9	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014922F	000820ND	000821ND	54	5 x 15	453.5	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014923STMP	007760IN	007761IN	146	5 x 15	557.4	13.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924A	007761IN	000795ND	46	5 x 15	551.6	16.6	0	0.6	-	0.3	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014924B	000795ND	000801ND	262	5 x 15	579.0	15.9	0.6	1.9	0.3	3.1	-	0.4	0.0	0.0	0	0	Surcharged
2	014924C	000801ND	000799ND	10	5 x 15	591.6	10.8	1.9	2	3.1	3.1	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
2	014924D	000799ND	000800ND	37	5 x 15	594.0	10.6	2	2.1	3.1	3.4	0.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
2	014924E	000800ND	000290CP	23	5 x 15	594.9	9.6	2.1	0	3.4	3.5	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
2	014928STMP	0001039ND	000788ND	160	3 x 3	71.8	8.0	0.8	0.2	1.7	0.8	-	-	0.0	0.0	0	0	Surcharged
2	014930A	000291CP	000882ND	4	5 x 13	806.0	12.4	2	2.1	Flooded	Flooded	Flooded	Flooded	1.9	0.7	441248	26955	Flooded
2	014930B	000882ND	000880ND	16	5 x 13	807.0	12.4	2.1	2	Flooded	Flooded	Flooded	Flooded	0.7	0.1	26955	2899	Flooded
2	014930C	000880ND	000881ND	16	5 x 13	799.6	12.3	2	1.4	Flooded	3.9	Flooded	0.2	0.1	0.0	2899	0	Flooded
2	014930D	000881ND	000883ND	114	5 x 13	778.7	12.0	1.4	1.2	3.9	Flooded	0.2	Flooded	0.0	0.0	0	499	Insufficient Freeboard
2	014930E	000883ND	003200SMH	207	5 x 13	793.1	12.2	1.2	0.8	Flooded	Flooded	Flooded	Flooded	0.0	0.2	499	27725	Flooded
2	014932A	000132CP	007842IN	106	5 x 16	1017.5	12.7	2	2.1	Flooded	Flooded	Flooded	Flooded	1.9	1.7	317606	150482	Flooded
2	014932B	007842IN	006101IN	96	5 x 16	1017.3	12.7	2.1	2.1	Flooded	Flooded	Flooded	Flooded	1.7	1.6	150482	138252	Flooded
2	014932C	006101IN	007844IN	17	5 x 16	1013.4	12.6	2.1	2	Flooded	Flooded	Flooded	Flooded	1.6	1.4	138252	120638	Flooded
2	014932D	007844IN	006029IN	86	5 x 16	1010.8	12.6	2	2	Flooded	Flooded	Flooded	Flooded	1.4	1.5	120638	321679	Flooded
2	014932E	006029IN	000890ND	12	5 x 16	1164.4	14.5	2	1.9	Flooded	Flooded	Flooded	Flooded	1.5	0.1	321679	4580	Flooded
2	014932F	000890ND	000884ND	17	5 x 16	1159.2	14.5	1.9	1.7	Flooded	Flooded	Flooded	Flooded	0.1	0.4	4580	12794	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
2	014932G	000884ND	006032IN	3	5 x 16	1151.6	14.4	1.7	1.4	Flooded	Flooded	Flooded	Flooded	0.4	0.3	12794	40579	Flooded
2	014932H	006032IN	003200SMH	22	5 x 16	1270.3	15.8	1.4	0.8	Flooded	Flooded	Flooded	Flooded	0.3	0.2	40579	27725	Flooded
2	014933A	003200SMH	000885ND	95	5 x 16	967.1	12.1	0.8	0.3	Flooded	2.7	Flooded	0.1	0.2	0.0	27725	0	Flooded
2	014933B	000885ND	000886ND	145	5 x 16	893.7	11.1	0.3	0.2	2.7	Flooded	0.1	Flooded	0.0	0.0	0	436	Insufficient Freeboard
2	014933C	000886ND	003206SMH	60	5 x 16	903.7	11.3	0.2	0.1	Flooded	Flooded	Flooded	Flooded	0.0	0.0	436	361	Flooded
2	014933D	003206SMH	000887ND	41	5 x 16	903.5	11.3	0.1	0.1	Flooded	1.8	Flooded	0.3	0.0	0.0	361	0	Flooded
2	014933E	000887ND	000893ND	43	5 x 16	923.3	11.5	0.1	0	1.8	1.0	0.3	0.9	0.0	0.0	0	0	Insufficient Freeboard
2	014933F	000893ND	006037IN	110	5 x 16	828.9	11.1	0	0	1.0	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
2	014933G	006037IN	000939ND	52	5 x 16	820.6	11.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014933H	000939ND	003313SMH	328	5 x 16	750.6	11.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014934A	003200SMH	002910ND	95	5 x 13	883.2	13.6	0.8	0.3	Flooded	Flooded	Flooded	Flooded	0.2	0.0	27725	177	Flooded
2	014934B	002910ND	002911ND	289	5 x 13	770.8	11.8	0.3	0.1	Flooded	Flooded	Flooded	Flooded	0.0	0.0	177	215	Flooded
2	014934C	002911ND	002912ND	172	5 x 13	762.8	11.8	0.1	0	Flooded	0.1	Flooded	-	0.0	0.0	215	0	Flooded
2	014934D	002912ND	000940ND	193	5 x 13	684.4	11.9	0	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
2	014934E	000940ND	003313SMH	142	5 x 13	687.2	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
2	014940STMP	000874ND	008046IN	152	1.25	9.5	-7.6	9.2	5.6	Flooded	Flooded	Flooded	Flooded	5.1	1.5	24	4284	Flooded
3	008354STMP	000505CB	003120SMH	13	1	12.6	15.5	4.9	4.2	Flooded	Flooded	Flooded	Flooded	4.4	3.3	54032	148305	Flooded
3	008355STMP	003120SMH	003122SMH	203	2.5	60.0	12.0	4.2	3.8	Flooded	Flooded	Flooded	Flooded	3.3	2.9	148305	76564	Flooded
3	008358STMP	005975IN	003122SMH	38	1	9.0	12.6	3.6	3.8	Flooded	Flooded	Flooded	Flooded	3.5	2.9	7950	76564	Flooded
3	008361STMP	000507CB	003121SMH	33	1	3.0	3.8	3.6	3.7	Flooded	Flooded	Flooded	Flooded	2.4	2.2	5771	5494	Flooded
3	008362STMP	003121SMH	000807ND	47	1	5.8	7.5	3.7	4.5	Flooded	Flooded	Flooded	Flooded	2.2	0.9	5494	91	Flooded
3	008420A	000574CB	000918ND	10	1	3.2	4.0	1.5	1.5	Flooded	2.0	Flooded	0.0	0.8	0.0	600	0	Flooded
3	008420B	000918ND	003398SMH	11	1	3.2	4.1	1.5	1.5	2.0	2.1	0.0	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	008426STMP	003398SMH	000919ND	30	1.25	4.1	3.3	1.5	1.5	1.8	2.1	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	008428STMP	000577CB	000919ND	17	1	5.4	6.8	1.5	1.5	Flooded	2.4	Flooded	0.2	1.1	0.0	3799	0	Flooded
3	008429STMP	000919ND	003079SMH	218	1.5	7.1	5.0	1.5	0	1.9	3.1	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
3	008435STMP	003400SMH	002914ND	19	2.5	43.8	8.9	7.8	3.6	Flooded	Flooded	Flooded	Flooded	2.7	0.0	10284	246	Flooded
3	008436STMP	003401SMH	002915ND	22	2.5	42.7	8.6	7	3.5	Flooded	Flooded	Flooded	Flooded	2.6	0.0	10963	41	Flooded
3	008437STMP	003402SMH	000994ND	150	4 x 12	378.1	8.7	3.4	3.5	Flooded	4.4	Flooded	0.0	1.5	0.0	3260	0	Flooded
3	008642STMP	006170IN	006172IN	27	1.75	6.5	6.8	6.1	6.8	1.5	Flooded	0.3	Flooded	0.0	6.0	0	14710	Insufficient Freeboard
3	008643STMP	006171IN	006170IN	145	1.25	6.5	5.9	3.9	6.1	Flooded	1.7	Flooded	0.3	1.1	0.0	4198	0	Flooded
3	008644A	006172IN	000847ND	74	2	5.1	2.3	6.8	6.9	Flooded	2.7	Flooded	0.1	6.0	0.0	14710	0	Flooded
3	008644B	000847ND	003383SMH	162	2	5.2	1.7	6.9	7	2.7	Flooded	0.1	Flooded	0.0	6.6	0	28849	Insufficient Freeboard
3	008648A	003218SMH	000915ND	71	3.25 x 5	61.8	5.8	5.8	6	RIM	Flooded	RIM	Flooded	0.0	3.7	0	788	Insufficient Freeboard
3	008648B	000915ND	000902ND	212	3.25 x 5	62.8	5.7	6	6.5	Flooded	Flooded	Flooded	Flooded	3.7	3.3	788	894	Flooded
3	008648C	000902ND	003217SMH	81	3.25 x 5	63.0	5.2	6.5	6.6	Flooded	RIM	Flooded	RIM	3.3	0.0	894	0	Flooded
3	008706A	003407SMH	000950ND	11	3.25 x 5	69.5	-5.4	6.5	6.4	RIM	Flooded	RIM	Flooded	0.0	3.8	0	2886	Insufficient Freeboard
3	008706B	000950ND	000949ND	25	3.25 x 5	72.7	-5.6	6.4	6.3	Flooded	Flooded	Flooded	Flooded	3.8	3.8	2886	4700	Flooded
3	008706C	000949ND	003406SMH	173	3.25 x 5	76.0	-5.9	6.3	3.6	Flooded	Flooded	Flooded	Flooded	3.8	1.7	4700	5591	Flooded
3	008711STMP	007700IN	003077SMH	172	1.25	6.9	5.6	4.3	4.1	2.5	3.8	0.2	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	008718STMP	007706IN	007707IN	104	0.667	2.0	5.6	5.4	5.2	Flooded	Flooded	Flooded	Flooded	4.6	3.1	8540	4176	Flooded
3	008719STMP	007707IN	007711IN	182	0.667	2.1	6.0	5.2	1.7	Flooded	Flooded	Flooded	Flooded	3.1	1.4	4176	1361	Flooded
3	008753A	003408SMH	000953ND	23	3.25 x 5	63.2	4.9	6.7	6.7	RIM	Flooded	RIM	Flooded	0.0	3.3	0	1359	Insufficient Freeboard
3	008753B	000953ND	000952ND	109	3.25 x 5	63.6	5.0	6.7	6.7	Flooded	Flooded	Flooded	Flooded	3.3	3.4	1359	3680	Flooded
3	008753C	000952ND	000951ND	105	3.25 x 5	66.7	5.2	6.7	6.6	Flooded	Flooded	Flooded	Flooded	3.4	3.9	3680	3839	Flooded
3	008753D	000951ND	003407SMH	11	3.25 x 5	69.6	5.4	6.6	6.5	Flooded	RIM	Flooded	RIM	3.9	0.0	3839	0	Flooded
3	008754STMP	003217SMH	003408SMH	362	3.25 x 5	63.2	5.1	6.6	6.7	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	008755A	003409SMH	000978ND	156	4 x 12	362.2	8.8	3.5	3.9	Flooded	Flooded	Flooded	Flooded	0.0	0.0	19	9	Flooded
3	008755B	000978ND	003434SMH	88	4 x 12	368.7	8.2	3.9	4.2	Flooded	Flooded	Flooded	Flooded	0.0	0.0	9	54	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	008756STMP	000971ND	003409SMH	42	4 x 12	384.0	8.9	3.5	3.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	23	19	Flooded
3	008904A	000595CB	0001045ND	121	2	14.1	8.5	0	2.9	-	2.4	-	0.1	0.0	0.0	0	0	Sufficient Capacity
3	008904B	0001045ND	000596CB	135	2	17.0	7.4	2.9	3.1	2.4	Flooded	0.1	Flooded	0.0	0.0	0	5	Insufficient Freeboard
3	008907STMP	006217IN	0001045ND	17	1	5.9	-7.3	3.7	2.9	Flooded	3.4	Flooded	0.1	2.7	0.0	17523	0	Flooded
3	008909STMP	000524IO	003367SMH	289	1.25	17.0	16.0	0.8	2.6	Flooded	Flooded	Flooded	Flooded	0.8	2.6	5798	46777	Flooded
3	008910STMP	000596CB	003436SMH	52	2	26.3	8.3	3.1	3.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	5	101	Flooded
3	008948A	003175SMH	000876ND	48	3	26.2	3.7	7.8	7.8	1.9	1.9	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
3	008948B	000876ND	003177SMH	119	3	26.1	3.7	7.8	7.9	2.0	1.9	-	-	0.0	0.0	0	0	Surcharged
3	008949A	003186SMH	000853ND	5	3	25.0	4.7	7.6	7.6	Flooded	1.8	Flooded	0.9	5.0	0.0	4354	0	Flooded
3	008949B	000853ND	003175SMH	145	3	16.6	2.7	7.6	7.8	1.8	1.9	0.9	1.2	0.0	0.0	0	0	Insufficient Freeboard
3	008963STMP	000572CB	003397SMH	62	1	6.6	8.3	2.6	2.7	Flooded	3.1	Flooded	0.4	2.4	0.0	7108	0	Flooded
3	008965STMP	006234IN	000990ND	142	1	2.7	3.9	4.8	6.3	Flooded	5.3	Flooded	0.2	4.7	0.0	18522	0	Flooded
3	008976A	003384SMH	000846ND	33	2	13.0	4.1	7.1	7.1	Flooded	Flooded	Flooded	Flooded	6.1	4.9	21979	15	Flooded
3	008976B	000846ND	004007SMH	215	2	12.3	3.9	7.1	7.1	Flooded	Flooded	Flooded	Flooded	4.9	4.0	15	22629	Flooded
3	008978A	003385SMH	000833ND	131	1	3.9	4.8	32	32.5	Flooded	Flooded	Flooded	Flooded	31.7	6.1	32867	20	Flooded
3	008978B	000833ND	003384SMH	15	1	5.7	7.1	32.5	7.1	Flooded	Flooded	Flooded	Flooded	6.1	6.1	20	21979	Flooded
3	009270A	007711IN	000763ND	35	1.5	5.8	4.2	1.7	4.6	Flooded	Flooded	Flooded	Flooded	1.4	0.8	1361	51	Flooded
3	009270B	000763ND	003397SMH	207	1.5	5.4	3.4	4.6	2.7	Flooded	6.5	Flooded	0.4	0.8	0.0	51	0	Flooded
3	009271STMP	003079SMH	003078SMH	46	3	40.1	9.0	0	2	2.0	2.2	-	-	0.0	0.0	0	0	Surcharged
3	009272STMP	007712IN	003079SMH	24	1	6.5	9.3	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
3	009273STMP	003080SMH	003081SMH	34	2.5	46.6	9.3	4.7	4.7	Flooded	Flooded	Flooded	Flooded	1.7	2.1	6226	14755	Flooded
3	009274STMP	007713IN	003080SMH	25	1.25	9.0	10.7	2.9	4.7	Flooded	Flooded	Flooded	Flooded	2.2	1.7	10089	6226	Flooded
3	009275STMP	003081SMH	000808ND	111	2.5	46.4	9.3	4.7	5.3	Flooded	Flooded	Flooded	Flooded	2.1	0.8	14755	64	Flooded
3	009276STMP	000481CB	003166SMH	39	1.25	-5.7	5.7	3.7	5.5	Flooded	Flooded	Flooded	Flooded	1.0	0.8	3258	2209	Flooded
3	009279STMP	003078SMH	003080SMH	297	2.25	38.8	12.9	2	4.7	3.1	Flooded	-	Flooded	0.0	1.7	0	6226	Surcharged
3	009479A	003185SMH	000842ND	28	1.5	11.0	6.1	6.6	7.2	Flooded	Flooded	Flooded	Flooded	1.7	1.5	2843	6	Flooded
3	009479B	000842ND	003184SMH	101	1.5	13.1	7.3	7.2	7.8	Flooded	Flooded	Flooded	Flooded	1.5	2.9	6	12136	Flooded
3	009482STMP	003169SMH	003352SMH	37	2	39.4	-12.4	8.1	8.7	RIM	3.1	RIM	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	009483STMP	003170SMH	003169SMH	16	1.5	11.5	-6.4	9.4	8.1	Flooded	RIM	Flooded	RIM	4.1	0.0	1657	0	Flooded
3	009485STMP	007766IN	003170SMH	12	1.25	9.0	7.2	8.7	9.4	4.5	Flooded	0.6	Flooded	0.0	4.1	0	1657	Insufficient Freeboard
3	009486STMP	007794IN	007766IN	155	1.5	9.0	5.0	8	8.7	3.6	4.0	0.3	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	009491STMP	003182SMH	003172SMH	168	3	28.9	4.1	8.1	7.9	Flooded	RIM	Flooded	RIM	6.4	0.0	9988	0	Flooded
3	009517A	003172SMH	000837ND	39	3.5	28.9	3.0	7.9	7.9	RIM	Flooded	RIM	Flooded	0.0	4.0	0	6	Insufficient Freeboard
3	009517B	000837ND	003169SMH	287	3.5	28.9	3.0	7.9	8.1	Flooded	RIM	Flooded	RIM	4.0	0.0	6	0	Flooded
3	009518STMP	003183SMH	003173SMH	169	2	7.0	2.9	8.3	8.3	Flooded	Flooded	Flooded	Flooded	5.7	7.6	4267	18338	Flooded
3	009519A	003173SMH	000836ND	26	2	10.2	3.2	8.3	8.6	Flooded	Flooded	Flooded	Flooded	7.6	5.5	18338	11	Flooded
3	009519B	002908ND	003170SMH	131	2	10.3	3.3	9.1	9.4	Flooded	Flooded	Flooded	Flooded	5.0	4.1	14	1657	Flooded
3	009519C	000836ND	002908ND	156	2	10.1	3.2	8.6	9.1	Flooded	Flooded	Flooded	Flooded	5.5	5.0	11	14	Flooded
3	009525STMP	000525CB	000837ND	26	1	4.7	5.8	7.6	7.9	Flooded	Flooded	Flooded	Flooded	5.7	4.0	9338	6	Flooded
3	009541STMP	006235IN	000990ND	34	1.5	7.2	7.8	3.8	6.3	Flooded	4.8	Flooded	0.2	0.5	0.0	1173	0	Flooded
3	009542A	003331SMH	000990ND	37	3.25 x 5	55.9	4.8	6.3	6.3	RIM	1.3	RIM	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	009542B	000990ND	000988ND	99	3.25 x 5	56.1	4.8	6.3	6.5	1.3	1.5	0.2	-	0.0	0.0	0	0	Insufficient Freeboard
3	009543A	003332SMH	000987ND	77	3.25 x 5	55.6	4.9	6.2	6.3	RIM	1.2	RIM	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	009543B	000987ND	003331SMH	97	3.25 x 5	55.8	4.8	6.3	6.3	1.2	RIM	0.1	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	009550STMP	003334SMH	000991ND	6	1.25	7.0	6.0	7.6	6	Flooded	4.6	Flooded	0.0	1.1	0.0	1231	0	Flooded
3	009552STMP	000529CB	000842ND	33	1	4.3	5.4	1.8	7.2	3.3	Flooded	0.2	Flooded	0.0	1.5	0	6	Insufficient Freeboard
3	009555STMP	000530CB	003185SMH	27	1	5.7	7.1	2.6	6.6	Flooded	Flooded	Flooded	Flooded	1.4	1.7	2902	2843	Flooded
3	009557STMP	003190SMH	003185SMH	264	1.25	6.0	5.6	4	6.6	2.6	Flooded	-	Flooded	0.0	1.7	0	2843	Surcharged
3	009563A	003191SMH	000843ND	104	2	23.8	7.5	8.1	8	Flooded	2.7	Flooded	0.6	5.4	0.0	18092	0	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009563B	000843ND	003186SMH	5	2	23.8	7.5	8	7.6	3.1	Flooded	0.6	Flooded	0.0	5.0	0	4354	Insufficient Freeboard
3	009566STMP	000853ND	003187SMH	24	2	14.1	4.5	7.6	8.1	2.8	Flooded	0.9	Flooded	0.0	5.4	0	5553	Insufficient Freeboard
3	009567STMP	003188SMH	003189SMH	39	2	10.3	3.3	8.2	8.1	Flooded	Flooded	Flooded	Flooded	8.1	7.7	48863	24322	Flooded
3	009570A	003187SMH	000844ND	205	2	11.2	3.6	8.1	8.1	Flooded	Flooded	Flooded	Flooded	5.4	6.2	5553	16	Flooded
3	009570B	000844ND	003188SMH	10	2	10.8	3.4	8.1	8.2	Flooded	Flooded	Flooded	Flooded	6.2	8.1	16	48863	Flooded
3	009578STMP	007889IN	003405SMH	56	1.75	19.5	8.1	3.4	5	Flooded	Flooded	Flooded	Flooded	3.3	3.4	61565	9478	Flooded
3	009579STMP	003405SMH	000936ND	56	1.75	18.6	7.7	5	3.8	Flooded	Flooded	Flooded	Flooded	3.4	0.9	9478	2010	Flooded
3	009580A	003406SMH	002916ND	153	4 x 7	284.0	10.2	3.6	3.6	Flooded	Flooded	Flooded	Flooded	1.7	0.0	5591	631	Flooded
3	009580B	002916ND	002914ND	21	4 x 7	304.7	10.9	3.6	3.6	Flooded	Flooded	Flooded	Flooded	0.0	0.0	631	246	Flooded
3	009580C	002915ND	003402SMH	36	4 x 7	361.7	13.8	3.5	3.4	Flooded	Flooded	Flooded	Flooded	0.0	1.5	41	3260	Flooded
3	009580D	002914ND	002915ND	4	4 x 7	332.4	12.0	3.6	3.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	246	41	Flooded
3	009688C	000936ND	003406SMH	22	4 x 7	225.2	8.0	3.8	3.6	Flooded	Flooded	Flooded	Flooded	0.9	1.7	2010	5591	Flooded
3	009692STMP	006169IN	003213SMH	39	1.25	5.1	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009693STMP	000476CB	006169IN	198	1.25	5.1	17.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009694STMP	003214SMH	003216SMH	282	2.5	23.8	4.8	7.1	8	3.2	Flooded	-	Flooded	0.0	6.1	0	28977	Surcharged
3	009695STMP	003214SMH	003215SMH	282	2.5	24.6	5.0	7.1	8.1	3.2	Flooded	-	Flooded	0.0	6.5	0	27160	Surcharged
3	009696STMP	000994ND	000971ND	84	4 x 12	381.4	8.8	3.5	3.5	4.4	Flooded	0.0	Flooded	0.0	0.0	0	23	Insufficient Freeboard
3	009702STMP	003367SMH	003208SMH	292	1.25	17.1	13.6	2.6	0	Flooded	-	Flooded	-	2.6	0.0	46777	0	Flooded
3	009704STMP	003429SMH	003430SMH	33	0.833	2.7	8.5	4.2	4.7	1.8	Flooded	0.2	Flooded	0.0	4.6	0	26042	Insufficient Freeboard
3	009705STMP	003430SMH	000974ND	71	0.833	6.0	10.8	4.7	6	Flooded	Flooded	Flooded	Flooded	4.6	5.9	26042	56	Flooded
3	009706STMP	000974ND	003428SMH	93	0.833	4.7	8.4	6	31.9	Flooded	Flooded	Flooded	Flooded	5.9	20.4	56	11940	Flooded
3	009707STMP	003431SMH	000977ND	163	1	3.4	4.3	1	0	Flooded	0.1	Flooded	-	0.7	0.0	370	0	Flooded
3	009710STMP	006207IN	003432SMH	31	1	4.4	5.6	0.3	0	Flooded	-	Flooded	-	0.0	0.0	3	0	Flooded
3	009713A	003432SMH	000977ND	18	2	10.9	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009713B	000977ND	000595CB	26	2	14.1	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009714STMP	006212IN	003432SMH	10	1	6.5	8.3	1.2	0	Flooded	-	Flooded	-	0.6	0.0	622	0	Flooded
3	009717STMP	006230IN	006231IN	43	1	7.9	6.9	1.4	5.5	Flooded	3.8	Flooded	-	0.6	0.0	2364	0	Flooded
3	009718STMP	006231IN	000989ND	15	2	9.4	4.9	5.5	6.5	2.8	4.5	-	-	0.0	0.0	0	0	Surcharged
3	009719STMP	003329SMH	001001ND	69	3.25 x 5	62.2	-5.0	6.6	6.3	1.6	1.4	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	009720A	003330SMH	000988ND	12	3.25 x 5	-20.2	4.6	3.8	6.5	-	1.5	-	-	0.0	0.0	0	0	Surcharged
3	009720B	000989ND	003329SMH	54	3.25 x 5	59.5	4.8	6.5	6.6	1.5	1.6	-	1.9	0.0	0.0	0	0	Surcharged
3	009720C	000988ND	000989ND	46	3.25 x 5	58.8	5.0	6.5	6.5	1.5	1.5	-	-	0.0	0.0	0	0	Surcharged
3	009722STMP	000601CB	003330SMH	17	1.25	4.9	10.4	0	3.8	0.5	3.3	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
3	009737A	003383SMH	000832ND	67	2	7.5	2.4	7	7.1	Flooded	Flooded	Flooded	Flooded	6.6	5.2	28849	13	Flooded
3	009737B	000832ND	003384SMH	22	2	7.5	2.4	7.1	7.1	Flooded	Flooded	Flooded	Flooded	5.2	6.1	13	21979	Flooded
3	009749STMP	000622CB	000980ND	45	1.25	12.3	9.7	5.6	3.4	Flooded	Flooded	Flooded	Flooded	1.2	1.4	4535	1123	Flooded
3	009753A	006224IN	000981ND	66	1	5.6	7.0	7.4	7.5	Flooded	Flooded	Flooded	Flooded	6.3	2.3	29130	7	Flooded
3	009753B	000981ND	003327SMH	20	1	5.9	7.3	7.5	7.4	Flooded	Flooded	Flooded	Flooded	2.3	3.0	7	6762	Flooded
3	009754STMP	006223IN	000999ND	44	1	7.6	9.4	6.7	3.5	Flooded	Flooded	Flooded	Flooded	4.7	2.5	42635	4023	Flooded
3	009766STMP	007779IN	003178SMH	12	2	-13.6	4.3	8.3	7.9	Flooded	Flooded	Flooded	Flooded	7.9	7.6	36386	22866	Flooded
3	009767STMP	003178SMH	003179SMH	18	2	15.5	4.9	7.9	8	Flooded	Flooded	Flooded	Flooded	7.6	7.6	22866	23683	Flooded
3	009768A	000845ND	003179SMH	132	2	10.5	3.4	8.2	8	Flooded	Flooded	Flooded	Flooded	5.9	7.6	13	23683	Flooded
3	009768B	000849ND	000845ND	33	2	10.3	3.3	8.2	8.2	Flooded	Flooded	Flooded	Flooded	6.0	5.9	14	13	Flooded
3	009768C	003189SMH	000849ND	111	2	10.4	3.4	8.1	8.2	Flooded	Flooded	Flooded	Flooded	7.7	6.0	24322	14	Flooded
3	009770STMP	003179SMH	003180SMH	71	3	26.0	3.5	8	8	Flooded	Flooded	Flooded	Flooded	7.6	7.7	23683	24154	Flooded
3	009772STMP	007780IN	000839ND	9	1.5	3.4	3.2	8.2	8.3	Flooded	Flooded	Flooded	Flooded	6.5	5.8	9187	17	Flooded
3	009773STMP	003180SMH	003181SMH	128	3	26.2	3.7	8	8.1	Flooded	Flooded	Flooded	Flooded	7.7	6.2	24154	8273	Flooded
3	009774STMP	003181SMH	003182SMH	18	3	27.3	-3.9	8.1	8.1	Flooded	Flooded	Flooded	Flooded	6.2	6.4	8273	9988	Flooded
3	009775STMP	003184SMH	003181SMH	46	1.5	15.3	8.6	7.8	8.1	Flooded	Flooded	Flooded	Flooded	2.9	6.2	12136	8273	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	009776STMP	003177SMH	003178SMH	256	3	26.1	3.7	7.9	7.9	1.9	Flooded	-	Flooded	0.0	7.6	0	22866	Surcharged
3	009780STMP	003192SMH	003191SMH	61	2	29.3	9.2	8	8.1	Flooded	Flooded	Flooded	Flooded	5.4	5.4	30745	18092	Flooded
3	009781STMP	000543IO	003192SMH	66	2	29.1	9.1	7.9	8	Flooded	Flooded	Flooded	Flooded	5.8	5.4	128071	30745	Flooded
3	009786STMP	003193SMH	003041SMH	61	1	5.1	6.4	4.3	4.6	Flooded	Flooded	Flooded	Flooded	3.9	1.5	7363	944	Flooded
3	009788STMP	007793IN	003194SMH	32	1	3.0	8.6	2.4	3.9	Flooded	2.3	Flooded	0.2	2.4	0.0	6104	0	Flooded
3	009791STMP	000621CB	003356SMH	57	1	3.7	5.5	3.2	4.6	Flooded	Flooded	Flooded	Flooded	1.8	0.4	2062	298	Flooded
3	009792STMP	003342SMH	003356SMH	222	2	12.8	4.3	4.5	4.6	Flooded	Flooded	Flooded	Flooded	1.4	0.4	3435	298	Flooded
3	009795STMP	003397SMH	003079SMH	397	2	30.3	9.6	2.7	0	6.2	3.0	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
3	009796STMP	003356SMH	003397SMH	519	2	20.3	6.4	4.6	2.7	Flooded	6.1	Flooded	0.4	0.4	0.0	298	0	Flooded
3	009805A	003358SMH	001007ND	73	1.75	11.3	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009805B	001007ND	003359SMH	40	1.75	11.3	12.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009812STMP	003359SMH	003360SMH	58	1.5	11.3	10.5	0	1.2	-	1.0	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009813STMP	003360SMH	003364SMH	29	2	39.5	12.5	1.2	0.3	1.3	0.5	-	-	0.0	0.0	0	0	Surcharged
3	009814STMP	000626CB	003363SMH	10	1.5	4.5	4.1	0	0	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009817STMP	001908SMH	001909SMH	266	2	17.4	5.5	8.6	8.6	Flooded	6.7	Flooded	0.4	8.1	0.0	48360	0	Flooded
3	009818STMP	008220IN	001910SMH	25	2	34.0	-10.6	8.2	8.4	5.9	5.2	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
3	009819STMP	002674SMH	008220IN	214	2	23.9	7.5	8.3	8.2	7.2	5.8	1.1	1.9	0.0	0.0	0	0	Insufficient Freeboard
3	009820STMP	008221IN	008220IN	31	1.25	10.2	10.8	4.5	8.2	1.8	2.9	-	1.9	0.0	0.0	0	0	Surcharged
3	009846STMP	006182IN	003385SMH	91	1	2.6	3.2	31.9	32	Flooded	Flooded	Flooded	Flooded	31.8	31.7	34055	32867	Flooded
3	009847STMP	003394SMH	003385SMH	127	1.25	5.8	4.6	31.9	32	Flooded	Flooded	Flooded	Flooded	27.2	31.7	20914	32867	Flooded
3	009851STMP	003353SMH	003354SMH	128	1.5	5.6	3.1	4.5	4.5	Flooded	Flooded	Flooded	Flooded	3.7	2.0	5720	1875	Flooded
3	009852STMP	0001031ND	003361SMH	855	2.5	22.3	16.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	009863STMP	007989IN	003446SMH	33	1	5.1	8.9	3.8	8.3	2.4	3.7	0.6	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009864STMP	007990IN	007989IN	41	1	5.1	6.5	1.8	3.8	Flooded	1.7	Flooded	0.6	1.6	0.0	6389	0	Flooded
3	009865STMP	001909SMH	003446SMH	23	2.25	17.6	4.4	8.6	8.3	6.4	6.4	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	009866STMP	003446SMH	003447SMH	101	2.25	17.5	4.4	8.3	8.7	6.5	Flooded	0.5	Flooded	0.0	5.7	0	19864	Insufficient Freeboard
3	009867STMP	003447SMH	003051SMH	55	2.25	18.4	4.5	8.7	8.7	Flooded	Flooded	Flooded	Flooded	5.7	7.8	19864	52716	Flooded
3	009868STMP	007991IN	003447SMH	115	1.25	4.6	3.7	8.3	8.7	Flooded	Flooded	Flooded	Flooded	3.4	5.7	2319	19864	Flooded
3	009869A	003051SMH	000802ND	374	2.25	26.5	6.6	8.7	8.6	Flooded	Flooded	Flooded	Flooded	7.8	7.8	52716	45	Flooded
3	009869B	000802ND	003339SMH	6	2.25	28.6	7.1	8.6	8.8	Flooded	Flooded	Flooded	Flooded	7.8	8.4	45	114434	Flooded
3	009952STMP	007848IN	003209SMH	119	1	5.3	7.4	0.4	1.4	Flooded	2.0	Flooded	-	0.3	0.0	308	0	Flooded
3	009953STMP	003209SMH	003210SMH	63	1	5.3	6.7	1.4	2	2.8	2.1	-	0.7	0.0	0.0	0	0	Surcharged
3	009954STMP	003210SMH	003427SMH	78	1.5	22.1	18.1	2	2.6	2.2	Flooded	0.7	Flooded	0.0	2.6	0	15139	Insufficient Freeboard
3	009958A	003427SMH	000995ND	317	1.5	23.6	13.0	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.6	1.4	15139	13	Flooded
3	009958B	000995ND	003212SMH	19	1.5	25.1	14.0	2.7	2.7	Flooded	Flooded	Flooded	Flooded	1.4	1.3	13	7256	Flooded
3	009959STMP	003211SMH	003427SMH	55	1	6.0	13.1	2.2	2.6	Flooded	Flooded	Flooded	Flooded	0.7	2.6	1868	15139	Flooded
3	010078A	003122SMH	000805ND	28	5 x 10	421.8	11.5	3.8	4.4	Flooded	Flooded	Flooded	Flooded	2.9	0.9	76564	53	Flooded
3	010078B	000808ND	003166SMH	27	5 x 10	444.9	8.9	5.3	5.5	Flooded	Flooded	Flooded	Flooded	0.8	0.8	64	2209	Flooded
3	010078C	000807ND	000806ND	19	5 x 10	420.9	10.1	4.5	4.6	Flooded	Flooded	Flooded	Flooded	0.9	0.9	91	112	Flooded
3	010078D	000806ND	000808ND	132	5 x 10	420.6	9.4	4.6	5.3	Flooded	Flooded	Flooded	Flooded	0.9	0.8	112	64	Flooded
3	010078E	000805ND	000807ND	28	5 x 10	421.0	10.8	4.4	4.5	Flooded	Flooded	Flooded	Flooded	0.9	0.9	53	91	Flooded
3	010079A	003166SMH	000809ND	103	5 x 10	445.2	-8.9	5.5	4.9	Flooded	Flooded	Flooded	Flooded	0.8	2.8	2209	2118	Flooded
3	010080STMP	003165SMH	003122SMH	158	5 x 10	392.5	10.5	3.8	3.8	Flooded	Flooded	Flooded	Flooded	2.6	2.9	45776	76564	Flooded
3	010085STMP	003207SMH	003210SMH	210	1.5	17.1	19.2	0	2	-	1.9	-	0.7	0.0	0.0	0	0	Sufficient Capacity
3	010086STMP	003208SMH	003207SMH	23	1.5	17.1	14.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010087STMP	003194SMH	000856ND	46	1	3.0	3.7	3.9	4.7	4.8	4.9	0.2	1.1	0.0	0.0	0	0	Insufficient Freeboard
3	010088A	003041SMH	000856ND	22	1	5.1	6.4	4.6	4.7	Flooded	4.9	Flooded	1.1	1.5	0.0	944	0	Flooded
3	010088B	000856ND	003190SMH	130	1	5.9	7.3	4.7	4	4.9	2.7	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
3	010133A	003215SMH	000888ND	82	2.5	21.8	4.4	8.1	8.1	Flooded	Flooded	Flooded	Flooded	6.5	0.9	27160	1	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010133B	000889ND	003392SMH	23	2.5	24.6	5.0	8.1	8.1	Flooded	Flooded	Flooded	Flooded	5.9	6.6	37	43683	Flooded
3	010133C	000888ND	000848ND	64	2.5	25.1	5.1	8.1	8.1	Flooded	Flooded	Flooded	Flooded	0.9	5.4	1	25	Flooded
3	010133D	000848ND	000889ND	195	2.5	24.7	5.0	8.1	8.1	Flooded	Flooded	Flooded	Flooded	5.4	5.9	25	37	Flooded
3	010134STMP	003216SMH	003393SMH	364	2.5	24.8	5.0	8	7.9	Flooded	Flooded	Flooded	Flooded	6.1	6.1	28977	50538	Flooded
3	010139STMP	006178IN	000915ND	12	1	5.8	7.2	11.3	6	Flooded	Flooded	Flooded	Flooded	7.5	3.7	62397	788	Flooded
3	010140STMP	001001ND	003218SMH	118	3.25 x 5	61.8	-5.3	6.3	5.8	1.4	RIM	-	RIM	0.0	0.0	0	0	Surcharged
3	010226STMP	006183IN	003385SMH	72	1.25	2.2	2.9	31.8	32	Flooded	Flooded	Flooded	Flooded	31.7	31.7	33474	32867	Flooded
3	010271STMP	003389SMH	003401SMH	175	2.5	34.3	6.9	7.8	7	Flooded	Flooded	Flooded	Flooded	3.6	2.6	19855	10963	Flooded
3	010272STMP	003390SMH	003400SMH	175	2.5	33.2	6.7	8.2	7.8	Flooded	Flooded	Flooded	Flooded	3.7	2.7	20958	10284	Flooded
3	010273STMP	000562CB	000899ND	8	1.5	8.2	4.6	5	6.7	Flooded	Flooded	Flooded	Flooded	4.0	3.9	9846	52	Flooded
3	010279STMP	000564CB	003394SMH	8	1	3.6	4.7	31.9	31.9	Flooded	Flooded	Flooded	Flooded	27.1	27.2	27159	20914	Flooded
3	010280STMP	007862IN	000564CB	26	0.833	5.2	9.4	29.1	31.9	Flooded	Flooded	Flooded	Flooded	26.5	27.1	74949	27159	Flooded
3	010282STMP	000566CB	003428SMH	38	1	2.7	3.4	30.3	31.9	Flooded	Flooded	Flooded	Flooded	16.6	20.4	8238	11940	Flooded
3	010286STMP	003428SMH	003394SMH	47	1.25	5.9	4.7	31.9	31.9	Flooded	Flooded	Flooded	Flooded	20.4	27.2	11940	20914	Flooded
3	010288STMP	007867IN	003429SMH	135	0.833	2.7	4.9	3.8	4.2	Flooded	1.8	Flooded	0.2	2.7	0.0	6544	0	Flooded
3	010289STMP	003392SMH	003390SMH	381	2.5	27.8	5.6	8.1	8.2	Flooded	Flooded	Flooded	Flooded	6.6	3.7	43683	20958	Flooded
3	010290STMP	003393SMH	003389SMH	381	2.5	29.1	5.9	7.9	7.8	Flooded	Flooded	Flooded	Flooded	6.1	3.6	50538	19855	Flooded
3	010291A	006188IN	000901ND	264	2	13.5	4.3	5.2	6.5	Flooded	Flooded	Flooded	Flooded	5.1	3.9	53648	52	Flooded
3	010291B	000901ND	000900ND	23	2	14.4	4.6	6.5	6.5	Flooded	Flooded	Flooded	Flooded	3.9	3.9	52	46	Flooded
3	010291C	000900ND	000899ND	30	2	17.6	5.6	6.5	6.7	Flooded	Flooded	Flooded	Flooded	3.9	3.9	46	52	Flooded
3	010291D	000899ND	003395SMH	151	2	19.0	6.0	6.7	8	Flooded	Flooded	Flooded	Flooded	3.9	3.6	52	21334	Flooded
3	010292STMP	004007SMH	003388SMH	233	2	15.5	4.9	7.1	8	Flooded	Flooded	Flooded	Flooded	4.0	3.2	22629	9784	Flooded
3	010293A	003388SMH	000916ND	6	2	18.5	5.8	8	7.9	Flooded	Flooded	Flooded	Flooded	3.2	3.2	9784	2380	Flooded
3	010293B	000916ND	003402SMH	89	2	22.8	7.2	7.9	3.4	Flooded	Flooded	Flooded	Flooded	3.2	1.5	2380	3260	Flooded
3	010296A	003396SMH	000917ND	31	1.5	5.8	5.3	2.9	3.2	Flooded	Flooded	Flooded	Flooded	1.3	1.0	1286	29	Flooded
3	010296B	000917ND	003397SMH	220	1.5	5.0	3.7	3.2	2.7	Flooded	6.3	Flooded	0.4	1.0	0.0	29	0	Flooded
3	010299STMP	006240IN	003334SMH	166	1.25	7.0	5.6	8	7.6	Flooded	Flooded	Flooded	Flooded	7.6	1.1	68458	1231	Flooded
3	010301A	003335SMH	000991ND	90	3.25 x 5	48.3	5.6	4	6	0.7	0.9	0.0	0.0	0.0	0.0	0	0	Insufficient Freeboard
3	010301B	000991ND	003332SMH	85	3.25 x 5	55.5	5.2	6	6.2	0.9	RIM	0.0	RIM	0.0	0.0	0	0	Insufficient Freeboard
3	010302STMP	003336SMH	003335SMH	7	2.25	48.2	-12.0	11.2	4	Flooded	3.4	Flooded	0.0	6.7	0.0	23799	0	Flooded
3	010303STMP	003337SMH	003336SMH	39	2.25	45.6	11.4	8.8	11.2	Flooded	Flooded	Flooded	Flooded	8.3	6.7	73073	23799	Flooded
3	010306STMP	000607CB	003337SMH	5	1	3.0	4.0	8.7	8.8	Flooded	Flooded	Flooded	Flooded	6.7	8.3	13313	73073	Flooded
3	010307STMP	006239IN	003335SMH	45	1	4.7	6.0	3.1	4	Flooded	1.7	Flooded	0.0	1.9	0.0	8877	0	Flooded
3	010308STMP	003338SMH	003335SMH	147	1	4.0	4.9	6.4	4	Flooded	4.7	Flooded	0.0	0.3	0.0	252	0	Flooded
3	010309STMP	007929IN	000608CB	108	1.25	9.8	9.7	3	3.1	Flooded	2.5	Flooded	0.3	3.0	0.0	21499	0	Flooded
3	010310STMP	006593IN	007929IN	175	1.25	5.1	4.1	2.8	3	Flooded	Flooded	Flooded	Flooded	2.2	3.0	6327	21499	Flooded
3	010331STMP	001992SMH	003339SMH	145	2.25	25.5	6.3	8.6	8.8	Flooded	Flooded	Flooded	Flooded	5.9	8.4	12627	114434	Flooded
3	010332STMP	003339SMH	003337SMH	296	2.25	37.9	9.4	8.8	8.8	Flooded	Flooded	Flooded	Flooded	8.4	8.3	114434	73073	Flooded
3	010334STMP	006241IN	006240IN	80	1.25	3.2	3.3	5.8	8	Flooded	Flooded	Flooded	Flooded	4.7	7.6	4820	68458	Flooded
3	010335STMP	000608CB	006240IN	164	1.25	9.8	7.9	3.1	8	2.9	Flooded	0.3	Flooded	0.0	7.6	0	68458	Insufficient Freeboard
3	010337STMP	003434SMH	003436SMH	171	4 x 12	362.3	7.7	4.2	3.3	Flooded	Flooded	Flooded	Flooded	0.0	0.0	54	101	Flooded
3	010338STMP	003327SMH	000999ND	30	1	7.0	8.6	7.4	3.5	Flooded	Flooded	Flooded	Flooded	3.0	2.5	6762	4023	Flooded
3	010343STMP	006245IN	000996ND	58	0.833	4.8	11.9	5.4	3.6	Flooded	Flooded	Flooded	Flooded	5.3	3.0	35074	23093	Flooded
3	010347STMP	006273IN	003354SMH	29	1.25	9.3	7.5	4.4	4.5	Flooded	Flooded	Flooded	Flooded	4.1	2.0	23657	1875	Flooded
3	010371STMP	000618CB	003355SMH	9	1.25	2.9	4.6	4.1	4.5	2.3	4.0	1.6	1.6	0.0	0.0	0	0	Insufficient Freeboard
3	010372STMP	003354SMH	003355SMH	137	1.5	10.2	-5.8	4.5	4.5	Flooded	3.8	Flooded	1.6	2.0	0.0	1875	0	Flooded
3	010373STMP	003355SMH	003344SMH	52	1.5	10.7	6.1	4.5	4.5	3.8	4.1	1.6	1.6	0.0	0.0	0	0	Insufficient Freeboard
3	010380STMP	000620CB	003356SMH	28	1	6.1	7.5	3.3	4.6	Flooded	Flooded	Flooded	Flooded	2.7	0.4	6936	298	Flooded
3	010382STMP	003077SMH	003356SMH	36	1.25	6.9	6.4	4.1	4.6	4.2	Flooded	0.2	Flooded	0.0	0.4	0	298	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010398STMP	000628CB	003361SMH	19	1.25	12.1	9.8	0.1	0	2.2	-	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
3	010402STMP	003361SMH	003362SMH	30	2.5	34.5	18.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010403STMP	003362SMH	003363SMH	102	2.5	34.4	17.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404A	003363SMH	001017ND	68	3	38.9	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010404B	001017ND	003365SMH	35	3	38.9	8.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010405STMP	003364SMH	003365SMH	108	2	39.4	13.2	0.3	0	0.6	0.2	-	-	0.0	0.0	0	0	Surcharged
3	010407STMP	003365SMH	003366SMH	166	3	78.1	16.6	0	1.5	-	Flooded	-	Flooded	0.0	1.1	0	30884	Sufficient Capacity
3	010408A	003366SMH	001013ND	195	3	81.5	13.4	1.5	3.2	Flooded	Flooded	Flooded	Flooded	1.1	2.2	30884	105	Flooded
3	010408B	001013ND	003120SMH	303	3	77.6	11.4	3.2	4.2	Flooded	Flooded	Flooded	Flooded	2.2	3.3	105	148305	Flooded
3	010409A	003213SMH	001009ND	63	1.75	5.1	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010409B	001009ND	003358SMH	174	1.75	5.1	13.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010410A	003212SMH	001010ND	287	1.75	29.4	12.0	2.7	2.7	Flooded	2.3	Flooded	1.2	1.3	0.0	7256	0	Flooded
3	010410B	001010ND	003360SMH	72	1.75	29.4	12.2	2.7	1.2	2.3	1.6	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
3	010411A	007886IN	001015ND	80	1.25	9.2	7.4	3.6	4	Flooded	Flooded	Flooded	Flooded	3.3	3.0	24117	1014	Flooded
3	010411B	001015ND	000971ND	159	1.25	9.1	7.3	4	3.5	Flooded	Flooded	Flooded	Flooded	3.0	0.0	1014	23	Flooded
3	010412A	003436SMH	000980ND	15	5 x 10	364.9	8.8	3.3	3.4	Flooded	Flooded	Flooded	Flooded	0.0	1.4	101	1123	Flooded
3	010412B	000983ND	003328SMH	16	5 x 10	371.9	8.6	3.6	3.6	Flooded	Flooded	Flooded	Flooded	2.4	2.3	4330	16179	Flooded
3	010412C	000999ND	000982ND	33	5 x 10	372.5	8.9	3.5	3.5	Flooded	Flooded	Flooded	Flooded	2.5	2.4	4023	3308	Flooded
3	010412D	000982ND	000983ND	129	5 x 10	372.0	8.8	3.5	3.6	Flooded	Flooded	Flooded	Flooded	2.4	2.4	3308	4330	Flooded
3	010412E	000980ND	000999ND	130	5 x 10	360.8	8.8	3.4	3.5	Flooded	Flooded	Flooded	Flooded	1.4	2.5	1123	4023	Flooded
3	010455STMP	000639CB	000802ND	20	0.833	7.3	13.1	9	8.6	Flooded	Flooded	Flooded	Flooded	8.7	7.8	31501	45	Flooded
3	010472STMP	007748IN	000809ND	16	1.25	14.0	11.2	3.6	4.9	Flooded	Flooded	Flooded	Flooded	3.2	2.8	46084	2118	Flooded
3	010576STMP	006246IN	000996ND	36	1.25	13.1	10.4	5.8	3.6	Flooded	Flooded	Flooded	Flooded	3.3	3.0	12909	23093	Flooded
3	010578A	003328SMH	000997ND	18	5 x 10	372.3	8.7	3.6	3.6	Flooded	Flooded	Flooded	Flooded	2.3	2.2	16179	3575	Flooded
3	010578B	001004ND	003340SMH	14	5 x 10	387.0	10.0	3.6	3.6	Flooded	Flooded	Flooded	Flooded	1.9	2.3	5605	39847	Flooded
3	010578C	000997ND	000984ND	21	5 x 10	372.1	8.8	3.6	3.5	Flooded	Flooded	Flooded	Flooded	2.2	2.8	3575	10489	Flooded
3	010578D	000996ND	001004ND	151	5 x 10	386.8	9.5	3.6	3.6	Flooded	Flooded	Flooded	Flooded	3.0	1.9	23093	5605	Flooded
3	010578E	000984ND	000996ND	125	5 x 10	371.2	8.9	3.5	3.6	Flooded	Flooded	Flooded	Flooded	2.8	3.0	10489	23093	Flooded
3	010580STMP	006247IN	001004ND	16	1.25	12.6	11.2	3.4	3.6	Flooded	Flooded	Flooded	Flooded	2.9	1.9	7245	5605	Flooded
3	010581STMP	006248IN	006247IN	47	1.25	8.7	8.6	3.1	3.4	Flooded	Flooded	Flooded	Flooded	3.0	2.9	11270	7245	Flooded
3	010582STMP	007884IN	006248IN	237	1.25	6.6	5.6	3	3.1	Flooded	Flooded	Flooded	Flooded	2.2	3.0	13205	11270	Flooded
3	010584A	003340SMH	001003ND	15	5 x 10	387.0	10.2	3.6	3.6	Flooded	Flooded	Flooded	Flooded	2.3	1.6	39847	6045	Flooded
3	010584B	001003ND	006250IN	69	5 x 10	387.0	10.3	3.6	3.6	Flooded	Flooded	Flooded	Flooded	1.6	2.4	6045	46919	Flooded
3	010586A	006250IN	000998ND	72	5 x 10	387.1	10.4	3.6	3.7	Flooded	Flooded	Flooded	Flooded	2.4	1.4	46919	12690	Flooded
3	010586B	000998ND	003165SMH	41	5 x 10	391.7	10.4	3.7	3.8	Flooded	Flooded	Flooded	Flooded	1.4	2.6	12690	45776	Flooded
3	010596STMP	003341SMH	003342SMH	47	2	12.7	4.0	4.5	4.5	5.2	Flooded	0.1	Flooded	0.0	1.4	0	3435	Insufficient Freeboard
3	010597STMP	003343SMH	003341SMH	274	1.75	11.2	5.4	4.4	4.5	3.9	5.5	1.6	0.1	0.0	0.0	0	0	Insufficient Freeboard
3	010601STMP	003344SMH	003343SMH	82	1.75	10.9	4.5	4.5	4.4	3.8	3.9	1.6	1.6	0.0	0.0	0	0	Insufficient Freeboard
3	010602STMP	003345SMH	003344SMH	146	1.25	3.0	5.0	3	4.5	Flooded	4.2	Flooded	1.6	1.6	0.0	2410	0	Flooded
3	010603STMP	006260IN	003345SMH	17	1	3.0	6.4	2.9	3	Flooded	Flooded	Flooded	Flooded	2.1	1.6	3815	2410	Flooded
3	010605STMP	003347SMH	003214SMH	346	3.5	41.3	5.1	7.2	7.1	2.1	2.2	-	-	0.0	0.0	0	0	Surcharged
3	010606STMP	006261IN	001001ND	125	2	11.6	8.3	0	6.3	-	4.4	-	-	0.0	0.0	0	0	Sufficient Capacity
3	010613STMP	003348SMH	003347SMH	300	3.5	40.7	6.4	5.8	7.2	1.3	2.1	-	-	0.0	0.0	0	0	Surcharged
3	010614STMP	003350SMH	003348SMH	73	3	41.1	9.2	0	5.8	1.0	1.8	-	-	0.0	0.0	0	0	Surcharged
3	010617STMP	003351SMH	003350SMH	40	2.5	39.4	9.4	6	0	1.5	1.5	1.3	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618A	003352SMH	001000ND	29	2	39.4	12.5	8.7	8.3	3.1	2.5	0.3	-	0.0	0.0	0	0	Insufficient Freeboard
3	010618B	001000ND	003351SMH	11	2	39.4	12.5	8.3	6	2.6	2.0	-	1.3	0.0	0.0	0	0	Surcharged
3	010879STMP	008268IN	008269IN	32	1.25	4.0	5.7	0.9	1	3.6	4.0	0.5	0.2	0.0	0.0	0	0	Insufficient Freeboard
3	010880STMP	008273IN	008269IN	176	2	10.6	5.3	0.7	1	2.3	3.7	0.3	0.2	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
3	010882STMP	002692SMH	008273IN	23	1.25	9.2	7.5	0.7	0.7	2.4	2.7	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
3	010884STMP	008272IN	008273IN	58	1.25	4.8	3.8	0.8	0.7	Flooded	3.0	Flooded	0.3	0.5	0.0	1081	0	Flooded
3	011123STMP	001904SMH	001906SMH	269	1.75	12.6	5.2	8.4	8.4	Flooded	Flooded	Flooded	Flooded	4.9	8.2	20376	52126	Flooded
3	011124STMP	001905SMH	001904SMH	23	1.75	18.7	7.6	8.4	8.4	Flooded	Flooded	Flooded	Flooded	5.2	4.9	28602	20376	Flooded
3	011125STMP	001912SMH	001905SMH	256	1.75	7.4	4.6	7.8	8.4	3.6	Flooded	1.3	Flooded	0.0	5.2	0	28602	Insufficient Freeboard
3	011130STMP	001906SMH	001908SMH	17	2	12.4	3.9	8.4	8.6	Flooded	Flooded	Flooded	Flooded	8.2	8.1	52126	48360	Flooded
3	011131STMP	008218IN	001907SMH	24	1.25	4.3	7.7	8.3	8.4	Flooded	Flooded	Flooded	Flooded	4.5	8.2	1932	53937	Flooded
3	011132STMP	008219IN	001907SMH	32	3	25.9	3.6	8.4	8.4	Flooded	Flooded	Flooded	Flooded	7.1	8.2	24409	53937	Flooded
3	011133STMP	001910SMH	008219IN	245	3	34.1	4.8	8.4	8.4	4.3	Flooded	-	Flooded	0.0	7.1	0	24409	Surcharged
3	011134STMP	001907SMH	001908SMH	18	2	16.2	5.1	8.4	8.6	Flooded	Flooded	Flooded	Flooded	8.2	8.1	53937	48360	Flooded
3	011144STMP	008256IN	008255IN	59	2	16.8	6.4	1	0.9	6.6	6.9	0.6	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	011145STMP	008269IN	008256IN	211	2	12.5	6.1	1	1	4.0	6.4	0.2	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	011146STMP	008257IN	008256IN	28	1.25	7.9	9.2	0.8	1	3.1	3.9	0.5	0.6	0.0	0.0	0	0	Insufficient Freeboard
3	011517STMP	008237IN	008236IN	26	1.25	3.2	8.4	0.5	1	1.2	3.1	-	0.9	0.0	0.0	0	0	Surcharged
3	011535STMP	001942SMH	001992SMH	158	2	22.8	7.1	8.5	8.6	Flooded	Flooded	Flooded	Flooded	2.9	5.9	3807	12627	Flooded
3	011536STMP	006582IN	006593IN	27	1.5	10.6	-6.0	2.9	2.8	Flooded	Flooded	Flooded	Flooded	2.0	2.2	3776	6327	Flooded
3	011633STMP	001961SMH	001942SMH	245	2	19.6	6.1	8.3	8.5	Flooded	Flooded	Flooded	Flooded	3.7	2.9	18142	3807	Flooded
3	011634STMP	001975SMH	001947SMH	263	2	18.1	5.9	4.4	4.2	Flooded	Flooded	Flooded	Flooded	2.8	3.7	10081	17664	Flooded
3	011635STMP	001981SMH	001975SMH	251	2	13.0	4.7	3.8	4.4	Flooded	Flooded	Flooded	Flooded	2.3	2.8	11866	10081	Flooded
3	011637STMP	001982SMH	001981SMH	15	2	23.6	7.4	3.8	3.8	Flooded	Flooded	Flooded	Flooded	1.7	2.3	6889	11866	Flooded
3	011638STMP	006587IN	001982SMH	39	2	17.6	5.5	4.1	3.8	Flooded	Flooded	Flooded	Flooded	2.0	1.7	7908	6889	Flooded
3	011640STMP	001984SMH	006587IN	210	2	10.3	4.1	3.4	4.1	Flooded	Flooded	Flooded	Flooded	0.8	2.0	1000	7908	Flooded
3	011831A	001913SMH	001110ND	63	1.5	8.2	4.6	8	8.1	4.4	Flooded	0.5	Flooded	0.0	1.0	0	11	Insufficient Freeboard
3	011831B	001110ND	001911SMH	68	1.5	7.4	4.1	8.1	8.1	Flooded	4.0	Flooded	0.9	1.0	0.0	11	0	Flooded
3	011833STMP	001911SMH	001912SMH	25	1.5	7.4	-4.1	8.1	7.8	4.0	3.9	0.9	1.3	0.0	0.0	0	0	Insufficient Freeboard
3	011834STMP	001914SMH	001913SMH	11	1.5	8.2	-4.6	8.1	8	4.9	4.4	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
3	011835STMP	002673SMH	001914SMH	233	1.5	8.2	4.6	6.8	8.1	4.9	4.7	1.1	0.4	0.0	0.0	0	0	Insufficient Freeboard
3	011911STMP	002693SMH	002692SMH	25	1.25	9.4	-7.5	0.7	0.7	Flooded	2.4	Flooded	0.1	0.4	0.0	685	0	Flooded
3	011968STMP	001920SMH	002673SMH	38	1.25	8.2	7.2	4.5	6.8	4.7	4.8	0.5	1.1	0.0	0.0	0	0	Insufficient Freeboard
3	011971STMP	008235IN	002674SMH	46	1.25	4.4	8.3	0.6	8.3	2.9	5.6	-	1.1	0.0	0.0	0	0	Surcharged
3	011972STMP	008236IN	002674SMH	56	2	19.5	6.1	1	8.3	7.0	7.1	0.9	1.1	0.0	0.0	0	0	Insufficient Freeboard
3	011973STMP	008255IN	008236IN	211	2	16.7	5.2	0.9	1	7.1	7.0	0.6	0.9	0.0	0.0	0	0	Insufficient Freeboard
3	012028STMP	001946SMH	001947SMH	123	1.5	7.4	5.6	3.5	4.2	1.5	Flooded	0.0	Flooded	0.0	3.7	0	17664	Insufficient Freeboard
3	012230STMP	000140CB	001975SMH	22	0.667	4.4	12.0	6.4	4.4	Flooded	Flooded	Flooded	Flooded	6.2	2.8	36781	10081	Flooded
3	012234STMP	000142CB	001975SMH	32	0.833	3.3	8.1	3.5	4.4	Flooded	Flooded	Flooded	Flooded	2.7	2.8	2097	10081	Flooded
3	014005STMP	001947SMH	001961SMH	30	2	21.3	6.7	4.2	8.3	Flooded	Flooded	Flooded	Flooded	3.7	3.7	17664	18142	Flooded
3	014015STMP	003395SMH	002916ND	55	2	24.3	7.7	8	3.6	Flooded	Flooded	Flooded	Flooded	3.6	0.0	21334	631	Flooded
3	014039A	007779IN	000839ND	56	2	7.1	-2.6	8.3	8.3	Flooded	Flooded	Flooded	Flooded	7.9	5.8	36386	17	Flooded
3	014039B	000839ND	003183SMH	151	2	7.2	-2.5	8.3	8.3	Flooded	Flooded	Flooded	Flooded	5.8	5.7	17	4267	Flooded
3	014927STMP	003171SMH	002908ND	100	1	6.0	8.3	6	9.1	Flooded	Flooded	Flooded	Flooded	5.2	5.0	34000	14	Flooded
4	007729STMP	000723ND	002632SMH	54	1.25	16.7	15.2	0.5	0.8	2.6	Flooded	0.3	Flooded	0.0	0.5	0	2416	Insufficient Freeboard
4	007730STMP	000722ND	002632SMH	33	1.25	20.1	16.2	1.6	0.8	Flooded	Flooded	Flooded	Flooded	0.5	0.5	13	2416	Flooded
4	007736STMP	005620IN	002633SMH	40	1	6.5	11.1	2.9	2.9	Flooded	Flooded	Flooded	Flooded	2.6	2.9	12171	24727	Flooded
4	007737STMP	005621IN	005620IN	100	0.833	7.1	14.7	0.6	2.9	Flooded	Flooded	Flooded	Flooded	0.6	2.6	1466	12171	Flooded
4	007740STMP	005623IN	002635SMH	29	1.25	12.5	10.1	3.3	1.2	Flooded	Flooded	Flooded	Flooded	2.8	0.5	13616	368	Flooded
4	007741STMP	002635SMH	002638SMH	128	2	41.2	14.4	1.2	1.5	Flooded	Flooded	Flooded	Flooded	0.5	1.0	368	5315	Flooded
4	008186STMP	000714ND	002615SMH	142	1.5	13.9	15.9	0	0.5	-	1.8	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008481STMP	007630IN	000504IO	56	1.25	14.7	12.3	0.7	0	Flooded	-	Flooded	-	0.6	0.0	2520	0	Flooded
4	008482STMP	007631IN	007632IN	26	0.833	5.2	10.0	2	2.1	Flooded	Flooded	Flooded	Flooded	2.0	0.2	9096	30	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	008484STMP	007632IN	007633IN	10	0.833	5.2	9.5	2.1	2.1	Flooded	2.4	Flooded	0.8	0.2	0.0	30	0	Flooded
4	008485STMP	007633IN	000397CB	6	0.833	5.2	9.7	2.1	0.6	2.4	2.0	0.8	0.9	0.0	0.0	0	0	Insufficient Freeboard
4	008486STMP	000397CB	000714ND	33	1	13.9	17.9	0.6	0	1.8	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
4	008489STMP	002615SMH	002616SMH	65	1.5	13.9	11.8	0.5	0.6	1.9	Flooded	-	Flooded	0.0	0.4	0	853	Surcharged
4	008491STMP	002616SMH	000722ND	99	1.5	20.5	11.6	0.6	1.6	Flooded	Flooded	Flooded	Flooded	0.4	0.5	853	13	Flooded
4	008495A	000398CB	000715ND	9	1.5	17.2	9.6	0	0.1	0.8	0.1	-	-	0.0	0.0	0	0	Surcharged
4	008495B	000715ND	007639IN	14	1.5	17.1	9.7	0.1	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
4	008496STMP	007639IN	002617SMH	9	1.5	17.2	15.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	008759STMP	000584CB	003410SMH	31	1.25	8.2	8.0	3.6	3.6	Flooded	Flooded	Flooded	Flooded	3.4	3.0	7485	6313	Flooded
4	008836STMP	002629SMH	002630SMH	36	1	13.2	16.2	0.9	0.8	Flooded	4.7	Flooded	1.0	0.6	0.0	4069	0	Flooded
4	008838STMP	000412CB	000727ND	19	1	4.5	8.8	0.5	0.9	3.4	5.2	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	008839STMP	005597IN	000412CB	17	1	4.5	10.1	0.2	0.5	0.4	1.6	1.1	0.1	0.0	0.0	0	0	Insufficient Freeboard
4	008842STMP	005600IN	002631SMH	99	1.25	15.6	12.3	2.7	2.9	Flooded	Flooded	Flooded	Flooded	1.7	2.9	20483	23910	Flooded
4	008871STMP	005616IN	002635SMH	108	1.25	2.9	11.4	0	1.2	-	Flooded	-	Flooded	0.0	0.5	0	368	Sufficient Capacity
4	008908STMP	003357SMH	003435SMH	132	2	8.2	5.3	0.6	1.4	1.8	Flooded	-	Flooded	0.0	0.2	0	254	Surcharged
4	008919STMP	007898IN	000954ND	29	0.833	2.8	8.3	3.3	4	Flooded	Flooded	Flooded	Flooded	3.2	3.4	4679	6816	Flooded
4	008922STMP	000401CB	002618SMH	33	1	8.6	12.9	0.6	0.9	3.0	Flooded	0.0	Flooded	0.0	0.3	0	835	Insufficient Freeboard
4	008926A	002618SMH	000737ND	39	1.5	21.9	12.2	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.3	0.6	835	10	Flooded
4	008926B	000737ND	002619SMH	28	1.5	20.2	11.3	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.6	0.6	10	1730	Flooded
4	009103STMP	002617SMH	002618SMH	226	1.5	17.1	11.7	0	0.9	-	Flooded	-	Flooded	0.0	0.3	0	835	Sufficient Capacity
4	009120A	002619SMH	000717ND	17	1.75	25.6	10.5	0.9	0.9	Flooded	Flooded	Flooded	Flooded	0.6	0.6	1730	14	Flooded
4	009120B	000718ND	002620SMH	146	1.75	29.6	12.2	1	0	2.7	-	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
4	009120C	000717ND	000718ND	57	1.75	25.6	10.5	0.9	1	Flooded	2.7	Flooded	0.6	0.6	0.0	14	0	Flooded
4	009121A	000403CB	000716ND	21	1.25	6.5	5.2	0.9	1	3.8	Flooded	0.1	Flooded	0.0	0.6	0	8	Insufficient Freeboard
4	009121B	000716ND	002619SMH	15	1.25	6.5	5.2	1	0.9	Flooded	Flooded	Flooded	Flooded	0.6	0.6	8	1730	Flooded
4	009128A	002620SMH	000720ND	68	2	29.6	19.0	0	0.5	-	1.8	-	1.9	0.0	0.0	0	0	Sufficient Capacity
4	009128B	000720ND	002622SMH	88	2	61.7	23.0	0.5	0.9	1.8	Flooded	1.9	Flooded	0.0	0.8	0	15520	Insufficient Freeboard
4	009129STMP	002621SMH	000720ND	75	1.75	32.2	23.7	0	0.5	-	2.1	-	1.9	0.0	0.0	0	0	Sufficient Capacity
4	009130STMP	002626SMH	002621SMH	90	1.5	32.2	17.8	1.2	0	5.4	-	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
4	009131STMP	002622SMH	002623SMH	139	2	56.9	19.7	0.9	1.1	Flooded	Flooded	Flooded	Flooded	0.8	0.4	15520	607	Flooded
4	009132STMP	002623SMH	002624SMH	80	2	56.6	19.5	1.1	1.3	Flooded	Flooded	Flooded	Flooded	0.4	1.2	607	19915	Flooded
4	009134STMP	002624SMH	002625SMH	173	2	50.2	20.2	1.3	1.7	Flooded	Flooded	Flooded	Flooded	1.2	1.5	19915	20829	Flooded
4	009135STMP	002625SMH	007940IN	593	2	46.1	14.3	1.7	0	Flooded	6.8	Flooded	-	1.5	0.0	20829	0	Flooded
4	009136STMP	002627SMH	002626SMH	35	1.5	28.3	16.2	0.6	1.2	Flooded	5.1	Flooded	0.5	0.3	0.0	249	0	Flooded
4	009137STMP	000407CB	002626SMH	17	1.25	4.9	7.2	0.6	1.2	3.4	5.6	0.4	0.5	0.0	0.0	0	0	Insufficient Freeboard
4	009138STMP	005578IN	000407CB	27	1	4.8	6.0	0.5	0.6	2.8	2.6	0.1	0.4	0.0	0.0	0	0	Insufficient Freeboard
4	009143STMP	002628SMH	002627SMH	361	1.5	21.5	14.2	0.4	0.6	2.1	Flooded	-	Flooded	0.0	0.3	0	249	Surcharged
4	009146STMP	000409CB	002628SMH	25	1	3.5	11.5	0	0.4	-	1.7	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009154STMP	000410CB	000719ND	18	1	5.0	7.4	0.5	1.1	Flooded	4.8	Flooded	0.6	0.1	0.0	32	0	Flooded
4	009155A	002630SMH	000727ND	25	1.25	13.2	10.7	0.8	0.9	4.6	5.0	1.0	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009155B	000727ND	000719ND	121	1.25	14.5	12.0	0.9	1.1	5.0	4.5	0.3	0.6	0.0	0.0	0	0	Insufficient Freeboard
4	009155C	000719ND	002628SMH	78	1.25	18.9	15.1	1.1	0.4	4.5	1.4	0.6	-	0.0	0.0	0	0	Insufficient Freeboard
4	009159A	002632SMH	000729ND	215	1.75	36.8	15.8	0.8	1.3	Flooded	Flooded	Flooded	Flooded	0.5	0.7	2416	28	Flooded
4	009159B	000729ND	002635SMH	60	1.75	33.2	14.9	1.3	1.2	Flooded	Flooded	Flooded	Flooded	0.7	0.5	28	368	Flooded
4	009161STMP	002638SMH	002639SMH	88	2	47.4	19.1	1.5	1.6	Flooded	5.7	Flooded	0.3	1.0	0.0	5315	0	Flooded
4	009162STMP	005630IN	002638SMH	49	1.25	15.9	12.9	1.8	1.5	2.9	Flooded	0.2	Flooded	0.0	1.0	0	5315	Insufficient Freeboard
4	009165STMP	005633IN	000730ND	12	1.25	7.6	11.7	0.5	1.7	2.9	8.2	0.3	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	009166STMP	005634IN	005633IN	28	1.25	7.6	9.0	0.6	0.5	1.8	2.4	0.1	0.3	0.0	0.0	0	0	Insufficient Freeboard
4	009170A	002640SMH	0001041ND	80	2	52.7	16.5	1.8	1.9	Flooded	Flooded	Flooded	Flooded	1.3	0.9	4730	4	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	009170B	0001041ND	006640IN	371	2	55.9	17.4	1.9	0	Flooded	-	Flooded	-	0.9	0.0	4	0	Flooded
4	009171A	002639SMH	000730ND	127	2	47.4	17.5	1.6	1.7	5.8	7.4	0.3	0.2	0.0	0.0	0	0	Insufficient Freeboard
4	009171B	000730ND	002640SMH	348	2	51.3	17.6	1.7	1.8	7.4	Flooded	0.2	Flooded	0.0	1.3	0	4730	Insufficient Freeboard
4	009396STMP	002633SMH	005623IN	286	1.25	9.9	7.9	2.9	3.3	Flooded	Flooded	Flooded	Flooded	2.9	2.8	24727	13616	Flooded
4	009494A	003413SMH	000955ND	86	1.75	8.9	3.7	6.1	6.8	Flooded	Flooded	Flooded	Flooded	5.1	5.0	17396	87	Flooded
4	009494B	000955ND	003412SMH	103	1.75	14.9	6.2	6.8	4	Flooded	Flooded	Flooded	Flooded	5.0	3.7	87	79697	Flooded
4	009498STMP	000973ND	003414SMH	250	2	8.1	4.3	5.1	6.3	1.1	Flooded	0.1	Flooded	0.0	5.3	0	16124	Insufficient Freeboard
4	009499STMP	003414SMH	003416SMH	70	2	8.2	2.7	6.3	6.6	Flooded	Flooded	Flooded	Flooded	5.3	5.4	16124	23681	Flooded
4	009503STMP	003415SMH	003416SMH	47	1.25	10.6	8.6	6.7	6.6	Flooded	Flooded	Flooded	Flooded	5.1	5.4	8383	23681	Flooded
4	009504A	003416SMH	000956ND	63	2	16.1	5.1	6.6	6.7	Flooded	Flooded	Flooded	Flooded	5.4	5.4	23681	184	Flooded
4	009504B	000956ND	003417SMH	33	2	25.8	8.2	6.7	6.7	Flooded	Flooded	Flooded	Flooded	5.4	4.0	184	11627	Flooded
4	009508STMP	003417SMH	000966ND	24	2	26.4	8.3	6.7	3.8	Flooded	Flooded	Flooded	Flooded	4.0	2.4	11627	25	Flooded
4	009509STMP	003420SMH	003418SMH	108	2.5	24.6	5.0	4.6	3.8	Flooded	Flooded	Flooded	Flooded	3.5	3.6	12091	32249	Flooded
4	009510STMP	003419SMH	006189IN	4	2	23.6	-7.4	5.3	4.3	Flooded	Flooded	Flooded	Flooded	3.7	3.5	23954	9468	Flooded
4	009511STMP	006197IN	000970ND	16	0.833	7.6	13.7	1.7	1.7	Flooded	0.6	Flooded	-	1.7	0.0	8928	0	Flooded
4	009514STMP	000594CB	003425SMH	52	1.25	4.2	-3.4	0	0	0.6	0.1	-	-	0.0	0.0	0	0	Surcharged
4	009656STMP	002017SMH	002018SMH	5	2	68.8	21.7	2.9	2.4	Flooded	Flooded	Flooded	Flooded	2.0	2.0	11254	9958	Flooded
4	009658A	002019SMH	002907ND	30	3	66.4	16.6	0.3	1.7	1.0	Flooded	0.8	Flooded	0.0	1.0	0	10	Insufficient Freeboard
4	009658B	002907ND	002018SMH	185	3	124.4	19.2	1.7	2.4	Flooded	Flooded	Flooded	Flooded	1.0	2.0	10	9958	Flooded
4	009659A	006640IN	001171ND	20	2	28.9	13.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009659B	001171ND	006645IN	28	2	28.9	12.7	0	0.5	-	0.4	-	-	0.0	0.0	0	0	Sufficient Capacity
4	009660STMP	006640IN	002019SMH	57	2	34.5	16.3	0	0.3	-	0.2	-	0.8	0.0	0.0	0	0	Sufficient Capacity
4	009688A	003412SMH	000954ND	19	4 x 7	219.6	7.8	4	4	Flooded	Flooded	Flooded	Flooded	3.7	3.4	79697	6816	Flooded
4	009688B	000954ND	000936ND	137	4 x 7	219.4	7.8	4	3.8	Flooded	Flooded	Flooded	Flooded	3.4	0.9	6816	2010	Flooded
4	009689STMP	000587CB	003413SMH	36	1.25	6.2	-5.0	5.7	6.1	Flooded	Flooded	Flooded	Flooded	4.8	5.1	9294	17396	Flooded
4	009697STMP	006201IN	000973ND	49	1	2.4	3.8	5.3	5.1	Flooded	2.1	Flooded	0.1	4.7	0.0	7120	0	Flooded
4	009698STMP	003426SMH	000973ND	46	1.5	6.6	4.6	5.2	5.1	Flooded	1.6	Flooded	0.1	3.7	0.0	5357	0	Flooded
4	009699STMP	006202IN	003426SMH	16	1.25	7.6	6.3	5	5.2	Flooded	Flooded	Flooded	Flooded	3.0	3.7	3673	5357	Flooded
4	009700STMP	006204IN	006202IN	60	1.25	10.6	8.5	4.7	5	2.3	Flooded	0.7	Flooded	0.0	3.0	0	3673	Insufficient Freeboard
4	009802STMP	007910IN	003357SMH	141	1.25	8.2	8.3	0	0.6	0.7	2.0	-	-	0.0	0.0	0	0	Surcharged
4	009904STMP	006594IN	001148ND	31	1.25	5.9	4.7	8.2	8.5	Flooded	Flooded	Flooded	Flooded	7.7	7.5	49507	40	Flooded
4	009996B	001152ND	001174ND	45	1	10.3	12.8	11.1	8.2	Flooded	Flooded	Flooded	Flooded	9.6	7.9	37	80	Flooded
4	010033STMP	006189IN	000966ND	15	2	24.2	7.6	4.3	3.8	Flooded	Flooded	Flooded	Flooded	3.5	2.4	9468	25	Flooded
4	010034A	003418SMH	000966ND	26	4 x 7	165.1	6.0	3.8	3.8	Flooded	Flooded	Flooded	Flooded	3.6	2.4	32249	25	Flooded
4	010034B	000966ND	003412SMH	168	4 x 7	176.6	6.9	3.8	4	Flooded	Flooded	Flooded	Flooded	2.4	3.7	25	79697	Flooded
4	010035STMP	006194IN	003420SMH	184	2.25	15.3	6.1	0	4.6	0.8	Flooded	1.8	Flooded	0.0	3.5	0	12091	Insufficient Freeboard
4	010036STMP	003421SMH	003418SMH	225	4 x 7	170.8	6.3	3.6	3.8	Flooded	Flooded	Flooded	Flooded	2.7	3.6	18055	32249	Flooded
4	010037STMP	001968SMH	003421SMH	78	4 x 7	260.3	-9.5	3.6	3.6	Flooded	Flooded	Flooded	Flooded	0.2	2.7	5100	18055	Flooded
4	010038STMP	006190IN	003421SMH	282	1.5	7.1	4.0	4	3.6	Flooded	Flooded	Flooded	Flooded	3.8	2.7	11817	18055	Flooded
4	010041STMP	000590CB	000968ND	16	1	3.5	8.0	1.6	4	1.8	5.6	0.6	1.1	0.0	0.0	0	0	Insufficient Freeboard
4	010046A	003423SMH	000968ND	54	2	21.8	6.8	3.8	4	Flooded	4.6	Flooded	1.1	1.4	0.0	12363	0	Flooded
4	010046B	000968ND	003419SMH	207	2	23.8	7.5	4	5.3	4.6	Flooded	1.1	Flooded	0.0	3.7	0	23954	Insufficient Freeboard
4	010047A	003435SMH	000967ND	214	2	24.4	7.7	1.4	3.8	Flooded	4.6	Flooded	0.4	0.2	0.0	254	0	Flooded
4	010047B	000967ND	003423SMH	12	2	24.3	7.6	3.8	3.8	4.8	Flooded	0.4	Flooded	0.0	1.4	0	12363	Insufficient Freeboard
4	010048STMP	003410SMH	003423SMH	206	1.25	8.1	6.5	3.6	3.8	Flooded	Flooded	Flooded	Flooded	3.0	1.4	6313	12363	Flooded
4	010050STMP	003424SMH	006194IN	10	2.25	16.5	6.1	2.8	0	0.8	0.8	1.1	1.8	0.0	0.0	0	0	Insufficient Freeboard
4	010053STMP	003425SMH	003424SMH	48	1.5	11.5	10.6	0	2.8	-	1.5	-	1.1	0.0	0.0	0	0	Sufficient Capacity
4	010054STMP	000970ND	003425SMH	13	1.25	7.6	6.0	1.7	0	0.2	-	-	-	0.0	0.0	0	0	Surcharged
4	010318A	003492SMH	0001040ND	33	2.25	58.6	14.7	2.3	2.3	1.1	0.6	0.4	1.6	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	010318B	0001040ND	004000SMH	46	2.25	58.6	14.7	2.3	0	0.9	-	1.6	1.9	0.0	0.0	0	0	Insufficient Freeboard
4	010319STMP	007939IN	003492SMH	22	2.25	58.6	14.7	2.4	2.3	Flooded	1.0	Flooded	0.4	2.1	0.0	2986	0	Flooded
4	010323STMP	003493SMH	007939IN	119	2.25	57.4	14.3	2.3	2.4	Flooded	Flooded	Flooded	Flooded	2.1	2.1	9479	2986	Flooded
4	010324STMP	003494SMH	003493SMH	174	2.25	57.9	14.4	2.3	2.3	Flooded	Flooded	Flooded	Flooded	2.3	2.1	74594	9479	Flooded
4	010326STMP	007940IN	003494SMH	10	2	83.5	26.0	0	2.3	6.8	Flooded	-	Flooded	0.0	2.3	0	74594	Surcharged
4	010349STMP	007944IN	007948IN	31	1.25	20.5	16.5	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.8	1.1	9962	1757	Flooded
4	010353STMP	007948IN	0001041ND	10	1.25	20.6	19.4	1.9	1.9	Flooded	Flooded	Flooded	Flooded	1.1	0.9	1757	4	Flooded
4	010356STMP	003441SMH	003442SMH	146	1.75	11.5	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010358STMP	002631SMH	003441SMH	129	1	11.5	14.2	2.9	0	Flooded	-	Flooded	-	2.9	0.0	23910	0	Flooded
4	010359A	003442SMH	0001042ND	110	1.75	24.0	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	010359B	0001042ND	003443SMH	16	1.75	24.0	10.3	0	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
4	010360STMP	003443SMH	002021SMH	346	2	52.7	20.8	0	0.5	-	Flooded	-	Flooded	0.0	0.4	0	4097	Sufficient Capacity
4	010361STMP	003444SMH	003443SMH	43	1.5	28.8	16.2	0.1	0	0.9	-	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
4	010366STMP	007955IN	003444SMH	26	1.5	23.8	17.7	0	0.1	-	0.6	-	1.6	0.0	0.0	0	0	Sufficient Capacity
4	010368STMP	003445SMH	007955IN	35	1.5	23.8	13.6	0	0	0.3	-	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
4	010370STMP	007958IN	003445SMH	178	1.5	23.9	17.7	0	0	-	-	-	2.0	0.0	0.0	0	0	Sufficient Capacity
4	011022STMP	000125CB	001966SMH	81	1	5.6	9.5	0.3	6.5	Flooded	Flooded	Flooded	Flooded	0.2	0.0	81	280	Flooded
4	011023STMP	006552IN	000125CB	27	1	5.8	9.2	0.2	0.3	Flooded	Flooded	Flooded	Flooded	0.1	0.2	36	81	Flooded
4	011258STMP	006645IN	002019SMH	9	2	32.0	9.9	0.5	0.3	0.4	0.2	-	0.8	0.0	0.0	0	0	Surcharged
4	011260STMP	002023SMH	001185ND	118	1.25	11.7	9.4	2.6	1.5	Flooded	Flooded	Flooded	Flooded	2.5	1.5	27175	117	Flooded
4	011261STMP	006647IN	002023SMH	71	1	4.0	6.7	1.9	2.6	Flooded	Flooded	Flooded	Flooded	0.2	2.5	50	27175	Flooded
4	011263STMP	006654IN	001185ND	115	1	2.2	5.4	0.3	1.5	0.2	Flooded	1.5	Flooded	0.0	1.5	0	117	Insufficient Freeboard
4	011264STMP	006656IN	001186ND	63	2.5	25.0	8.1	1.2	1.4	Flooded	Flooded	Flooded	Flooded	1.1	1.1	27229	56	Flooded
4	011266STMP	002021SMH	002024SMH	49	2	47.7	14.9	0.5	0.5	Flooded	6.2	Flooded	0.6	0.4	0.0	4097	0	Flooded
4	011383A	001970SMH	001151ND	99	3	84.6	11.8	6.4	7.1	Flooded	Flooded	Flooded	Flooded	5.2	4.1	59110	16	Flooded
4	011383B	001151ND	001969SMH	19	3	86.5	12.1	7.1	7.1	Flooded	Flooded	Flooded	Flooded	4.1	4.6	16	19715	Flooded
4	011385STMP	006553IN	000128CB	27	1	10.1	12.7	5.9	5.6	Flooded	Flooded	Flooded	Flooded	4.6	4.4	7001	7482	Flooded
4	011386STMP	000128CB	001151ND	41	1.25	11.5	12.3	5.6	7.1	Flooded	Flooded	Flooded	Flooded	4.4	4.1	7482	16	Flooded
4	011390A	001974SMH	001137ND	44	2	46.4	14.5	8.8	9.1	Flooded	Flooded	Flooded	Flooded	6.6	5.7	72253	90	Flooded
4	011390B	001137ND	001970SMH	126	2	46.4	14.5	9.1	6.4	Flooded	Flooded	Flooded	Flooded	5.7	5.2	90	59110	Flooded
4	011391STMP	001971SMH	001970SMH	33	3	86.0	12.3	5.7	6.4	Flooded	Flooded	Flooded	Flooded	5.5	5.2	187523	59110	Flooded
4	011392A	001973SMH	001135ND	8	2	10.9	4.1	6	6	Flooded	Flooded	Flooded	Flooded	3.9	5.0	15114	46	Flooded
4	011392B	001135ND	001944SMH	262	2	12.6	4.6	6	6.1	Flooded	Flooded	Flooded	Flooded	5.0	5.1	46	26420	Flooded
4	011441STMP	006540IN	001962SMH	204	2	21.1	6.6	5.6	6.5	Flooded	Flooded	Flooded	Flooded	3.8	5.5	3289	20337	Flooded
4	011442STMP	001944SMH	001943SMH	237	1.75	16.4	6.7	6.1	6.6	Flooded	Flooded	Flooded	Flooded	5.1	5.6	26420	13902	Flooded
4	011443STMP	001962SMH	006548IN	52	2.5	27.5	-5.6	6.5	6.3	Flooded	Flooded	Flooded	Flooded	5.5	4.9	20337	14736	Flooded
4	011444A	006548IN	001131ND	276	2.5	29.3	5.9	6.3	7.6	Flooded	Flooded	Flooded	Flooded	4.9	3.7	14736	10	Flooded
4	011444B	001131ND	001963SMH	27	2.5	33.6	6.8	7.6	7.9	Flooded	Flooded	Flooded	Flooded	3.7	4.8	10	22518	Flooded
4	011447STMP	001963SMH	001965SMH	195	2.5	37.1	7.5	7.9	5.9	Flooded	RIM	Flooded	RIM	4.8	0.0	22518	0	Flooded
4	011449STMP	000123CB	001131ND	34	0.833	2.8	5.6	6	7.6	Flooded	Flooded	Flooded	Flooded	4.8	3.7	12464	10	Flooded
4	011450STMP	001966SMH	001965SMH	139	3	103.5	14.5	6.5	5.9	Flooded	RIM	Flooded	RIM	0.0	0.0	280	0	Flooded
4	011451STMP	001965SMH	001968SMH	127	4	125.0	10.0	5.9	3.6	RIM	Flooded	RIM	Flooded	0.0	0.2	0	5100	Insufficient Freeboard
4	011452STMP	001967SMH	001966SMH	49	3	103.3	14.4	6	6.5	Flooded	Flooded	Flooded	Flooded	0.0	0.0	292	280	Flooded
4	011453STMP	001969SMH	001967SMH	255	3	87.9	12.3	7.1	6	Flooded	Flooded	Flooded	Flooded	4.6	0.0	19715	292	Flooded
4	011454STMP	000124CB	001967SMH	34	1.5	17.8	10.0	0.1	6	Flooded	Flooded	Flooded	Flooded	0.0	0.0	13	292	Flooded
4	011632A	001988SMH	001136ND	275	2	26.8	8.4	8.5	9.1	Flooded	Flooded	Flooded	Flooded	7.9	6.6	75417	59	Flooded
4	011632B	001136ND	001974SMH	53	2	29.8	9.4	9.1	8.8	Flooded	Flooded	Flooded	Flooded	6.6	6.6	59	72253	Flooded
4	011671STMP	002015SMH	002014SMH	12	1.5	17.4	-10.1	0.9	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
4	011672A	002011SMH	001167ND	15	1.25	19.5	16.0	0.6	0	1.7	-	0.7	1.9	0.0	0.0	0	0	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
4	011672B	001167ND	002014SMH	319	1.25	14.4	13.7	0	0	-	-	1.9	-	0.0	0.0	0	0	Sufficient Capacity
4	011674STMP	002013SMH	002012SMH	211	2	31.7	12.8	0	4.3	-	Flooded	-	Flooded	0.0	4.3	0	80667	Sufficient Capacity
4	011675STMP	006639IN	002016SMH	5	1.25 x 2	28.4	8.5	4.3	4	Flooded	Flooded	Flooded	Flooded	3.6	3.3	46257	72702	Flooded
4	011676STMP	002016SMH	002017SMH	81	2	45.4	14.3	4	2.9	Flooded	Flooded	Flooded	Flooded	3.3	2.0	72702	11254	Flooded
4	012008STMP	000111CB	006540IN	99	0.833	4.6	8.3	4.9	5.6	Flooded	Flooded	Flooded	Flooded	4.4	3.8	24919	3289	Flooded
4	012010STMP	000112CB	001943SMH	4	0.833	5.5	9.8	6.3	6.6	Flooded	Flooded	Flooded	Flooded	6.1	5.6	16014	13902	Flooded
4	012049STMP	002018SMH	001971SMH	452	3	100.2	14.1	2.4	5.7	Flooded	Flooded	Flooded	Flooded	2.0	5.5	9958	187523	Flooded
4	012137A	002012SMH	001169ND	7	2	18.7	5.9	4.3	4.3	Flooded	Flooded	Flooded	Flooded	4.3	4.0	80667	36	Flooded
4	012137B	001169ND	006639IN	40	2	21.8	6.9	4.3	4.3	Flooded	Flooded	Flooded	Flooded	4.0	3.6	36	46257	Flooded
4	012138STMP	002014SMH	002013SMH	74	2	31.7	20.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
4	012188STMP	001943SMH	006540IN	41	1.75	19.7	-8.1	6.6	5.6	Flooded	Flooded	Flooded	Flooded	5.6	3.8	13902	3289	Flooded
4	012190STMP	000133CB	001134ND	23	0.833	4.0	11.0	5.8	6	Flooded	Flooded	Flooded	Flooded	5.1	5.1	16879	97	Flooded
4	012193A	001983SMH	001134ND	261	1.75	11.4	4.7	5.7	6	4.4	Flooded	0.2	Flooded	0.0	5.1	0	97	Insufficient Freeboard
4	012193B	001134ND	001973SMH	15	1.75	10.0	4.1	6	6	Flooded	Flooded	Flooded	Flooded	5.1	3.9	97	15114	Flooded
4	012195STMP	000136CB	001974SMH	43	1.25	15.1	12.0	8.3	8.8	Flooded	Flooded	Flooded	Flooded	7.2	6.6	58337	72253	Flooded
4	012209A	001185ND	001174ND	587	2	44.1	14.2	1.5	8.2	Flooded	Flooded	Flooded	Flooded	1.5	7.9	117	80	Flooded
4	012209B	001174ND	002022SMH	44	2	38.5	12.0	8.2	8.4	Flooded	Flooded	Flooded	Flooded	7.9	8.1	80	110889	Flooded
4	012212STMP	002024SMH	001186ND	198	2	61.6	19.4	0.5	1.4	6.2	Flooded	0.6	Flooded	0.0	1.1	0	56	Insufficient Freeboard
4	012218STMP	006566IN	000134CB	23	0.833	4.4	9.1	5.7	6.9	Flooded	Flooded	Flooded	Flooded	5.5	5.1	9740	10884	Flooded
4	012219STMP	000134CB	001136ND	56	1.25	5.9	5.2	6.9	9.1	Flooded	Flooded	Flooded	Flooded	5.1	6.6	10884	59	Flooded
4	012220STMP	006567IN	000135CB	33	0.833	4.7	9.7	5.1	6.2	Flooded	Flooded	Flooded	Flooded	5.0	4.7	11060	13044	Flooded
4	012221STMP	000135CB	001137ND	41	1.25	9.0	7.1	6.2	9.1	Flooded	Flooded	Flooded	Flooded	4.7	5.7	13044	90	Flooded
4	012222STMP	000137CB	000136CB	25	0.833	9.1	16.3	8.8	8.3	Flooded	Flooded	Flooded	Flooded	8.7	7.2	38240	58337	Flooded
4	012223STMP	006568IN	000137CB	10	0.833	6.8	12.3	9.6	8.8	Flooded	Flooded	Flooded	Flooded	9.6	8.7	36431	38240	Flooded
4	012226STMP	000138CB	001136ND	45	0.667	4.0	11.0	12.1	9.1	Flooded	Flooded	Flooded	Flooded	11.4	6.6	23485	59	Flooded
4	012247STMP	001987SMH	001983SMH	270	1.75	7.1	4.9	0	5.7	-	4.4	1.8	0.2	0.0	0.0	0	0	Sufficient Capacity
4	012248STMP	000152CB	001983SMH	31	0.833	4.0	8.7	2.1	5.7	Flooded	4.6	Flooded	0.2	1.6	0.0	3064	0	Flooded
4	012249STMP	000149CB	001983SMH	20	0.833	3.3	7.9	1.7	5.7	Flooded	4.6	Flooded	0.2	0.7	0.0	575	0	Flooded
4	012262A	002022SMH	001148ND	37	2	27.4	8.5	8.4	8.5	Flooded	Flooded	Flooded	Flooded	8.1	7.5	110889	40	Flooded
4	012262B	001148ND	001988SMH	20	2	25.9	8.1	8.5	8.5	Flooded	Flooded	Flooded	Flooded	7.5	7.9	40	75417	Flooded
4	012264STMP	000158CB	001152ND	37	0.667	4.4	-12.0	16	11.1	Flooded	Flooded	Flooded	Flooded	13.4	9.6	66508	37	Flooded
4	012280STMP	006623IN	001965SMH	76	0.833	4.5	8.3	2.3	5.9	Flooded	RIM	Flooded	RIM	2.3	0.0	8458	0	Flooded
4	012304STMP	001186ND	001185ND	187	2	50.7	15.8	1.4	1.5	Flooded	Flooded	Flooded	Flooded	1.1	1.5	56	117	Flooded
4	014000STMP	004000SMH	002907ND	82	2.25	58.6	23.1	0	1.7	-	Flooded	1.9	Flooded	0.0	1.0	0	10	Sufficient Capacity
5	007707A	002646SMH	000735ND	81	1.75	15.9	6.5	8.2	8.2	Flooded	Flooded	Flooded	Flooded	7.6	5.0	8598	9	Flooded
5	007707B	000735ND	000736ND	306	1.75	15.8	6.5	8.2	8.1	Flooded	Flooded	Flooded	Flooded	5.0	5.3	9	15	Flooded
5	007707C	000736ND	002647SMH	56	1.75	16.8	6.9	8.1	8	Flooded	Flooded	Flooded	Flooded	5.3	4.7	15	4333	Flooded
5	007710STMP	000428CB	000736ND	37	1.25	4.0	3.9	6.3	8.1	Flooded	Flooded	Flooded	Flooded	6.1	5.3	8177	15	Flooded
5	007713STMP	005655IN	007684IN	71	1.25	14.5	19.2	0	0	-	-	-	1.0	0.0	0.0	0	0	Sufficient Capacity
5	007742STMP	007531IN	002645SMH	31	1.25	7.3	9.5	3.1	6.7	1.2	Flooded	1.2	Flooded	0.0	1.8	0	3449	Insufficient Freeboard
5	007895STMP	000472CB	000754ND	10	1	5.2	7.6	6.3	8.2	Flooded	Flooded	Flooded	Flooded	5.1	4.2	14711	51	Flooded
5	007897STMP	000122CP	000123CP	20	1	11.6	14.8	0	0	3.4	3.8	-	-	0.0	0.0	0	0	Surcharged
5	007898A	000124CP	000755ND	20	5.35	672.5	29.7	0.6	0.2	1.3	0.1	0.1	-	0.0	0.0	0	0	Insufficient Freeboard
5	007898B	000755ND	000125CP	37	5.35	691.1	31.0	0.2	0	0.1	-	-	-	0.0	0.0	0	0	Surcharged
5	007899STMP	002877SMH	000755ND	4	1.5	22.0	12.2	1.8	0.2	Flooded	4.0	Flooded	-	0.5	0.0	2079	0	Flooded
5	007900STMP	002885SMH	002877SMH	145	1.5	25.1	14.3	0.7	1.8	Flooded	Flooded	Flooded	Flooded	0.6	0.5	4596	2079	Flooded
5	007916STMP	002879SMH	002881SMH	87	1.5	7.3	13.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007917STMP	005719IN	002880SMH	78	1.25	10.4	10.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007918STMP	002880SMH	002881SMH	28	1.25	10.4	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	007919STMP	002881SMH	002882SMH	90	1.5	17.7	17.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007920STMP	002882SMH	002883SMH	101	1.5	17.7	16.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007921STMP	002883SMH	002884SMH	145	1.5	17.7	17.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	007924STMP	002884SMH	002885SMH	93	1.5	17.7	14.4	0	0.7	-	Flooded	-	Flooded	0.0	0.6	0	4596	Sufficient Capacity
5	008306STMP	005679IN	000464CB	35	1	6.0	9.2	0.4	1.1	Flooded	Flooded	Flooded	Flooded	0.1	0.6	10	1800	Flooded
5	008307STMP	005681IN	000464CB	50	1	6.8	9.2	0.1	1.1	0.2	Flooded	0.3	Flooded	0.0	0.6	0	1800	Insufficient Freeboard
5	008308STMP	005680IN	003025SMH	70	1	10.2	14.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008311STMP	000464CB	005680IN	4	1	10.2	13.0	1.1	0	Flooded	-	Flooded	-	0.6	0.0	1800	0	Flooded
5	008315STMP	003025SMH	003028SMH	139	1.5	12.8	16.5	0	0.8	-	6.0	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008449STMP	005701IN	000527IO	116	1.75	31.7	15.6	0	0	-	3.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008450STMP	003035SMH	003034SMH	53	1.75	21.4	14.5	5.5	8.4	1.8	Flooded	0.1	Flooded	0.0	2.8	0	6098	Insufficient Freeboard
5	008451STMP	003036SMH	003035SMH	105	1.75	18.9	7.8	8.1	5.5	Flooded	1.6	Flooded	0.1	0.4	0.0	171	0	Flooded
5	008452A	003034SMH	000750ND	102	1.75	21.7	8.9	8.4	8.5	Flooded	Flooded	Flooded	Flooded	2.8	5.5	6098	42	Flooded
5	008452B	000750ND	003039SMH	508	1.75	21.2	8.7	8.5	0	Flooded	-	Flooded	-	5.5	0.0	42	0	Flooded
5	008453STMP	003039SMH	003040SMH	339	1.75	21.2	18.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008454STMP	003040SMH	002876SMH	78	1.75	21.2	21.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008455STMP	002876SMH	005701IN	49	1.75	31.7	23.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008466STMP	007684IN	003033SMH	75	1.5	14.5	19.7	0	0	-	0.3	1.0	-	0.0	0.0	0	0	Sufficient Capacity
5	008474STMP	002650SMH	000510IO	48	1.75	40.0	16.5	0	0	2.3	-	-	-	0.0	0.0	0	0	Surcharged
5	008475STMP	000742ND	002650SMH	216	1.5	30.6	19.2	0.5	0	0.2	2.3	-	-	0.0	0.0	0	0	Surcharged
5	008570STMP	007675IN	007670IN	296	2	52.3	18.6	0	0.3	-	2.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008576STMP	000120CP	000121CP	97	5	532.6	28.6	0	0	-	2.3	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008581STMP	007680IN	000521IO	105	1.5	30.3	16.9	0.9	0	3.3	-	0.3	-	0.0	0.0	0	0	Insufficient Freeboard
5	008585STMP	003033SMH	000522IO	92	1.25	14.5	12.1	0	0	0.7	-	-	-	0.0	0.0	0	0	Surcharged
5	008600STMP	003019SMH	000743ND	56	1.25	13.6	-10.8	1.1	0.5	Flooded	4.2	Flooded	0.8	0.4	0.0	2129	0	Flooded
5	008601A	000462CB	000743ND	37	1.25	11.8	13.7	0.2	0.5	2.3	4.2	0.6	0.8	0.0	0.0	0	0	Insufficient Freeboard
5	008601B	000743ND	000511IO	134	1.25	21.4	17.1	0.5	0	4.2	-	0.8	-	0.0	0.0	0	0	Insufficient Freeboard
5	008676STMP	003026SMH	007653IN	15	1.25	9.2	8.2	0.2	0.2	0.8	0.8	-	-	0.0	0.0	0	0	Surcharged
5	008677STMP	007653IN	007655IN	37	1.25	16.3	13.3	0.2	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
5	008682STMP	007655IN	003028SMH	39	1.25	16.3	22.8	0	0.8	-	6.2	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008683STMP	005703IN	003027SMH	45	1.25	9.2	18.4	0	1.1	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
5	008684STMP	003028SMH	007656IN	99	1.5	29.1	16.1	0.8	1.1	6.0	Flooded	-	Flooded	0.0	0.9	0	14938	Surcharged
5	008685STMP	007656IN	007680IN	179	1.5	30.3	17.0	1.1	0.9	Flooded	3.2	Flooded	0.3	0.9	0.0	14938	0	Flooded
5	008694STMP	000470CB	003035SMH	29	1	3.1	4.0	5	5.5	Flooded	1.8	Flooded	0.1	1.3	0.0	1131	0	Flooded
5	008799A	002613SMH	000725ND	53	1.25	9.9	8.3	6.6	7.3	Flooded	Flooded	Flooded	Flooded	3.3	6.0	10848	33	Flooded
5	008799B	000725ND	002643SMH	48	1.25	6.9	5.5	7.3	7.4	Flooded	Flooded	Flooded	Flooded	6.0	6.6	33	12131	Flooded
5	008804A	002584SMH	000712ND	72	1	7.7	10.4	2.1	2.1	Flooded	Flooded	Flooded	Flooded	1.7	1.3	2544	4	Flooded
5	008804B	000712ND	002613SMH	256	1	7.6	9.8	2.1	6.6	Flooded	Flooded	Flooded	Flooded	1.3	3.3	4	10848	Flooded
5	008851STMP	000414CB	000726ND	34	0.833	4.6	8.4	8.3	8.2	Flooded	Flooded	Flooded	Flooded	7.6	5.8	7593	14	Flooded
5	008868STMP	000453CB	007531IN	40	1.25	7.3	-5.9	0.1	3.1	2.0	1.2	-	1.2	0.0	0.0	0	0	Surcharged
5	009050STMP	000454CB	000453CB	32	1.25	7.3	9.7	0	0.1	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
5	009055STMP	000456CB	002584SMH	21	1	8.8	10.9	2	2.1	Flooded	Flooded	Flooded	Flooded	1.7	1.7	6864	2544	Flooded
5	009094STMP	002649SMH	000742ND	51	1.25	30.6	24.2	0.6	0.5	Flooded	0.4	Flooded	-	0.5	0.0	3067	0	Flooded
5	009108STMP	003029SMH	003019SMH	156	1.5	13.9	9.9	0.4	1.1	2.0	Flooded	1.8	Flooded	0.0	0.4	0	2129	Insufficient Freeboard
5	009116STMP	007669IN	000518IO	41	2	52.3	16.6	0	0	1.9	0.6	-	-	0.0	0.0	0	0	Surcharged
5	009117STMP	007670IN	007669IN	38	2	52.3	16.5	0.3	0	2.2	1.8	-	-	0.0	0.0	0	0	Surcharged
5	009176STMP	000424CB	000732ND	19	1	2.2	2.7	6.7	8.1	Flooded	Flooded	Flooded	Flooded	4.8	6.8	2394	44	Flooded
5	009201STMP	005691IN	000471CB	28	1	2.7	4.4	1.2	2.2	Flooded	0.8	Flooded	0.1	0.2	0.0	70	0	Flooded
5	009202STMP	000471CB	003036SMH	30	1	2.7	3.3	2.2	8.1	3.3	Flooded	0.1	Flooded	0.0	0.4	0	171	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
5	009203A	002647SMH	000734ND	44	1.75	17.1	7.0	8	8.1	Flooded	Flooded	Flooded	Flooded	4.7	4.9	4333	28	Flooded
5	009203B	000754ND	000753ND	22	1.75	18.3	7.5	8.2	8.2	Flooded	Flooded	Flooded	Flooded	4.2	2.6	51	42	Flooded
5	009203C	000753ND	003036SMH	274	1.75	18.4	7.6	8.2	8.1	Flooded	Flooded	Flooded	Flooded	2.6	0.4	42	171	Flooded
5	009203D	000734ND	000754ND	195	1.75	17.0	7.0	8.1	8.2	Flooded	Flooded	Flooded	Flooded	4.9	4.2	28	51	Flooded
5	009213STMP	003027SMH	003026SMH	116	1.25	9.2	7.4	1.1	0.2	2.8	0.7	-	-	0.0	0.0	0	0	Surcharged
5	009397STMP	000415CB	002643SMH	27	1.25	6.4	5.2	6.8	7.4	Flooded	Flooded	Flooded	Flooded	5.8	6.6	6548	12131	Flooded
5	009402A	002643SMH	000732ND	87	1.5	10.5	6.2	7.4	8.1	Flooded	Flooded	Flooded	Flooded	6.6	6.8	12131	44	Flooded
5	009402B	000733ND	002646SMH	47	1.5	14.3	8.0	8.2	8.2	Flooded	Flooded	Flooded	Flooded	7.8	7.6	44	8598	Flooded
5	009402C	000732ND	000726ND	120	1.5	11.0	6.3	8.1	8.2	Flooded	Flooded	Flooded	Flooded	6.8	5.8	44	14	Flooded
5	009402D	000726ND	000733ND	136	1.5	11.7	6.5	8.2	8.2	Flooded	Flooded	Flooded	Flooded	5.8	7.8	14	44	Flooded
5	009404A	000731ND	000724ND	112	1.5	8.4	4.7	7.4	7.7	3.8	Flooded	0.4	Flooded	0.0	5.8	0	58	Insufficient Freeboard
5	009404B	000724ND	002643SMH	127	1.5	6.6	3.7	7.7	7.4	Flooded	Flooded	Flooded	Flooded	5.8	6.6	58	12131	Flooded
5	009415STMP	002644SMH	002645SMH	182	1.25	3.3	3.8	6.6	6.7	Flooded	Flooded	Flooded	Flooded	4.1	1.8	7166	3449	Flooded
5	009417STMP	002645SMH	000731ND	140	1.25	5.0	4.0	6.7	7.4	Flooded	4.1	Flooded	0.4	1.8	0.0	3449	0	Flooded
5	009418STMP	000423CB	000731ND	19	1	3.5	4.4	4.1	7.4	Flooded	4.3	Flooded	0.4	2.7	0.0	4754	0	Flooded
6	007127STMP	005483IN	005484IN	9	1	6.6	-8.3	4.2	2.9	Flooded	Flooded	Flooded	Flooded	4.2	2.9	22270	4613	Flooded
6	007128STMP	005484IN	005485IN	7	1	5.6	7.6	2.9	0	Flooded	-	Flooded	0.5	2.9	0.0	4613	0	Flooded
6	007129STMP	005485IN	005486IN	6	1	5.6	16.2	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	007130STMP	005486IN	002559SMH	29	1.5	5.8	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133A	000695ND	000694ND	185	2.5	0.0	0.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133B	000694ND	000689ND	60	2.5	9.1	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007133C	000689ND	002559SMH	167	2.5	9.1	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007135STMP	005490IN	005491IN	7	1	4.6	-5.8	2.2	1.3	Flooded	Flooded	Flooded	Flooded	2.2	1.3	5438	1172	Flooded
6	007136STMP	005491IN	005492IN	6	1	4.1	-5.3	1.3	0	Flooded	-	Flooded	0.6	1.3	0.0	1172	0	Flooded
6	007137STMP	005492IN	000445CB	17	1	4.1	14.5	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	007186STMP	005403IN	000439CB	4	1	1.5	7.9	0	0.4	-	1.5	0.6	0.6	0.0	0.0	0	0	Sufficient Capacity
6	007187STMP	005405IN	005404IN	9	1	8.1	13.4	0.8	0.5	Flooded	2.9	Flooded	0.1	0.8	0.0	5801	0	Flooded
6	007189STMP	005408IN	005407IN	18	1	5.4	12.2	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	007190STMP	005407IN	002566SMH	5	1	5.4	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007191STMP	005409IN	005408IN	11	1	5.4	7.1	1.1	0	Flooded	-	Flooded	0.5	1.1	0.0	2843	0	Flooded
6	007193STMP	005411IN	005412IN	17	1	8.7	11.3	2.2	0	Flooded	-	Flooded	0.1	2.2	0.0	15443	0	Flooded
6	007380STMP	000446CB	002560SMH	36	2	4.1	5.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007381STMP	000445CB	000446CB	50	2	4.1	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007382STMP	002559SMH	002560SMH	58	2.5	14.8	5.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007386STMP	005499IN	005500IN	7	1	9.1	11.4	2.2	0.8	Flooded	0.3	Flooded	1.8	1.8	0.0	13037	0	Flooded
6	007387STMP	005500IN	000694ND	35	1	9.1	15.1	0.8	0	0.3	-	1.8	-	0.0	0.0	0	0	Insufficient Freeboard
6	007388STMP	005502IN	000011PD	101	1	-0.1	0.4	0	1.3	-	1.8	-	0.4	0.0	0.0	0	0	Sufficient Capacity
6	007389STMP	005503IN	002561SMH	43	2	8.9	8.6	0	0.7	-	0.5	-	1.4	0.0	0.0	0	0	Sufficient Capacity
6	007390STMP	007526IN	005503IN	220	2	5.3	4.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007459STMP	002562SMH	002561SMH	237	1.25	6.4	6.8	0.5	0.7	0.2	1.3	-	1.4	0.0	0.0	0	0	Surcharged
6	007460STMP	002561SMH	000011PD	22	2	15.0	15.5	0.7	1.3	0.5	2.8	1.4	0.4	0.0	0.0	0	0	Insufficient Freeboard
6	007461STMP	005504IN	005505IN	90	1.25	8.2	7.3	0.2	0.4	0.5	0.5	-	1.9	0.0	0.0	0	0	Surcharged
6	007462STMP	002563SMH	002537SMH	85	3.5	75.7	7.8	2.4	2.4	4.1	Flooded	0.8	Flooded	0.0	2.3	0	52367	Insufficient Freeboard
6	007463STMP	002564SMH	002563SMH	179	3.5	75.7	8.8	2.3	2.4	RIM	4.1	RIM	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	007464STMP	002553SMH	002564SMH	129	3.5	75.8	8.1	1.2	2.3	3.5	RIM	0.8	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	007466STMP	000448CB	000449CB	226	1	7.3	9.3	1.3	1.4	3.2	2.2	0.3	1.8	0.0	0.0	0	0	Insufficient Freeboard
6	007467STMP	005506IN	000448CB	11	0.833	5.9	14.2	1.2	1.3	Flooded	3.4	Flooded	0.3	1.2	0.0	5193	0	Flooded
6	007468STMP	005507IN	000448CB	11	0.833	3.4	10.5	0.6	1.3	Flooded	3.4	Flooded	0.3	0.6	0.0	755	0	Flooded
6	007469STMP	005508IN	005509IN	61	1.25	11.6	9.3	0.5	0.6	Flooded	2.8	Flooded	2.0	0.3	0.0	432	0	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	007470STMP	005509IN	002535SMH	43	1.25	11.6	9.3	0.6	0.5	2.8	2.4	2.0	-	0.0	0.0	0	0	Insufficient Freeboard
6	007471STMP	002534SMH	002535SMH	30	2.5	36.9	13.5	0	0.5	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007472STMP	002587SMH	002534SMH	90	2.5	36.9	12.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007473STMP	007513IN	007512IN	32	1	4.9	6.9	0	0	-	-	0.1	0.6	0.0	0.0	0	0	Sufficient Capacity
6	007474STMP	007514IN	007513IN	40	1	4.9	7.7	0	0	-	-	0.3	0.1	0.0	0.0	0	0	Sufficient Capacity
6	007477STMP	007519IN	007518IN	11	1.5	9.1	5.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007599STMP	005399IN	000682ND	71	1	2.8	3.5	0.6	0.6	Flooded	3.1	Flooded	0.2	0.3	0.0	310	0	Flooded
6	007600STMP	005400IN	005401IN	11	1	1.9	-3.3	0	0	-	-	0.3	0.7	0.0	0.0	0	0	Sufficient Capacity
6	007601STMP	005401IN	002565SMH	68	1	1.9	6.3	0	0	-	1.1	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007602STMP	005402IN	002565SMH	42	2.5	39.2	11.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007603STMP	002566SMH	005402IN	221	2.5	39.3	8.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007604STMP	000439CB	005404IN	31	1.25	2.2	3.7	0.4	0.5	1.2	2.7	0.6	0.1	0.0	0.0	0	0	Insufficient Freeboard
6	007702STMP	000457CB	002585SMH	46	1	6.5	10.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007704STMP	007539IN	007538IN	9	0.833	6.5	12.0	4.7	0	Flooded	-	Flooded	0.4	4.6	0.0	30327	0	Flooded
6	007717STMP	005658IN	000508IO	19	1.75	42.4	24.5	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007719STMP	005659IN	005660IN	11	0.833	3.1	5.9	0.8	0	Flooded	-	Flooded	0.7	0.7	0.0	930	0	Flooded
6	007720STMP	005660IN	000738ND	5	0.833	3.1	9.8	0	0	-	6.8	0.7	-	0.0	0.0	0	0	Sufficient Capacity
6	007721STMP	000429CB	000738ND	21	2	6.1	6.3	0	0	-	5.6	-	-	0.0	0.0	0	0	Sufficient Capacity
6	007722STMP	005661IN	000429CB	8	0.833	6.1	13.9	0.6	0	Flooded	0.8	Flooded	-	0.6	0.0	1221	0	Flooded
6	007723A	000506IO	000738ND	31	6.17 x 4.5	201.9	7.5	0	0	1.7	1.5	0.4	-	0.0	0.0	0	0	Insufficient Freeboard
6	007723B	000738ND	000507IO	41	6.17 x 4.5	241.4	11.4	0	0	1.5	-	-	-	0.0	0.0	0	0	Surcharged
6	007728STMP	007487IN	007486IN	49	1	6.2	7.8	0.8	0.7	Flooded	1.0	Flooded	0.9	0.7	0.0	2172	0	Flooded
6	008061STMP	005412IN	000440CB	12	1	8.8	14.8	0	0.6	-	1.4	0.1	1.6	0.0	0.0	0	0	Sufficient Capacity
6	008063STMP	000440CB	002570SMH	22	1.25	9.0	9.0	0.6	0.9	1.1	2.0	1.6	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008065STMP	005415IN	005416IN	10	1	5.0	6.9	0.5	0	Flooded	-	Flooded	0.5	0.5	0.0	757	0	Flooded
6	008066STMP	005416IN	002568SMH	15	1	5.0	11.7	0	0.2	-	0.3	0.5	1.9	0.0	0.0	0	0	Sufficient Capacity
6	008067STMP	002568SMH	002569SMH	11	1.25	5.0	6.9	0.2	0.4	0.1	0.4	1.9	1.4	0.0	0.0	0	0	Insufficient Freeboard
6	008069STMP	002569SMH	002570SMH	26	1.25	5.0	8.0	0.4	0.9	0.4	2.0	1.4	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008070STMP	005418IN	005419IN	7	1	5.5	7.3	0.6	0	Flooded	-	Flooded	0.0	0.6	0.0	1030	0	Flooded
6	008071STMP	002572SMH	002570SMH	122	1.5	18.4	11.2	1.1	0.9	1.9	1.7	0.9	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008072A	002570SMH	000679ND	40	2	31.5	12.8	0.9	1.3	1.2	1.7	0.9	0.4	0.0	0.0	0	0	Insufficient Freeboard
6	008072B	000679ND	002571SMH	59	2	36.8	13.6	1.3	1.9	1.7	Flooded	0.4	Flooded	0.0	0.1	0	85	Insufficient Freeboard
6	008073STMP	005419IN	000441CB	34	1	5.5	11.8	0	1.5	-	Flooded	0.0	Flooded	0.0	0.4	0	243	Sufficient Capacity
6	008074STMP	000441CB	000679ND	10	1	5.5	6.9	1.5	1.3	Flooded	2.7	Flooded	0.4	0.4	0.0	243	0	Flooded
6	008075STMP	002509SMH	002572SMH	107	1.5	18.4	11.3	1.1	1.1	2.0	1.9	-	0.9	0.0	0.0	0	0	Surcharged
6	008076STMP	007516IN	004906SMH	270	5	9.1	4.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008077STMP	007518IN	007516IN	96	1.5	9.1	6.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008086STMP	002510SMH	002509SMH	115	1.5	18.5	10.8	1.2	1.1	2.5	2.0	0.5	-	0.0	0.0	0	0	Insufficient Freeboard
6	008088A	002512SMH	000680ND	28	1.5	18.8	10.5	2.3	2.2	Flooded	3.9	Flooded	0.1	0.4	0.0	431	0	Flooded
6	008088B	000680ND	002510SMH	86	1.5	18.6	10.4	2.2	1.2	3.9	2.5	0.1	0.5	0.0	0.0	0	0	Insufficient Freeboard
6	008092STMP	005433IN	002512SMH	25	1.25	9.0	8.7	1.4	2.3	3.2	Flooded	0.8	Flooded	0.0	0.4	0	431	Insufficient Freeboard
6	008093STMP	005431IN	005432IN	7	1	8.1	10.5	2.5	0.7	Flooded	Flooded	Flooded	Flooded	2.5	0.7	16187	1153	Flooded
6	008094STMP	005432IN	005433IN	5	1	9.0	15.7	0.7	1.4	Flooded	3.5	Flooded	0.8	0.7	0.0	1153	0	Flooded
6	008095STMP	005434IN	005435IN	11	1	4.8	6.2	0.5	0	Flooded	-	Flooded	0.1	0.5	0.0	616	0	Flooded
6	008096STMP	005435IN	005436IN	7	1	4.8	7.2	0	0	-	-	0.1	0.5	0.0	0.0	0	0	Sufficient Capacity
6	008097STMP	005436IN	000443CB	18	1	4.8	13.6	0	1.1	-	3.1	0.5	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008098STMP	005437IN	000443CB	19	1	0.9	6.2	0	1.1	-	3.1	0.7	1.1	0.0	0.0	0	0	Sufficient Capacity
6	008099STMP	005438IN	005437IN	6	1	0.9	-2.7	0	0	-	-	0.5	0.7	0.0	0.0	0	0	Sufficient Capacity
6	008102STMP	002513SMH	002512SMH	112	1.25	9.8	9.3	1.9	2.3	2.8	Flooded	1.0	Flooded	0.0	0.4	0	431	Insufficient Freeboard

