FINAL REPORT

DeKalb County Sanitary Sewer System-Wide Hydraulic Model Application Report: North Fork Peachtree Creek Sewershed

Prepared for

Department of Watershed Management
DeKalb County, Georgia

Prepared by

CDPMT

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Acronyms and Abbreviations

ADDF	average daily dry weather flow
BSF	base sanitary flow
CAP	Capacity Assurance Program
CCTV	closed-circuit television
CD	Consent Decree
CDPMT	Consent Decree Program Management Team
CIWEM	Chartered Institution of Water and Environmental Management
COA	City of Atlanta
DWF	dry weather flow
DWM	Department of Watershed Management (DeKalb County)
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
GIM	Ground Infiltration Model
GIS	geographic information system
gpm	gallon(s) per minute
GWI	groundwater infiltration
HGL	hydraulic grade line
IGA	Intergovernmental Agreement
ITMC	Intrenchment Creek
LS	lift station
MCD	Modified Consent Decree
MG	million gallon(s)
mgd	million gallon(s) per day
MMADF	maximum month average day flow
MNGWPD	Metropolitan North Georgia Water Planning District
NFPC	North Fork Peachtree Creek
NOAA	National Oceanic and Atmosphere Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PASARP	Priority Area Sewer Assessment and Rehabilitation Program
PR	Percentage Runoff
QA/QC	quality assurance/quality control
RDII	rainfall-derived infiltration and inflow
SCS	Soil Conservation Service
SDE	spatial database engine
SOP	Standard Operating Procedures
SSO	sanitary sewer overflow
SSOAP	Sanitary Sewer Overflow Analysis and Planning
TM	technical memorandum
UDG	Urban Drainage Group
WCTS	wastewater collection and transmission system
WEF	Water Environment Federation
WWF	wet weather flow

WWTF	wastewater treatment facility

Glossary

Term	Meaning	Source
Calibrating	The process of accounting for values representative of the County’s wastewater collection and transmission system (WCTS) using actual system data (e.g., flow data).	Consent Decree (CD), Paragraph 28(h)
Calibration	The process of adjusting model parameters so that the model output matches the measured sewer flow for the same time period.	DeKalb (2015), Section 1.5.5.3
Capacity	The design maximum flow, or loading, that a wastewater system and its components can handle in a specified period with predictable and consistent performance. Also, the peak flow is equal to the maximum flow only when the time periods are the same.	Water Environment Federation (WEF) (2013) Glossary
Capacity Assessment (System)	Evaluation of system capacity availability and constraints to identify system improvement and upgrade needs.	inferred from Section 1.5.1 of DeKalb County (2015)
Capacity Assurance Program	Definitions and parameters for determining the adequacy of collection, transmission, and treatment facilities to accommodate additional flow from existing connections or future connections. To be coordinated with regulations permitting additional flow.	inferred from Section 1.5.1 of DeKalb County (2015)
Consent Decree or Decree	Shall mean this Consent Decree, and all appendices attached hereto.	CD p. 12
Conveyance System Capacity	The wastewater conveyance system is commonly composed of gravity sewers, inverted siphons, pumping stations and force mains, storage systems, and flow control devices. Each component has an individual capacity. The system is the network of multiple individual reaches of sewers, pumping stations, and other features that work together to convey flow to a downstream point. The conveyance system capacity is determined by initial design criteria, installation techniques, and accuracies, the extent to which the system has been maintained, and how these individual component capacities interrelate.	WEF (2013), Section 1.1.1.3
Critical	Data, sewers, or locations that require field checking/site visits because they 1) are noted as questionable (or are missing) and 2) are integral to hydraulic routing model performance. Refer to Section 3.5 for details.	Consent Decree Program Management Team (CDPMT)
Dynamic Model	One in which the flows, depths and responses vary over time	CDPMT
Hydrologic and Hydraulic (I/I) Model	Refers to a digital combination of site-specific input with software capable of representing the hydrology (flow generation) and hydraulics (piping, pumps, and flow routing) of a sewer system.	CDPMT
Hydraulic Model	A mathematical model of a fluid introduced into a water/ wastewater sewer/storm sewer system at various rates and pressures.	DeKalb (2015), Section 1.5.2
Hydrology	The processes governing the amount of liquid entering a sewer system from rain events and ground water.	CDPMT

Term	Meaning	Source
Major Gravity Sewer Line	Shall mean Gravity Sewer Lines which are eighteen (18) inches or greater in diameter.	CD, p. 15
Major Lift Station	Shall mean a Lift Station that has at least one (1) pump with greater than ninety-nine (99) horse power and a force main diameter of six (6) inches or greater.	CD, p. 15
Model Application	The process of developing and using a model to support decisions.	CDPMT
Model Development	The process of selecting software, and gathering and inputting data to represent the specific system or application.	CDPMT
Overflow	Shall mean, for purposes of this Consent Decree, a release of wastewater from the WCTS, or from a wastewater treatment facility (WWTF) caused by problems in the WCTS, that does not reach waters of the United States or the State.	CD, p. 15
’R’ Value	Shall mean the fraction (sometimes reported as a percentage) of rainfall falling within a given sewershed area that enters a sanitary sewer collection system as rainfall dependent infiltration and inflow (I/I).	CD, p. 16
Sanitary Sewer Overflow or SSO	Shall mean all Spills, Overflows, and Building Backups.	CD, p. 16
Sensitivity Analysis	How the Model responds to changes in input parameters and variables.	CD, Paragraph 28(h)
Sewershed	Shall mean the subdivisions of the County’s WCTS containing sewers that are primarily hydraulically linked.	CD, p. 17
Spill	Shall mean, for purposes of this Consent Decree, a discharge of wastewater from the WCTS, or from a WWTF caused by problems in the WCTS, which reaches waters of the United States or the State, including a prohibited Bypass, but not including other discharges from a point source that is specified in the NPDES Permits.	CD, p. 17
Steady-state Model	Flows, depths, and response is steady over time.	CDPMT
Subcatchment	A subcatchment on the InfoWorks ICM model network represents the physical area from which a manhole or other inflow node collects water.	Innovyze InfoWorks ICM Help (2017)
Trunk Line Sewer	Trunk line sewer or trunk sewer is the same as major gravity sewer line. Refer to *Major Gravity Sewer Line*.	CD, p. 15
Update	The process of incorporating system changes, including new building or sewer modification, to better represent the system.	Adapted from CIWEM (2017), Section 3.5
Validation	Involves the process of testing the model against an independent data set.	WEF (2011), p. 208
Verification	A process of comparing model output to measured values and to system operator observations and determining that the model is adequate to be useful.	Adapted from CIWEM (2017), Section 5
Verify	To verify the Model’s performance using actual system data (e.g., flow data).	CD, Paragraph 28(h)

SECTION 1

Introduction

1.1 Project Background

The Consent Decree Program Management Team (CDPMT) completed a fully developed steady-state model on December 20, 2017, for each of the seven hydraulic models providing coverage throughout DeKalb County (hereafter, “the County”) using sewer system flows from January 2015 through June 2015. The model reports were developed by CDPMT and submitted to the DeKalb County Department of Watershed Management (DWM); the reports included detailed documentation of the modeling assumptions, findings, and changes to previous documentation or model versions (CDPMT, 2017). The model submitted in December 2017 reflected the following system data changes:

1. Geographic information system (GIS) spatial database engine updates received from the County before August 2017
2. Additional field check results provided by the County before August 2017
3. System-wide lift station updates that would be completed by end of December 2017

Since 2017, CDPMT submitted a Technical Memorandum (TM) to DWM to document the general approach needed to update the steady-state sewer models and to upgrade the steady-state models to fully hydrologic and hydraulic dynamic models (CDPMT, 2018). The approach details were presented to DWM in May 2018. As part of the model update process, CDPMT completed a system-wide model network update based on field survey data provided by DWM prior to February 2018 and submitted the updated steady-state models to DWM in June 2018.

This report documents primarily the two major activities since December 2017 subsequent to the incorporation of several key sewer system network edits or additions:

1. Steady-state hydraulic models updates and upgrades to dynamic hydraulic models including:
    a. The sewer model inputs update after the delivery of DWM’s December 2017 field survey information including the updated steady-state models submitted to DWM in June 2018. The model updates focus on the model network and flow update as discussed in Section 3.
    b. Steady-state hydraulic model upgrades to fully hydrologic and hydraulic dynamic models as explained in the dynamic model approach TM (CDPMT, 2018) (refer to Section 4).
2. The updated system capacity assessment results based on the dynamic models as discussed in Section 6.
    a. New flow and rainfall data from 2018 and early 2019 were used in the model inputs.
    b. Section 6 evaluation discussion was based on current capacity assurance criteria and may differ from what is used for assessment for capacity requests as well as what is used for long-term planning.

The report herein was developed as the third of seven reports as discussed in Section 1.3. Each report will have a similar format and content except where needed to highlight the specific details, analysis, or recommendations for the modeled basin or sewershed.

1.2 Dynamic Hydraulic Model Applications

As provided in the Capacity Assurance Program (CAP) lodged in Federal Court, the dynamic hydraulic model will be used only after EPA/EPD approve this Sub-Model Report and the MCD is entered in Federal Court. (Appendix D to MCD, CAP, Section 1.4.).

As documented in the 2017 model report (CDPMT, 2017), for the first time, the models gave the County the ability to evaluate sewer and lift station capacity-related questions with an understanding of how each sewer line or lift station is affected by, or itself affects, other portions of the wastewater collection and transmission system (WCTS).

With a dynamic hydraulic model, the model output provides a more representative understanding of time-based flow impacts, such as rainfall-derived infiltration and inflow (RDII) and its impact on system capacity. However, the model is only as accurate as the data measured, retrieved from existing records, or gathered from field inspections. The CDPMT suggests that DWM consider the recommendations provided in Section 8 to continue improving the quality of DWM data collection and verification.

For capacity request evaluations, the DWM-approved dynamic hydraulic model and results that meet DWM’s applicable criteria will replace, upon acceptance, the steady-state model results. The dynamic hydraulic model analysis results for all three basins (Snapfinger, Pole Bridge, and Intergovernmental Basins) are based on the latest accepted flow monitor data from April 2018 to February 2019 (per flow monitoring installation schedule, different models have different 6-month periods [refer to Section 2.4 for details]). In contrast, the steady-state model used the maximum month average day flow from the January to June 2015 period.

The dynamic hydraulic model was developed to meet the U.S. Environmental Protection Agency (EPA) Consent Decree (CD) requirement and assist the ongoing Priority Area Sewer Assessment and Rehabilitation Program (PASARP) needs. Any other applications of this model will need to consider the impact from the assumptions applied during the model development and calibration process as explained herein.

As with any model, engineering judgement should be used when interpreting results and should consider ongoing field verification, system improvements, and assumptions indicated in the model.

1.3 Model Study Area Overview

The County’s wastewater collection system is comprised of seven separate models developed based on the hydrological characteristics of the service areas. Model update and upgrade priorities were established by following DWM’s priority sequence shown below (CDPMT, 2018):

1. Intrenchment Creek (ITMC)
2. Nancy Creek
3. North Fork Peachtree Creek (NFPC)
4. South Fork Peachtree Creek
5. Snapfinger Basin
6. Pole Bridge Basin
7. Miscellaneous (Misc.) sewersheds in Intergovernmental Basin

This report focuses on the NFPC sewershed within the Intergovernmental Basin.

The Intergovernmental Basin diverts flows within each sewershed into the City of Atlanta (COA), Fulton County, and Gwinnett County. Therefore, in the Intergovernmental Basin the hydraulic models were developed on a sewershed basis. NFPC sewershed diverts its flows into COA. Figure 1-1 shows the sewershed location on the system overview map.

The hydraulic model for the NFPC sewershed, as of September 2019, was updated based on the data resources detailed in Section 2.

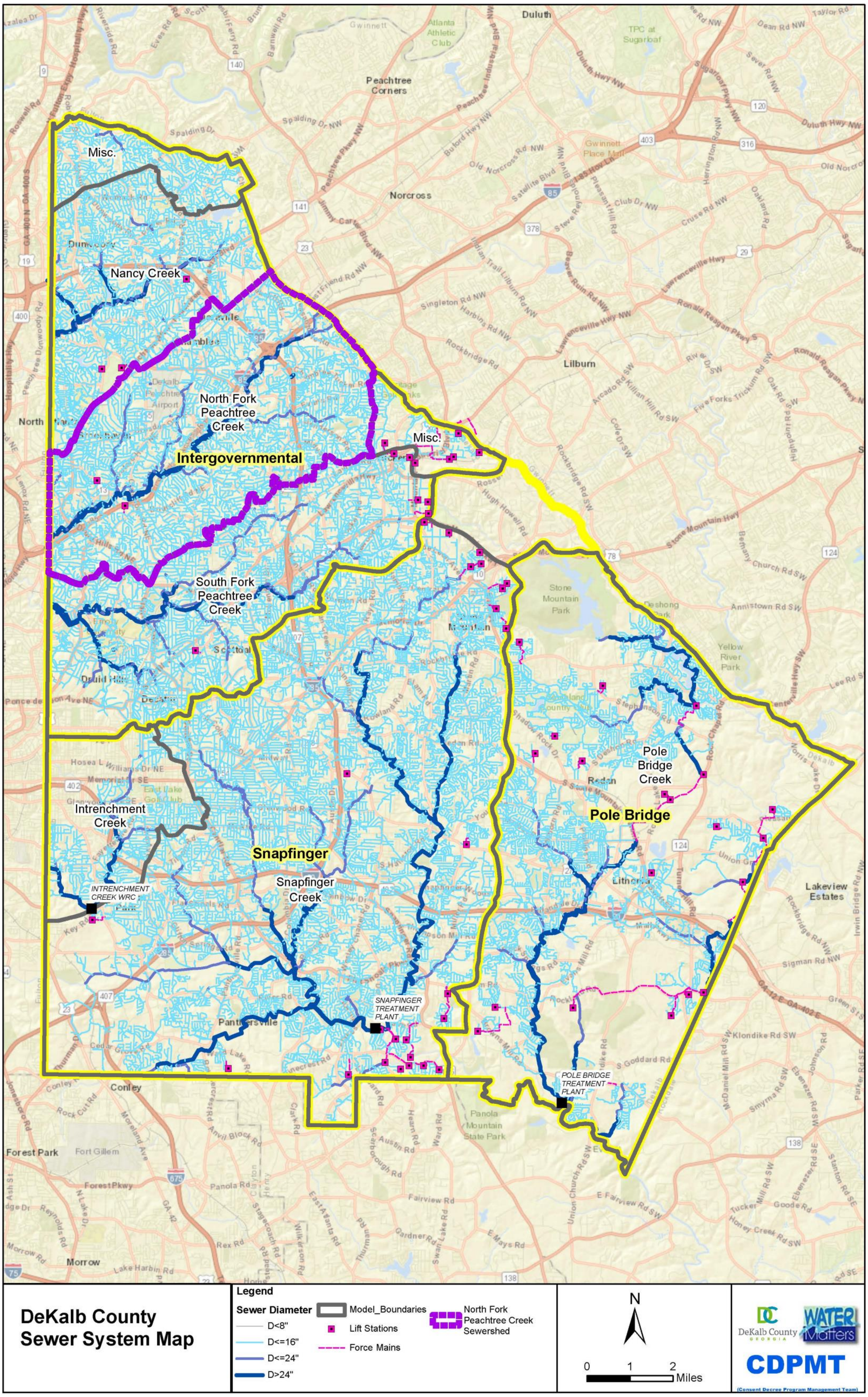

Figure 1-1. System Overview Map

SECTION 2

Data Collection and Review

This section summarizes the data sources used for both steady-state updates and dynamic hydraulic model input and the physical attributes updates after model delivery in December 2017. Steady-state model development updates are discussed in Section 3.