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008103STMP	005444IN	002513SMH	34	1	9.7	12.3	1.9	1.9	2.5	3.1	0.5	1.0	0.0	0.0	0	0	Insufficient Freeboard
6	008104STMP	005447IN	002514SMH	122	2.5	26.2	10.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008107STMP	005446IN	005445IN	6	1	8.5	11.0	4.5	1.8	Flooded	Flooded	Flooded	Flooded	4.5	1.8	39804	3819	Flooded
6	008108STMP	005445IN	005444IN	8	1	9.7	15.4	1.8	1.9	Flooded	2.5	Flooded	0.5	1.8	0.0	3819	0	Flooded
6	008110STMP	002511SMH	002507SMH	216	3	53.3	12.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008111STMP	002507SMH	002508SMH	37	3	53.3	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008112STMP	002508SMH	002524SMH	254	3	53.3	13.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008113STMP	000443CB	002512SMH	35	1.25	5.6	7.7	1.1	2.3	2.8	Flooded	1.1	Flooded	0.0	0.4	0	431	Insufficient Freeboard
6	008114STMP	002514SMH	002511SMH	111	3	53.3	12.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008116STMP	002515SMH	002514SMH	62	3	27.2	5.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008117STMP	002518SMH	002515SMH	358	3	27.2	8.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008118STMP	005448IN	005447IN	32	2	26.2	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008119STMP	005505IN	002516SMH	51	1.25	17.2	13.8	0.4	2.1	3.3	1.6	1.9	0.7	0.0	0.0	0	0	Insufficient Freeboard
6	008120STMP	002516SMH	005448IN	14	1.25	17.2	13.9	2.1	0	1.7	-	0.7	-	0.0	0.0	0	0	Insufficient Freeboard
6	008121STMP	002517SMH	005448IN	30	2	9.1	5.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008122STMP	000011PD	005505IN	58	1.5	-0.6	-3.5	1.3	0.4	6.1	3.8	0.4	1.9	0.0	0.0	0	0	Insufficient Freeboard
6	008123STMP	002519SMH	002518SMH	435	3	27.2	8.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008124STMP	005449IN	002519SMH	28	1.25	3.7	9.8	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008125STMP	002521SMH	002520SMH	31	1.25	5.4	6.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008127STMP	005479IN	002521SMH	91	1.25	5.4	9.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008129STMP	005452IN	005451IN	49	1	5.9	-7.6	16.8	0	2.0	-	-	-	0.0	0.0	0	0	Surcharged
6	008130STMP	005451IN	005454IN	81	1.25	5.9	8.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008131STMP	005453IN	005452IN	90	1	5.9	7.3	2.1	16.8	Flooded	2.0	Flooded	-	1.4	0.0	4641	0	Flooded
6	008132STMP	005454IN	002523SMH	103	1.5	5.9	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008133STMP	007578IN	007580IN	73	1	5.8	7.3	0.5	0.5	Flooded	2.0	Flooded	0.7	0.4	0.0	1043	0	Flooded
6	008135STMP	007580IN	007581IN	15	1.25	5.8	6.2	0.5	0.8	1.7	2.6	0.7	1.1	0.0	0.0	0	0	Insufficient Freeboard
6	008136B	000681ND	002525SMH	49	1.25	9.3	14.0	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008137STMP	007581IN	007582IN	45	1.25	5.8	4.7	0.8	0.7	2.6	2.8	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
6	008138STMP	002523SMH	007583IN	80	1.75	5.9	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008139STMP	007586IN	007583IN	216	1.25	8.1	9.0	0	0	-	0.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008140STMP	007583IN	007584IN	49	2	13.8	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008141STMP	007582IN	007584IN	181	1.5	15.6	8.7	0.7	0	2.5	0.2	-	-	0.0	0.0	0	0	Surcharged
6	008142STMP	007584IN	007585IN	107	2.5	31.4	9.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008143STMP	007585IN	002530SMH	83	2.5	34.4	8.7	0	0	-	-	-	1.4	0.0	0.0	0	0	Sufficient Capacity
6	008144STMP	007587IN	007586IN	12	1.25	8.2	7.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008145STMP	002524SMH	002527SMH	318	3	53.3	19.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008166STMP	007592IN	007593IN	9	1.25	9.3	-7.5	0.5	0.2	Flooded	0.1	Flooded	0.6	0.1	0.0	19	0	Flooded
6	008167STMP	007593IN	000681ND	21	1.25	9.3	7.6	0.2	0	0.1	-	0.6	1.1	0.0	0.0	0	0	Insufficient Freeboard
6	008170STMP	002525SMH	002526SMH	230	1.25	9.3	13.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008172STMP	002565SMH	002533SMH	308	2.5	40.9	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008173STMP	002532SMH	005404IN	137	2	13.4	6.4	0.4	0.5	1.2	1.9	1.5	0.1	0.0	0.0	0	0	Insufficient Freeboard
6	008174STMP	002530SMH	002566SMH	269	2.5	34.3	8.1	0	0	-	-	1.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008175STMP	005397IN	007597IN	7	1	7.4	-9.6	2.3	0	Flooded	-	Flooded	0.4	2.3	0.0	11548	0	Flooded
6	008176STMP	007597IN	000444CB	7	1	7.4	13.4	0	2.9	-	1.3	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008178STMP	000444CB	002528SMH	8	1.25	7.4	-6.2	2.9	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
6	008180STMP	002528SMH	002531SMH	73	1.5	7.6	8.0	0	0.2	-	0.8	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008183STMP	002531SMH	005456IN	109	2	8.4	5.1	0.2	0.3	0.3	1.0	-	-	0.0	0.0	0	0	Surcharged
6	008184STMP	005456IN	002532SMH	137	2	13.4	5.5	0.3	0.4	1.0	1.2	-	1.5	0.0	0.0	0	0	Surcharged
6	008185STMP	002533SMH	002551SMH	303	2.5	40.7	9.9	0	0.4	-	0.7	-	0.9	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008188STMP	005458IN	002553SMH	13	3	4.4	-1.8	2.3	1.2	4.1	2.0	0.4	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008224STMP	005459IN	005458IN	29	1	1.0	4.4	0.6	2.3	1.1	6.1	0.6	0.4	0.0	0.0	0	0	Insufficient Freeboard
6	008225STMP	005475IN	005459IN	100	1	1.1	5.5	0	0.6	-	1.1	1.3	0.6	0.0	0.0	0	0	Sufficient Capacity
6	008272STMP	002520SMH	002519SMH	11	3	24.0	8.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008273STMP	002560SMH	002520SMH	220	2.75	18.8	9.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008274STMP	002551SMH	002552SMH	13	3	40.7	7.2	0.4	1.8	3.2	3.3	0.9	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008275STMP	002552SMH	002553SMH	45	3.5	71.6	10.0	1.8	1.2	2.8	3.5	0.9	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008276STMP	005480IN	005479IN	131	1	5.4	-7.1	1.7	0	3.3	-	1.2	-	0.0	0.0	0	0	Insufficient Freeboard
6	008277STMP	005481IN	005480IN	38	1	5.4	6.8	1.6	1.7	Flooded	3.3	Flooded	1.2	0.5	0.0	1044	0	Flooded
6	008291STMP	002601SMH	002602SMH	94	2	29.7	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008295STMP	000385CB	002602SMH	16	1.25	9.0	9.2	0	0	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008320STMP	005662IN	000430CB	7	0.833	8.5	16.5	2.3	2.1	Flooded	Flooded	Flooded	Flooded	2.3	2.1	11256	17899	Flooded
6	008321STMP	000430CB	000741ND	9	1	12.5	16.6	2.1	2.2	Flooded	Flooded	Flooded	Flooded	2.1	1.5	17899	37	Flooded
6	008322STMP	000431CB	000740ND	37	1.25	10.4	10.5	1.3	1.5	3.7	Flooded	0.1	Flooded	0.0	0.9	0	19	Insufficient Freeboard
6	008441STMP	002605SMH	000499IO	56	5	182.3	20.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442A	002606SMH	000710ND	108	4	156.8	13.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008442B	000710ND	002605SMH	19	4	156.8	12.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008443STMP	002607SMH	002605SMH	136	3	28.6	8.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008444STMP	000708ND	000500IO	30	1.25	14.9	18.4	0	0	-	1.1	1.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008602STMP	007559IN	007560IN	6	1	7.3	12.0	0.5	5.9	Flooded	1.8	Flooded	0.3	0.5	0.0	898	0	Flooded
6	008603STMP	007560IN	000744ND	12	1	7.3	-9.3	5.9	0	1.8	-	0.3	0.8	0.0	0.0	0	0	Insufficient Freeboard
6	008604STMP	007562IN	007561IN	185	1.25	9.8	9.1	0.8	12	Flooded	2.9	Flooded	-	0.8	0.0	4556	0	Flooded
6	008639STMP	007498IN	005564IN	29	1.25	11.0	9.3	1	0.8	1.2	1.2	1.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	008640STMP	007506IN	005564IN	75	1.25	3.9	6.7	0	0.8	-	1.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008656STMP	002585SMH	002586SMH	26	1.5	6.5	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008657STMP	002586SMH	002596SMH	128	1.5	12.0	13.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008658STMP	000459CB	002586SMH	43	1	6.1	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008660STMP	007542IN	000459CB	14	0.833	6.1	14.1	0	0	-	-	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	008661STMP	002596SMH	002598SMH	123	1.5	12.0	12.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008663STMP	000460CB	002597SMH	30	1.25	15.6	17.3	0.4	0.5	1.1	3.0	-	-	0.0	0.0	0	0	Surcharged
6	008664STMP	007543IN	000460CB	12	1	15.5	19.7	1.8	0.4	Flooded	1.4	Flooded	-	1.8	0.0	22024	0	Flooded
6	008666STMP	007545IN	007546IN	40	1.25	5.4	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008667STMP	002599SMH	007545IN	134	1.25	5.4	10.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008668STMP	007546IN	002597SMH	12	1.25	5.3	10.4	0	0.5	-	3.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008672A	002597SMH	000703ND	56	1.5	29.7	17.2	0.5	0.6	2.7	2.0	-	-	0.0	0.0	0	0	Surcharged
6	008672B	000703ND	002601SMH	125	1.5	29.7	16.6	0.6	0	2.0	0.3	-	-	0.0	0.0	0	0	Surcharged
6	008673STMP	007563IN	002599SMH	105	1	5.4	11.5	0	0	-	-	1.1	-	0.0	0.0	0	0	Sufficient Capacity
6	008720STMP	007568IN	000385CB	26	0.833	8.9	16.0	2.5	0	Flooded	0.4	Flooded	-	2.5	0.0	25289	0	Flooded
6	008721STMP	002602SMH	003020SMH	19	2.25	38.2	14.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722A	003020SMH	000704ND	27	2.25	38.2	16.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008722B	000704ND	000745ND	98	2.25	38.2	16.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008726STMP	000449CB	000388CB	96	1.25	7.3	6.2	1.4	1.6	1.9	2.1	1.8	1.1	0.0	0.0	0	0	Insufficient Freeboard
6	008727STMP	000387CB	000388CB	52	1	10.7	13.4	2.7	1.6	Flooded	2.4	Flooded	1.1	1.4	0.0	3246	0	Flooded
6	008728STMP	007571IN	000387CB	16	0.833	6.1	12.4	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.6	1.4	12636	3246	Flooded
6	008729STMP	007572IN	000387CB	10	0.833	5.2	11.7	2.6	2.7	Flooded	Flooded	Flooded	Flooded	2.5	1.4	13872	3246	Flooded
6	008730STMP	000388CB	000389CB	110	1.25	14.4	12.5	1.6	1.6	2.1	1.6	1.1	0.9	0.0	0.0	0	0	Insufficient Freeboard
6	008731A	000389CB	000706ND	100	1.25	14.4	13.7	1.6	1.6	1.6	Flooded	0.9	Flooded	0.0	0.7	0	3	Insufficient Freeboard
6	008731B	000706ND	000390CB	252	1.25	14.4	11.7	1.6	3.7	Flooded	Flooded	Flooded	Flooded	0.7	2.7	3	5200	Flooded
6	008734STMP	000390CB	002604SMH	46	1.25	14.9	11.9	3.7	3.5	Flooded	2.0	Flooded	0.8	2.7	0.0	5200	0	Flooded

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	008735STMP	007573IN	000390CB	12	0.833	6.6	14.6	2.9	3.7	Flooded	Flooded	Flooded	Flooded	2.7	2.7	3461	5200	Flooded
6	008736STMP	007574IN	007573IN	10	0.833	4.1	7.7	5.9	2.9	Flooded	Flooded	Flooded	Flooded	5.4	2.7	4901	3461	Flooded
6	008737STMP	007575IN	007574IN	5	0.833	3.2	-5.9	7.4	5.9	Flooded	Flooded	Flooded	Flooded	7.0	5.4	11832	4901	Flooded
6	008738STMP	007576IN	007575IN	7	0.833	4.3	7.8	7.4	7.4	Flooded	Flooded	Flooded	Flooded	7.4	7.0	28297	11832	Flooded
6	008739STMP	002604SMH	000708ND	45	1.25	14.9	12.5	3.5	0	2.0	-	0.8	1.5	0.0	0.0	0	0	Insufficient Freeboard
6	008771STMP	007503IN	007502IN	9	0.833	4.5	-8.4	2.8	0.5	Flooded	0.1	Flooded	0.1	2.7	0.0	10442	0	Flooded
6	008772STMP	007505IN	007504IN	8	0.833	6.1	11.2	6.2	1.5	Flooded	Flooded	Flooded	Flooded	6.1	1.5	42903	1621	Flooded
6	008773STMP	007507IN	007506IN	8	0.833	3.9	12.5	0	0	-	-	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008774STMP	007508IN	007507IN	10	0.833	3.9	7.4	1.5	0	Flooded	-	Flooded	0.6	1.3	0.0	2988	0	Flooded
6	008775STMP	002545SMH	007509IN	63	2	27.4	9.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008776STMP	007509IN	007515IN	98	2.5	32.1	9.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008777STMP	007510IN	007509IN	10	0.833	4.8	12.2	0	0	-	0.7	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	008779STMP	007512IN	002587SMH	40	1	4.9	12.8	0	0	-	0.5	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008791STMP	002608SMH	002606SMH	252	3.5	156.8	16.2	2.4	0	Flooded	0.1	Flooded	-	2.0	0.0	10465	0	Flooded
6	008792A	002610SMH	000711ND	7	3	9.3	4.4	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008792B	000711ND	002611SMH	305	3	18.0	8.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008857STMP	002591SMH	002590SMH	167	1.5	5.3	3.0	1	0	0.0	-	-	-	0.0	0.0	0	0	Surcharged
6	008860STMP	007530IN	002591SMH	47	1.5	5.3	5.0	0	1	-	0.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008861STMP	005517IN	007530IN	194	1	5.3	6.7	2.8	0	Flooded	-	Flooded	-	2.4	0.0	13053	0	Flooded
6	008862STMP	005519IN	005518IN	19	1	6.5	8.2	1.4	1.7	Flooded	2.0	Flooded	1.5	1.0	0.0	3507	0	Flooded
6	008863STMP	005518IN	005520IN	184	1.25	6.5	-5.3	1.7	0	1.8	-	1.5	-	0.0	0.0	0	0	Insufficient Freeboard
6	008864STMP	005520IN	002562SMH	53	1.25	6.5	6.8	0	0.5	-	0.2	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008876STMP	005547IN	005546IN	19	0.833	3.3	11.2	0	0	-	0.4	0.6	-	0.0	0.0	0	0	Sufficient Capacity
6	008877STMP	005548IN	005547IN	14	0.833	3.3	-6.3	1.6	0	Flooded	-	Flooded	0.6	1.4	0.0	2808	0	Flooded
6	008878STMP	005549IN	002545SMH	278	2	27.4	10.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	008882STMP	005554IN	005553IN	39	1.5	17.8	10.0	1	1.2	1.5	1.3	1.4	1.7	0.0	0.0	0	0	Insufficient Freeboard
6	008883STMP	005556IN	005554IN	35	1.25	3.5	5.9	0.6	1	0.6	1.8	-	1.4	0.0	0.0	0	0	Surcharged
6	008884STMP	005564IN	005554IN	135	1.5	14.5	9.3	0.8	1	1.0	1.5	-	1.4	0.0	0.0	0	0	Surcharged
6	008885STMP	005555IN	005554IN	8	0.833	1.4	6.8	0	1	-	2.2	0.7	1.4	0.0	0.0	0	0	Sufficient Capacity
6	008887STMP	005558IN	005556IN	38	1	3.5	6.0	0.6	0.6	0.6	0.8	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	008888STMP	005561IN	005558IN	29	1	3.5	4.5	0.7	0.6	0.9	0.6	0.9	1.6	0.0	0.0	0	0	Insufficient Freeboard
6	008891STMP	005562IN	005561IN	12	0.833	3.5	9.8	0	0.7	-	1.0	0.4	0.9	0.0	0.0	0	0	Sufficient Capacity
6	008892STMP	005563IN	005562IN	9	0.833	3.5	6.7	1	0	Flooded	-	Flooded	0.4	0.9	0.0	1414	0	Flooded
6	009032STMP	007486IN	007488IN	161	1	6.2	7.8	0.7	0	1.0	-	0.9	-	0.0	0.0	0	0	Insufficient Freeboard
6	009033STMP	007488IN	002580SMH	60	1.25	6.2	10.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034A	002580SMH	000700ND	130	1.25	6.2	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009034B	000700ND	002581SMH	28	1.25	6.2	9.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009037A	002581SMH	000744ND	317	1.5	10.4	14.0	0	0	-	-	-	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009037B	000744ND	000740ND	191	1.5	17.5	16.1	0	1.5	-	Flooded	0.8	Flooded	0.0	0.9	0	19	Sufficient Capacity
6	009037C	000740ND	000741ND	82	1.5	27.5	17.3	1.5	2.2	Flooded	Flooded	Flooded	Flooded	0.9	1.5	19	37	Flooded
6	009037D	000741ND	005658IN	322	1.5	26.4	14.8	2.2	0	Flooded	-	Flooded	-	1.5	0.0	37	0	Flooded
6	009038STMP	002582SMH	002581SMH	168	1	4.5	7.7	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009042STMP	002583SMH	002582SMH	30	1	4.5	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009043STMP	007493IN	002583SMH	14	1	4.5	10.6	0	0	-	-	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009044STMP	007495IN	007494IN	8	1	4.7	-5.9	2.6	1.5	Flooded	Flooded	Flooded	Flooded	2.6	1.5	6740	882	Flooded
6	009045STMP	007494IN	007493IN	10	1	4.5	-5.8	1.5	0	Flooded	-	Flooded	0.5	1.5	0.0	882	0	Flooded
6	009046STMP	007497IN	007496IN	75	1	6.1	8.0	1.2	1.7	Flooded	Flooded	Flooded	Flooded	1.1	1.2	3673	1642	Flooded
6	009047STMP	007496IN	007495IN	118	1	5.5	6.9	1.7	2.6	Flooded	Flooded	Flooded	Flooded	1.2	2.6	1642	6740	Flooded
6	009058STMP	002648SMH	000431CB	87	1.5	10.0	8.6	0	1.3	-	3.5	1.5	0.1	0.0	0.0	0	0	Sufficient Capacity

TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	DGravityMain FacilityID	US	DS	Length (ft)	Diameter/ Height x Width (ft)	Maximum Flow (ft3/s)	Maximum Velocity (fps)	US	DS	US	DS	US	DS	US	DS	US	DS	Summary Pipe Condition
6	009059STMP	005512IN	000698ND	9	1.25	8.0	7.7	0	0	-	1.1	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009060STMP	005513IN	005512IN	8	0.833	8.0	15.6	0.1	0	Flooded	0.3	Flooded	-	0.1	0.0	36	0	Flooded
6	009061STMP	005515IN	002538SMH	6	1	9.1	11.4	3.6	2.4	Flooded	Flooded	Flooded	Flooded	3.3	1.9	23293	14674	Flooded
6	009062STMP	005516IN	005515IN	6	0.833	5.7	10.4	3.6	3.6	Flooded	Flooded	Flooded	Flooded	3.6	3.3	14506	23293	Flooded
6	009064STMP	002538SMH	005541IN	41	2.5	75.1	15.1	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.9	2.3	14674	31866	Flooded
6	009066STMP	002539SMH	002542SMH	264	2.5	61.5	15.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067A	002540SMH	000698ND	149	2.5	48.1	14.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009067B	000698ND	002539SMH	19	2.5	56.0	12.0	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009068STMP	005514IN	002539SMH	33	0.833	0.4	3.9	0	0	-	1.1	0.9	-	0.0	0.0	0	0	Sufficient Capacity
6	009069STMP	002571SMH	002541SMH	61	2	36.8	16.7	1.9	2.4	Flooded	Flooded	Flooded	Flooded	0.1	1.8	85	16469	Flooded
6	009070STMP	002541SMH	000697ND	56	2	31.6	9.9	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.8	2.1	16469	434	Flooded
6	009073STMP	005544IN	002542SMH	20	1	6.6	11.5	0.7	0	0.4	1.1	1.6	-	0.0	0.0	0	0	Insufficient Freeboard
6	009088STMP	007616IN	002611SMH	32	0.833	5.8	12.1	0.5	0	Flooded	-	Flooded	-	0.5	0.0	921	0	Flooded
6	009089STMP	007617IN	007616IN	20	0.833	7.1	13.6	0.1	0.5	Flooded	Flooded	Flooded	Flooded	0.1	0.5	41	921	Flooded
6	009090STMP	000432CB	000740ND	17	1.25	12.2	9.7	1.5	1.5	Flooded	Flooded	Flooded	Flooded	0.9	0.9	3935	19	Flooded
6	009091STMP	007561IN	002648SMH	18	1.25	9.8	-7.9	12	0	2.9	0.0	-	1.5	0.0	0.0	0	0	Surcharged
6	009179STMP	005545IN	005544IN	9	0.833	6.6	12.9	0.7	0.7	Flooded	0.5	Flooded	1.6	0.7	0.0	2201	0	Flooded
6	009180STMP	002542SMH	002543SMH	274	3	67.7	13.1	0	2.2	-	RIM	-	RIM	0.0	0.0	0	0	Sufficient Capacity
6	009181STMP	002543SMH	002544SMH	125	3.5	67.6	7.6	2.2	2.4	RIM	RIM	RIM	RIM	0.0	0.0	0	0	Insufficient Freeboard
6	009182STMP	002612SMH	002609SMH	58	3	53.3	13.6	1.9	2.3	2.0	Flooded	-	Flooded	0.0	1.9	0	27592	Surcharged
6	009183STMP	005546IN	005549IN	26	2	20.9	10.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009184STMP	005553IN	005546IN	161	1.5	17.8	10.1	1.2	0	1.3	-	1.7	-	0.0	0.0	0	0	Insufficient Freeboard
6	009185STMP	007501IN	007498IN	33	1.25	10.6	8.6	2.2	1	1.7	1.2	1.1	1.9	0.0	0.0	0	0	Insufficient Freeboard
6	009186STMP	007499IN	007498IN	13	0.833	1.1	6.1	0	1	-	1.6	0.8	1.9	0.0	0.0	0	0	Sufficient Capacity
6	009187STMP	007500IN	007499IN	10	0.833	1.1	-3.1	0	0	-	-	0.5	0.8	0.0	0.0	0	0	Sufficient Capacity
6	009188STMP	007504IN	007501IN	9	0.833	6.4	13.3	1.5	2.2	Flooded	2.2	Flooded	1.1	1.5	0.0	1621	0	Flooded
6	009189STMP	007502IN	007501IN	5	0.833	4.6	10.7	0.5	2.2	0.1	2.2	0.1	1.1	0.0	0.0	0	0	Insufficient Freeboard
6	009191STMP	005665IN	000432CB	6	0.833	6.9	14.4	1.1	1.5	Flooded	Flooded	Flooded	Flooded	1.1	0.9	3867	3935	Flooded
6	009192STMP	007524IN	007519IN	87	1	9.1	11.4	1.5	0	2.4	0.2	1.1	-	0.0	0.0	0	0	Insufficient Freeboard
6	009193STMP	007525IN	007524IN	9	1	9.1	11.4	1.5	1.5	Flooded	2.0	Flooded	1.1	1.5	0.0	7970	0	Flooded
6	009195STMP	007528IN	007526IN	98	2	5.3	6.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009196STMP	002589SMH	007528IN	80	1.5	5.3	6.3	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009197STMP	007538IN	000457CB	16	0.833	6.5	14.6	0	0	-	-	0.4	-	0.0	0.0	0	0	Sufficient Capacity
6	009372STMP	002535SMH	002536SMH	16	2.5	48.0	9.8	0.5	0.5	1.2	1.0	-	-	0.0	0.0	0	0	Surcharged
6	009373STMP	002536SMH	002540SMH	202	2.5	48.0	10.1	0.5	0	1.0	-	-	-	0.0	0.0	0	0	Surcharged
6	009374STMP	005511IN	000450CB	34	0.833	7.3	13.6	9.1	9.5	Flooded	Flooded	Flooded	Flooded	9.1	7.9	83760	10021	Flooded
6	009376STMP	000450CB	002539SMH	26	0.833	5.9	10.6	9.5	0	Flooded	1.1	Flooded	-	7.9	0.0	10021	0	Flooded
6	009377STMP	002590SMH	002589SMH	61	1.5	5.3	-3.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009379STMP	002611SMH	002607SMH	47	3	23.7	9.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009380STMP	007604IN	002607SMH	21	0.833	5.2	15.0	0	0	-	0.6	0.5	-	0.0	0.0	0	0	Sufficient Capacity
6	009381STMP	007605IN	007604IN	11	0.833	5.2	10.2	2	0	Flooded	-	Flooded	0.5	2.0	0.0	8107	0	Flooded
6	009382STMP	002544SMH	002608SMH	125	3.5	162.2	16.7	2.4	2.4	RIM	Flooded	RIM	Flooded	0.0	2.0	0	10465	Insufficient Freeboard
6	009383STMP	007606IN	002608SMH	13	1.25	7.5	6.2	2.4	2.4	Flooded	Flooded	Flooded	Flooded	1.6	2.0	3992	10465	Flooded
6	009385STMP	007607IN	007606IN	6	1	7.3	11.4	2.4	2.4	Flooded	Flooded	Flooded	Flooded	2.4	1.6	9471	3992	Flooded
6	009387STMP	007610IN	002544SMH	33	2.5	93.3	18.8	2.5	2.4	Flooded	RIM	Flooded	RIM	2.2	0.0	37060	0	Flooded
6	009388STMP	005541IN	007610IN	625	2.5	71.8	15.1	2.4	2.5	Flooded	Flooded	Flooded	Flooded	2.3	2.2	31866	37060	Flooded
6	009389STMP	002527SMH	002612SMH	47	3	53.3	18.5	0	1.9	-	2.0	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009390STMP	002609SMH	002544SMH	24	3	55.5	7.9	2.3	2.4	Flooded	RIM	Flooded	RIM	1.9	0.0	27592	0	Flooded
6	009391STMP	002526SMH	002610SMH	106	1.25	9.3	14.5	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