2.1 Physical Attributes Updates

As documented in the 2017 model report, DWM GIS data is one of the major data sources used to build the NFPC sewershed model network.

Since the model was completed in December 2017, multiple field surveys were conducted at critical locations. The field survey records prior to February 2018 were the main data sources used for the model physical attributes updates for all seven models including the NFPC sewershed model.

PASARP closed-circuit television (CCTV) or field-check findings prior to February 2018 were also collected, reviewed, and incorporated into the model physical attributes update.

As explained in the dynamic model development approach TM (CDPMT, 2018), only significant system changes were incorporated through the dynamic model development according to the corresponding flow monitoring periods after February 2018. Information related to those significant system changes were provided by the County and reviewed for the model updates accordingly.

The County’s GIS was not incorporated in this report because of version control issues revealed in the data review process for the December 2017 model submission. It was assumed that the field survey results provided by the County’s GIS department would cover most of the GIS updates once the GIS database version control issue was resolved.

The coordinate and datum used in the County GIS database and GIS data provided by COA was NAD_1983_StatePlane_Georgia_West_FIPS_1002_Feet.

2.2 Ancillary Structure Updates

The following information were provided by DWM for the model lift station and wet well updates:

- 2018 lift station drawdown test records: the lift station on/off levels and wet well areas were used for the model update.
- pump monthly run time records at each lift station from 2012 to February of 2019: the monthly average daily flow records were used to verify the dry weather flow (DWF) loading in the model.

There are two County-owned lift stations within the NFPC sewershed model extent: Briarwood Field Lift Station (LS) and Summit Glen LS. Figure 2-1 shows the locations of the lift stations. For the above two lift stations in the NFPC sewershed, there were no updates based on the lift station drawdown test records.

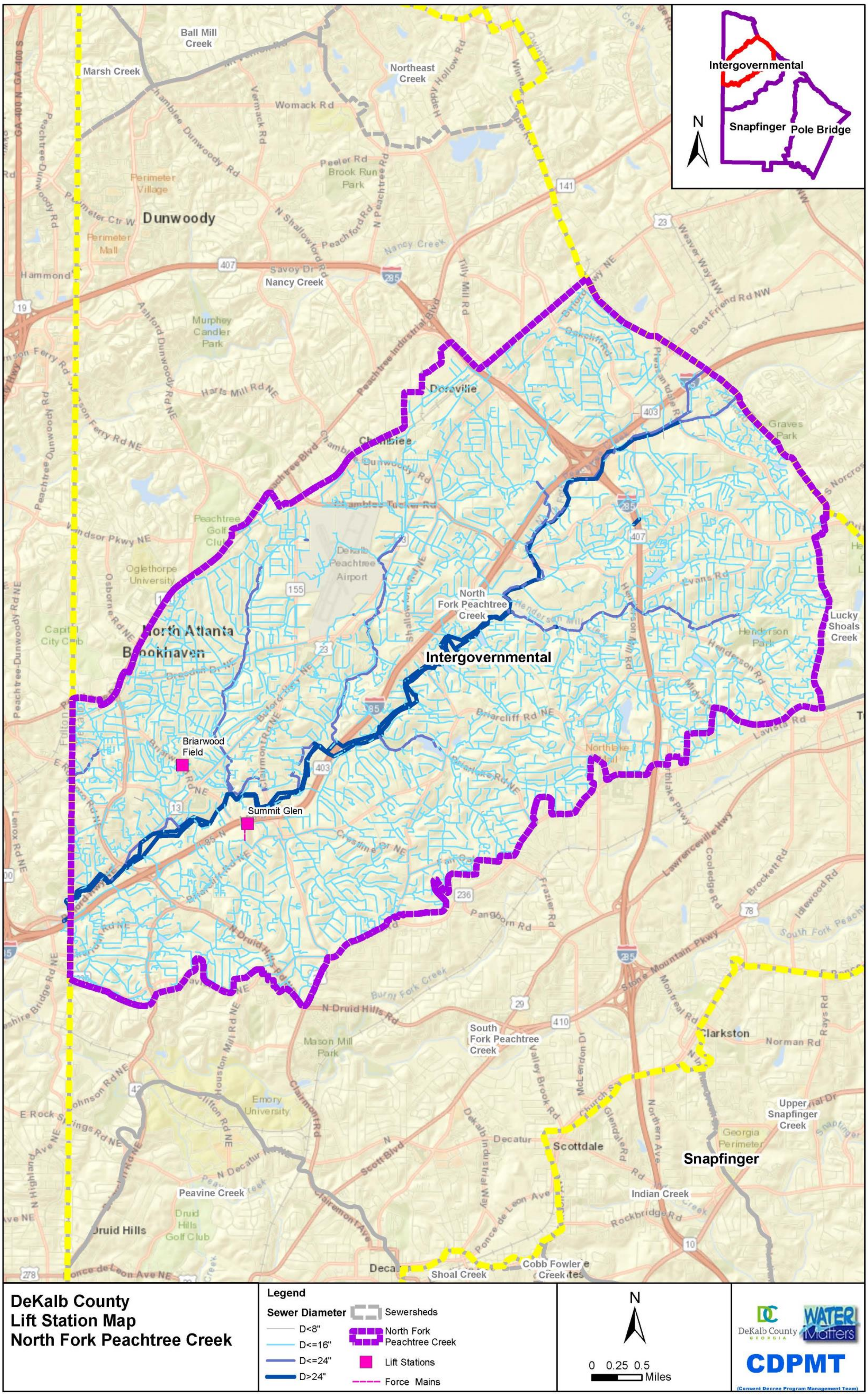

Figure 2-1. Lift Station Location Map

2.3 Boundary Condition Updates

Boundary condition data at both upstream and downstream points of the model areas were collected from the neighboring utilities to define the flow and hydraulic conditions at the interconnections between the County's system and neighboring systems. Flows within the NFPC sewershed are subject to the County's Intergovernmental Agreement (IGA) with COA, which expires in June 2029. Through this IGA, which includes not only NFPC but also interconnections with other sewersheds within the Intergovernmental Basin, monthly average flow limits from the County into COA are 50 million gallons per day (mgd). Maximum daily flow limits are 59.23 mgd into the County and 116.5 mgd from the County into COA.

For the NFPC sewershed, flow from the County's system discharges into adjacent COA through two interconnections along the west boundary that are measured by two County-owned flow meters. The boundary condition at the two discharge points was set as follows:

- Downstream discharge location downstream of DK2:
  - (DWF boundary level was assumed to be the observed average depth during dry periods at the flow meter.
  - Wet weather flow (WWF) (2-year, 24-hour design storm) boundary level was estimated based on the projected level provided by COA.
- Downstream discharge location downstream of Roxboro:
  - DWF boundary level was assumed to be the observed average depth during dry periods at the flow meter.
  - Because COA did not provide information for WWF (2-year, 24-hour design storm) conditions at this location, the WWF (2-year, 24-hour design storm) boundary level was estimated as discharge pipe at 75 percent full. Considering the relatively lower flow at this location, the impact from this assumption is minimal.

Figure 2-2 shows the NFPC sewershed model boundary consisting of the two major outflow interconnections with COA.

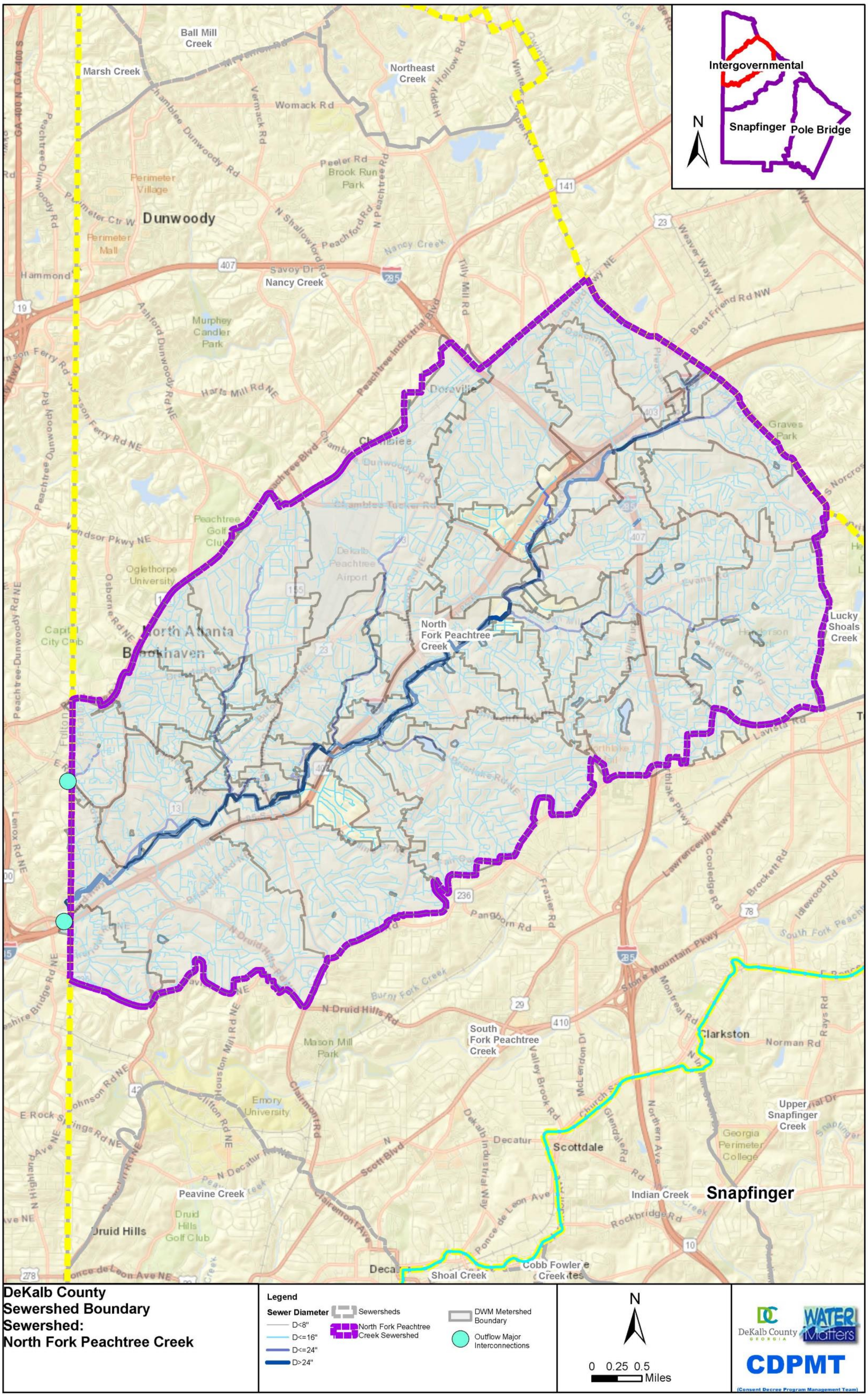

Figure 2-2. NFPC Sewershed Boundary

2.4 2018/2019 Flow Meter and Rain Gauge Data

2.4.1 Overview

For the 2018/2019 flow monitoring program, 35 meters were installed by DWM within the NFPC sewershed. A total of 2 of the 35 meters are inter-jurisdiction meters that measure flow to the COA collection system. Flow meter NFORK49 had data quality issues and was later stolen. This meter was then replaced (referred to as NFORK49_2) and relocated to a nearby location on October 25, 2018.

Figure 2-3 shows a flow meter diagram to illustrate the relationship among the 35 meters. Table 2-1 summarizes the flow meters used in this study.

A total of eight rain gauges were included for the rainfall data review: RGNFORK1, RGNFORK2, RGNFORK3, RGNFORK4, RGNFORK5, RGNFORK6, RGSFORK2, and RGSFORK3. RGSFORK2 and RGSFORK3 are located outside the NFPC sewershed boundary and were assigned to meters based on proximity.

The rain gauges listed were first assigned to different meters based on distance and the preliminary assignment was then adjusted during the calibration process. Table 2-2 lists the preliminary mapping between rain gauges and meters based on distance, which could be adjusted during the model WWF calibration process for better fit between flow and rainfall correlations. In addition, the following data were collected to supplement the data from the County’s rain gauges:

- Two U.S. Geological Survey rain gauges within or close to the modeled area: one located close to RGNFORK1, and the other located to the southwest of the NFPC sewershed.
- Radar weather coverage map records from the National Oceanic and Atmosphere Administration (NOAA)[1] were also reviewed to help understand the rainfall spatial and temporal distribution.

Figure 2-4 shows flow and rainfall monitoring locations and approximate metershed boundaries.

Additional flow and rainfall data are provided in the 2019 flow and rainfall monitoring report (CDPMT, 2019). This section focuses on the data review related to model flow input and calibration needs. Because of schedule considerations, flow data collected from June to November 2018 were used. The data review was done using the EPA’s Sanitary Sewer Overflow Analysis and Planning (SSOAP) software.