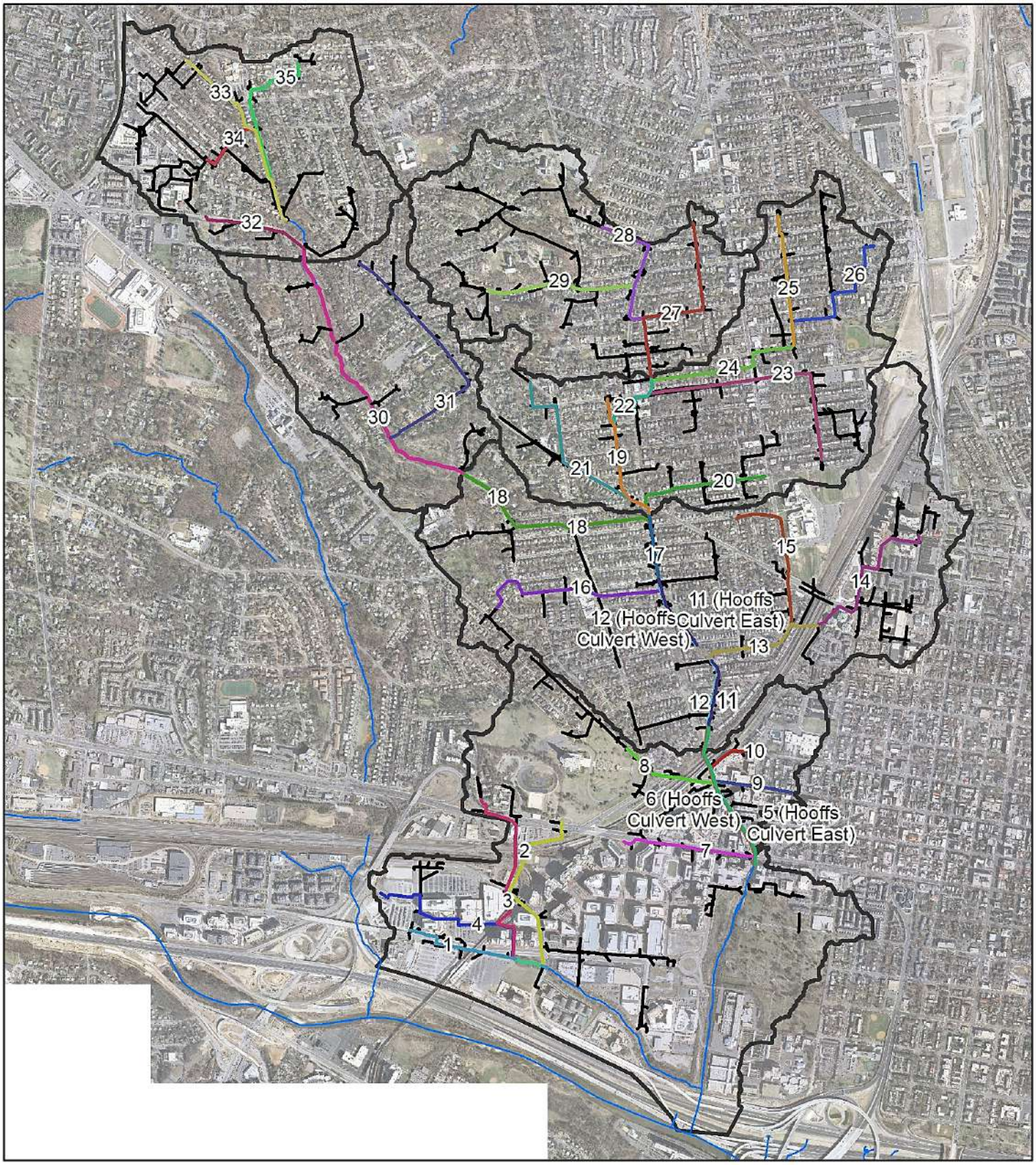
TABLE 1

Hooffs Run Scenario 4 (June 2006 Storm Event and Boundary Condition) Detailed Hydraulic Model Results

		Point ID						Duration of Surcharge (hrs)		Surcharge/ Depth Above Crown (ft)		Insufficient Freeboard/ Depth Below Rim (ft)		Duration of Flooding (hrs)		Flooded Volume (ft3)		
Subshed	**DGravityMain FacilityID**	**US**	**DS**	**Length (ft)**	**Diameter/ Height x Width (ft)**	**Maximum Flow (ft3/s)**	**Maximum Velocity (fps)**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**US**	**DS**	**Summary Pipe Condition**
6	009392STMP	007611IN	000711ND	5	1.25	8.8	11.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	009393STMP	007612IN	007611IN	7	0.833	8.8	17.1	0.6	0	Flooded	0.1	Flooded	-	0.6	0.0	1854	0	Flooded
6	009394STMP	007613IN	007610IN	29	1	10.6	13.8	4.6	2.5	Flooded	Flooded	Flooded	Flooded	4.6	2.2	71186	37060	Flooded
6	014900STMP	005457IN	002552SMH	359	2	31.3	9.8	0.9	1.8	Flooded	4.3	Flooded	0.9	0.2	0.0	238	0	Flooded
6	014901A	005404IN	000682ND	18	2	20.1	8.8	0.5	0.6	1.9	2.1	0.1	0.2	0.0	0.0	0	0	Insufficient Freeboard
6	014901B	000682ND	005457IN	294	2	21.2	9.1	0.6	0.9	2.1	Flooded	0.2	Flooded	0.0	0.2	0	238	Insufficient Freeboard
6	014917STMP	002537SMH	000697ND	10	3	54.4	7.6	2.4	2.4	Flooded	Flooded	Flooded	Flooded	2.3	2.1	52367	434	Flooded
6	014918STMP	000697ND	002538SMH	9	3	84.0	11.8	2.4	2.4	Flooded	Flooded	Flooded	Flooded	2.1	1.9	434	14674	Flooded
6	014957STMP	007515IN	002587SMH	200	2.5	32.1	6.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014958STMP	000745ND	000738ND	338	2.25	38.2	15.8	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014959STMP	002598SMH	002597SMH	145	1.5	11.9	10.1	0	0.5	-	2.7	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014960STMP	004906SMH	004907SMH	21	2	9.1	4.9	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014961STMP	004907SMH	004908SMH	46	2	9.1	7.2	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014963STMP	004908SMH	004909SMH	77	2	9.1	6.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014964STMP	004909SMH	004910SMH	120	2	9.1	7.1	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity
6	014965STMP	004910SMH	002517SMH	26	2	9.1	13.6	0	0	-	-	-	-	0.0	0.0	0	0	Sufficient Capacity

TABLE 2
Hooffs Run Scenario 4 Outfall Boundary Conditions: June 2006 Boundary Conditions

Node ID	Location	Boundary Condition
000080CP	Old Cameron Run	User Storage History
000302IO	Old Cameron Run	User Storage History
000306IO	Old Cameron Run	User Storage History
000341IO	Hooffs Run	User Storage History
000342IO	Hooffs Run	User Storage History
Hooffs_632	Hooffs Run	User Storage History



Legend

Profiles

	4	9	14	19	24	29	34
N/A	5	10	15	20	25	30	35
1	6	11	16	21	26	31	City of Alexandria Streams
2	7	12	17	22	27	32	
3	8	13	18	23	28	33	Hooffs Run Subwatersheds

Hooffs Run Profile Locations

Stormwater Capacity Analysis for Hooffs Run Watershed, City of Alexandria, Virginia

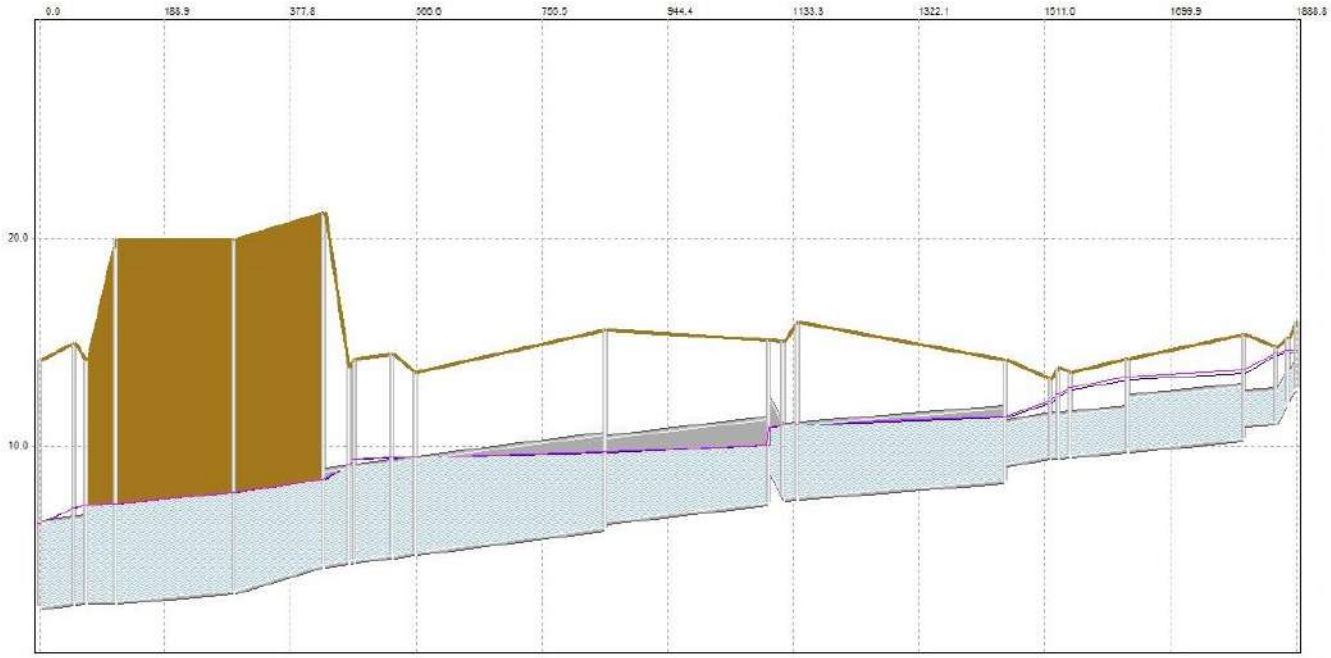
0 750 1,500 3,000
Feet

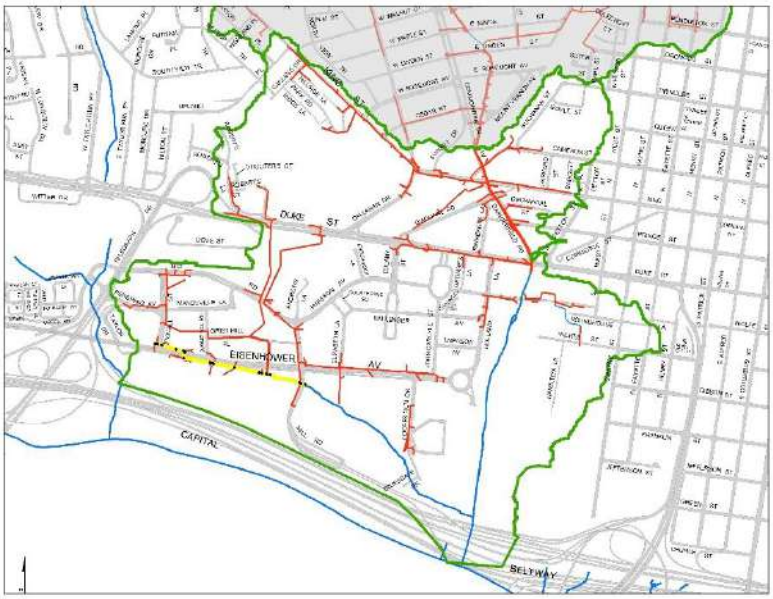
N

CH2MHILL

FIGURE 1

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 1 from 000080CP to 004837IN





Surface Flooding

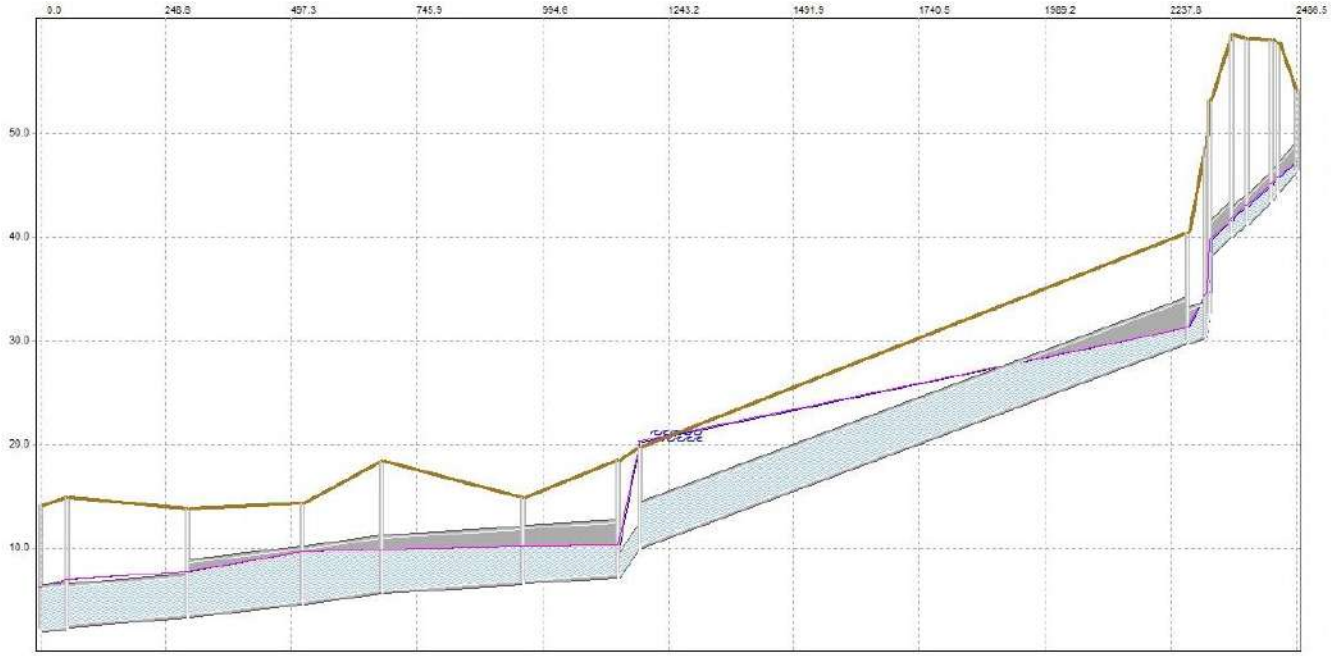
Peak Hydraulic Grade Line

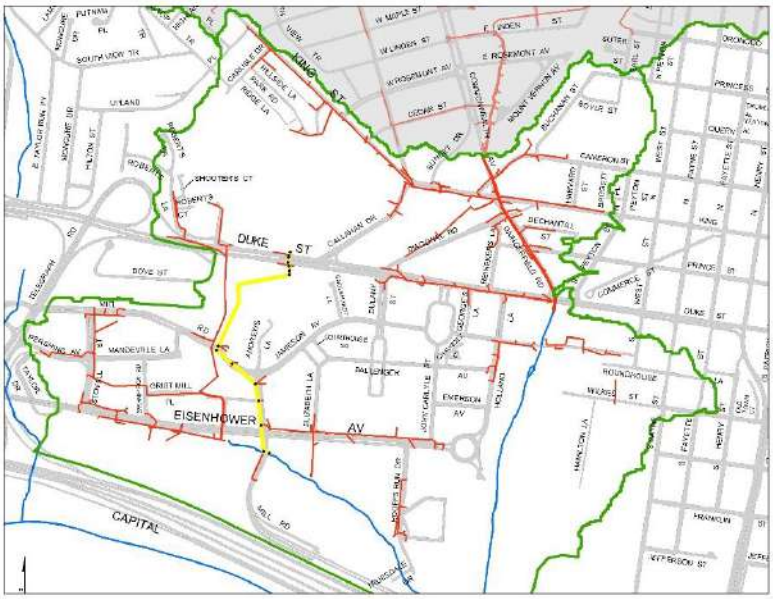
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 2

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 2 from 000080CP to 006016IN





Surface Flooding

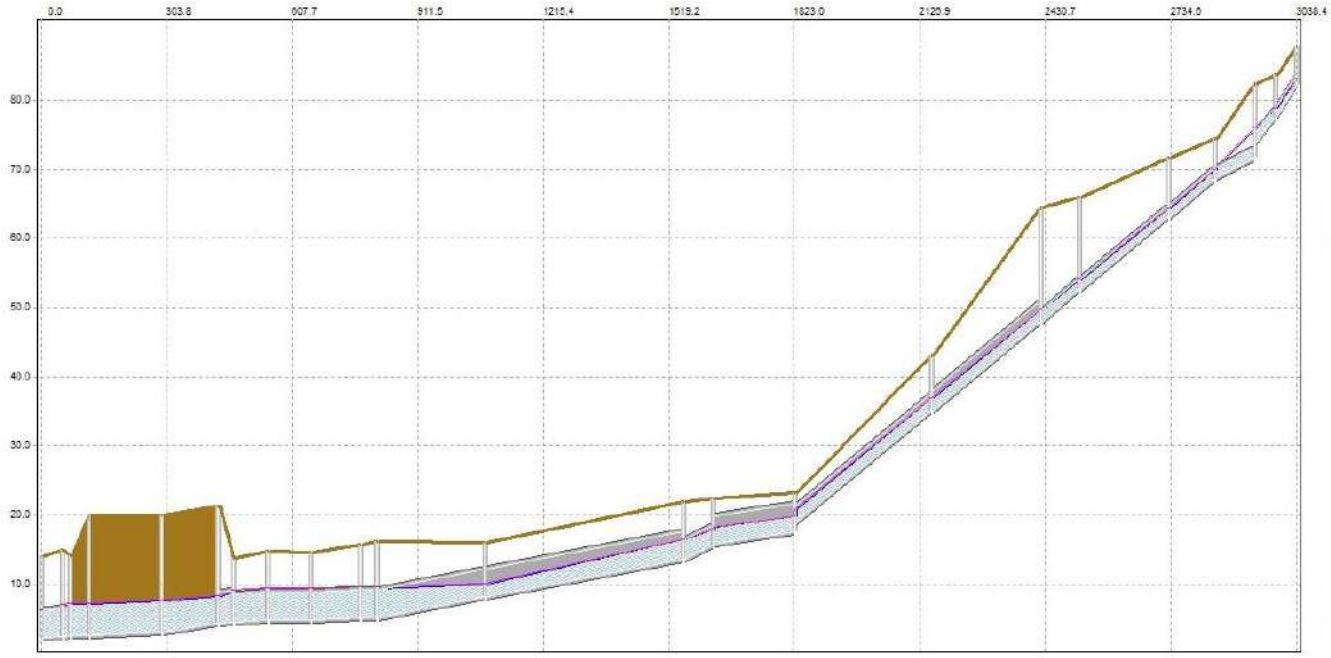
Peak Hydraulic Grade Line

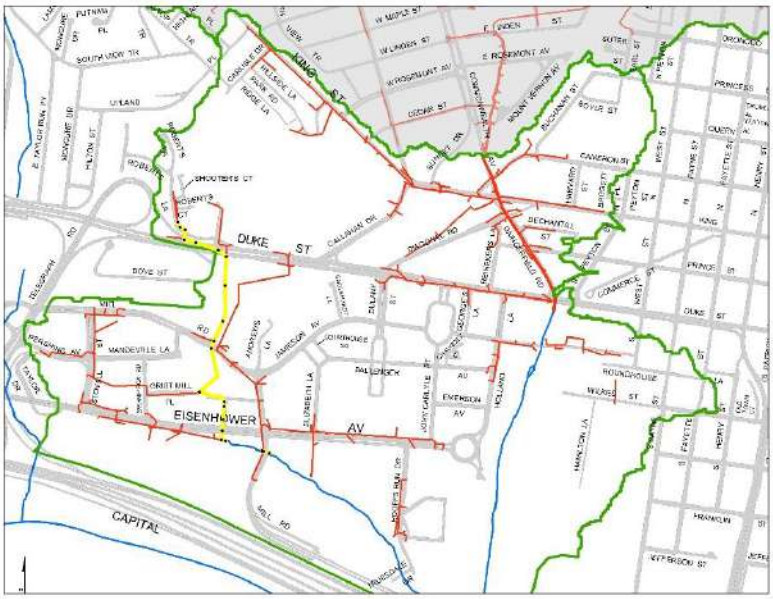
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 3

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 3 from 000080CP to 000658IN





Surface Flooding

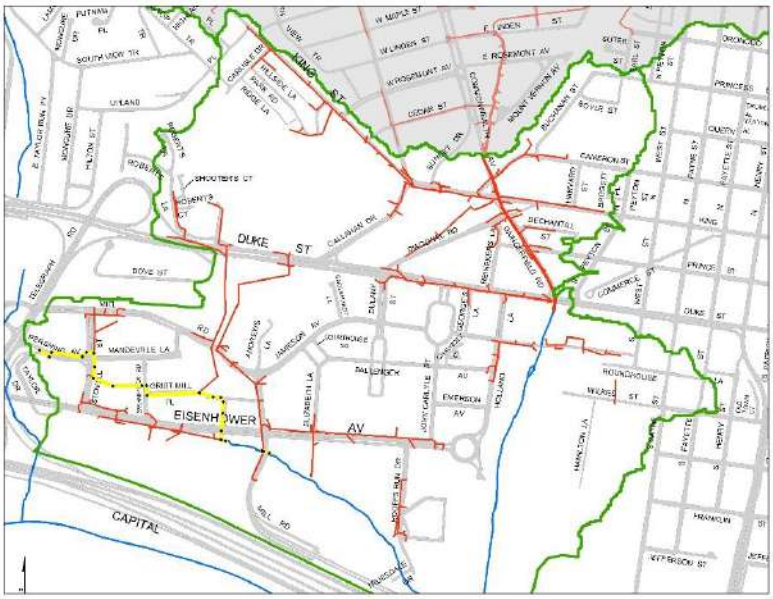
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 4

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 4 from 000080CP to 004860IN



Surface Flooding

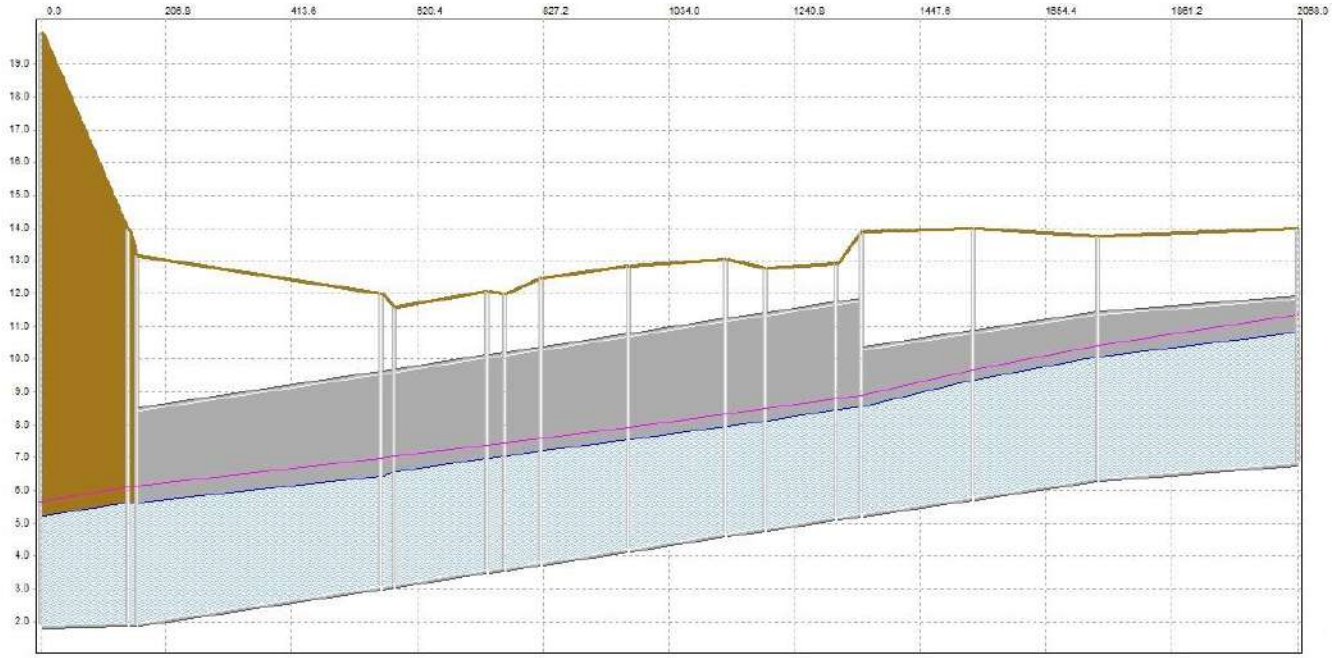
Peak Hydraulic Grade Line

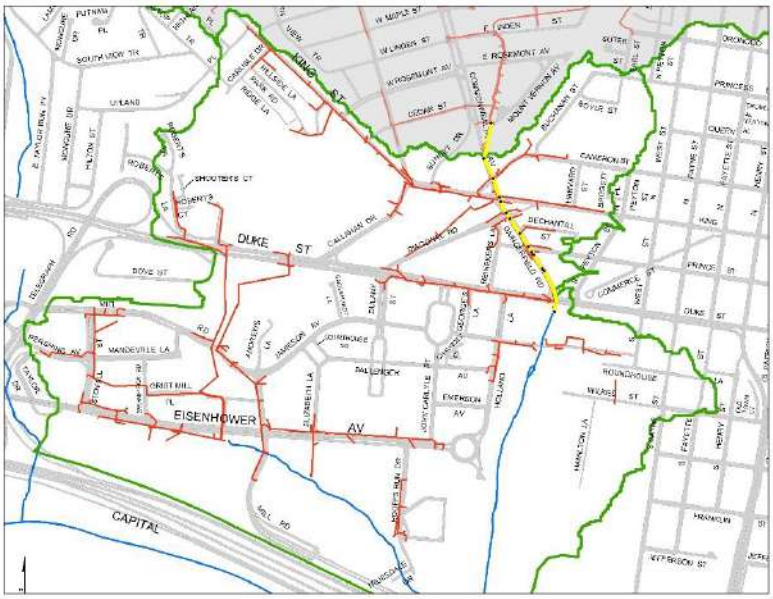
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 5

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 5 from 000293CP to 000939ND





Surface Flooding

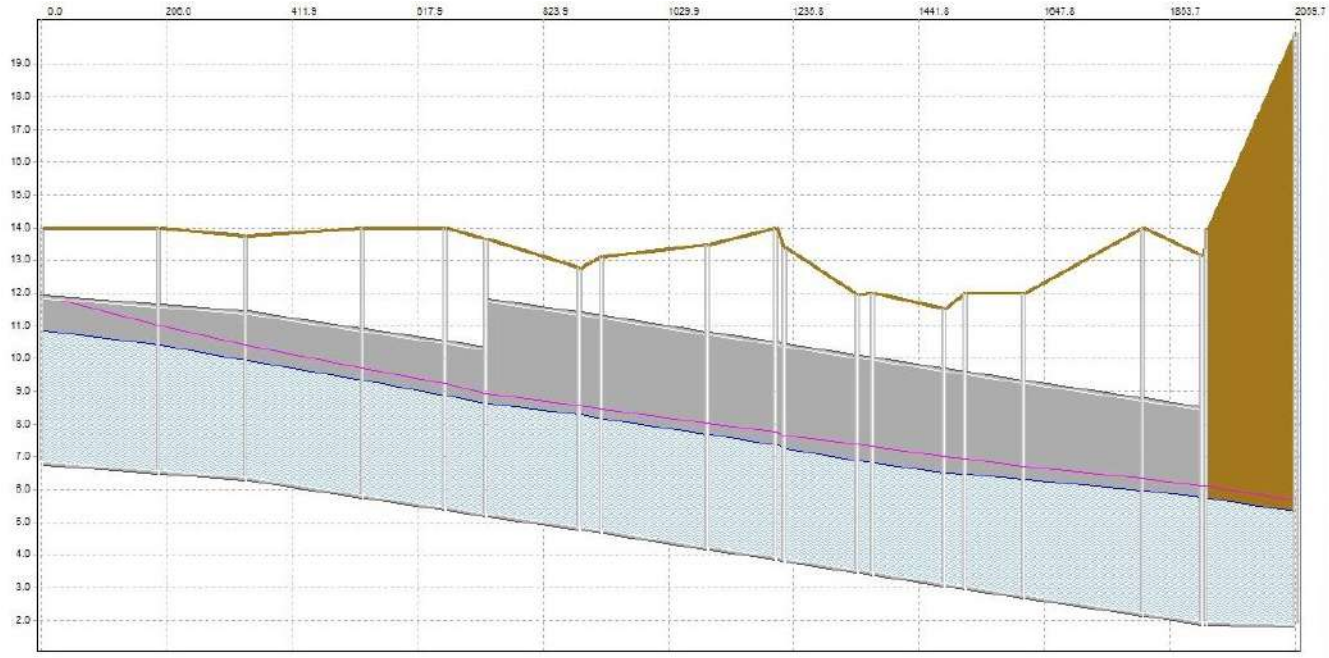
Peak Hydraulic Grade Line

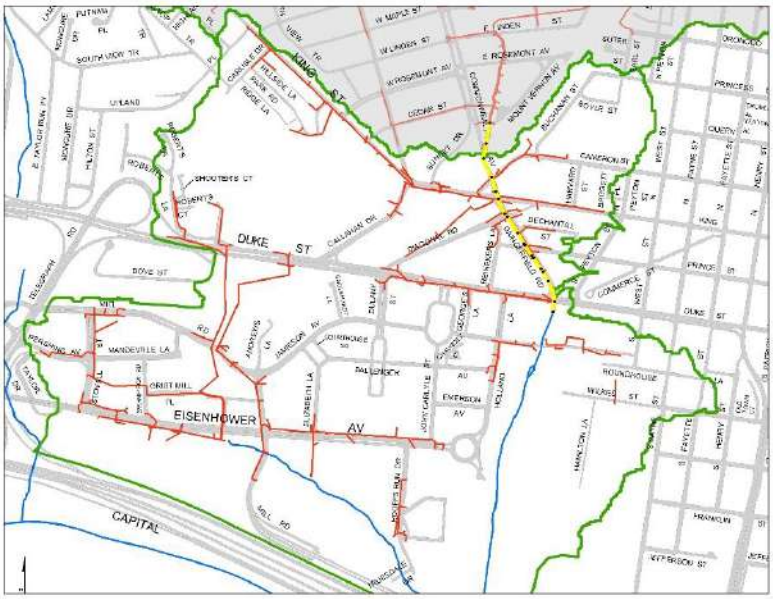
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 6

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 6 from 000292CP to 002912ND





Surface Flooding

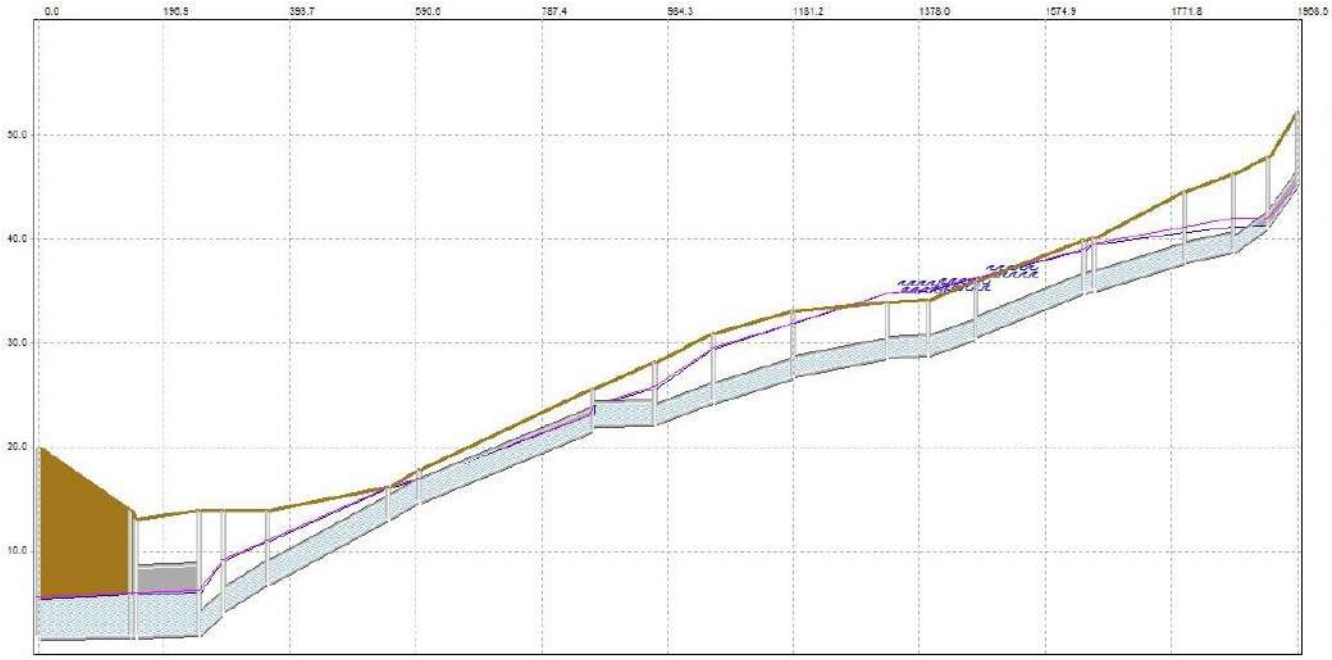
Peak Hydraulic Grade Line

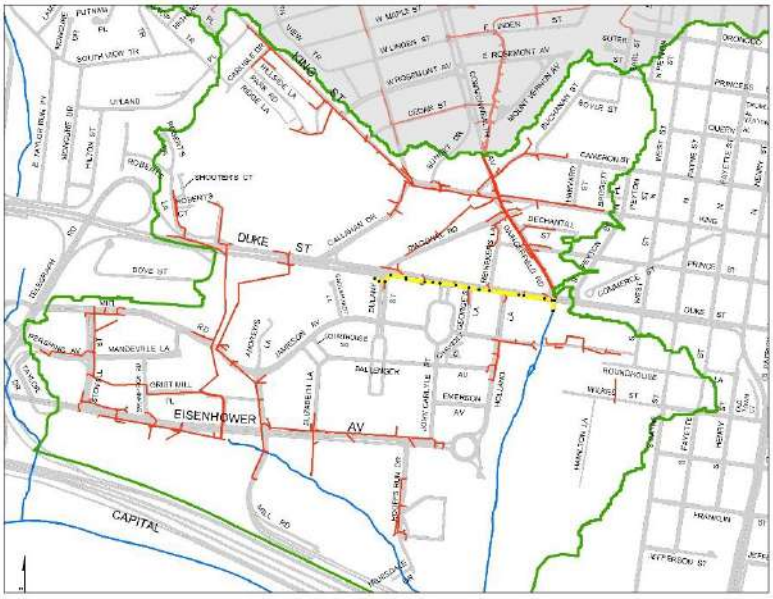
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 7

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 7 from 000292CP to 004975IN





Surface Flooding

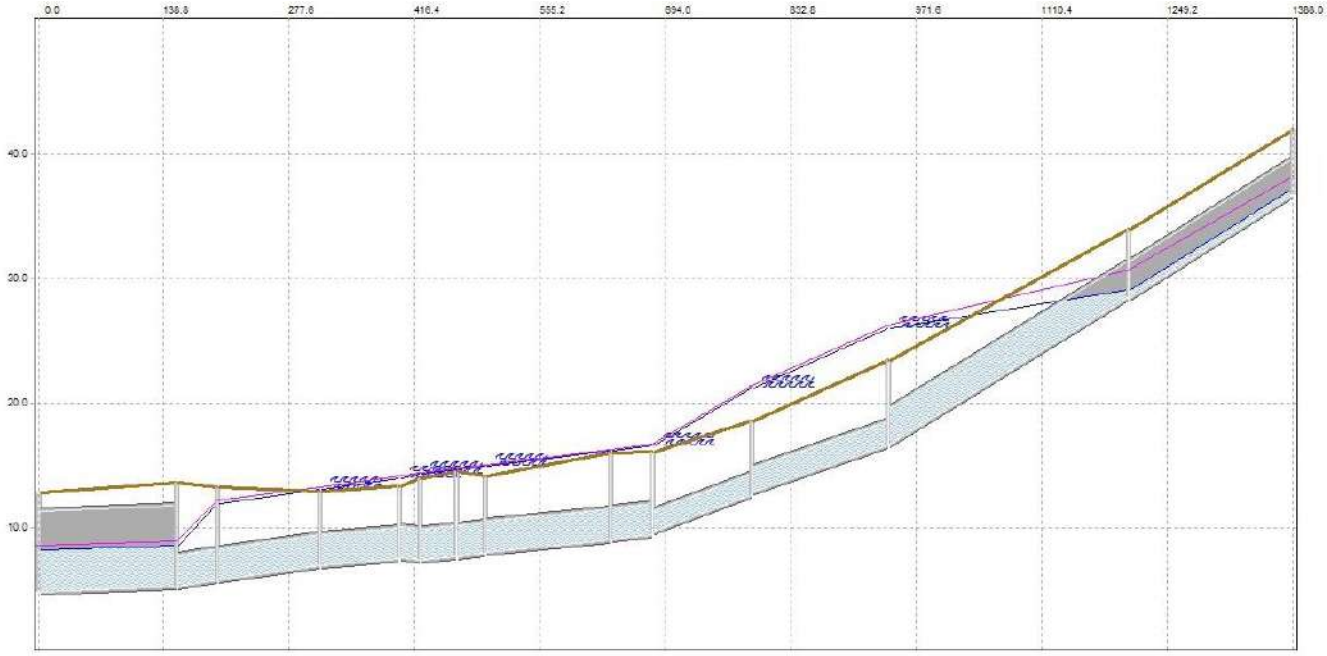
Peak Hydraulic Grade Line

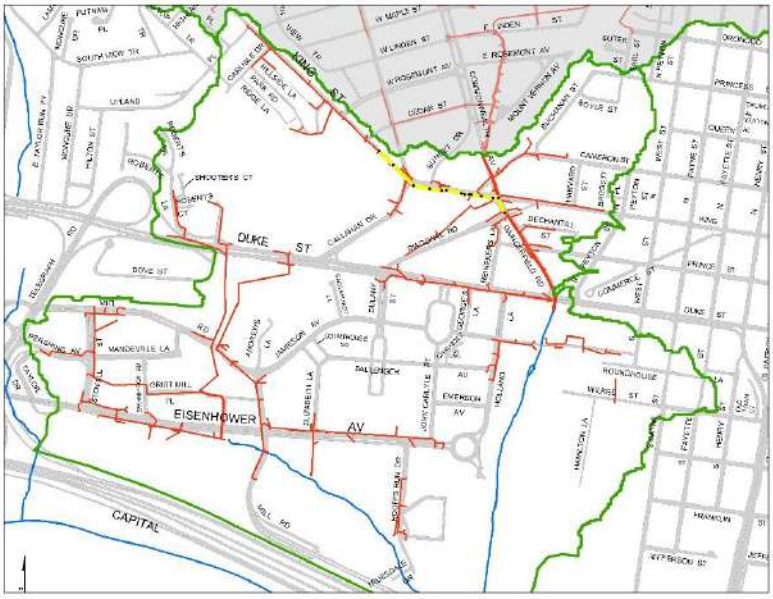
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 8

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 8 from 002913ND to 000912ND





Surface Flooding

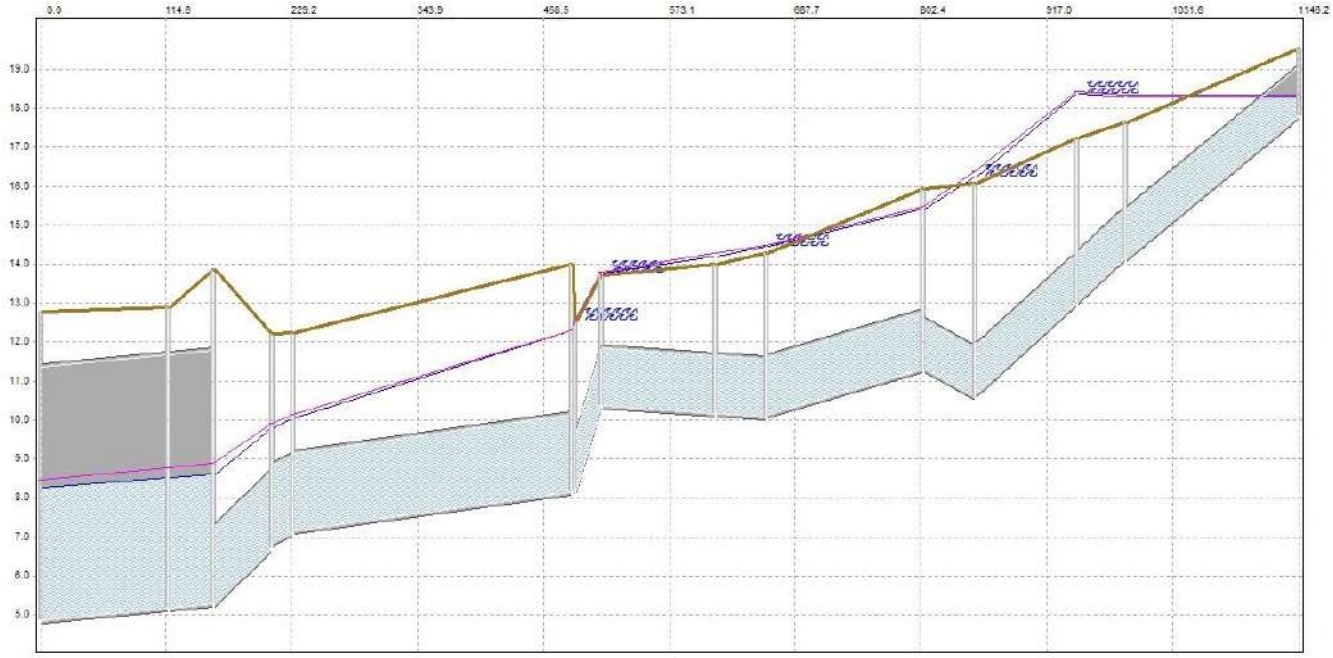
Peak Hydraulic Grade Line

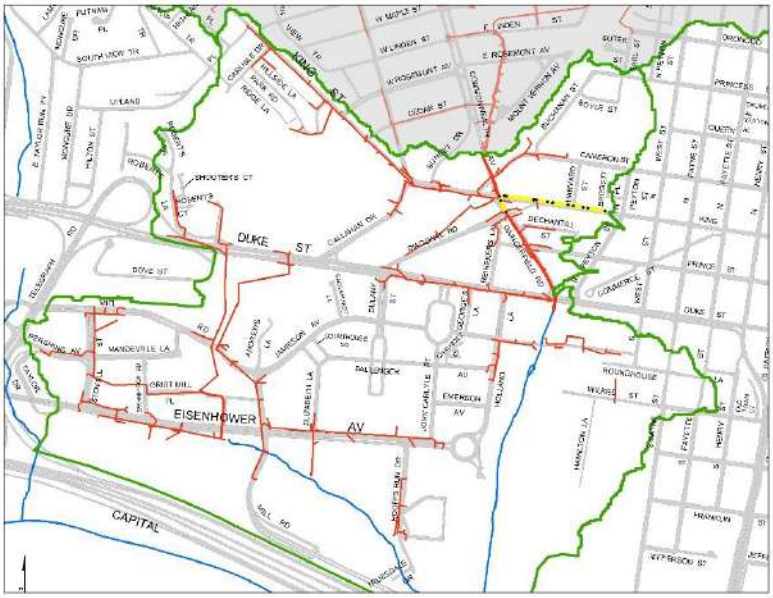
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 9

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 9 from 000958ND to 000944ND





Surface Flooding

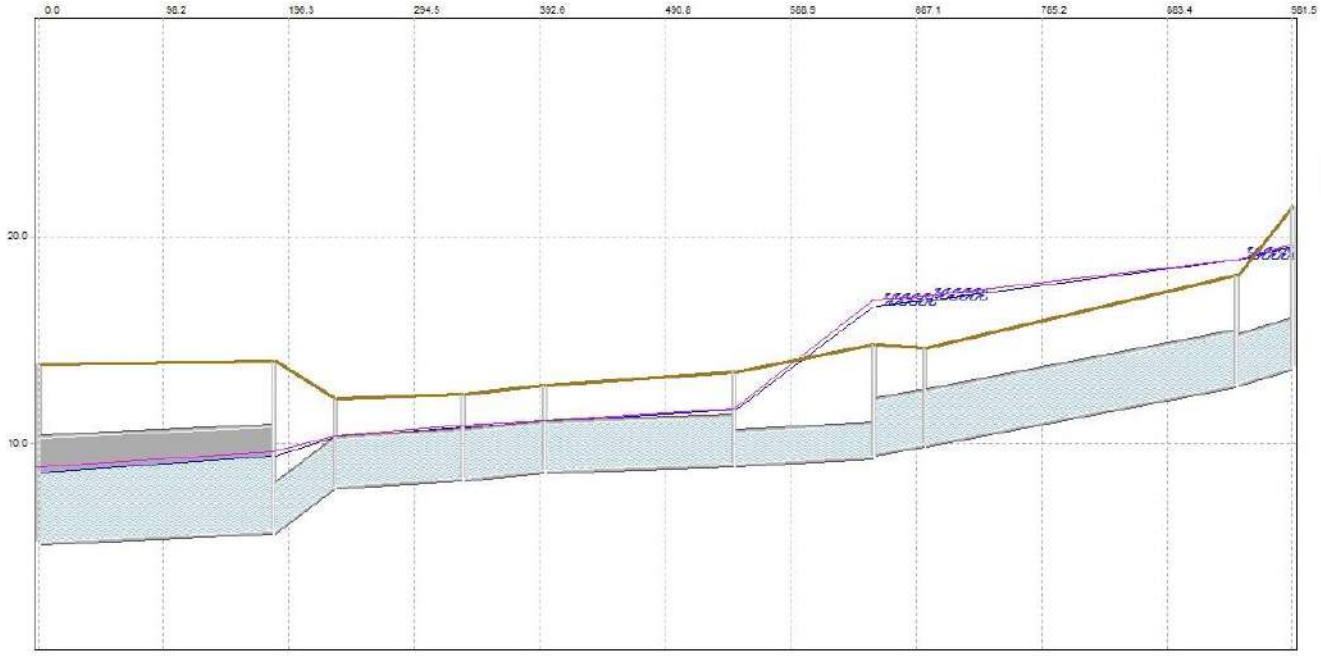
Peak Hydraulic Grade Line

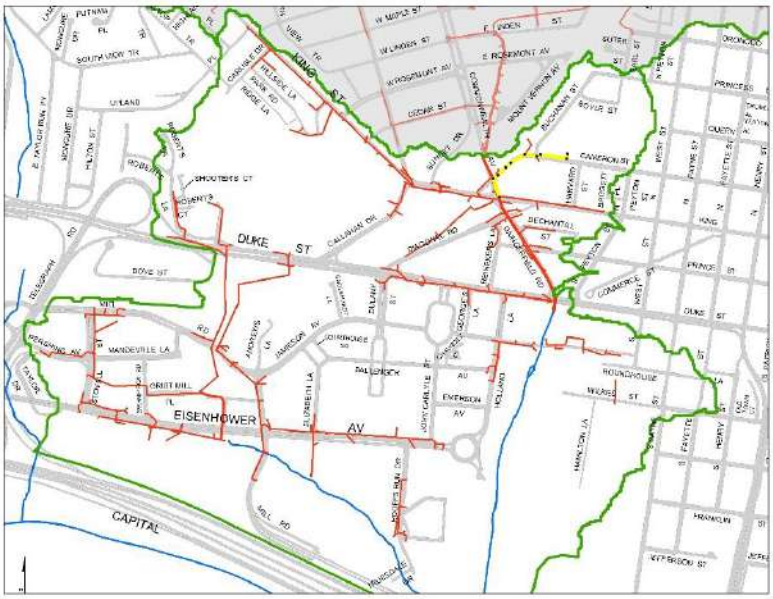
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 10

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 10 from 000960ND to 006100IN





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

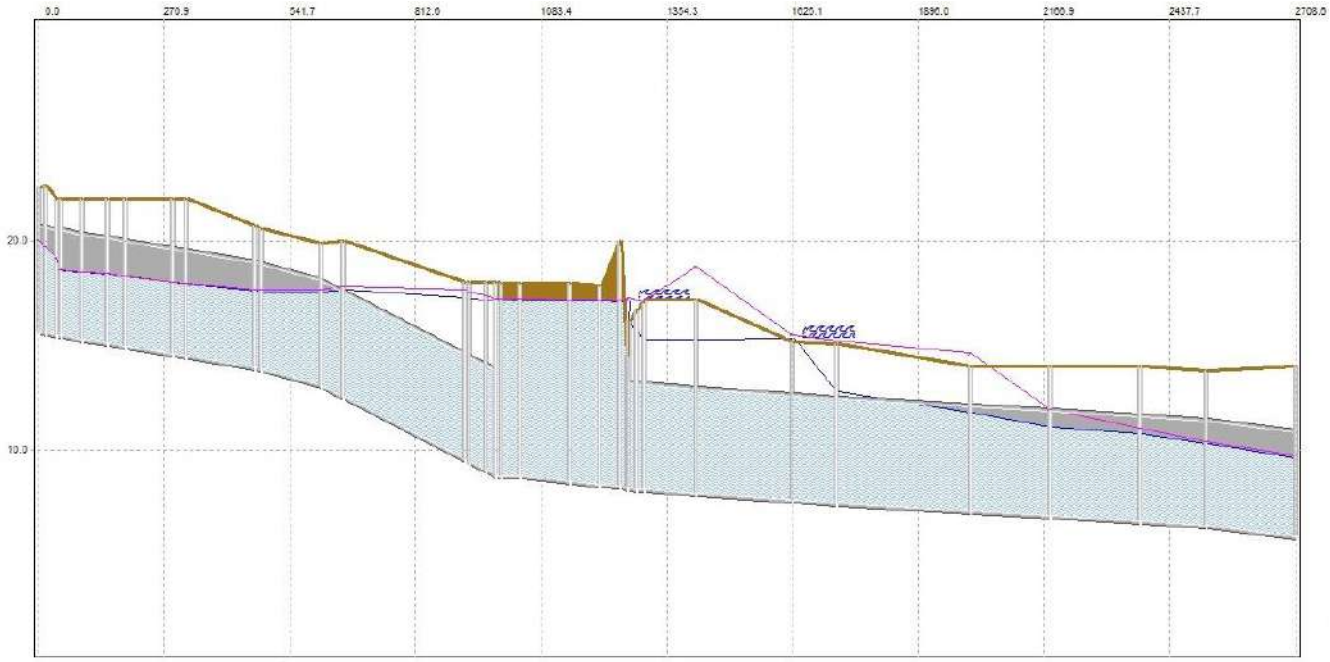
Ground Surface Elevation

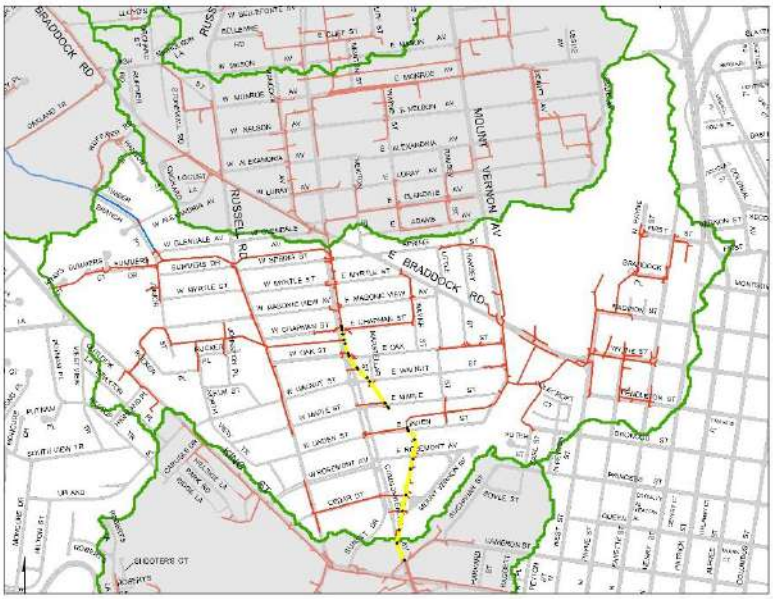
FIGURE 11

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 11 from 000946ND to 003095SMH

FIGURE 12

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 12 from 000945ND to 003095SMH





Surface Flooding

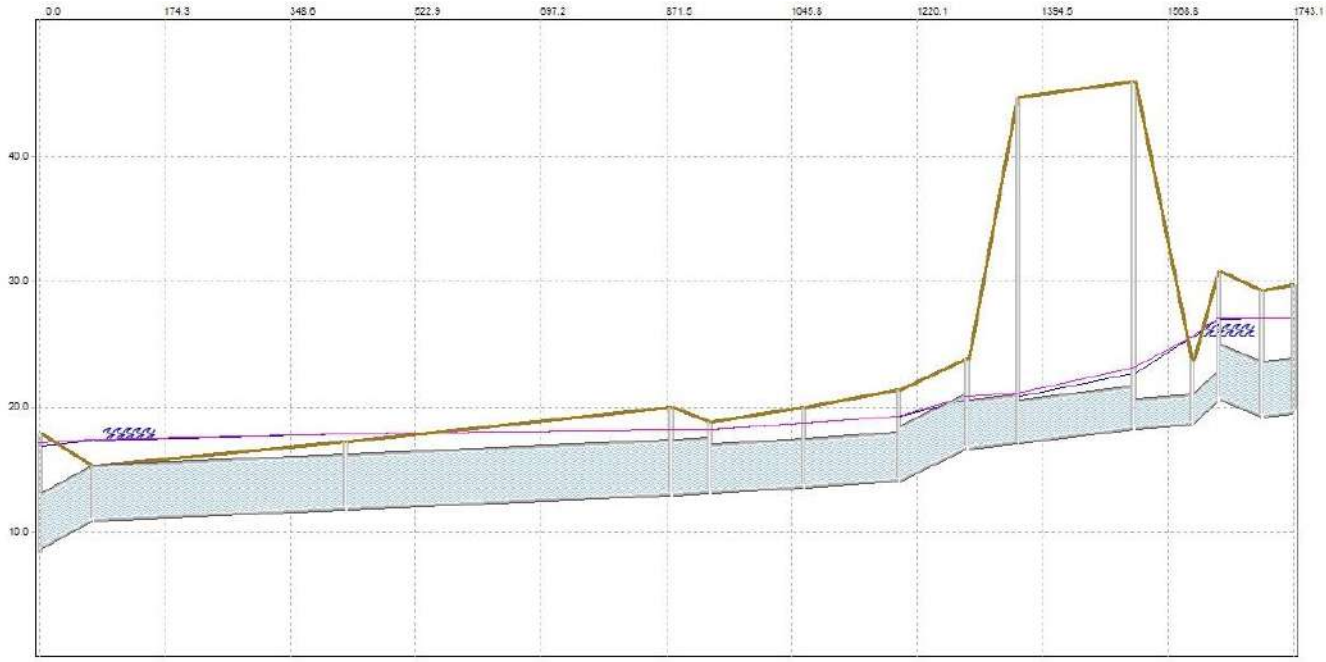
Peak Hydraulic Grade Line

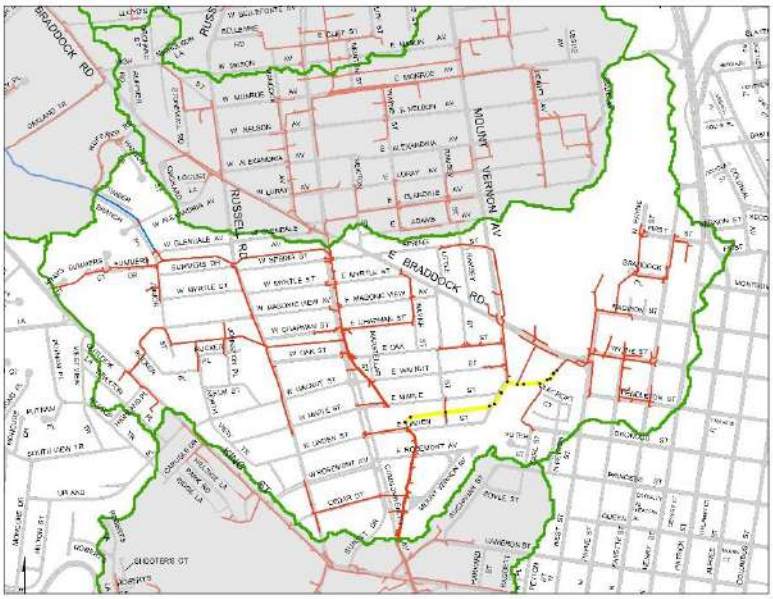
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 13

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 13 from 000546IOto 003457SMH





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 14

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 14 from 000788ND to 003486SMH

FIGURE 15

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 15 from 000789ND to 007762IN

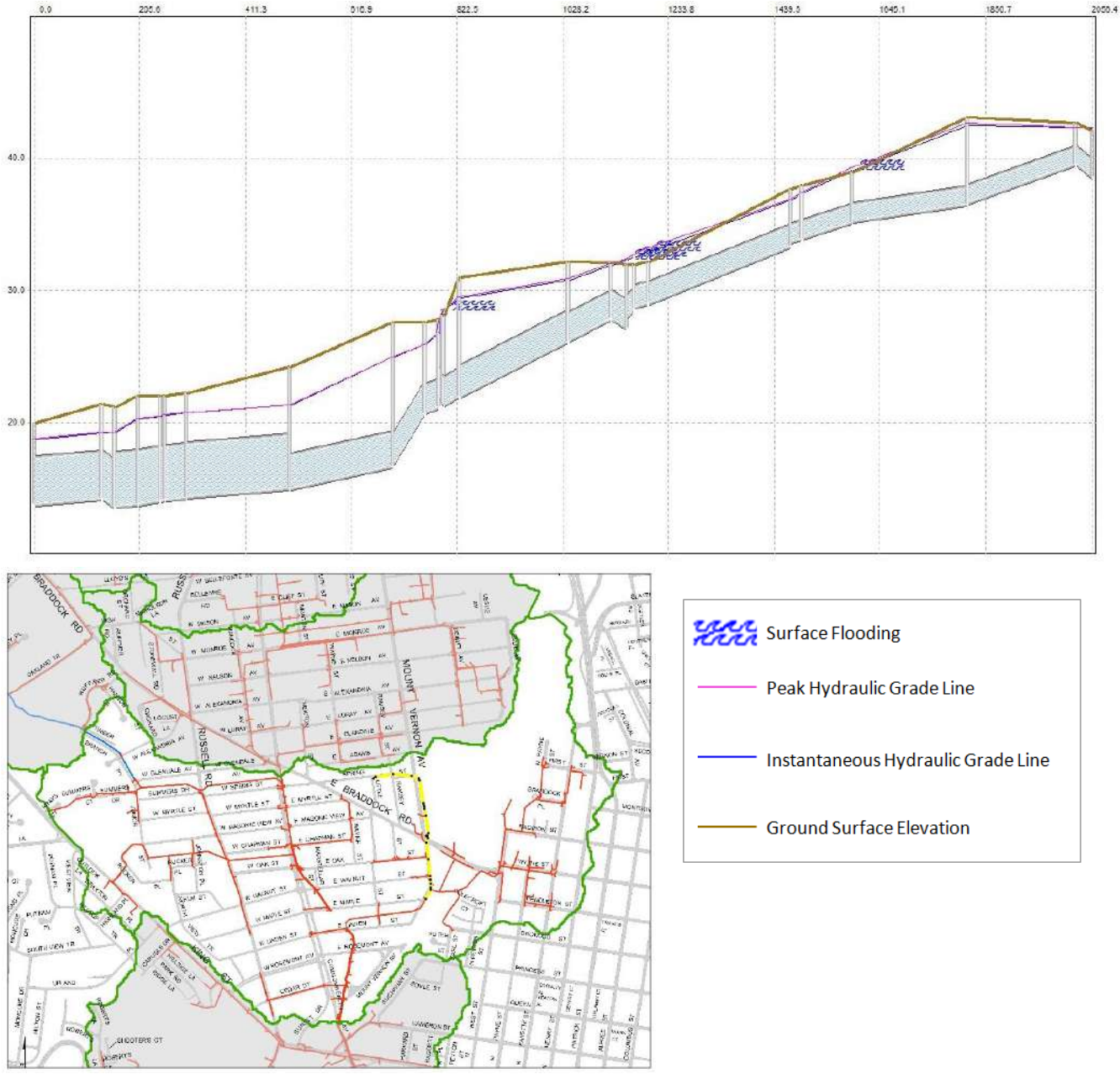
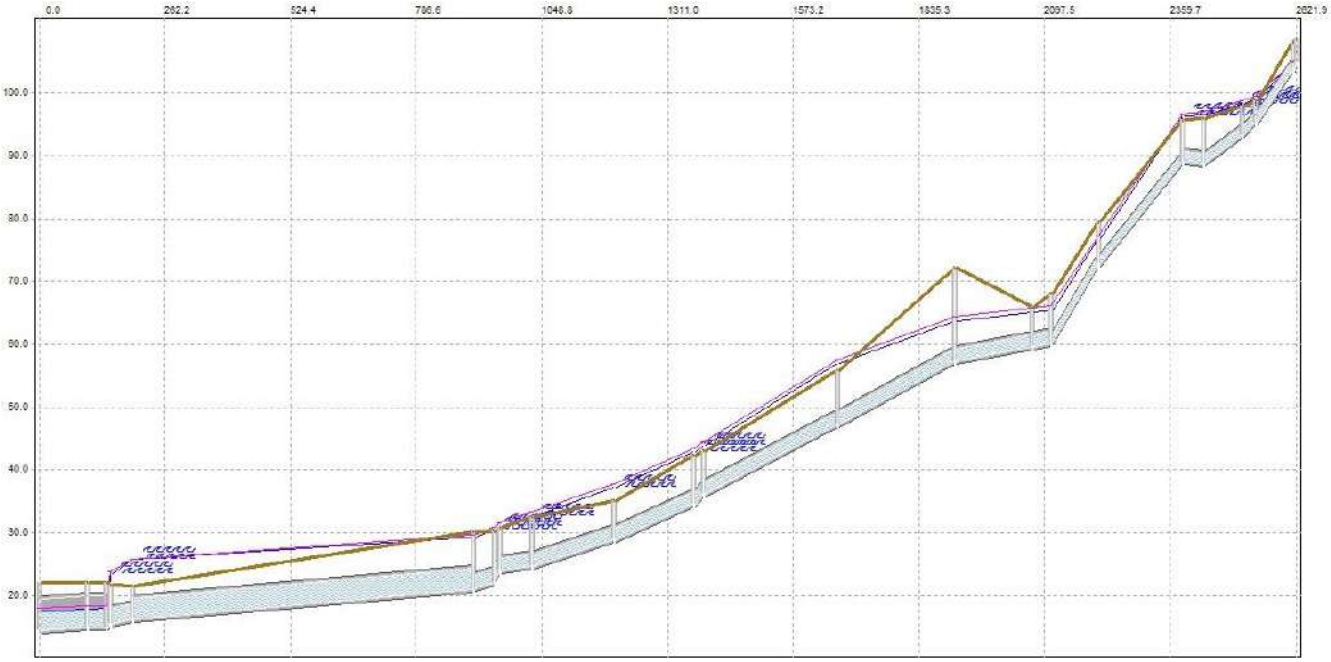
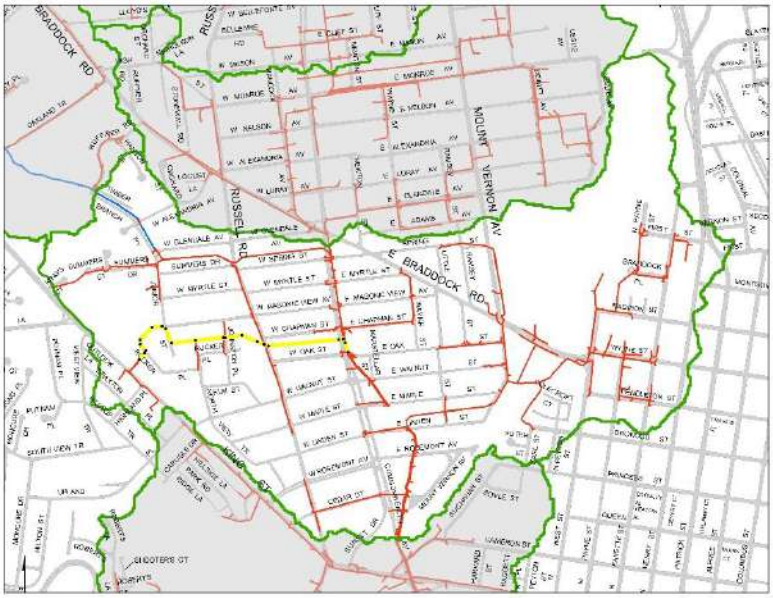


FIGURE 16

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 16 from 000823ND to 002912SMH





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 17

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 17 from 000815ND to 003166SMH

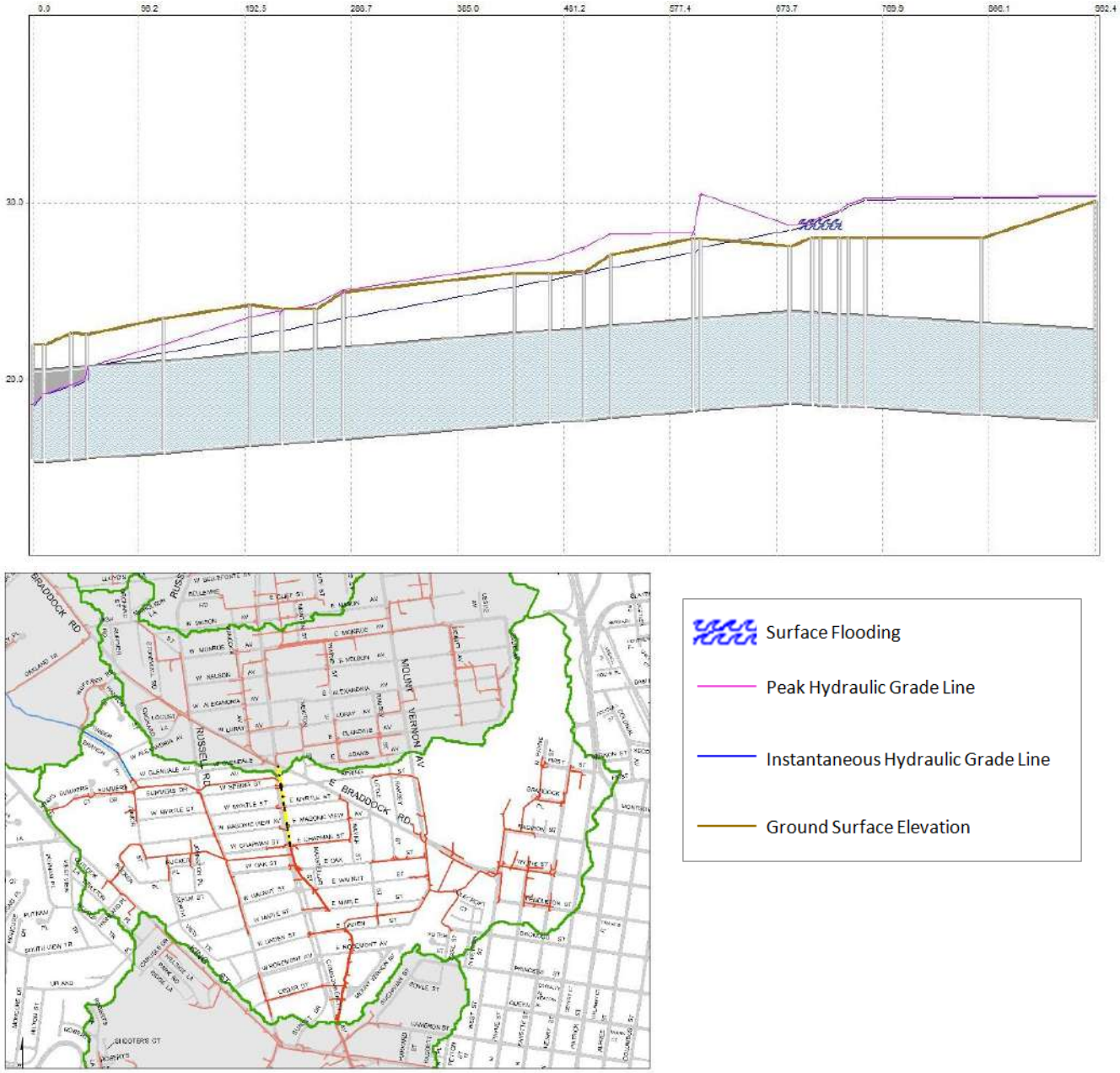
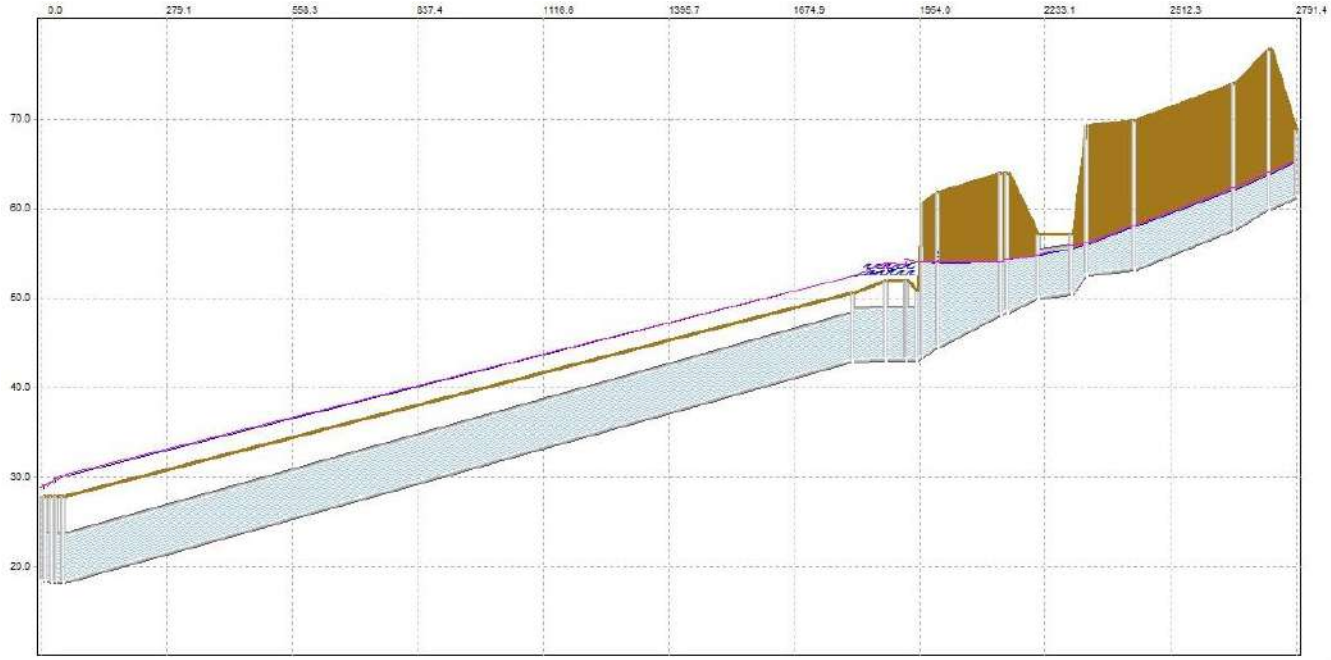
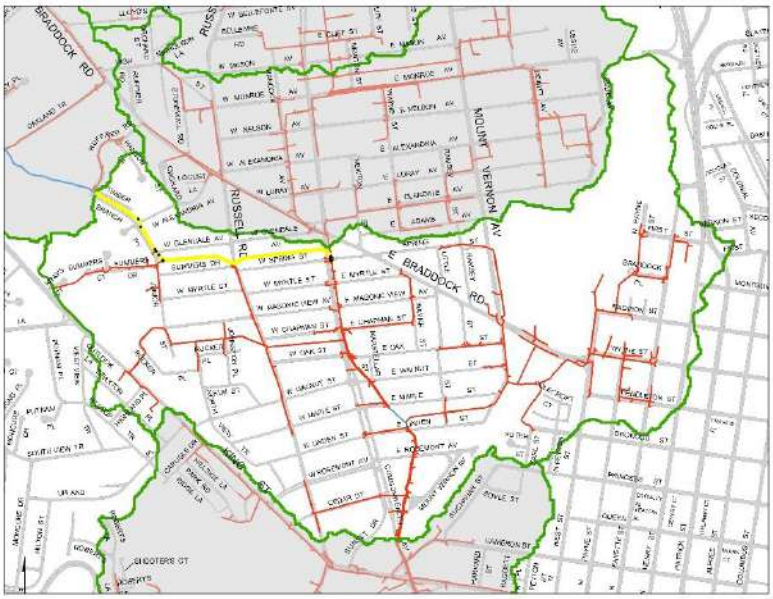