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[1] https://gis.ncdc.noaa.gov/maps/ncei/radar

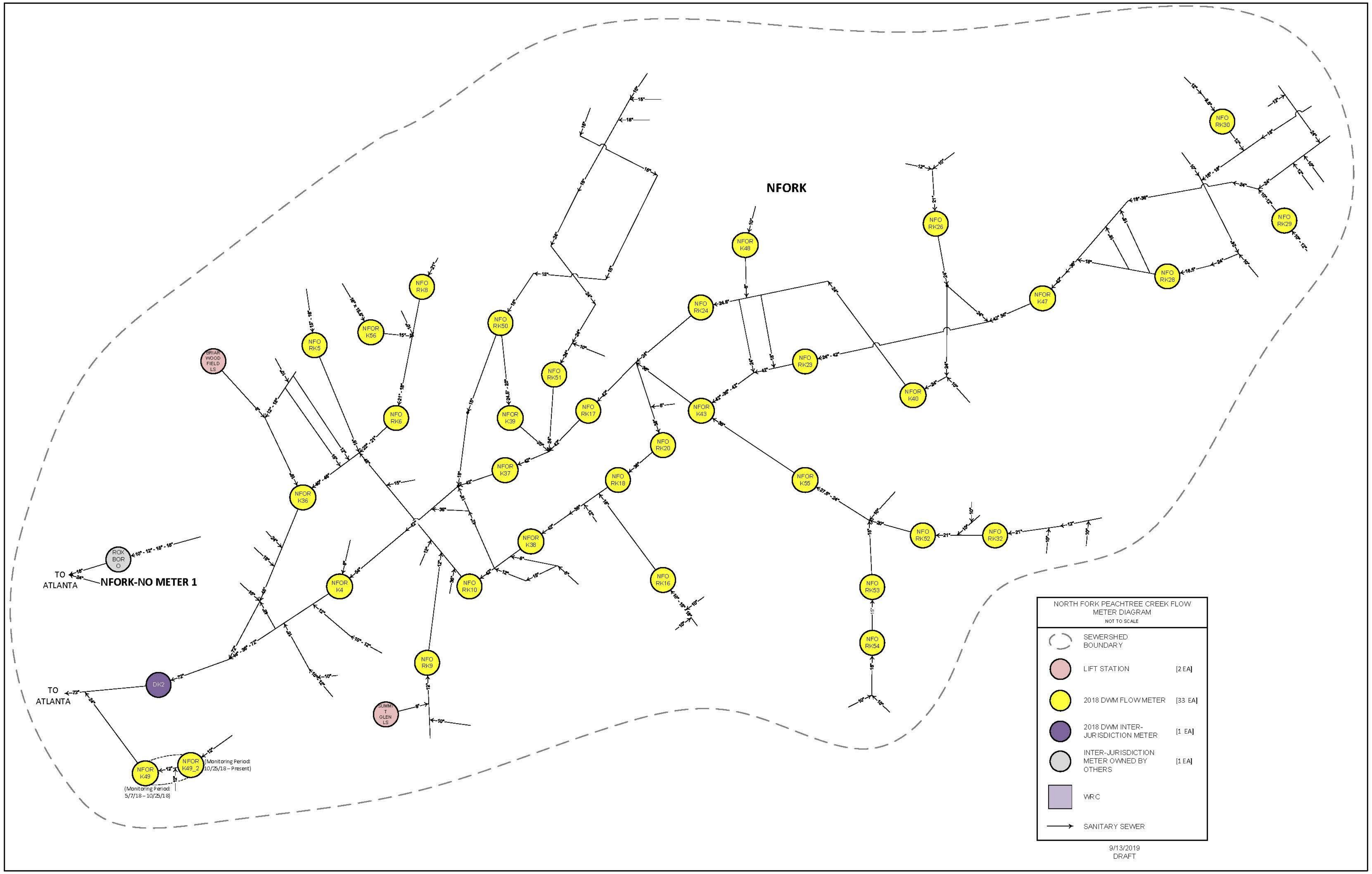

Figure 2-3. Flow Meter Relationship Diagram

Table 2-1. DWM Flow Meters Summary

Meter ID	Measured Pipe ID	Measured Pipe Size
NFORK4	18-197-s025__18-197-s024	54
NFORK5	18-197-s072__18-197-s071	18
NFORK6	18-202-s005__18-202-s004	21
NFORK8	18-243-s084__18-243-s323	21
NFORK9	18-196-s034__18-196-s033	12
NFORK10	18-195-s003__18-195-s201	42
NFORK16	18-205-s125__18-205-s124	18
NFORK17	18-234-s054__18-233-s096	42
NFORK18	18-234-s045__18-205-s025	36
NFORK20	18-246-s060__18-246-s061	36
NFORK23	18-266-s083a__18-266-s024	42
NFORK24	18-267-s010__18-267-s320	24.5
NFORK26	18-295-s018__18-295-s019	21
NFORK28	18-294-s012__18-294-s011	18.5
NFORK29	18-293-s027__18-293-s026	12
NFORK30	18-314-s031__18-314-s030	9.5
NFORK32	18-251-s037__18-251-s038	21
NFORK36	18-156-s408__18-156-s123	48
NFORK37	18-204-s060__18-195-s113	42
NFORK38	18-204-s055__18-195-s112	42
NFORK39	18-204-s124__18-204-s123	24.5
NFORK40	18-266-s009__18-266-s123	24
NFORK43	18-247-s205__18-247-s012	42
NFORK47	18-283-s004__18-283-s003	42
NFORK48	18-267-s058__18-267-s012	10
NFORK49_2	18-154-s097__18-154-s100	12
NFORK50	18-204-s032__18-204-s033	18
NFORK51	18-204-s077__18-204-s068	24
NFORK52	18-249-s016__18-249-s017	21
NFORK53	18-249-s046__18-249-s048	15
NFORK54	18-230-s011__18-230-s402	15
NFORK55	18-247-s163__18-247-s205	27.5
NFORK56	18-202-s045__18-202-s044	16
DK2	18-154-x312__18-154-s311	72
Roxboro	18-200-s024__18-199-s201	18

Table 2-2. Preliminary Rain Gauges Assignment

Meter ID	Rain Gauge
NFORK4	RGNFORK4
NFORK5	RGNFORK4
NFORK6	RGNFORK4
NFORK8	RGNFORK5
NFORK9	RGNFORK4
NFORK10	RGNFORK4
NFORK16	RGNFORK1
NFORK17	RGNFORK1
NFORK18	RGNFORK1
NFORK20	RGNFORK1
NFORK23	RGNFORK3
NFORK24	RGNFORK1
NFORK26	RGNFORK3
NFORK28	RGNFORK2
NFORK29	RGNFORK2
NFORK30	RGNFORK2
NFORK32	RGNFORK6
NFORK36	RGSFORK3
NFORK37	RGNFORK4
NFORK38	RGNFORK4
NFORK39	RGNFORK4
NFORK40	RGNFORK3
NFORK43	RGNFORK1
NFORK47	RGNFORK3
NFORK48	RGNFORK1
NFORK49_2	RGSFORK3
NFORK50	RGNFORK4
NFORK51	RGNFORK4
NFORK52	RGNFORK2
NFORK53	RGNFORK2
NFORK54	RGSFORK2
NFORK55	RGNFORK1
NFORK56	RGNFORK5
DK2	RGSFORK3
Roxboro	RGNFORK5

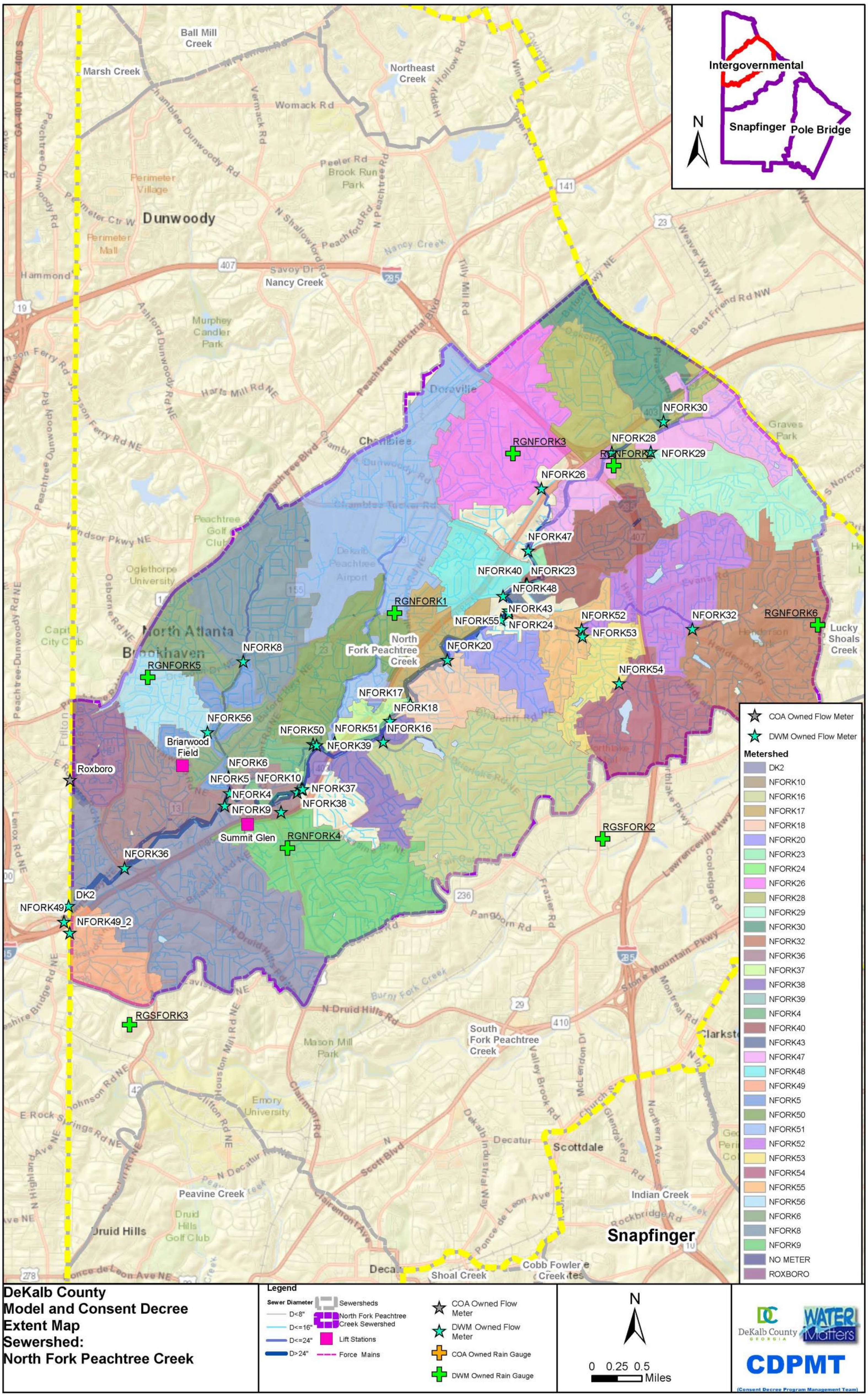

Figure 2-4. NFPC Flow Meter and Rain Gauge Locations and Metershed Boundaries (as of September 2019)

2.4.2 Data Review

The collected data in NFPC and throughout DWM's sewer system were first checked daily and monthly by the combined efforts from DWM and DWM's outside flow monitoring contractors to identify data drops, equipment malfunction, unusual flow patterns, etc. (CDPMT, 2019), then further reviewed in EPA's SSOAP application per the following criteria applicable for modeling needs:

- Adequate data recorded for qualified dry weather periods
- Capture at least three qualified storm events, each with a minimum total rainfall greater than 0.5 inches and RDII responses that were generally observed at most monitors
- Data quality was acceptable for major monitors for each event

Figure 2-5 shows the dry days vs. wet days comparison at the eight rain gauges. Based on the comparison, there are enough dry data periods to generate the model DWF inputs.

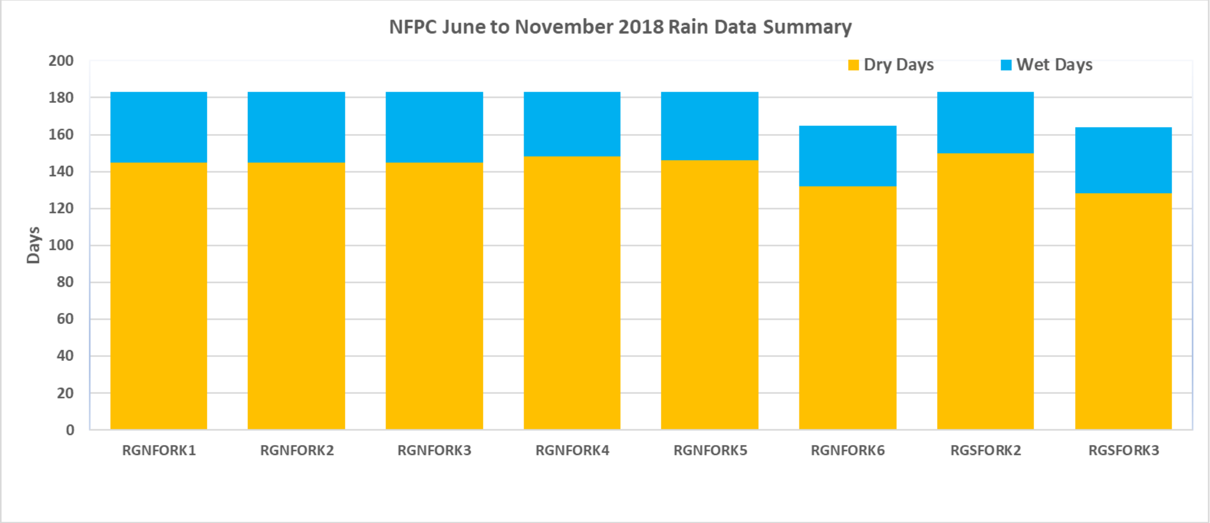

Figure 2-5. Flow Monitoring Dry and Wet Days Summary

Figure 2-6 summarizes the data quality for the 35 meters per routine DWM data checks (CDPMT, 2019). The data review process revealed the following additional issues beyond those identified in the routine DWM data checks:

- NFORK4: this site had poor velocity data and the scattergraph matched a drifting sensor. For model input and DWF calibration, only select data after the end of August 2018 were used. For WWF calibration, only a limited number of events had reasonable data available.
- NFORK5: this site had data quality issues. In August and September, depth sensor readings drifted downward into negative values, and velocities experienced extended overnight drops. Some data loss occurred in June/July.
- NFORK26: chronic velocity sensor issues resulted in poor data through August 21, 2018. For model input and DWF calibration, only select data after August 21 were used. For WWF calibration, only a limited number of events had reasonable data available.
- NFORK49_2: the original meter (NFORK49) had data quality issues and was later stolen. The meter was then replaced and relocated on October 25, 2018. Therefore, only limited data were collected and used for model input and calibration.