FIGURE 18

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 18 from 000814ND to 000125CP





Surface Flooding

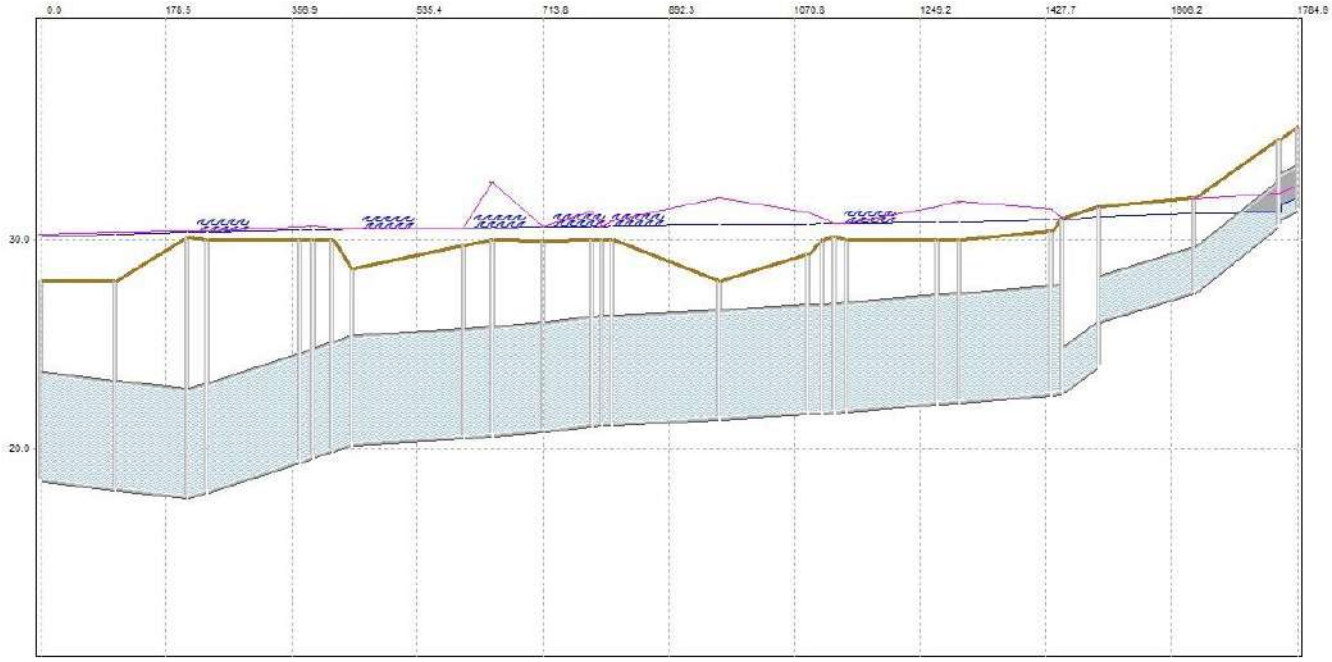
Peak Hydraulic Grade Line

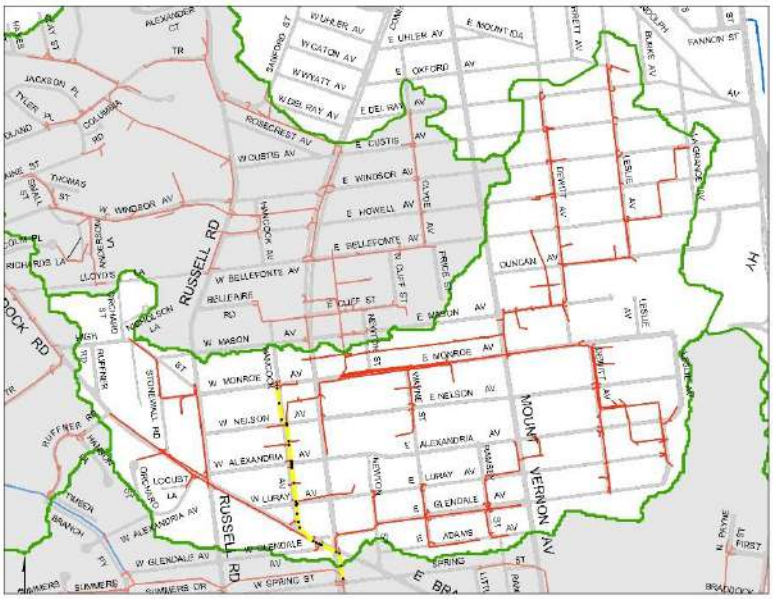
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 19

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 19 from 000811ND to 000977ND





Surface Flooding

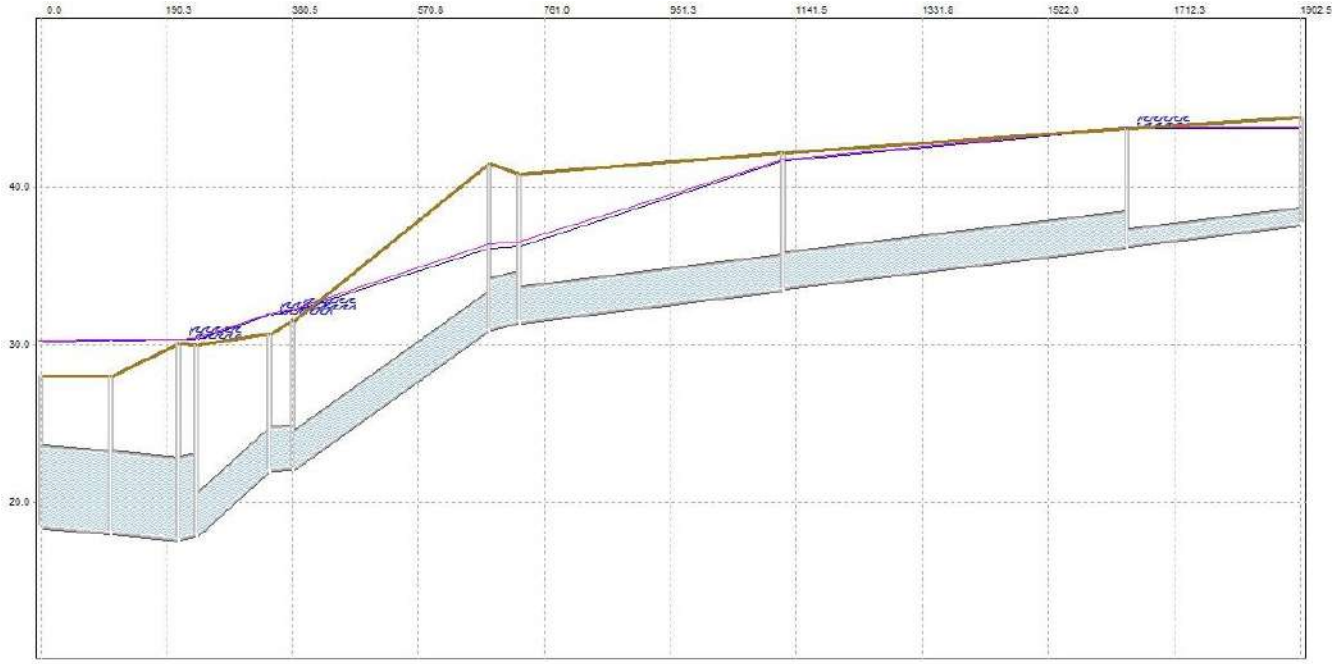
Peak Hydraulic Grade Line

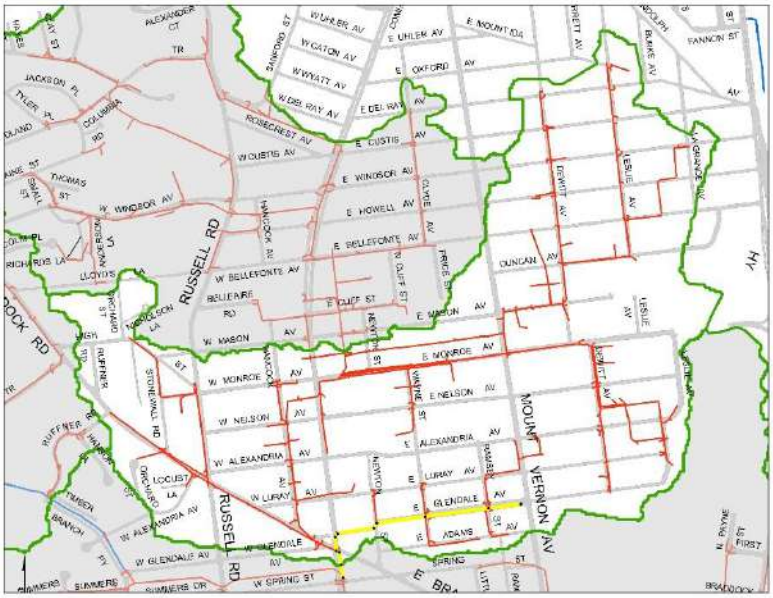
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 20

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 20 from 000811ND to 001005ND





Surface Flooding

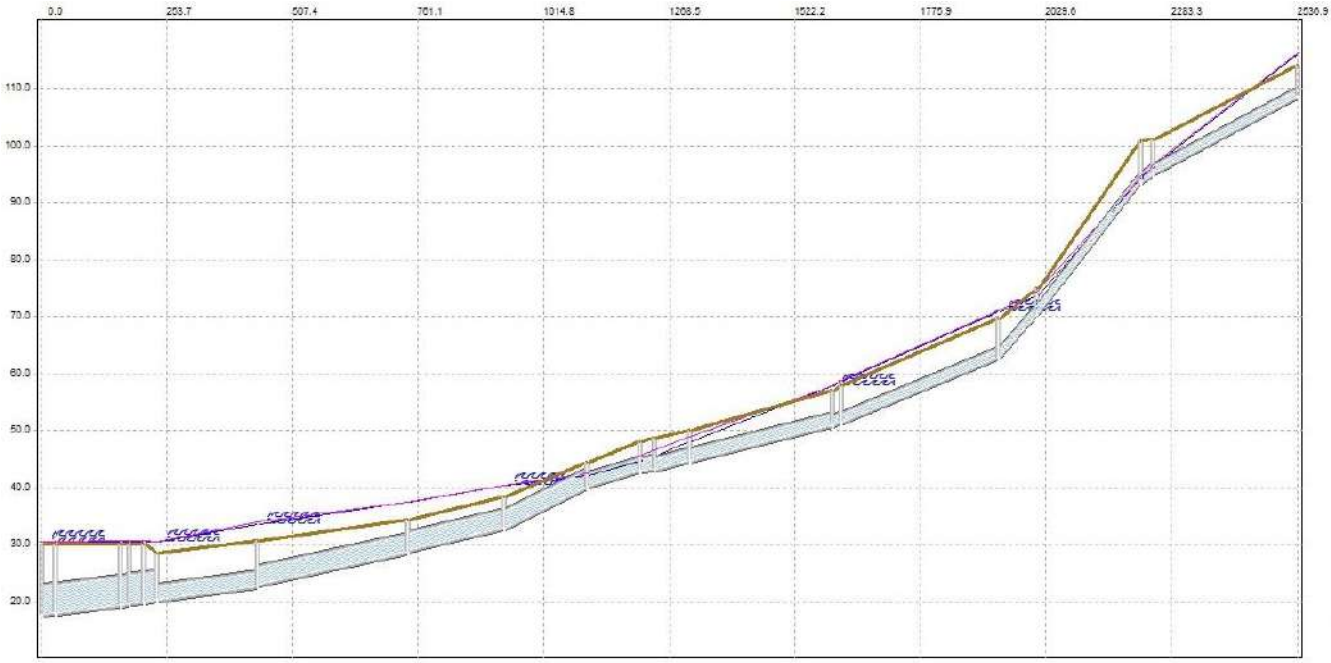
Peak Hydraulic Grade Line

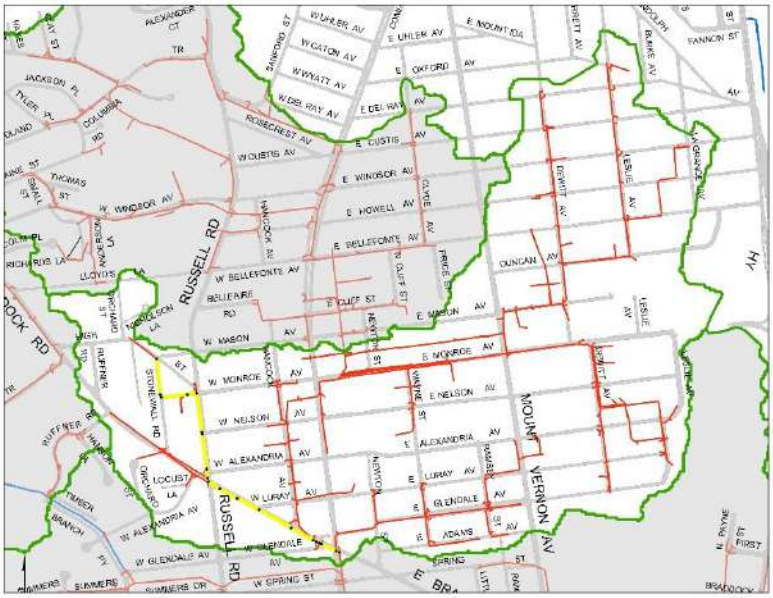
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 21

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 21 from 003166SMH to 003367SMH





Surface Flooding

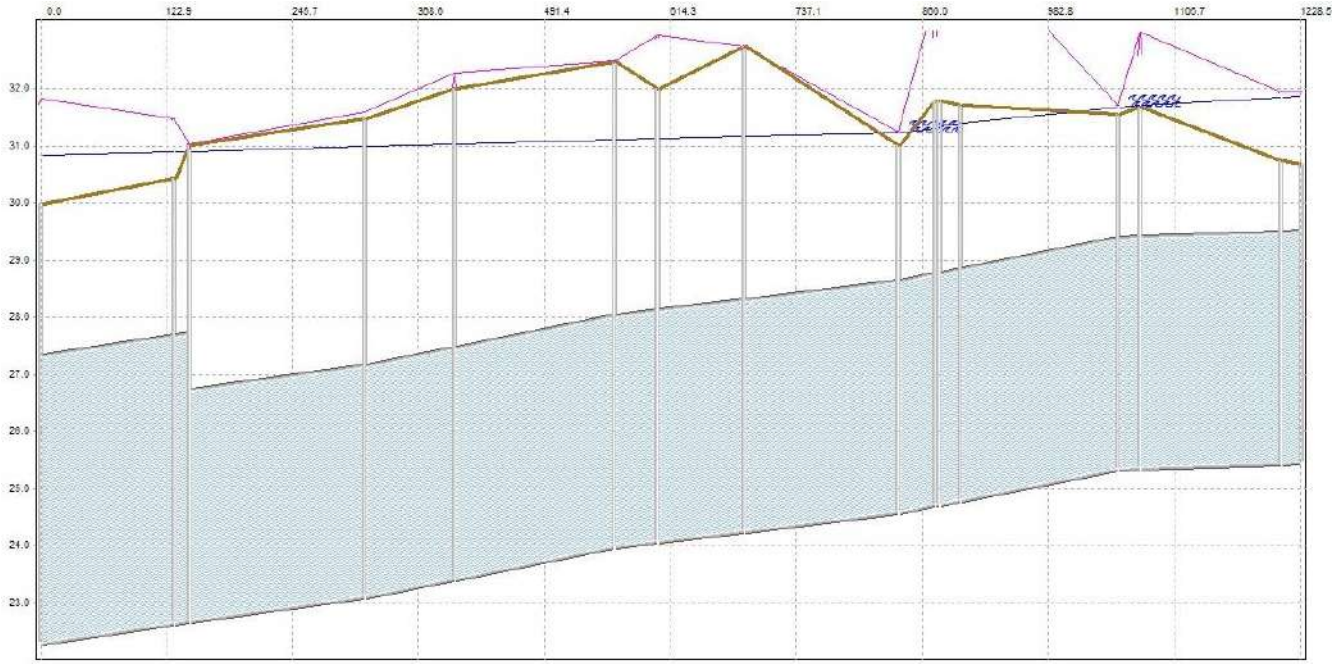
Peak Hydraulic Grade Line

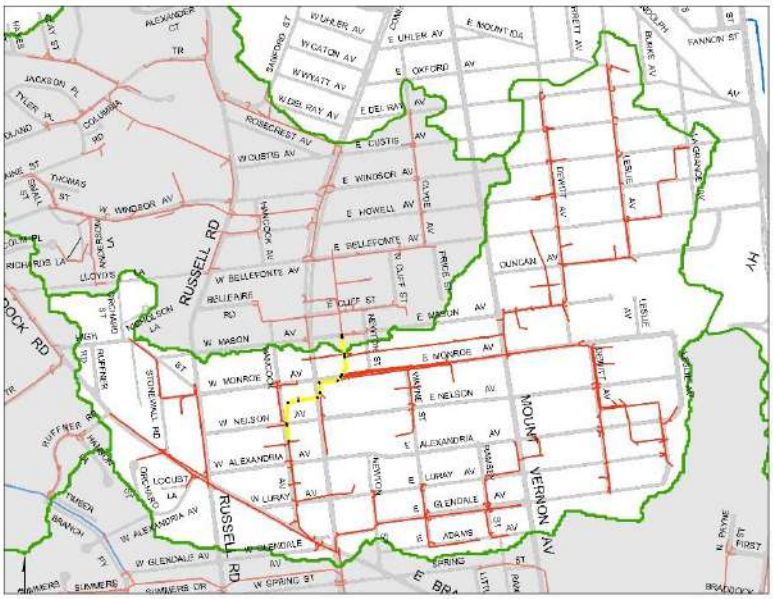
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 22

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 22 from 000999ND to 003412SMH





Surface Flooding

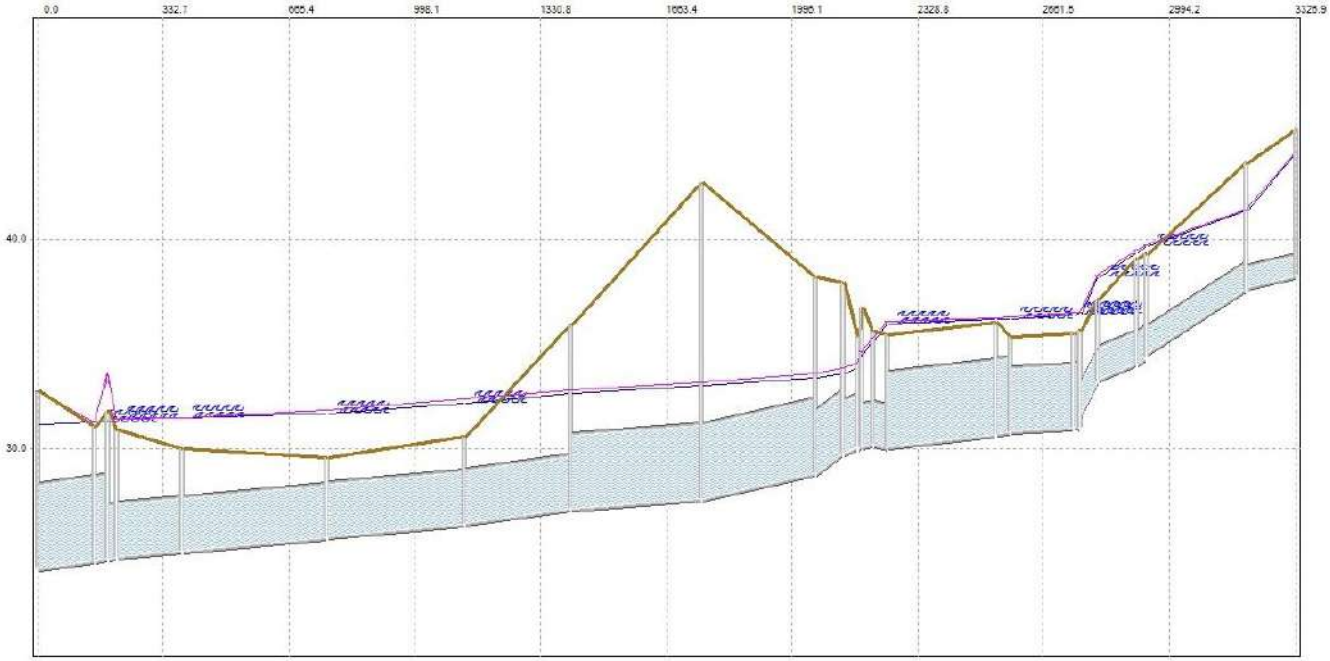
Peak Hydraulic Grade Line

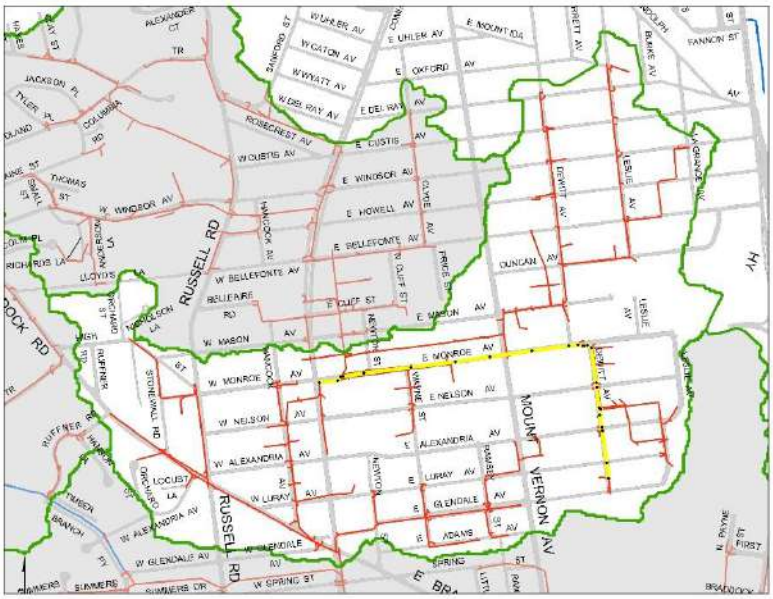
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 23

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 23 from 000994ND to 000856ND





Surface Flooding

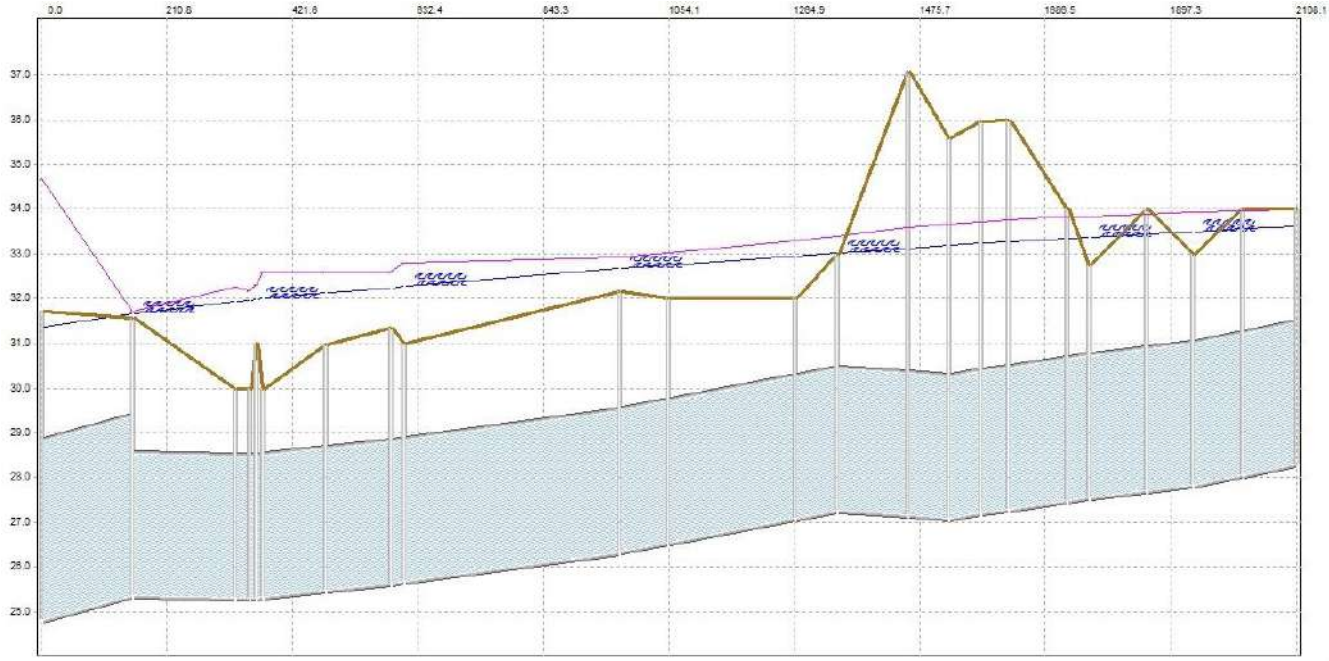
Peak Hydraulic Grade Line

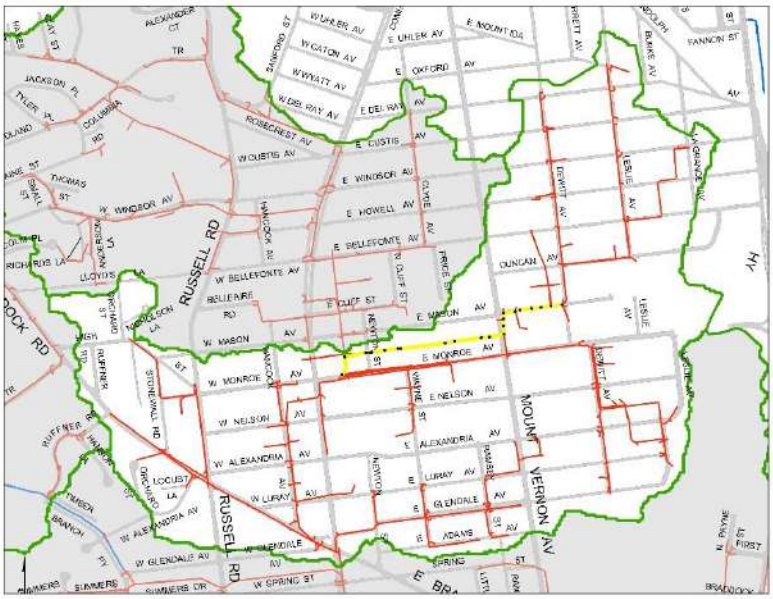
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 24

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 24 from 002916ND to 003335SMH





Surface Flooding

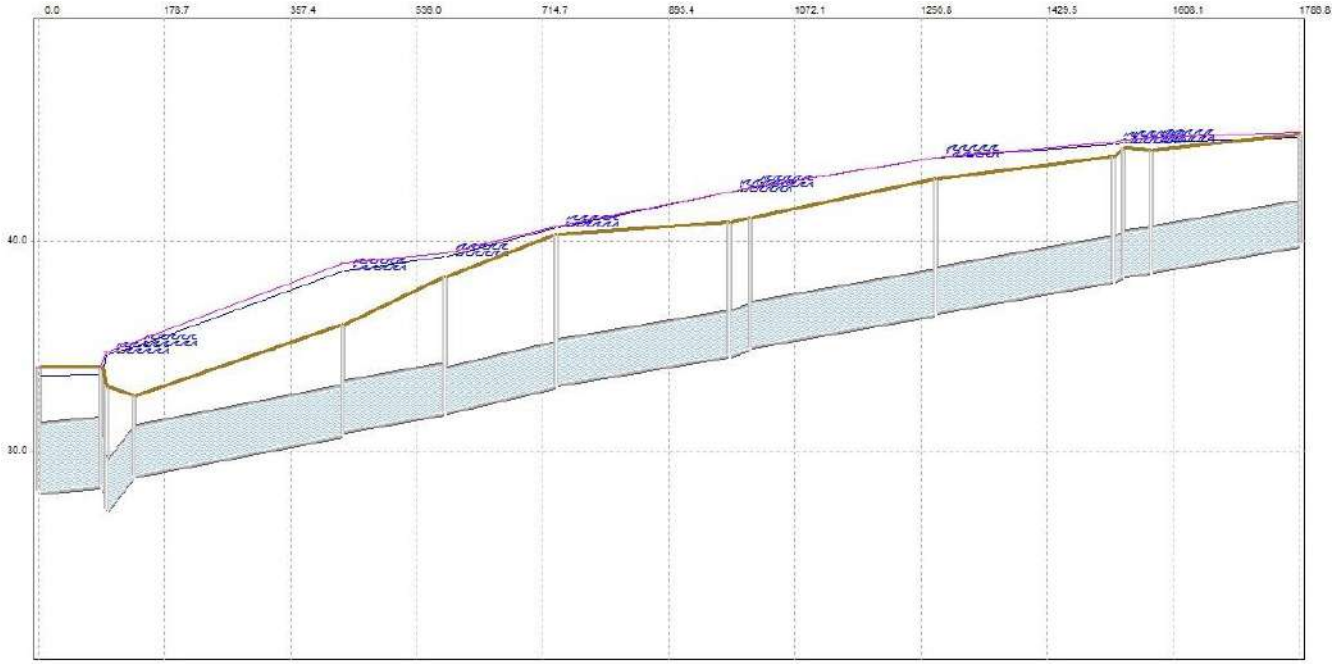
Peak Hydraulic Grade Line

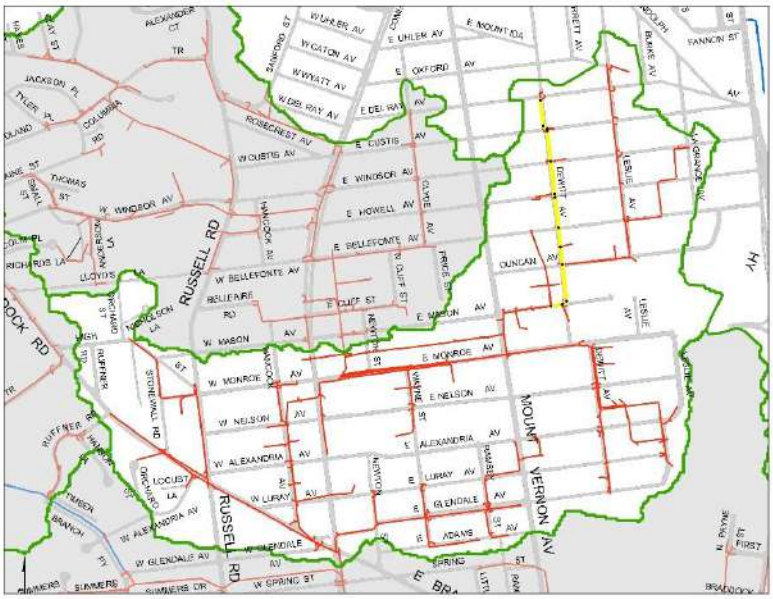
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 25

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 25 from 000991ND to 001984SMH





Surface Flooding

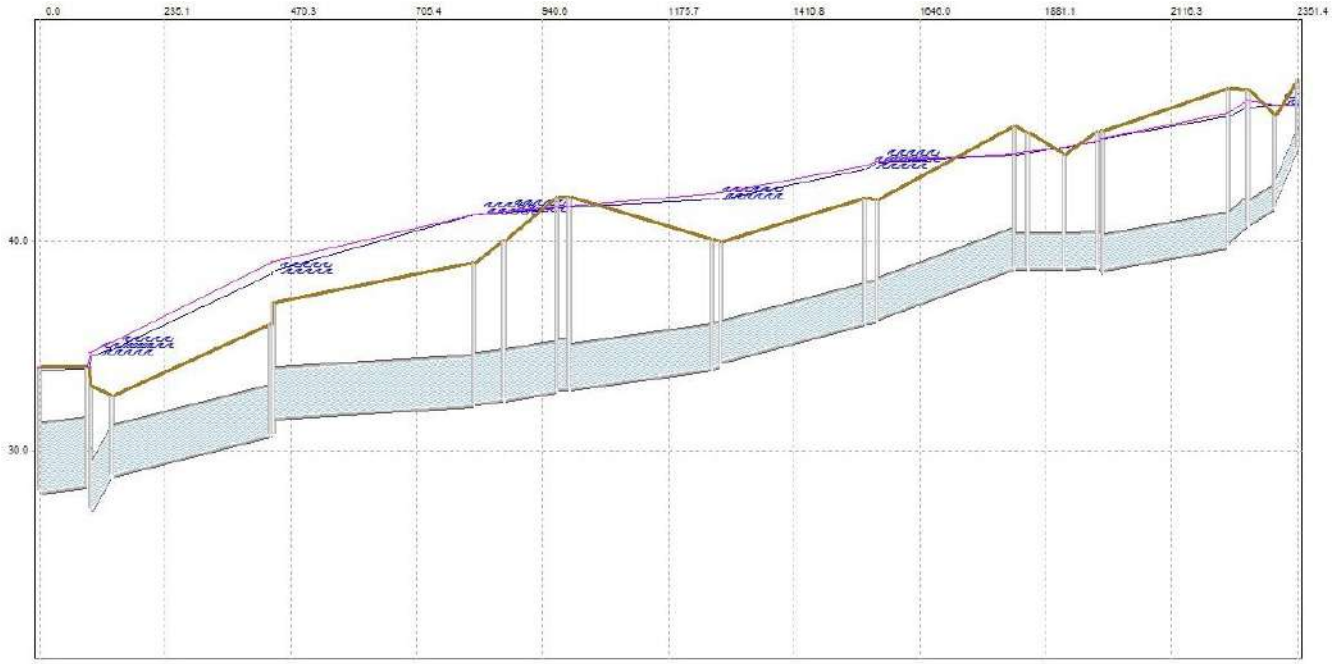
Peak Hydraulic Grade Line

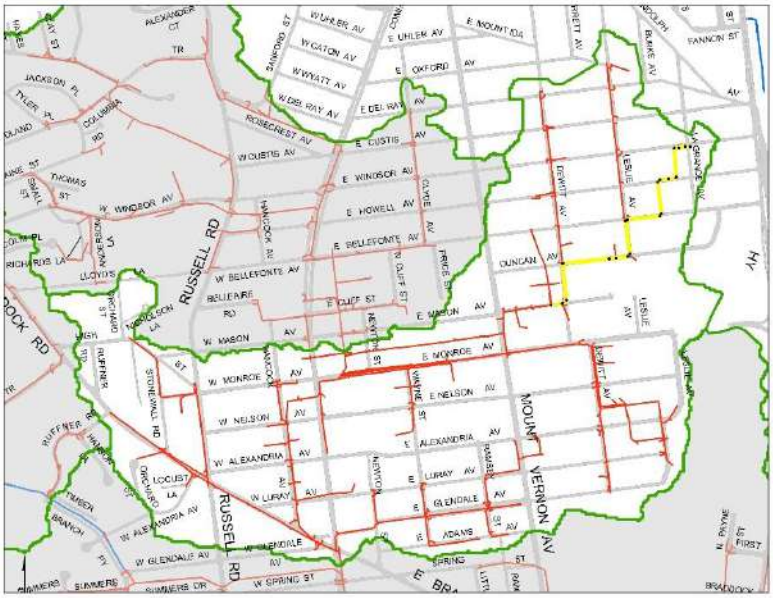
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 26

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 26 from 000991ND to 000107CB





Surface Flooding

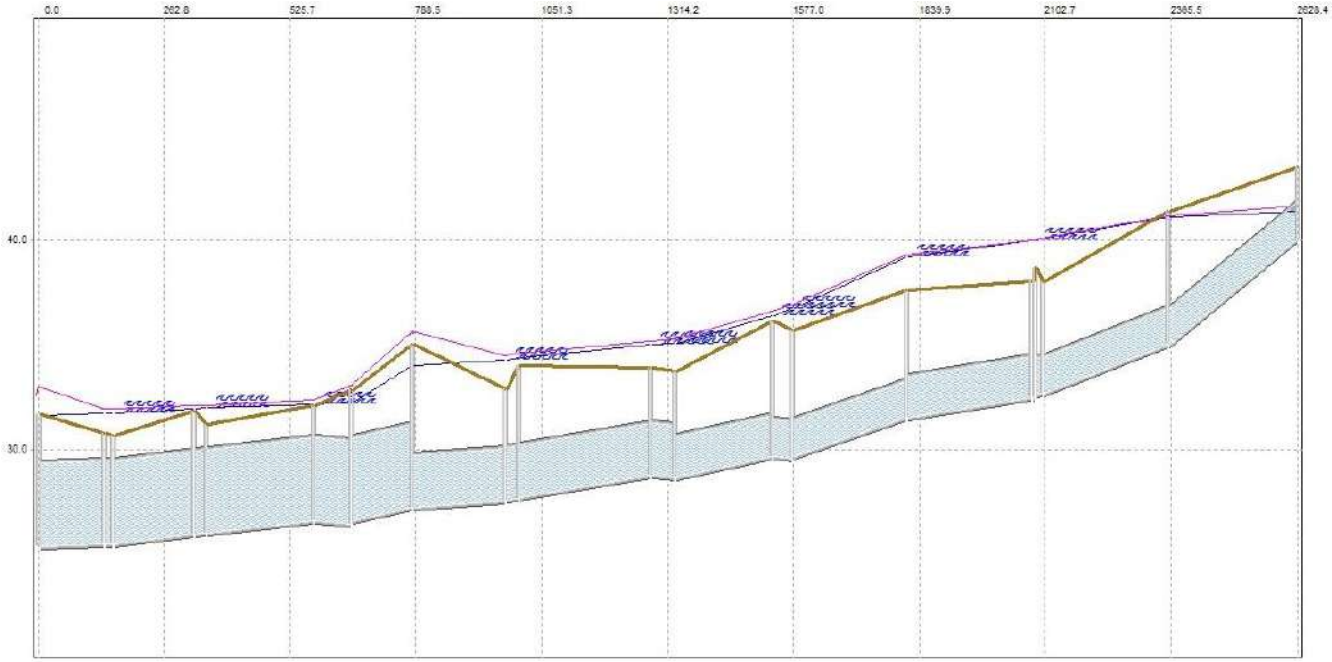
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 27

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 27 from 000936ND to 001987SMH



Surface Flooding

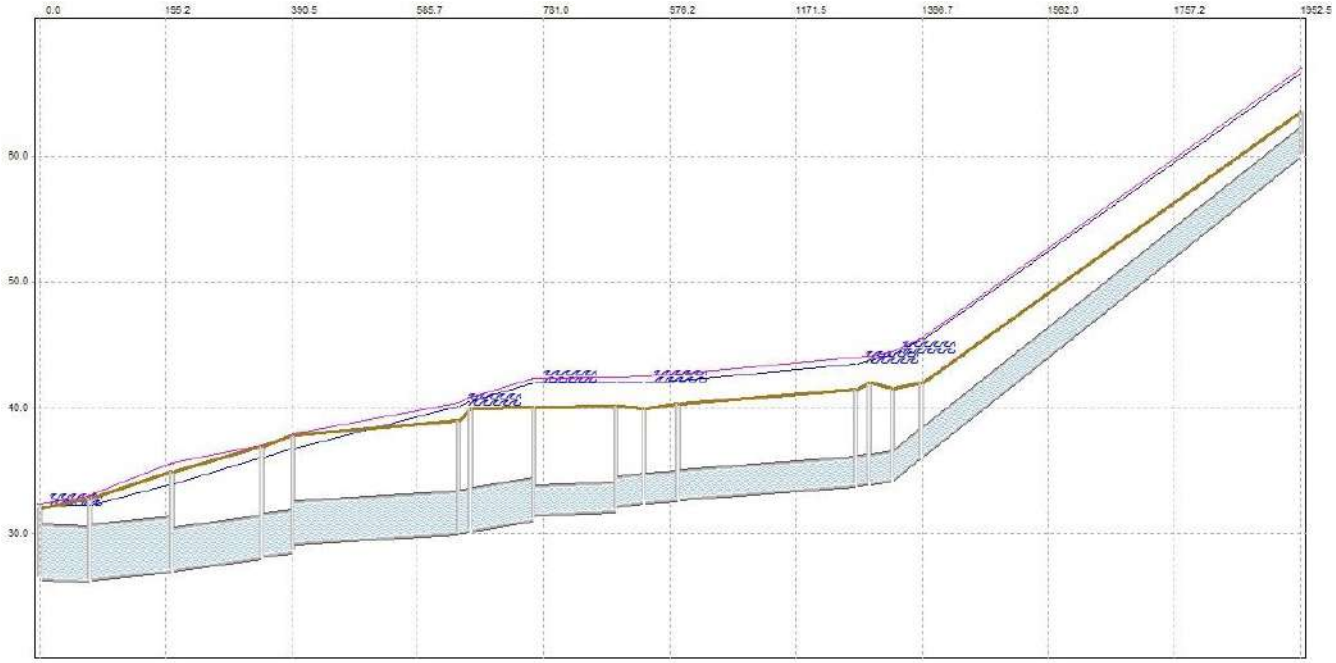
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 28

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 28 from 003421SMH to 001185ND



Surface Flooding

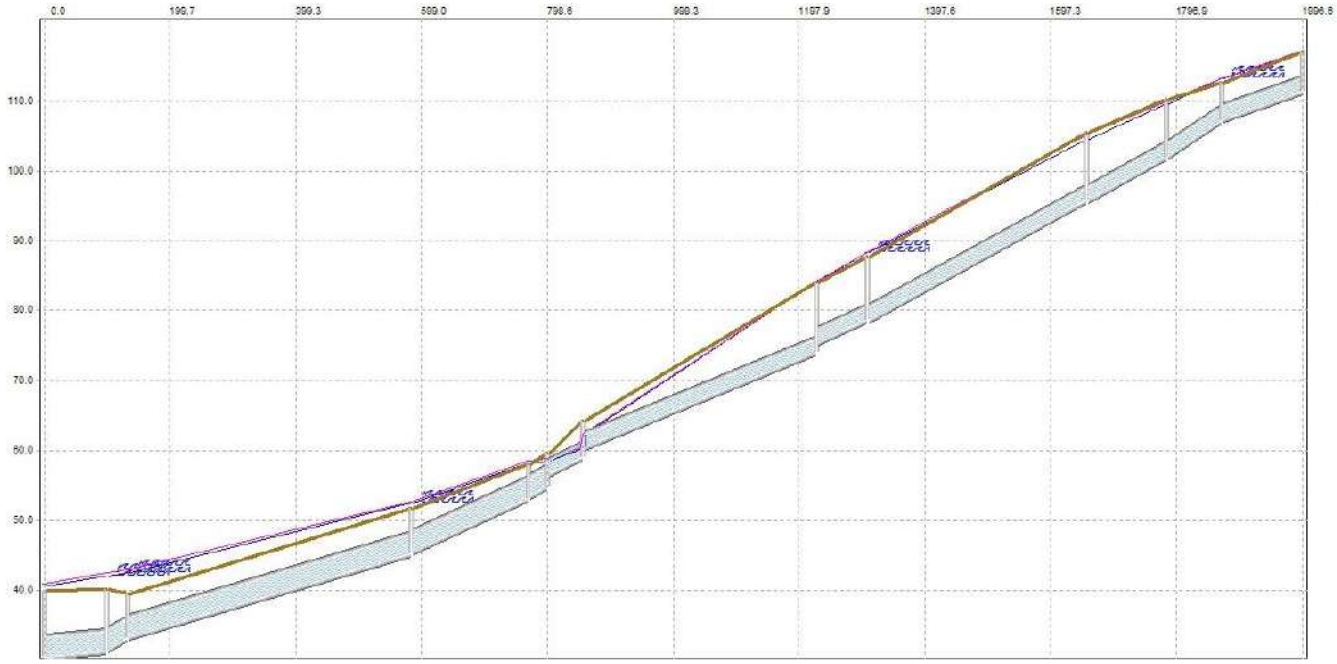
Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 29

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 29 from 001151ND to 002635SMH



Surface Flooding

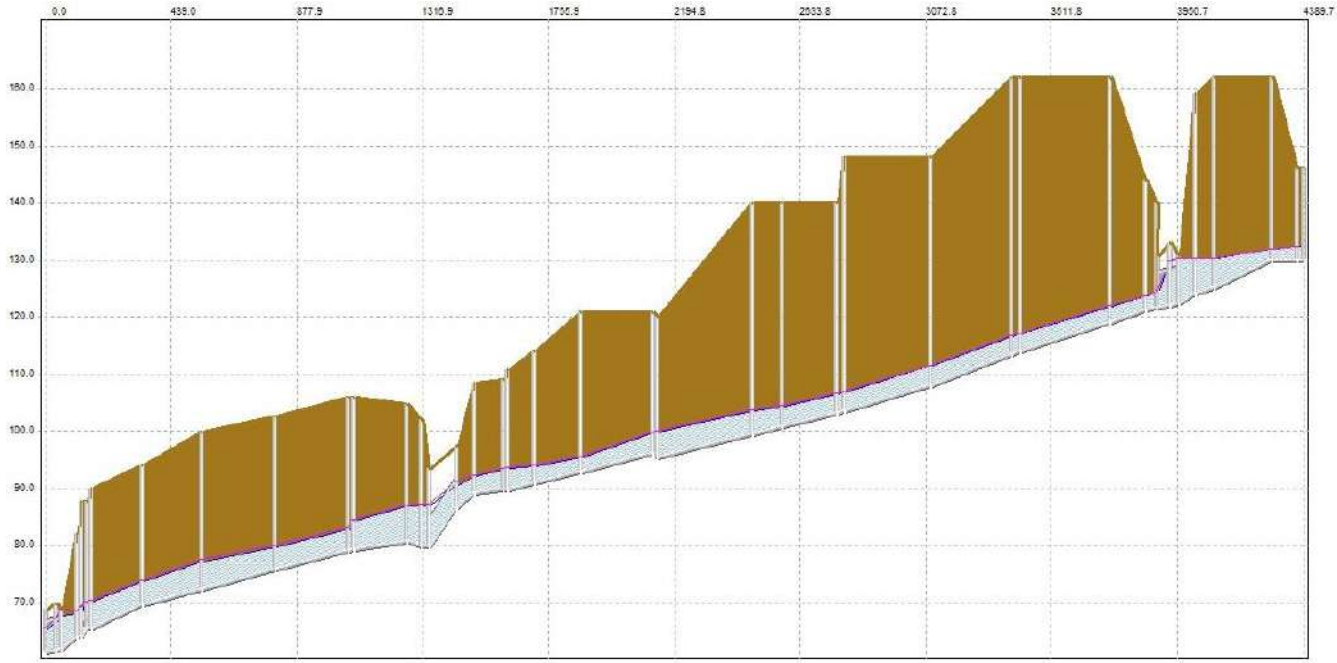
Peak Hydraulic Grade Line

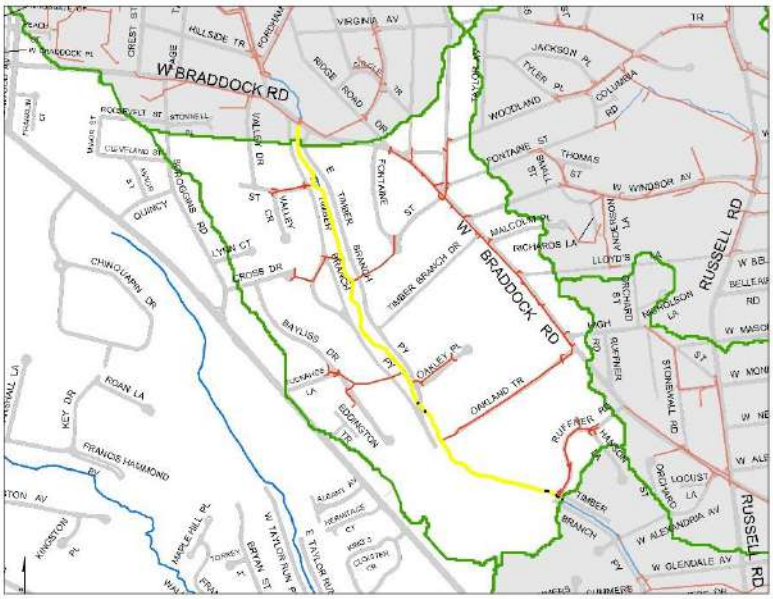
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 30

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 30 from 000125CP to 000508IO





Surface Flooding

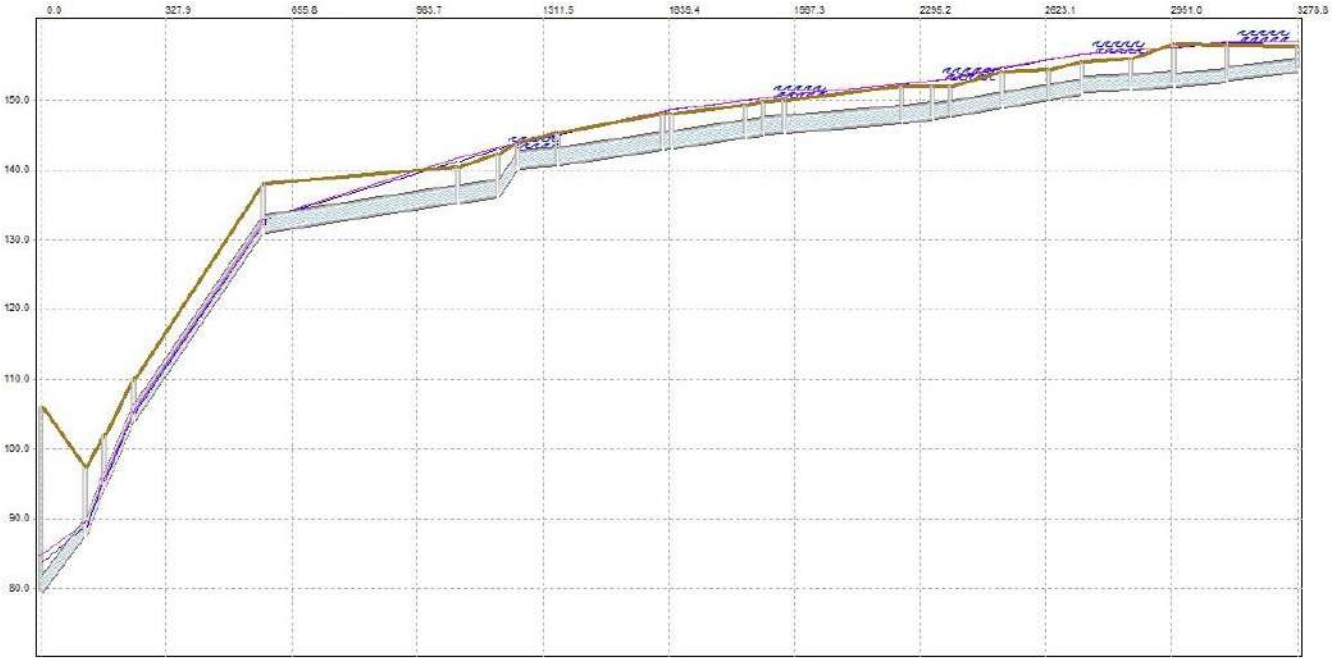
Peak Hydraulic Grade Line

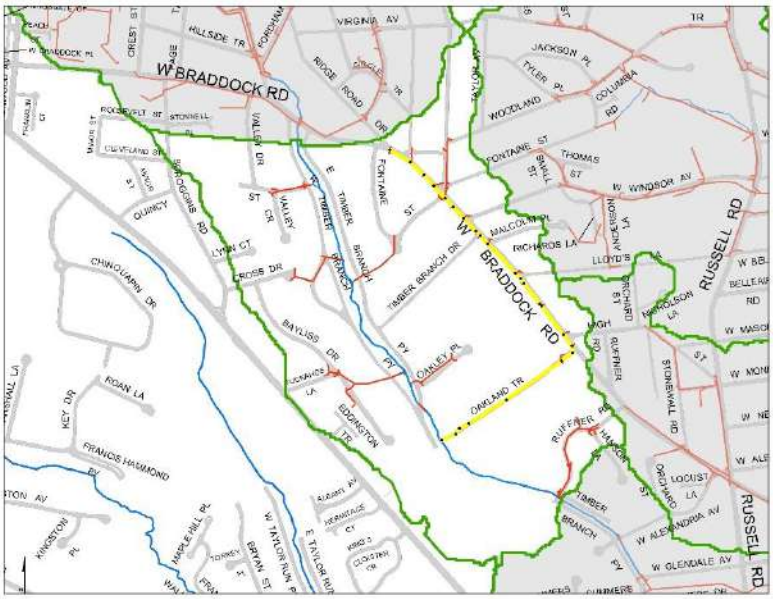
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 31

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 31 from 000527IO to 002644SMH





Surface Flooding

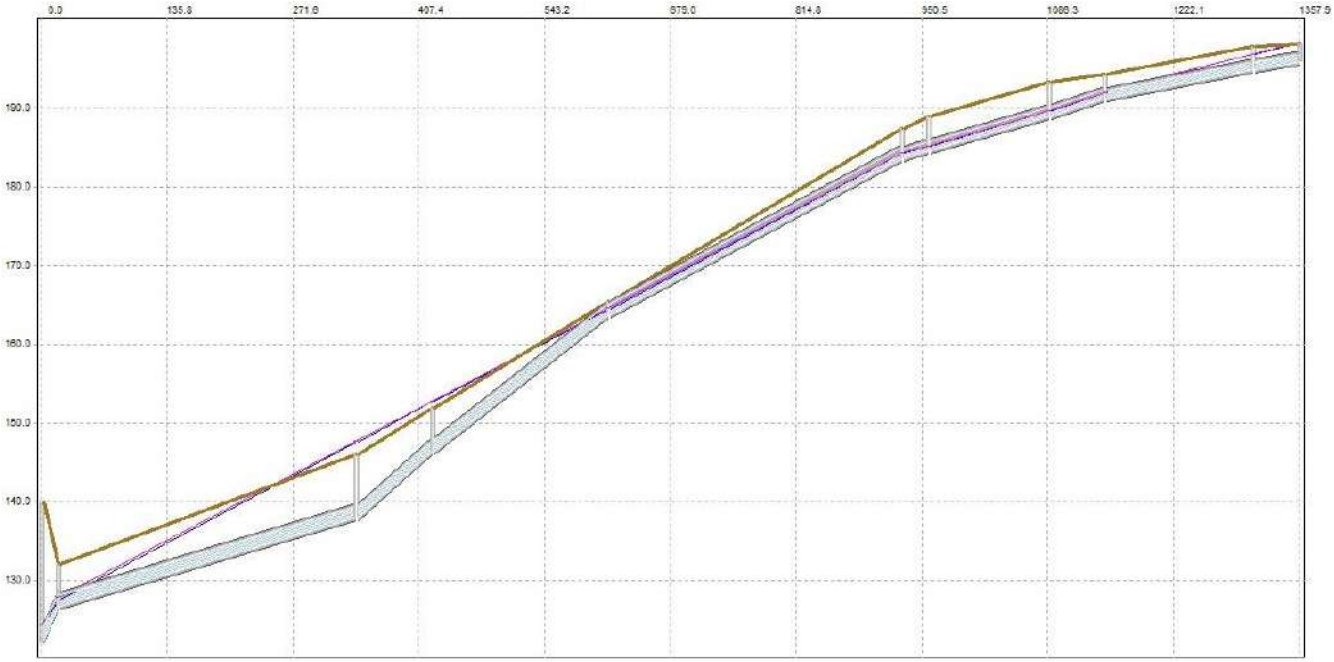
Peak Hydraulic Grade Line

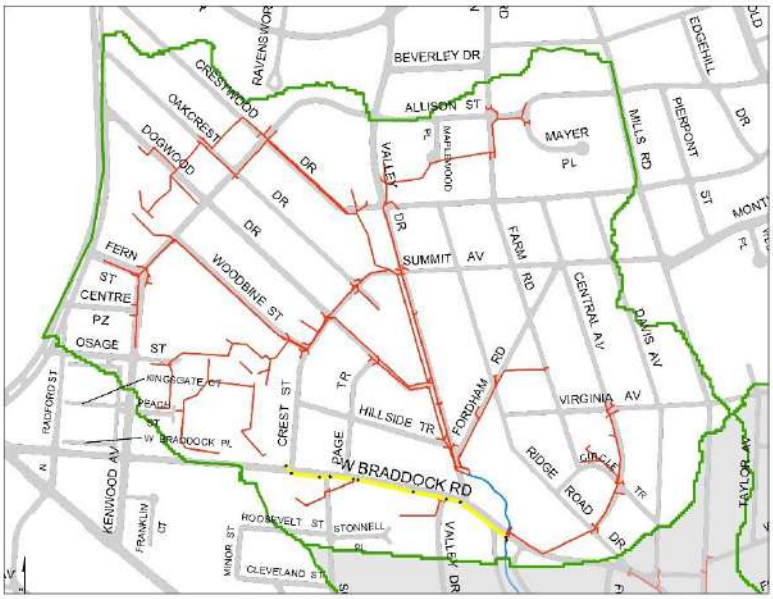
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 32

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 32 from 000508IO to 007487IN





Surface Flooding

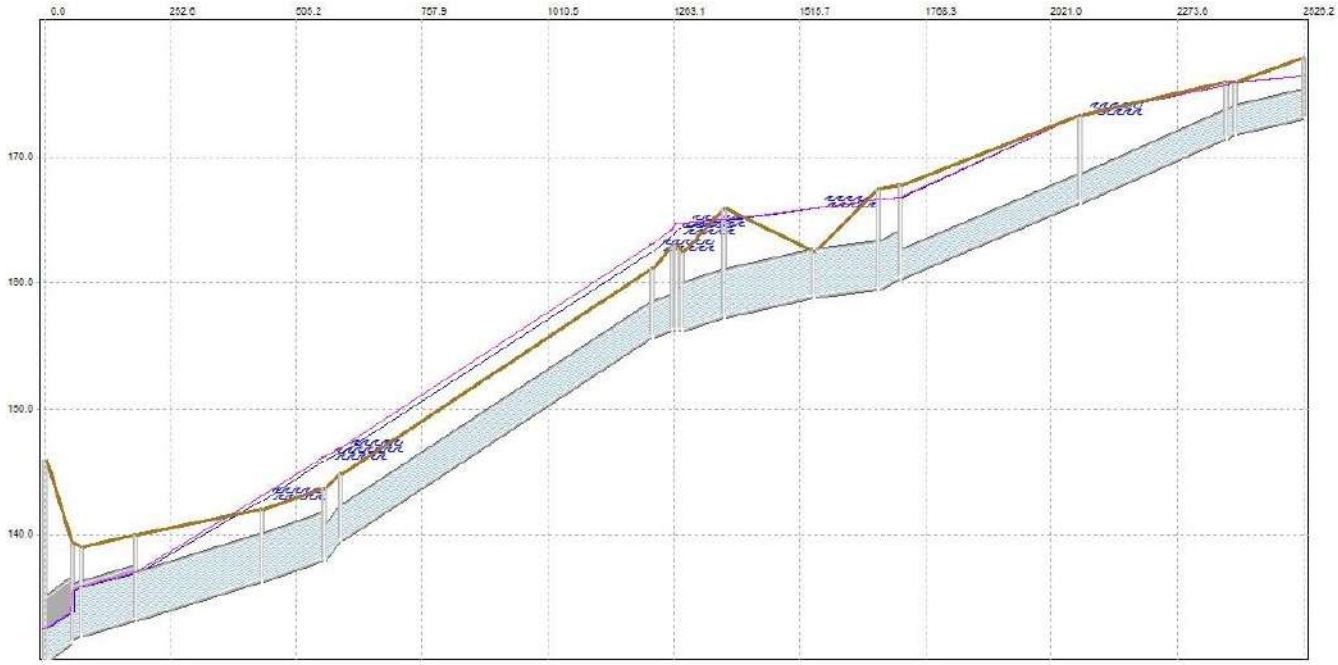
Peak Hydraulic Grade Line

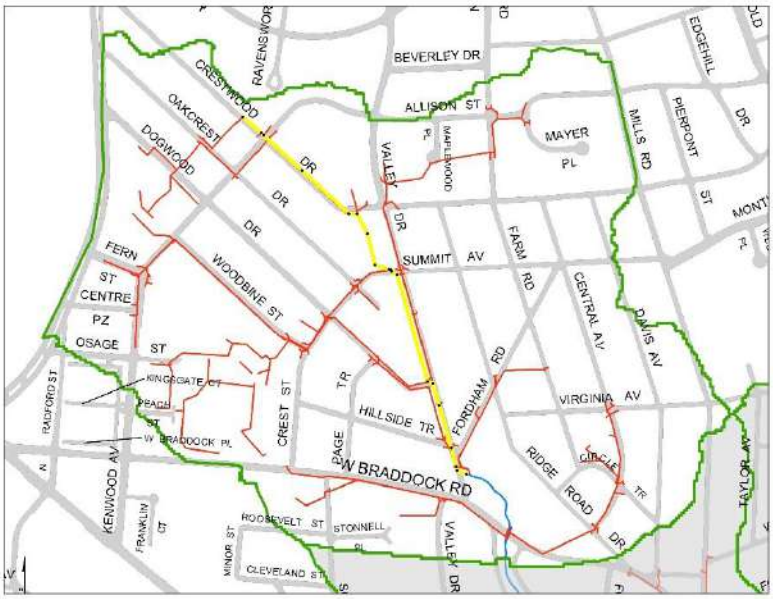
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 33

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 33 from 000499IO to 002532SMH





Surface Flooding

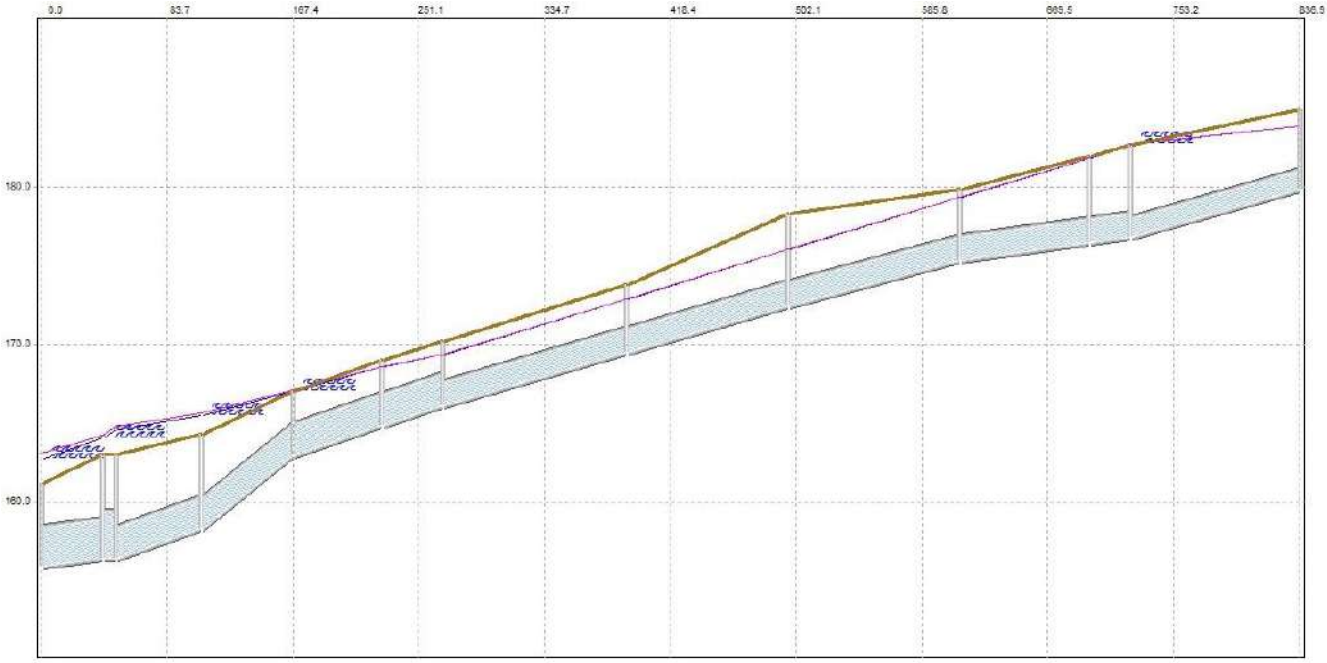
Peak Hydraulic Grade Line

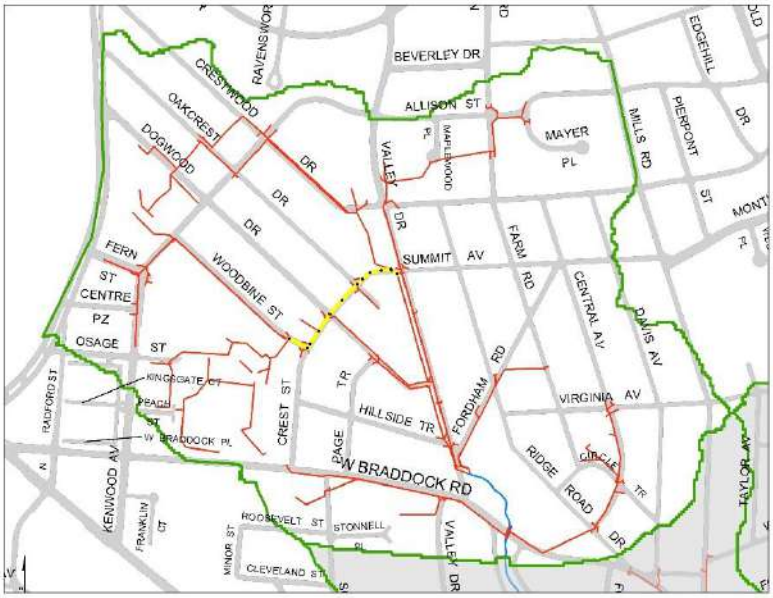
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 34

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 34 from 005541IN to 002513SMH





Surface Flooding

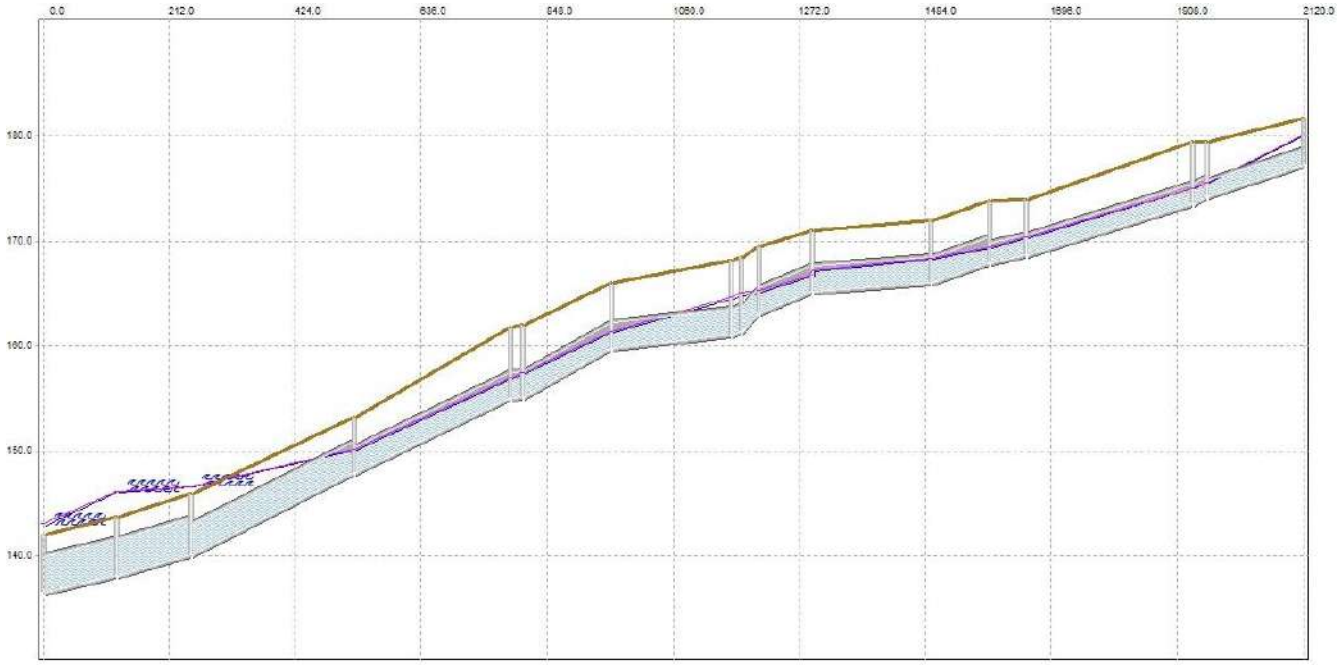
Peak Hydraulic Grade Line

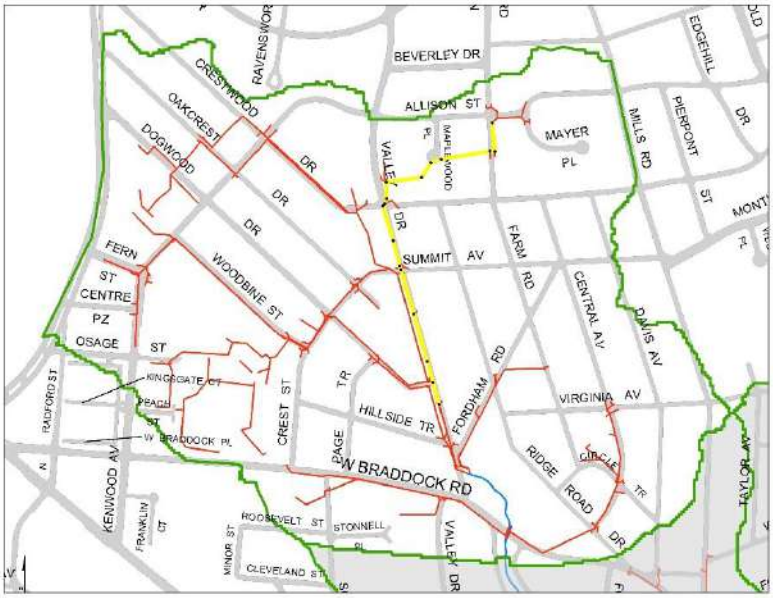
Instantaneous Hydraulic Grade Line

Ground Surface Elevation

FIGURE 35

Scenario 4: June 2006 Storm Event and Boundary Condition- Profile 35 from 002608SMH to 005553IN





Surface Flooding

Peak Hydraulic Grade Line

Instantaneous Hydraulic Grade Line

Ground Surface Elevation