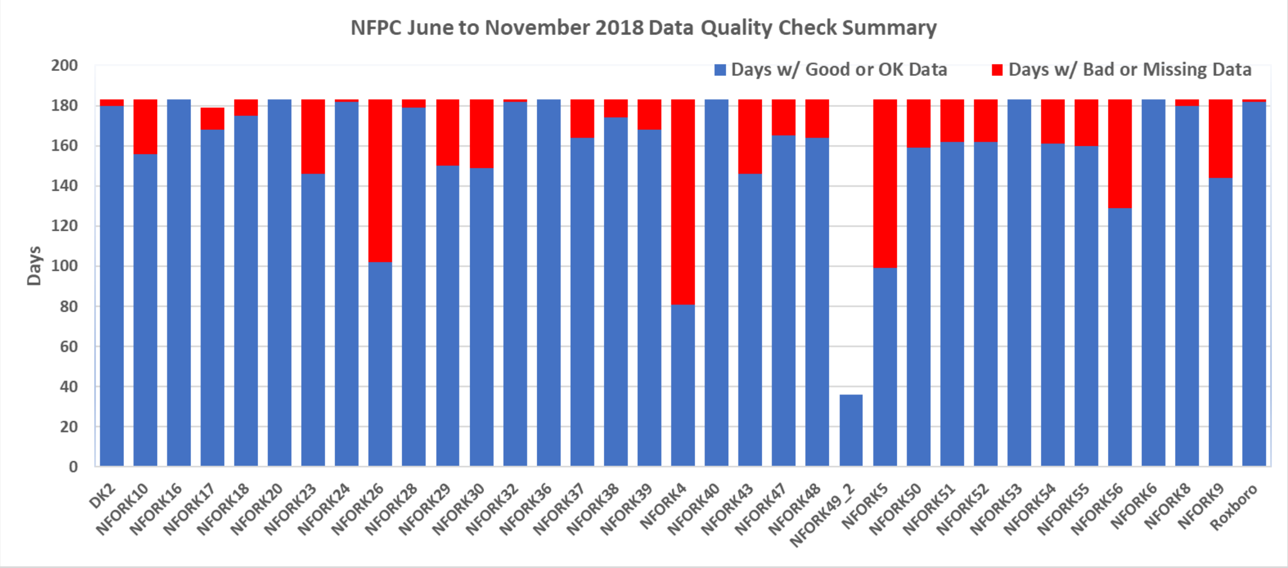

Figure 2-6. Flow Monitoring Data Quality Summary

DWF mass flow balance was performed to check the flow routing between the meters and the model network connectivity. Where the mass flow balance between sequential meters appeared suspect and the cause and remedy could not be explained or applied, the flow rate and volume at those meters were not used for the model net DWF allocation within the metershed contributing areas. However, the issues only affect the calculated average flow rate, and the diurnal pattern and the ratio between different DWF components were still considered valid for the DWF model inputs development, as discussed in Section 3.6.

For the NFPC sewershed model, the following meters showed negative net DWF based on the mass balance check: NFORK17, NFORK36, NFORK39, NFORK43, and NFORK54. The negative net DWF at these five flow meters were resolved by the following:

- NFORK17: downstream from flow split. Data from its immediate downstream meter NFORK37 was used to allocate DWF.
- NFORK36: data from its immediate downstream meter DK2 was used to allocate DWF.
- NFORK39: this meter is directly downstream from NFORK50, but measured less flow than NFORK50 consistently. There are only small areas of flow contribution between the two meters. Data from its immediate upstream meter NFORK50 was used to allocate DWF.
- NFORK43: data from its immediate downstream meter NFORK17 also had negative net DWF issue; therefore, data from the next downstream meter NFORK37 was used to allocate DWF.
- NFORK54: data from its immediate downstream meter NFORK53 was used to allocate DWF.

Overall, the flow monitoring program pertaining to the NFPC sewershed produced sufficient flow monitoring data for model flow inputs and calibration. However, there were some conditions and activities that caused some instances of data uncertainty, including:

- Flow monitoring equipment malfunctions
- Assumptions related to mass flow balance issues
- Hydraulic condition at the meter site (debris, etc.)
- Rainfall: spatial variation
- Maintenance frequency

- Others: stolen meter/battery

The impact from the uncertainties were considered while using the flow data to compare the model results during calibration process, as discussed in Section 5.

2.4.3 Storm Events Selection

An important objective of the flow data review was to evaluate the storm events captured during the 6-month flow monitoring period mentioned in Section 2.4.1 and to identify potential qualifying storm events for model calibration. Three major factors were considered for the selection process, including:

1. Rainfall:
    a. Total volume within 24 hours of greater than 0.5 inches.
    b. Avoid storm events with significant variation among different rain gauges.
2. Data quality: data quality was acceptable for major monitors for the same event.
3. RDII response: RDII responses were observed at most of the monitors.

During the 6 months of flow data, one large event captured on October 10, 2018, was approximately equal to a 1-year, 24-hour event per NOAA intensity-duration-frequency curve. Another similar large event captured on November 12, 2018, was included as a potential qualifying storm event for model verification.

Figure 2-7 plots the total rainfall volume within 24 hours at the DWM-owned rain gauges. A total of 12 storm events were selected as potential qualifying events for calibration (circled in red on Figure 2-7).

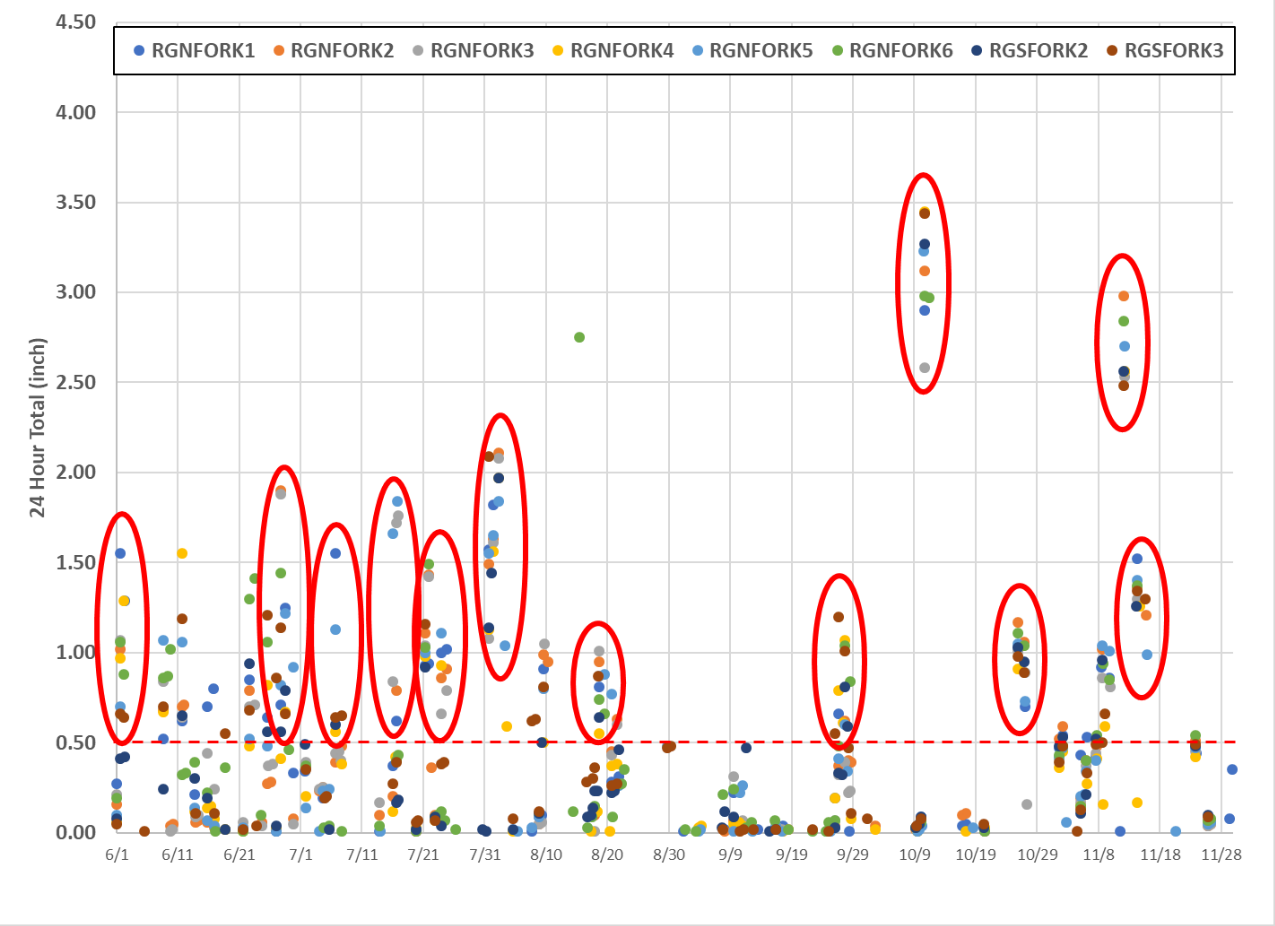

Figure 2-7. Storm Event Evaluation

Table 2-3 summarizes the number of selected storm events for the DWM-owned meters in the NFPC sewershed. Those selected storm events had no observed data quality issues during routine flow monitoring quality assurance/quality control (QA/QC). The other events with observed data quality issues during routine flow monitoring QA/QC were revisited during the calibration process and were included in the calibration based on engineering judgement, as discussed in Section 5.3. Appendix A provides the detailed evaluation for each event.

Table 2-3. Storm Selection Summary

Meter ID	**Selected Storm Events without Data Quality Issues**[a]
NFORK4	4
NFORK5	9
NFORK6	12
NFORK8	12
NFORK9	9
NFORK10	12
NFORK16	12
NFORK17	8
NFORK18	11
NFORK20	12
NFORK23	8
NFORK24	12
NFORK26	5
NFORK28	11
NFORK29	8
NFORK30	10
NFORK32	12
NFORK36	12
NFORK37	10
NFORK38	12
NFORK39	12
NFORK40	12
NFORK43	9
NFORK47	11
NFORK48	12
NFORK49_2	2
NFORK50	11

Table 2-3. Storm Selection Summary

Meter ID	Selected Storm Events without Data Quality Issues[a]
NFORK51	11
NFORK52	11
NFORK53	12
NFORK54	10
NFORK55	12
NFORK56	8
DK2	11
Roxboro	12

[a] Based on flow monitoring monthly routine check

2.5 Other Data Sources

To assist in the model update and upgrade, the following additional data sources were included:

- Data were collected to update sanitary flow distribution in the model including:
    - updated geocoded water billing data for 2015 by AECOM. These data were also used for the ongoing County master planning program. Questionable billing data from 2016 through 2019 were reviewed by DWM, who determined that the data should not be used because of quality issues.
    - large wastewater dischargers provided by DWM.
    - latest coverage map data for unsewered areas with septic tanks from DWM: the water billing data for those areas will not be used to allocate sanitary flow because the wastewater generated from those users are not discharged to the collection system
- Sanitary sewer overflow (SSO) records from DWM were reviewed to assist the model results verification, as discussed in Section 5.4.

SECTION 3

Model Updates

This section discusses model updates since the steady-state model was delivered to DWM in December 2017. The model updates since 2017 follow the same model development approaches and assumptions discussed in the 2017 model report (CDPMT, 2017), which are discussed in detail in this section.

To help differentiate the models in the report discussion herein, the model delivered in December 2017 is referred as the "2017 base model" for the remainder of this report.

3.1 Model Protocol

The NFPC sewershed model adheres to the updated protocol as included in the 2017 base model report. A model protocol was originally developed by MWH Global Inc. as part of their previous modeling work for the County in 2011 (MWH, 2011). In 2017, the protocol was updated to reflect changes and modeling needs since 2011. The updates were in the following areas:

- Data Flags
- Lift Station: Force Main
- DWF Development

Adjustments to the WWF model parameters setup are explained in Section 4.

3.2 Model Extent

The 2017 base model report included detailed discussion of the model extent delineation process meeting the CD requirements and is summarized below.

The model extent includes all pipes in the County-provided GIS special database engine (SDE) files. However, pipe segments referenced in the CD were called the "CD extent" segments and were generally the focus and priority of the modeling effort. The selection of specific pipe segments and components for the model's CD extent were defined by the following CD requirements:

- Sewer pipelines and force mains connecting lift stations.
- Gravity sewer pipes with diameters of 18 inches and greater.
- SSOs and known system capacity restrictions. The initial 2015 hydraulic model development used the SSO records from 2012, 2013, and 2014 to identify SSO locations.
- Flow meter locations.
- PASARP high-priority areas.

However, sewer pipes not meeting the CD extent definition were included in the model. Any missing data for the "non-CD extent" sewers were interpolated, and no field efforts were required to resolve connectivity or missing data to meet CD requirements. Including the interpolated data for the non-CD extent pipes did not materially affect model performance. Model components for the CD extent sewers were noted in the model database attribute table. The model is adequate for the intended uses.

The model extent was updated as described herein per the recent field survey results by adding new sewer pipelines and manholes or deleting abandoned sewer pipelines and manholes. The CD extent was updated to include the recent SSO records after December 2017. Figure 3-1 shows the updated model CD extent. Table 3-1 summarizes the model's inventory of infrastructure assets for the NFPC sewershed. The table also shows the portion that made up the CD extent sewers.

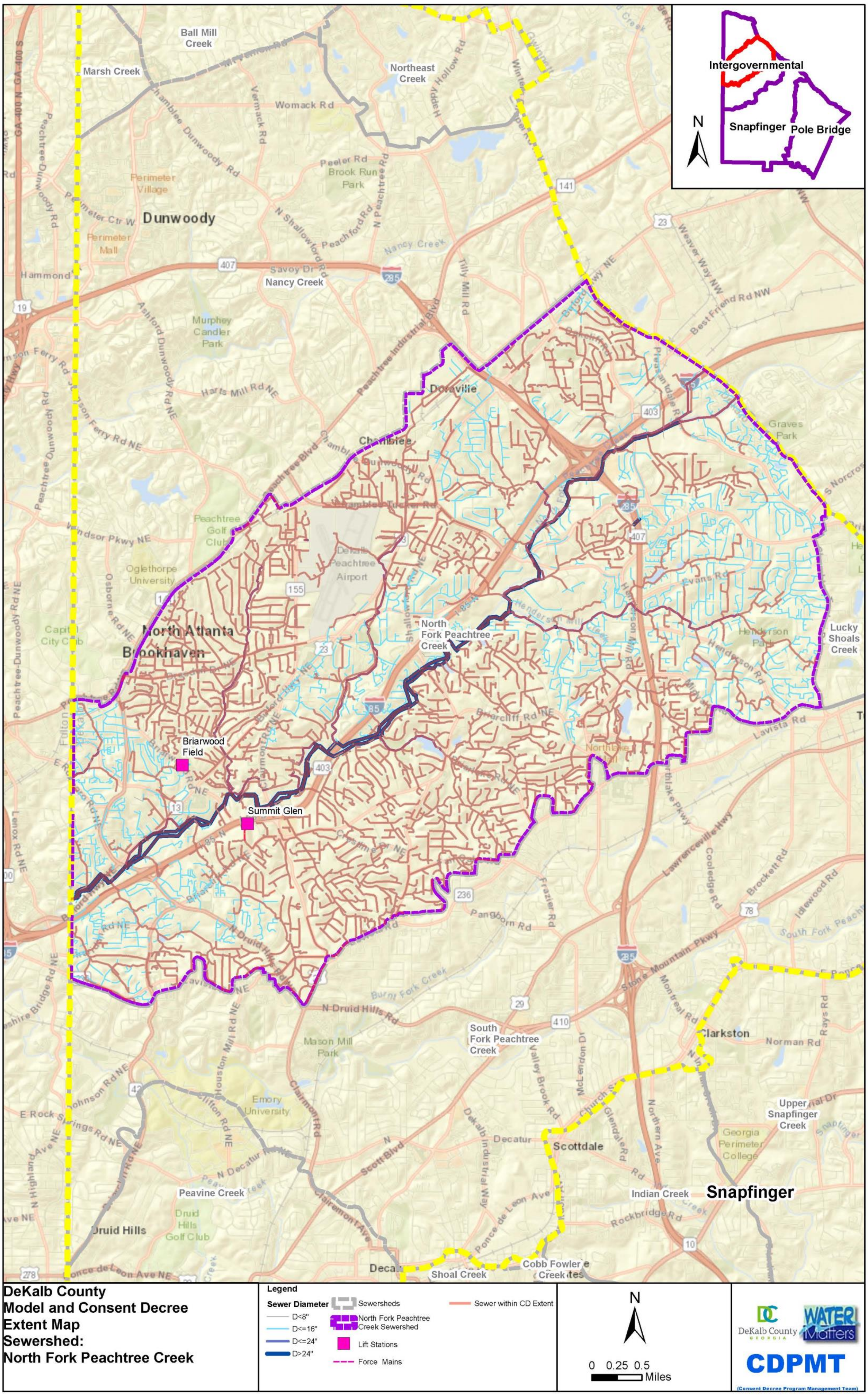

Figure 3-1. NFPC Model and CD Extent Map

Table 3-1. Updated Model Extent Summary

Entire Model Extent			CD Extent		
No. of Manholes	Sewer Pipe Length (ft)	No. of Lift Stations	No. of Manholes	Sewer Pipe Length (ft)	No. of Lift Stations
12,182	2,309,549	2	8,128	1,601,322	2

Note:
ft = feet

3.3 Model Development Documentation

As discussed in 2017 base model report (CDPMT, 2017), documentation was incorporated throughout the modeling process using data flags, hyperlinks, and user text/number fields for model elements and attributes. These documentation features in the 2017 base model were updated to include new data sources described herein in Section 2. The updates indicate when changes were made to the element or attribute, and the source and reason for the change (field verification, calibration, etc.).

Table 3-2 lists the updated model data flags to track new source data and changes including updates since the 2017 base model.

Table 3-2. Updated Model Data Flags
As of September 2019

Name	Description
GI	GIS Data from sewer mapping (2015 DWM GIS)
G2	November 2016 DWM GIS
G3	August 2017 DWM GIS (only changes since June 2016 extracted by DWM)
IG	Interpolated manhole rim/ground elevation from topo
SM	Set by modeler with engineer judgement if inferred data from Topo causing validation error
GC	GIS changed per model calibration and peak flow simulation
IN	Inferred automatically by InfoWorks
CB	Calibration change (if original data from GIS, use GC)
RD	Record Drawings
SD	Surveyed data or field check in 2015
S2	Surveyed data or field check in 2016
S3	37 critical field check sites by Brown and Caldwell and Arcadis in August 2017
D1	Field survey requested by DWM in 2017, not published in the DWM GIS SDE as of August 2017
RA	Updates from PASARP assessment, not published in the DWM GIS SDE as of August 2017
QG	For unverified G3 2017 updates from provided 2017 field survey
S4	Surveyed data or field check in 2018 (before February 2018)
S5	Surveyed data or field check in 2018 (after February 2018)
D2	Field survey requested by the County in 2017, not published in the County GIS SDE as of February 2018
R2	Updates from PASARP assessment, not published in the County GIS SDE as of February 2018

Hyperlinks were used in the model to link to:

- Field survey records and drawings

Model user text/number fields were also used as described below:

- User Text:
  - User Text #1 (Node, Link, Subcatchment): Metershed ID from 2018 Flow Monitoring Program
  - User Text #2 (Node, Link, Subcatchment): Updated CDextent

3.4 Model Network

As discussed in Section 2, the model network updates throughout the entire DWM system incorporate the field survey records up to February 2018 and significant system changes after February 2018 through the corresponding flow monitoring periods. Significant system changes are those that have a significant hydraulic impact on model results and change the capacity assessment conclusions. For example, the addition on a previously unknown interconnection between two sewers that can change flow rates in each pipe would be an example of a significant change.

Tables 3-3 through 3-5 list the data sources and corresponding data flags used to document the updated model development decisions on major manhole and sewer pipe input parameters. A total of 438 sewer pipe segments and 228 manholes were updated since the submission of the December 2017 base model.

After the model network updates, 256 gravity pipe segments (2.1 percent of total gravity pipe segments) had negative slopes, 12 manholes (0.1 percent of total manholes) had outgoing pipes higher (at least 0.5 ft) than incoming sewer pipes, and 92 locations had large-diameter sewer pipe connecting to smaller-diameter sewer pipe (at least 1-inch difference) based on GIS or field-surveyed pipe attributes. Those sewer pipelines may cause local capacity restrictions and affect the model-predicted capacity results, as discussed in Section 6. Sewer diameters and slopes should be verified at those locations.

There are 11 shallow manholes with depths less than 2 ft. Continuing field verification for manholes with inferred rim and ground elevations is recommended.

As shown on Figure 2-1, there are two lift stations in the NFPC sewershed model extent: Briarwood Field LS and Summit Glen LS. Both are included in the model as described in 2017 model report. Wet wells were represented as nodes and the cross-sectional area was determined by wet well dimensions. Each pump was represented by a specific pump link, and each force main was also represented by a link. There is no update based on the LS drawdown test records.

Table 3-3. Data Source Flags for Updated Model Manhole Rim Elevation
As of September 2019

Data Source	**Data Source Flag**	**Rim Elevation 2017 Base Model**	**Rim Elevation Updated Model**
		(No. of Manholes)	**(No. of Manholes)**
County GIS	GI	10,397	10,289
	G2	16	16
	G3	91	0
	QG	0	69
Data Assumption	IG	1,327	1,314
	SM	46	92
	GC	1	1
	IN	0	0
	CB	1	1

Table 3-3. Data Source Flags for Updated Model Manhole Rim Elevation
As of September 2019

Data Source	Data Source Flag	Rim Elevation 2017 Base Model	Rim Elevation Updated Model
		(No. of Manholes)	**(No. of Manholes)**
Drawings	RD	1	1
	SD	139	133
	S2	5	5
	S3	109	94
	S4	0	0
	S5	0	11
	D1	4	4
	D2	0	152
Field Survey	RA	0	0
	Total	**12,137**	**12,182**

Table 3-4. Data Source Flags for Updated Model Pipe Inverts
As of September of 2019

		No. of Pipe Segments 2017 Base Model		**No. of Pipe Segments Updated Model**	
Data Source	**Data Source Flag**	**Upstream Inverts**	**Downstream Inverts**	**Upstream Inverts**	**Downstream Inverts**
	GI	10,215	10,304	10,094	10,158
	G2	36	14	36	13
	G3	30	42	0	0
County GIS	QG	0	0	11	21
	IG	0	0	0	0
	SM	18	30	20	32
	GC	3	3	2	3
	IN	1,569	1,410	1,598	1,434
Data Assumption	CB	0	0	2	2
Drawings	RD	2	2	2	2
	SD	182	225	171	215
	S2	5	6	5	6
	S3	112	135	97	111
	S4	0	0	0	0
	S5	0	0	4	7
	D1	4	5	4	5
	D2	0	0	175	212
Field Survey	RA	0	0	0	0

Table 3-4. Data Source Flags for Updated Model Pipe Inverts
As of September of 2019

		No. of Pipe Segments 2017 Base Model		No. of Pipe Segments Updated Model	
Data Source	**Data Source Flag**	**Upstream Inverts**	**Downstream Inverts**	**Upstream Inverts**	**Downstream Inverts**
	R2	0	0	0	0
Total		**12,176**	**12,176**	**12,221**	**12,221**

Table 3-5. Data Source Flags for Updated Model Pipe Diameter
As of September of 2019

Data Source	Data Source Flag	Pipe Diameter 2017 Base Model (No. of Pipe Segments)	Pipe Diameter Updated Model (No. of Pipe Segments)
County GIS	GI	11,478	11,422
	G2	268	256
	G3	17	0
	QG	0	9
Data Assumption	IG	0	0
	SM	6	8
	GC	3	3
	IN	272	265
	CB	0	0
Drawings	RD	1	1
Field Survey	SD	62	45
	S2	1	1
	S3	62	55
	S4	0	0
	S5	0	44
	D1	4	4
	D2	0	81
	RA	2	2
	R2	0	25
	Total	**12,176**	**12,221**

3.5 Modeling Subcatchments

In the 2017 base model, only “dummy” subcatchments were developed to carry the DWF inputs and peak flow factors. To upgrade the 2017 base model to include the dynamic WWF model parameters, WWF subcatchments (which can be much smaller in drainage area than a metershed) were delineated to represent estimated drainage areas where rainfall runoff may contribute to the sanitary sewer flow.

The subcatchment delineation followed the procedures specified in the model protocol included in Appendix A of the 2017 base model report (CDPMT, 2017). The procedures were developed by MWH Global Inc. (MWH, 2011) and are described in the following text.

Subcatchments contain all information associated with dry and wet weather flows. Because this is a sanitary sewer model, subcatchments, or contributing areas, should generally be defined by property boundaries. However, when encountering large permeable areas, subcatchments may be delineated assuming an offset from the sewer line to account for any I/I that may occur. The maximum size of the subcatchments should be no more than 50 acres but preferably smaller than 20 acres. Smaller subcatchments will be required in parts of the catchment that are very complex, such as regions with high concentration of flow splits, or sanitary sewer overflows. Subcatchments should, where possible, contain only one development type (land use). Development types include various densities of housing, warehouses, offices, factories, commercial development, etc. In the case of major developments such as large retail or industrial parks, it may be necessary to obtain private drainage records to help identify where flows enter the collection system. Large permeable or 'green' areas that exist within an urban catchment (such as playing fields, golf courses or park land), which are known to not contribute to the sanitary collection system, shall be omitted from the model except for areas along sewer lines where I/I may occur. These areas will have no sanitary flow contribution.

The catchment boundaries shall be created directly in InfoWorks or digitized in the GIS and imported into the modeling software. Careful consideration is required when choosing the node to which the subcatchment areas should be assigned. The approach will always be an approximation, as in reality areas will connect at a number of points along the modeled pipe length. Because this is a sanitary sewer model, the manner in which tributary sewers connect to the modeled pipe should be considered when deciding where to assign a particular area. In general, if there is a suitable manhole within or adjacent to the subcatchment where an increase in pipe size occurs, then this is the node to which the area should be assigned. If there is no increase in pipe size, the area should be assigned to a suitable node midway along the appropriate sewer length bounded by the subcatchment. In upstream reaches of the system or in locations of summit manholes, the most upstream or summit manhole should be assigned to ensure that all pipe segments carry some flow.

If larger subcatchments are delineated in the upstream reaches of the system, this may sometimes result in the prediction of spurious flooding and surcharging. In this situation, the selection of an appropriate node to which to assign areas must be driven more strictly by pipe size changes on the branch to be modeled, and by studying the way in which the tributary sewer network connects to the modeled pipe. Where a choice has to be made between two or more possible manholes, areas should be assigned toward the downstream end of the pipe running through or past each subcatchment. This will be slightly conservative in terms of peak flows being passed forward in the model. It is important, however, when defining the upstream limits of the model that sufficient length of pipe is retained in the model to adequately represent the routing of flow through the collection system. Failure to do this will result in flows passing too rapidly into the downstream part of the model, with consequent over-prediction of peak flows.

Additional delineation procedures were followed to further enhance the resolution of the subcatchment coverage including:

- Use of parcels as base unit for the delineation for higher distribution resolution.
- Refined septic service areas per the latest DWM GIS database.
- Refined large permeable ground cover or water bodies that existed within the urbanized areas. These areas generally provide no contribution to the sanitary sewer system flows. These areas were omitted from the model except for areas along sewer lines where RDII may occur.
- Included subcatchments for contributing areas from neighboring collection systems.

For the NFPC sewershed model, there are a total of 3,725 WWF subcatchments. Table 3-6 summarizes the subcatchment coverage per metershed.

Table 3-6. Model WWF Subcatchment Summary

Metershed	Sum of Contributing Area (acre)	Count of Subcatchment	Largest Contributing Area (acre)	Smallest Contributing Area (acre)
NFORK4	94	19	20.9	0.7
NFORK5	262	69	25.7	0.5
NFORK6	554	124	29.7	0.2
NFORK8	1,013	176	81.1	0.2
NFORK9	1,056	200	38.0	0.4
NFORK10	201	33	32.2	0.8
NFORK16	1,513	309	34.3	0.1
NFORK17	359	51	48.7	0.6
NFORK18	349	79	18.3	0.7
NFORK20	297	59	18.5	0.4
NFORK23	24	4	13.3	1.1
NFORK24	87	8	24.9	0.3
NFORK26	1,004	162	36.2	0.3
NFORK28	742	108	46.0	0.6
NFORK29	738	121	60.5	0.4
NFORK30	456	50	80.6	0.3
NFORK32	1,273	223	38.8	0.2
NFORK36	721	157	20.9	0.1
NFORK37	146	25	28.5	0.4
NFORK38	359	67	31.4	0.1
NFORK39	34	5	22.4	1.6
NFORK40	827	113	53.7	0.3
NFORK43	1	1	1.3	1.3
NFORK47	634	107	45.5	0.1
NFORK48	353	70	33.4	0.8
NFORK49_2	306	70	34.0	0.3
NFORK50	627	117	34.7	0.1
NFORK51	1,750	190	347.5	0.1
NFORK52	810	185	21.2	0.2
NFORK53	292	66	40.5	0.7

Table 3-6. Model WWF Subcatchment Summary

Metershed	Sum of Contributing Area (acre)	Count of Subcatchment	Largest Contributing Area (acre)	Smallest Contributing Area (acre)
NFORK54	619	118	27.4	0.3
NFORK55	298	63	37.6	0.6
NFORK56	357	104	12.7	0.2
DK2	1,832	346	69.4	0.1
Roxboro	325	108	16.0	0.1
No Meter	59	18	11.1	0.2
Total	**20,372**	**3,725**		

3.6 Dynamic Hydraulic Model Flow Inputs

The dynamic hydraulic model flow inputs were updated based on portions of the flow data analysis of the 2018 and early 2019 flow and rainfall monitoring data for County wide model areas. As discussed in Section 2.4, EPA's SSOAP application was used for data analysis. The detailed SSOAP data analysis is included in the 2019 flow and rainfall monitoring report (CDPMT, 2019). Section 3.6 focuses only on the analysis results from the 6-month flow data collected from June through November 2018 for NFPC sewershed.

The detailed explanation of the different flow components and the methodology to distribute the different DWF components is provided in the 2017 base model report (CDPMT, 2017) and is summarized as follows. DWF consisted of groundwater infiltration (GWI) and sanitary flow.

- Following EPA (2007) guidance, GWI was determined using flow meter data by taking the minimum reading (typically between 2:00 a.m. and 5:00 a.m.) and assuming that 15 percent of that flow was sanitary flow and the remaining 85 percent flow was constant groundwater infiltration. However, the percentage of the minimum reading presumed to groundwater infiltration was adjusted as needed to reach mass flow balance among the meters.
- The base sanitary flow (BSF) was the load directly contributed by the County's customers. Sanitary flows were determined using flow meter data by subtracting GWI from the calculated average DWF. The average BSF was then distributed based on geocoded water consumption data provided by the County.

Table 3-7 summarizes the updated DWF model inputs for each NFPC metershed including sanitary flow and base groundwater infiltration.

As discussed in Section 2.4.2, because of mass flow balance issues, the monitored flow rate and volume at NFORK17, NFORK36, NFORK39, NFORK43, and NFORK54 were not used for model net DWF allocation within the metersheds' contributing areas. However, the diurnal pattern and the ratio between different DWF components were still considered for the DWF model inputs development.

Table 3-7. Model DWF Inputs Based on 2018 Flow Monitoring Data

	Model	Model Weekday DWF Input				Model Weekend DWF Input				Model Dry GWI Input	
	Wastewater Profile	ADDF (CUM)	ADDF(SUB)	BSF (CUM)	BSF (SUB)	ADDF (CUM)	ADDF(SUB)	BSF (CUM)	BSF (SUB)	DRY GWI (CUM)	DRY GWI (SUB)
Meter ID	**ID#**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**	**mgd**
NFORK4	321	5.30	0.36	3.09	0.15	5.47	0.44	3.25	0.22	2.21	0.21
NFORK5	322	0.14	0.14	0.09	0.09	0.15	0.15	0.11	0.11	0.05	0.05
NFORK6	323	1.35	0.61	0.81	0.36	1.40	0.66	0.85	0.40	0.55	0.26
NFORK8	324	0.43	0.43	0.25	0.25	0.41	0.41	0.23	0.23	0.18	0.18
NFORK9	325	0.49	0.49	0.26	0.26	0.50	0.50	0.27	0.27	0.23	0.23
NFORK10	326	2.51	0.35	1.49	0.17	2.50	0.41	1.48	0.23	1.02	0.18
NFORK16	327	0.40	0.40	0.24	0.24	0.41	0.41	0.25	0.25	0.16	0.16
NFORK17*	328	NA									
NFORK18	329	1.58	0.07	1.00	0.01	1.59	0.09	1.01	0.03	0.58	0.06
NFORK20	330	1.51	0.26	0.99	0.25	1.50	0.30	0.98	0.29	0.52	0.02
NFORK23	331	2.11	0.24	1.32	0.20	1.80	0.18	1.01	0.14	0.79	0.05
NFORK24	332	1.36	0.01	0.82	0.00	1.40	0.04	0.86	0.04	0.54	0.01
NFORK26	333	0.78	0.78	0.49	0.49	0.81	0.81	0.52	0.52	0.29	0.29
NFORK28	334	0.68	0.58	0.37	0.30	0.66	0.56	0.35	0.29	0.31	0.27
NFORK29	335	0.44	0.44	0.27	0.27	0.48	0.48	0.31	0.31	0.17	0.17
NFORK30	336	0.11	0.11	0.06	0.06	0.10	0.10	0.06	0.06	0.04	0.04
NFORK32	337	0.39	0.39	0.20	0.20	0.42	0.42	0.24	0.24	0.18	0.18
NFORK36*	338	NA									
NFORK37	339	4.94	0.00	2.94	0.00	5.03	0.03	3.03	0.02	2.00	0.01
NFORK38	340	2.16	0.18	1.32	0.08	2.09	0.08	1.26	0.00	0.83	0.09
NFORK39*	341	NA									
NFORK40	342	1.21	0.43	0.72	0.23	1.22	0.41	0.73	0.21	0.49	0.20
NFORK43*	343	NA									
NFORK47	344	1.67	0.53	0.93	0.27	1.43	0.27	0.69	0.01	0.74	0.26
NFORK48	345	0.14	0.14	0.09	0.09	0.14	0.14	0.09	0.09	0.05	0.05
NFORK49_2	357	0.14	0.14	0.09	0.09	0.14	0.14	0.09	0.09	0.05	0.05
NFORK50	347	0.43	0.43	0.30	0.30	0.54	0.54	0.41	0.41	0.13	0.13
NFORK51	348	1.03	1.03	0.60	0.60	1.06	1.06	0.63	0.63	0.43	0.43
NFORK52	349	0.89	0.50	0.46	0.25	0.94	0.52	0.50	0.26	0.43	0.25
NFORK53	350	0.45	0.45	0.27	0.27	0.46	0.46	0.28	0.28	0.18	0.18
NFORK54*	351	NA									
NFORK55	352	1.34	0.00	0.72	0.00	1.40	0.00	0.78	0.00	0.61	0.00
NFORK56	353	0.31	0.31	0.20	0.20	0.32	0.32	0.22	0.22	0.11	0.11
DK2	354	11.38	1.59	6.49	0.75	11.48	1.46	6.60	0.63	4.89	0.84
Roxboro	355	0.37	0.37	0.23	0.23	0.36	0.36	0.23	0.23	0.14	0.14
No Meter	356	0.18	0.18	0.12	0.12	0.27	0.27	0.21	0.21	0.06	0.06

* Excluded due to mass balance issues, covered by the immediate downstream meter.

There were also a few small areas not covered by the DWM flow meters. As shown in Figure 2-3, the unmetered area within the NFPC sewershed is limited to the areas immediately upstream of the two discharge locations to COA.

- Unmetered areas between NFORK49_2 and NFORK49: Originally, NFORK49 was installed to capture these flows, but its location made it difficult to capture and retrieve quality data. Additionally, the meter was later stolen and moved upstream to NFORK49_2. Therefore, the DWF for these unmetered areas were estimated based on subtracting DWF at NFORK49_2 from DWF at NFORK49.
- Unmetered areas discharge to COA near Roxboro:
  - For the BSF, assumed 75 percent of returning rate from the water usage records, which are based on the estimated average indoor water use of 72 to 78 percent for DeKalb County per Metropolitan North Georgia Water Planning District (MNGWPD, 2017).
  - For the base GWI:
    - Used the immediate upstream meter data to calculate the percentage of minimum night-time flow over average daily dry weather flow (ADDF). If there is no upstream meter, the system-wide average percentage was used.
    - Assumed 75 percent of minimum nighttime flow is GWI as an initial value per the Model Protocol section in Appendix A of the 2017 base model report (CDPMT, 2017).
    - Calculated the estimated ADDF for the unmetered area based on the estimated BSF and the above assumptions.
    - Back-calculated base GWI from the estimated ADDF and BSF based on the above procedures.

The model DWF distribution within each metershed was also updated. The base GWI distribution was refined based on the drainage area of the delineated WWF subcatchments. Sanitary flow distribution in the model was updated based on the 2015 water billing data, which was used by AECOM for the master planning task. Questionable billing data from 2016 through 2019 were reviewed by DWM, who determined that the data should not be used.

As recommended in the 2017 base model report, sanitary flow distribution was also further refined for locations with identified large water users and dischargers. The large water users were identified from the 2015 water billing data within each model area, and the large dischargers were provided by the County.

The distribution was adjusted based on the large water users and large dischargers as follows:

- For each DWM-provided large wastewater discharger, the provided monthly average flow (February 2018) was assumed for the 2015 average upon confirmation with DWM and added as trade flow in the subcatchment table to replace the existing sanitary flow loading based on water billing data.
- For identified large water users, the data records were reviewed and the corresponding loaded flow in the model was adjusted only if there was information available to calculate the new flow loading. Further evaluation of those large water users is recommended as the County's sewer variance program information becomes available.

Table 3-8 lists the identified large water users within the NFPC sewershed. There are 5 large dischargers within the NFPC sewershed based on the list provided by the County. Table 3-9 lists the identified large water users within the NFPC sewersheds based on 2015 water billing data.

Table 3-8. Large Wastewater Dischargers

Name	Model Loading Manhole ID	Monthly Average Flow (gpm)
UNITED PARCEL SERVICE P DALE BLDG 971428	18-314-s028	8.6
CARGILL TEXTURIZING SOLUTIONS	18-313-s404	2.3
GREENWOOD ICE CREAM	18-278-s305	2.0
ALSCO INC	18-318-s308	122.4
J.W. OUTFITTERS INC	18-313-s068	13.5

Note:
gpm = gallons per minute

Table 3-9. Top 10 Large Water Users

Ranking	Location ID	Name	Water Consumption (gpm)
1	522020	ALSCO INC	91.7
2	300815	LANDMARK AT BANYAN BAY LP	64.6
3	8935235	POST PROPERTIES/ LP POST BROOKHAVEN	47.0
4	8716304	CAMERON BROOK APTS	41.1
5	8726102	POST ATLANTA	40.8
6	8723203	VIERA BRIARCLIFF APARTMENTS	38.2
7	8613502	SONOMA RIDGE APARTMENTS	37.3
8	301097	KRC ALDERWOOD TRAIL LLC	36.6
9	9723162	CWS APARTMENT HOMES LLC	34.8
10	300810	ASHFORD WALK, LLC	32.4

3.7 Basic Modeling Assumptions

The basic modeling assumptions were the same as those presented in the 2017 base model report (CDPMT, 2017). and included:

- Head loss: it was assumed that the manholes were in good condition and normal manhole head loss condition was used.
- Pipe Roughness: Table 3-10 lists the default Manning’s N for different pipe material in the County’s system. When the pipe’s material was not known, a value of 0.013 was assumed. As with other calibration parameters, the Manning’s N coefficient was occasionally adjusted in the calibration process.
- Manhole flooding: Manholes in the network were assumed to have a flooding type of “lost”. If there were any force mains, the nodes were represented as “sealed”.

Table 3-10. Manning's N for Various Pipe Material

Source: Haestad Methods, 2004

Pipe Material	Initial Manning's N
Brick	0.015
CI	0.014
CIP	0.013
CIP(lined)	0.012
CMP	0.015
Concrete	0.013
DIP	0.013
HDPE	0.012
Lined	0.012
Other	0.013
Polyethylene	0.01
PVC	0.012
RCP	0.013
Tile	0.015
Truss	0.012
VCP	0.013

SECTION 4

WWF Model Setup for Dynamic Hydraulic Modeling

A portion of WWF from rainfall runoff can work its way into the sewer system. The model simulates this time-dependent rainfall-to-sewer system phenomena in the hydraulic model. The WWF consists of three model components included in the InfoWorks ICM: initial loss (depression storage), runoff volume, and runoff routing. Incident rainfall is initially stored in surface depressions, which are subject to evaporative loss. When rainfall exceeds depression storage in a given model calculation time step, a proportion of the excess rainfall goes to runoff according to the particular volume and routing models used.

As discussed in the dynamic model approach TM (CDPMT, 2018), runoff model (both volume and routing) solutions offered in InfoWorks ICM were evaluated to determine which solution best reflected RDII characteristics using the following flow monitoring data:

- Observed inter-event impacts (for example, flow not returned to the base flow before the next storm event).
- Long-term impact from GWI from dry and wet periods.

The combined model solution of the hydrologic/surface runoff models (Fixed Percentage Runoff volume model + Wallingford routing model) and Ground Infiltration Model (GIM) was selected based on the pilot study results of a portion of DWM's sewer system by evaluating the approaches listed below. This pilot study was presented in 2018 Innovyze's Atlanta User Group Meeting (Lu et al., 2018). Comparing the three different model solutions resulted in the following findings:

- RTK methodology[2] is widely used as one empirical approach but has limited features to simulate the inter-event impacts and long-term impacts from GWI over different dry and wet periods (not selected).
- Hydrologic (surface runoff) models including both volume and routing models offered in InfoWorks ICM can conceptualize the RDII responses as surface runoff inputs but have limitations to represent slow response (selected as part of the combined solutions).
- GIM is effective for simulating inter-event impacts from antecedent moisture conditions or a highly attenuated response to rainfall ("long tail") but is complicated and has multiple parameters to adjust (selected as part of the combined solutions).

The following sections introduce the combined model solution approach, the major model parameters, and the assumptions applied in the model setup.

4.1 Combined Model Solution Approach

4.1.1 Hydrologic (Surface Runoff) Models

For the dynamic model, the Fixed Percentage Runoff (PR) volume model was paired with the Wallingford routing model to simulate the fast and medium responses of the RDII.

The Fixed PR volume model defines a fixed percentage of the net rainfall that becomes runoff. It uses one parameter, fixed runoff coefficient, to define the runoff volume. For example, a value of 0.1 means

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[2] R=fraction of rainfall volume entering the sewer system as RDII; T=time to peak; K=the ratio of time of recession to time to peak

that 10 percent of the generated runoff from the contributing area for the defined runoff surface enters the sewer as RDII.

The Wallingford routing model, also known as the double linear reservoir model, was selected for the runoff routing model. The Fixed PR volume model calculated the net resulting rainfall runoff entering the sewer. The Wallingford routing model transformed the generated net runoff for each subcatchment into an inflow hydrograph at each WWF loading node. The model was simplified to use only one parameter—the runoff routing value in the InfoWorks ICM runoff surface grid table (Innovyze, 2017)—to control the speed of the flow entering the sewer. This parameter affects the peak flow of the WWF hydrograph.

4.1.2 Ground Infiltration Model

Beyond the surface runoff discussed on the previous page, the remaining rainfall is directed into the soil storage reservoir. When the soil reaches a given saturation threshold, water starts to percolate downwards. A proportion of this percolation flow infiltrates directly into the sewer network while the remainder penetrates deeper to feed the groundwater storage reservoir. The above process can be simulated by GIM in InfoWorks ICM. By using the double layer reservoirs theory, GIM can simulate the inter-event impact from antecedent moisture conditions or a highly attenuated response to rainfall (long tail). However, this model is complicated, with 12 major parameters to calibrate to simulate the physical process including soil depth, percolation coefficient, baseflow coefficient, infiltration coefficient, percolation threshold, percolation percentage infiltrating, porosity of soil, porosity of ground, baseflow threshold level, baseflow threshold type, infiltration threshold level, and infiltration threshold type. It also requires a long simulation time to simulate the long-term impact from GWI, which was not appropriate for this study scope and schedule.

For this study, the GIM methodology was simplified to consider only the first layer reservoir, with three major parameters to calibrate (percolation coefficient, percolation percentage infiltrating, and percolation threshold). With proper calibration of the three parameters, GIM simulated both the medium and slow response of the RDII. GIM was used only for meters that could not calibrate with the Fixed PR and Wallingford models because of intensive ground infiltration.

The simplified GIM approach did not fully use the features for long-term simulation but retained the comprehensive advanced modeling technology to account for the inter-event impact, which was limited with the traditional RTK methodology as discussed in the pilot study (Lu et al., 2018). It addresses the delayed impacts of individual storms but is not calibrated to address multi-season or multi-year groundwater impacts.

4.2 WWF Model Setup Parameter Groups

The WWF model setup parameters from the combined model solutions were categorized into two major groups according to their effects on model RDII simulation results:

- Volume: this parameter group defined the proportion of rainfall landing on the catchment surface that enters the sewer as RDII, which affects the total RDII volume.
- Routing: this parameter group defined the speed with which rainfall enters the sewer as RDII. Parameters in this group affect the shape of the flow hydrograph (the timing and peak flow).

Parameters representing initial loss in processes, such as dampening and cooling of the catchment surface and filling up small surface depressions, were also used in the NFPC model to help address the inter-event impact issues by pairing with GIM. Group parameters were only applied as needed per calibration results.

Table 4-1 summarizes the major parameter groups discussed above. The parameters not listed in Table 4-1 were set with default values and had no effect on the model calibration process.

Table 4-1. WWF Parameters Summary

ICM Grid Table	Parameter	Group	Model Solutions	Notes
Subcatchment	Contributing Area	Volume	not applicable	
Land Use	Default Area 1 (%)	Volume	not applicable	Calibration Parameter
Runoff Surface	Runoff Routing Value	Routing	Wallingford Routing	Calibration Parameter
Runoff Surface	Initial Loss Value (ft)	Volume	not applicable	Calibration Parameter
Runoff Surface	Fixed Runoff Coefficient	Volume	Fixed PR Run off	Calibration Parameter
Ground Infiltration	Percolation Percentage Infiltrating	Volume	GIM	Calibration Parameter
Ground Infiltration	Percolation Coefficient	Routing	GIM	Calibration Parameter
Ground Infiltration	Percolation Threshold	Volume	GIM	Calibration Parameter

4.3 Assumptions

As discussed in the previous section, the combined model solution approach used the runoff model solutions for stormwater to conceptualize the RDII characteristics. The original comprehensive model solutions in InfoWorks ICM were intended to simulate the complex physical process of runoff and infiltration. This complex model process was simplified in the NFPC WWF model setup. The simplification enabled RDII in a separated sewer system to be simulated by converting the originally intended physical process-based model solutions to a hybrid model solution with empirical modeling assumptions. The assumptions related to the simplification included:

1. All the parameters were simplified as volume-related or speed-related, as explained in Section 4.2. The original physical meaning and limitations of the parameters were not applied in this simplified model solution. For example, the imperviousness percentage was used only to specify the overall potential runoff generated before subtracting the flow to the sewer through the fixed runoff model and GIM; it did not represent the real imperviousness of the contributing area.
2. Initial loss is a complex physical process with uncertainty factors related to rainfall spatial and temporal distribution and soil conditions. The related parameters were considered only per calibration needs.
3. For unmetered areas, the system average values from the calibrated model were assumed for the major WWF parameters.

The assumptions inherently reduce the complex, physically based InfoWorks ICM runoff model to a calibration-based simplification. A calibration-based simplification is required for RDII simulation because it is not feasible to identify and subsequently physically represent all processes and opportunities that allow rainfall to enter the sanitary sewer.

SECTION 5

Model Results Calibration and Verification

The 2017 base model report (CDPMT, 2017) provides detailed discussion of the model build, calibration and verification approach, and sensitivity analysis for DWF, which is summarized in this section. This section focuses on the DWF recalibration results, the dynamic WWF calibration, and verification.

The sensitivity analysis for WWF model parameters is also included in this section. Although the parameters used in the analysis were adopted from one example subcatchment in the ITMC model, the effects of those parameters on the results remain the same and the sensitivity analysis results from the ITMC model example are also applicable to the remaining six DWM hydraulic models using the same WWF model solutions and parameters.

5.1 Calibration Criteria

For DWF model calibration, CDPMT continued to use the same model calibration/verification criteria stated in in Section 4.1.1 of the 2017 base model report. The criteria used for dry weather calibration during individual 24-hour qualified dry day were:

- ±10 percent peak DWF
- ±10 percent volume

For WWF model calibration, CDPMT adopted the criteria that were accepted by DWM per Section 10.1 of the developed Model Protocol section in Appendix A of the 2017 base model report (CDPMT, 2017). The criteria included accepting calibration results variations within the following ranges:

- +25/-15 percent for peak flow
- +20/-10 percent for volumes
- +1.5 ft/-0.5 ft for depths where surcharge occurred with system data quality supported

The above criteria were also the same as the standards from the Chartered Institution of Water and Environmental Management (CIWEM) Urban Drainage Group (UDG), except for depth which was normalized for SI units[3] instead of metric so +1.5 ft/-0.5 ft instead of +0.5 m/-0.1 m (CIWEM, 2017). Those criteria were met for at least three qualified storm events.

For extremely low flows, a large percentage difference between predicted and recorded flows do not correspond to significantly different flow magnitudes and volumes. For these low-flow conditions, while the percent difference between modeled and observed flows is high, the absolute difference is considered negligible if the flow was less than 0.1 mgd or the volume was less than 0.1 million gallons (MG) (Water Environment Federation [2011] Table 5.2).

Figure 5-1 shows one example of applying the above volume criteria in the WWF calibration summary graph.

As explained in the dynamic model approach TM (CDPMT, 2018), the above criteria represented expected levels of accuracy, depending on the data quality. Noncompliance to the criteria was acceptable if justified by limitations either in the flow monitoring data or the available system data (for example, questionable GIS sewer pipe inverts causing a depth violation). The emphasis of the calibration process was on determining and attaining fitness for modeling purpose, rather than on the strict

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[3] International System of Units (Système international)

numerical agreement with flow and field survey data that may be subject to recording errors. Consideration was given to known operational issues, for example blockages, pumping station failures, ongoing PASARP system cleaning activities, or intervention by operators at control structures, if applicable.

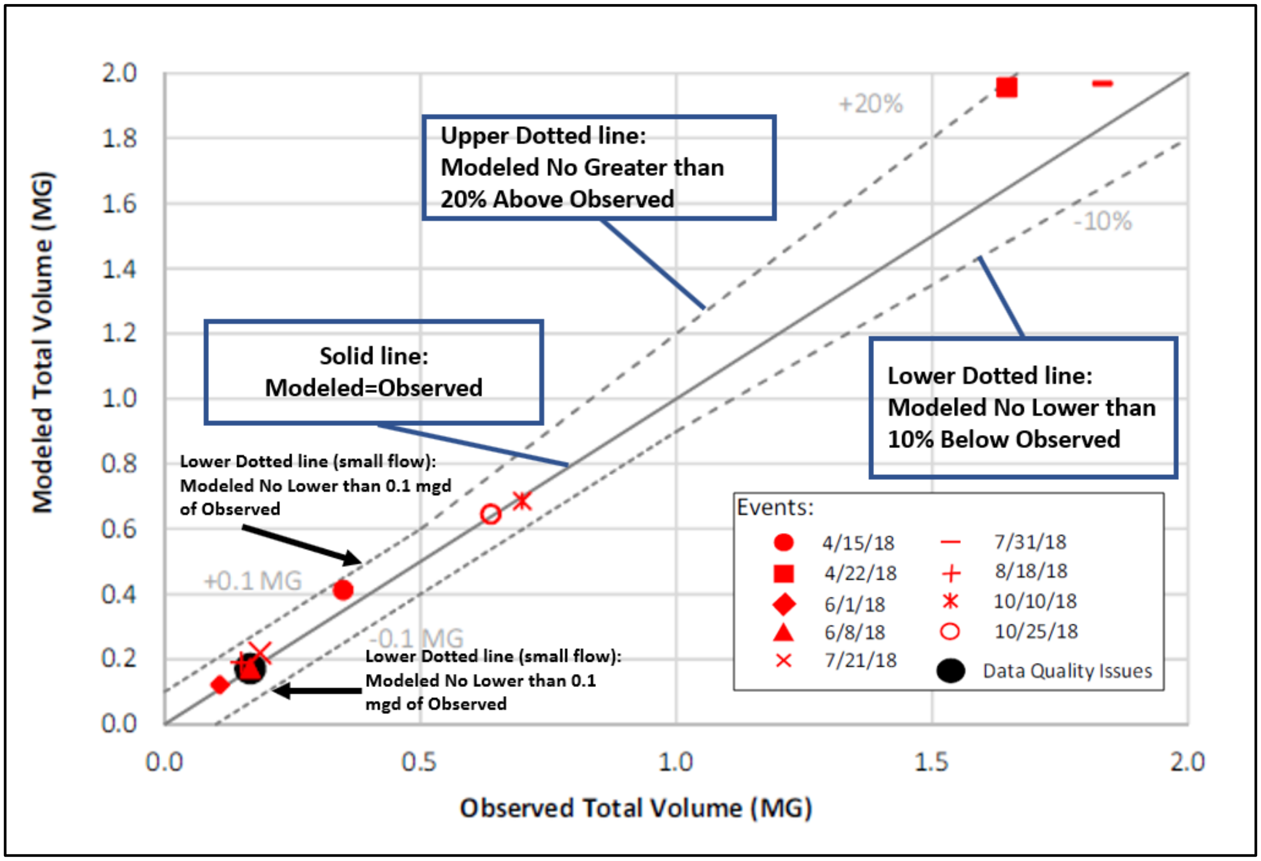


Figure 5-1. WWF Calibration Criteria Graph Example: Volume

5.2 Dry Weather Flow Calibration

5.2.1 Calibration Summary

Dry weather time periods used for model calibration were preceded by 2 days with daily rainfall totals of 0.1 inches or less. Where possible, both weekend and weekdays were selected for dry weather calibration such that the model flow tracked, within the criteria tolerances, the variation in the recorded flow for a typical week. Per the developed Model Protocol section in Appendix A of the 2017 base model report (CDPMT, 2017), flows were acceptable for calibration if they met the level of accuracy described above for a minimum of 2 weekdays and 1 weekend day. However, where possible more days were desirable.

Table 5-1 summarizes the model DWF calibration results for the NFPC sewershed and includes the addition of comments identifying questionable meters where the mass flow balance between sequential meters appeared suspect and the cause and remedy could not be explained or applied. The calibration of the overall volume, peak flow, and shape of the hydrograph was considered acceptable. Appendix B provides the detail calibration summary graphs for each meter.

For NFORK17, NFORK36, NFORK39, NFORK43, and NFORK54 with mass balance issues as discussed in section 2, the impacts are summarized below:

- model was calibrated at NFORK17, NFORK36, NFORK43, and NFORK54 for peak flow, volume, and depth
- model was calibrated at NFORK39 for depth

Figure 5-2 provides an example plot of the comparison between model and monitored DWF data at meter NFORK6. Appendix B provides similar calibration graphs for all meters. The model was considered calibrated for DWF when the modeled daily peak flows matched observed daily peak flows within the criteria range for most meters.

The surcharged pipes (pipes where the flow depth exceeds the crown of the pipe) during DWF were also checked. There was a total of 131 sewer pipe segments surcharged based on the DWF model calibration results (for example, surcharge caused by reversed/flat sewer pipes or offsets between incoming and outgoing pipes). The County will review wet weather model scenarios to determine if the predicted surcharging resulting from the reversed/flat sewer pipes represents a risk for SSOs and will prioritize efforts to confirm invert elevation information of such pipes.

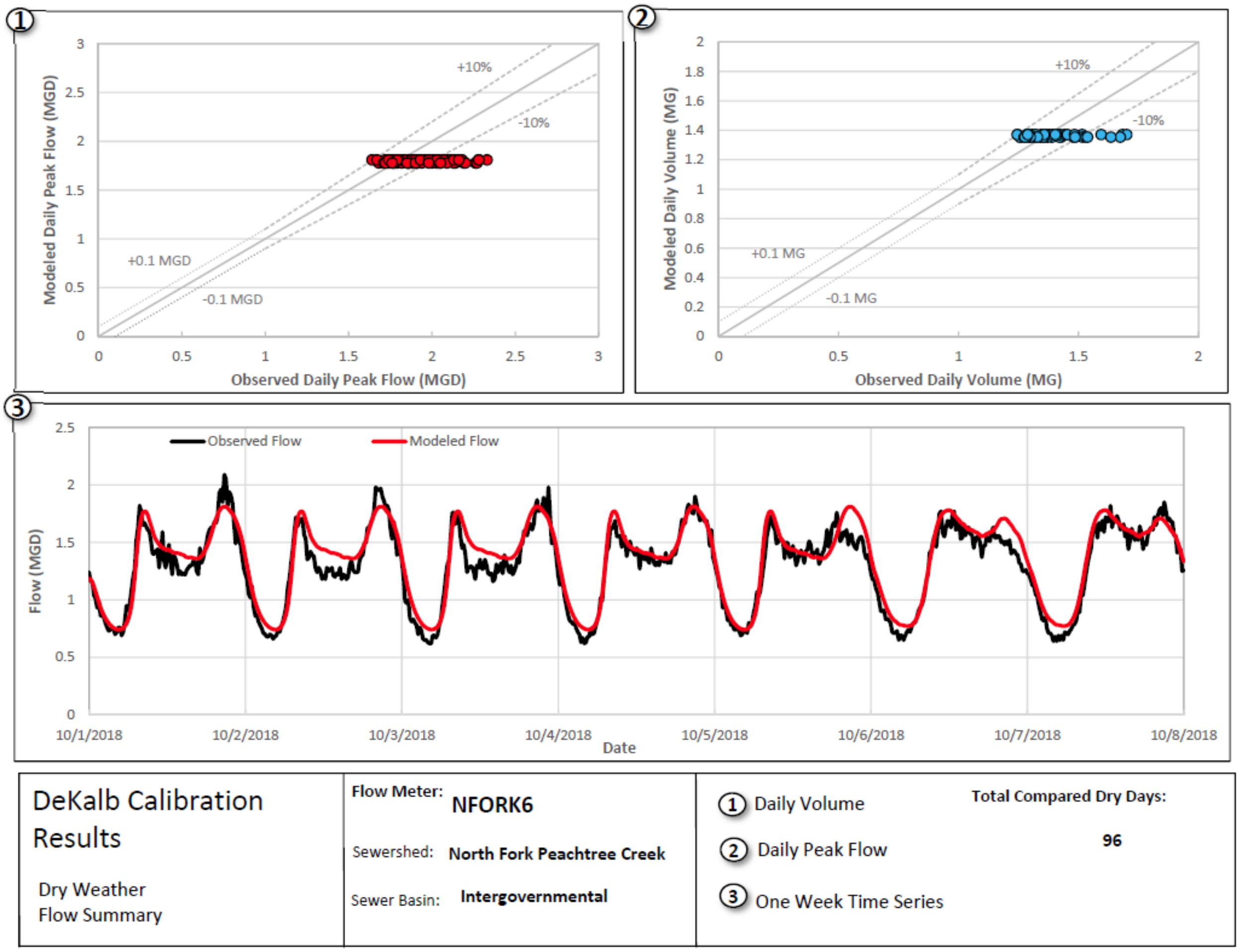


Figure 5-2. Example Dry Weather Flow Calibration Plot at Meter NFORK6

Table 5-1. DWF Calibration Summary
As of September 2019

Meter Name	Weekday (Days)			Weekend (Days)			Total			Comments
	Total Dry Days	Calibrated on Peak	Calibrated on Volume	Total Dry Days	Calibrated on Peak	Calibrated on Volume	Total Dry Days	Calibrated on Peak	Calibrated on Volume	
NFORK4	16	6	10	4	0	4	20	6	14	
NFORK5	36	32	36	20	18	20	56	50	56	
NFORK6	64	35	59	32	20	27	96	55	86	
NFORK8	45	26	42	29	20	24	74	46	66	
NFORK9	46	41	45	24	20	23	70	61	68	
NFORK10	45	35	35	25	16	18	70	51	53	
NFORK16	55	46	54	32	26	30	87	72	84	
NFORK17	57	38	28	28	13	9	85	51	37	mass balance issue in DWF flow, but meets calibration standard
NFORK18	56	36	42	31	14	20	87	50	62	
NFORK20	62	47	58	27	13	19	89	60	77	
NFORK23	63	4	56	27	7	20	90	11	76	
NFORK24	58	42	42	32	22	17	90	64	59	
NFORK26	44	29	44	21	15	20	65	44	64	
NFORK28	47	21	44	29	16	24	76	37	68	
NFORK29	51	30	40	26	18	20	77	48	60	
NFORK30	7	7	7	5	5	5	12	12	12	
NFORK32	58	45	50	28	21	24	86	66	74	
NFORK36	58	19	3	32	13	4	90	32	7	mass balance issue in DWF flow, but meets calibration standard
NFORK37	59	56	54	31	26	25	90	82	79	

Table 5-1. DWF Calibration Summary
As of September 2019

	Weekday (Days)			**Weekend (Days)**			**Total**			
Meter Name	**Total Dry Days**	**Calibrated on Peak**	**Calibrated on Volume**	**Total Dry Days**	**Calibrated on Peak**	**Calibrated on Volume**	**Total Dry Days**	**Calibrated on Peak**	**Calibrated on Volume**	**Comments**
NFORK38	61	37	49	29	24	22	90	61	71	
NFORK39	49	1	6	28	0	0	77	1	6	mass balance issue
NFORK40	67	53	53	32	23	21	99	76	74	
NFORK43	47	42	15	25	17	10	72	59	25	mass balance issue in DWF flow, but meets calibration standard
NFORK47	50	4	44	24	18	20	74	22	64	
NFORK48	32	32	32	19	19	19	51	51	51	
NFORK49_2	8	8	8	5	5	5	13	13	13	flow monitor was stolen; relocated on 10/25/18
NFORK50	44	20	38	19	8	16	63	28	54	
NFORK51	53	42	51	25	20	24	78	62	75	
NFORK52	51	26	40	25	15	13	76	41	53	
NFORK53	21	20	21	17	14	17	38	34	38	
NFORK54	18	0	0	11	0	0	29	0	0	mass balance issue
NFORK55	50	16	20	27	10	10	77	26	30	
NFORK56	23	23	23	10	10	10	33	33	33	
DK2	56	54	55	31	25	25	87	79	80	
Roxboro	41	40	41	24	24	24	65	64	65	

5.2.2 Sensitivity Analysis

The DWF parameters remained the same as the 2017 base model including BSF, GWI, and diurnal patterns. The sensitivity analysis discussed in Section 4 of the 2017 base model report was also applied to the modeling work discussed herein. The key analysis issues are summarized below:

- Flow input (BSF and GWI) – Increasing or decreasing these flow parameters affected the overall volume of the flow measured during dry weather. If the daily volume of the DWF of the model appeared higher or lower than the metered flow, then the BSF/GWI was adjusted until model results matched the metered data.
- Diurnal Patterns – Diurnal patterns were created from flow meter data to represent the DWF hourly variations at the meter site location and applied to the entire corresponding metershed within the model. Some diurnal patterns may have needed adjustment to account for the travel time within the metershed, especially for areas with long distances from upstream points to the downstream flow meter. As diurnals are unit multipliers, adjusting the diurnal did not affect the volume of flow but rather the maximum and minimum flows.
- The changes on any combination of the above parameters lead to direct proportional changes on the model results.

5.3 Wet Weather Flow Calibration

5.3.1 Calibration Summary

Unlike traditional, event-specific WWF calibration, a continuous simulation was conducted for the 6-month flow monitoring period (total of 6 months) to simulate the inter-event impacts. For each meter, the model-predicted results were compared with the monitored data for the selected RDII events. An RDII event is not exactly the same as the storm event discussed in Section 2.4.3. Both share the same start time, but the RDII event may last longer to include the retention time after the storm ends to allow the flow to return to base, pre-event flow condition. Depending on the flow retention time after the storm, one RDII event could include multiple storm events. For the calibration summary presentation, up to nine RDII events were selected based on the selected storm events listed in Appendix A for use with the detailed statistical comparison of monitored flow data against the calibration criteria. Table 5-2 lists the 9 selected RDII events and provides characteristic data for each of the selected events. In addition, the model could be calibrated to events outside the nine selected RDII events.

Table 5-2. RDII Events Summary

Event	Date	Duration (hours)	Peak Rainfall Intensity (in/hr)	Total Rainfall (in)
1	6/1/2018 14:15	17.5	2.72	1.29
2	6/27/2018 17:30	25	2.56	1.91
3	7/6/2018 15:30	6	2.36	1.55
4	7/15/2018 23:45	1.5	4.16	1.65
5	7/21/2018 6:30	2.75	3.16	1.16
6	7/31/2018 15:00	57	2.16	4.25
7	9/26/2018 16:15	4.25	1.36	0.66
8	10/10/2018 16:45	19	1.32	3.42
9	10/25/2018 21:45	14.25	0.44	1.17

Table 5-3 summarizes the total number of RDII events calibrated to each criteria category out of the selected events with quality data for statistical comparison, and the RDII event ID refers to Table 5-2. Appendix C provides the detailed statistic summary table and graphs showing calibration results for each meter.

Table 5-3. WWF Calibration Summary

Meter ID	Total RDII Events with Quality Data (RDII Event ID)	Total No. of Events Calibrated to Peak Flow	Total No. of Events Calibrated to Volume	Total No. of Events Calibrated to Peak Depth	Notes
NFORK4	3 (RDII event 7–9)	5	3	8	poor velocity data; among the three events with quality data, all parameters are calibrated
NFORK5	7 (RDII event 1,3–8)	3	7	8	data quality issues: August/September depth sensor drifted downward into negative values, and velocities experienced extended overnight drops; some data loss in June/July
NFORK6	9 (RDII event 1–9)	8	8	7	
NFORK8	9 (RDII event 1–9)	5	5	8	
NFORK9	8 (RDII event 1–5, 7–9)	8	8	7	data loss: 7/30/18–8/30/18
NFORK10	8 (RDII event 1–5, 7–9)	8	7	9	data loss/unreliable data: 8/25/18–9/18/18
NFORK16	8 (RDII event 1–3, 5–9)	6	7	9	
NFORK17	7 (RDII event 2–6, 8–9)	5	7	8	mass balance issue in DWF only; WWF calibrated
NFORK18	9 (RDII event 1–9)	8	7	9	
NFORK20	9 (RDII event 1–9)	7	6	9	
NFORK23	8 (RDII event 1–6, 8–9)	5	6	8	
NFORK24	9 (RDII event 1–9)	6	8	9	
NFORK26	3 (RDII event 7–9)	3	3	8	chronic velocity sensor issues resulted in poor data through 8/21/18; among the three events with quality data, all parameters are calibrated

Table 5-3. WWF Calibration Summary

Meter ID	Total RDII Events with Quality Data (RDII Event ID)	Total No. of Events Calibrated to Peak Flow	Total No. of Events Calibrated to Volume	Total No. of Events Calibrated to Peak Depth	Notes
NFORK28	9 (RDII event 1–9)	5	7	4	
NFORK29	7 (RDII event 1–4, 7–9)	5	6	9	
NFORK30	7 (RDII event 1–7)	3	5	3	irregular level jumps resulted in jumps in DWF; data loss: 10/1/18–10/29/18
NFORK32	9 (RDII event 1–9)	5	7	9	
NFORK36	9 (RDII event 1–9)	7	6	9	mass balance issue in DWF only; WWF calibrated
NFORK37	7 (RDII event 1–5, 7, 9)	6	8	9	
NFORK38	9 (RDII event 1–9)	7	7	9	
NFORK39	8 (RDII event 2–9)	1	2	9	mass balance issue in both DWF and WWF
NFORK40	9 (RDII event 1–9)	7	9	9	
NFORK43	7 (RDII event 1–7)	6	6	6	data loss: 8/13/18–8/27/18, 10/9/18–10/29/18; mass balance issue in DWF only; WWF calibrated
NFORK47	9 (RDII event 1–9)	8	8	9	
NFORK48	9 (RDII event 1–9)	7	8	9	
NFORK49_2	1 (RDII event 9)	1	1	1	flow monitor was stolen; relocated on 10/25/18; only one event with available data
NFORK50	9 (RDII event 1–9)	3	7	9	
NFORK51	9 (RDII event 1–9)	5	6	8	
NFORK52	9 (RDII event 1–9)	7	6	9	
NFORK53	9 (RDII event 1–9)	8	9	9	

Table 5-3. WWF Calibration Summary

Meter ID	Total RDII Events with Quality Data (RDII Event ID)	Total No. of Events Calibrated to Peak Flow	Total No. of Events Calibrated to Volume	Total No. of Events Calibrated to Peak Depth	Notes
NFORK54	9 (RDII event 1–9)	6	3	9	mass balance issue in DWF only; WWF calibrated
NFORK55	9 (RDII event 1–9)	7	4	9	
NFORK56	7 (RDII event 1–7)	5	7	8	level drifts beginning 10/10/18
DK2	9 (RDII event 1–9)	8	7	9	unusually high readings unrelated to rain on 10/11/18 and 10/18/18
Roxboro	9 (RDII event 1–9)	6	8	9	

As shown by the calibration summary, most flow meters are calibrated to a large range of selected events that had quality data for the 2018 6-month-long continuous simulation. Notes explain some flow meters to explain the major data quality issues and impact on model accuracy. Major findings related to data uncertainties and assumptions are as follows:

1. Uncertainties on model-predicted depth because of potential back water caused by blockages downstream of meters NFORK40, NFORK51, and NFORK52. CCTV inspection confirmed blockage downstream of these meters. During model calibration, the sewer pipes were either given a sediment depth or an increased Manning's n value to mimic the potential blockages in the calibration model, but those "dummy" changes were removed during the capacity assessment simulation to exclude restrictions caused by system maintenance issues.
2. Data quality issues. The following meters were affected by data quality issues and did not meet the WWF calibration criteria of three events:
    a. NFORK39 was installed directly downstream from NFORK50, but measured consistently less flow than NFORK50. This caused a mass balance issue in both DWF and WWF at NFORK39. The flow monitoring data at this meter also showed erratic velocities. During calibration, NFORK50 was calibrated.
    b. As discussed in Section 2.4, NFORK49 was stolen during the flow monitoring period. It was later re-installed at an upstream location, referred to as NFORK49_2. The re-installation occurred on October 25, 2018. As a result, only one WWF calibration event was captured at this location.

The impacts from the above uncertainties and assumptions were limited to the local areas only but need to be considered for model applications focusing on any detailed hydraulic analysis of the impacted local area.

5.3.2 Sensitivity Analysis

The major WWF input and calibration parameters listed in Section 4.2 were evaluated through sensitivity analysis for their impact on the model results. For WWF, the runoff results generated from one representative ITMC subcatchment were used in the analysis for the rest of the six models including the NFPC model. The absolute percentage changes varied for different metersheds as the RDII components for fast and slow response change. However, the observed trends from the ITMC example subcatchment below also apply to the metersheds in other sewershed/basin models using the same WWF parameters.

The model-predicted volume and peak flow were used to compare the model response to the major model input parameters changes from two scenarios:

1. Scenario 1: Base scenario with initial parameter values in one model run
2. Scenario 2: Comparison scenario including a series of model runs with parameter values changed by 50 percent (only one parameter changes for each individual run)

To avoid the impact from rainfall variations, the 2-year, 24-hour design storm was used for this sensitivity analysis.

One subcatchment within the ITMC5 metershed in the ITMC sewershed model was used as an example for the analysis. Tables 5-4, 5-5, and 5-6 summarize the comparison between the two scenarios for different RDII components. A total of 8 parameters were evaluated, and the contributing area was included as measured input parameter, not a calibration parameter, which does not change through the calibration process.

The sensitivity analysis results revealed the following trends for the NFPC model:

- The contributing area and the default area have the dominant impact on both volume and peak flow results for both fast and slow RDII response. Changes to any combination of contributing area and default area lead to direct proportional changes on both model-predicted volume and peak flow results.
- Runoff routing and fixed runoff coefficient mainly affect the overall peak flow rate through the fast RDII response.
- Percolation percentage infiltrating has relatively equal effect on both peak flow and total volume, while percolation coefficient mainly affects peak flow through the slow RDII response.

Table 5-4. WWF Parameters Sensitivity Analysis Summary

ICM Grid Table	Field	Input Parameter Values			Model Results_Total RDII Volume (MG)			Model Results_Total RDII Peak Flow (MGD)		
		Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference
Subcatchment	Contributing Area	215.788	323.682	**50%**	0.01616	0.02425	**50%**	0.06080	0.09120	**50%**
Land Use	Default Area 1 (%)	1.28	1.92	**50%**	0.01616	0.02425	**50%**	0.06080	0.09120	**50%**
Runoff Surface	Runoff Routing Value	13	19.5	**50%**	0.01616	0.01616	**0%**	0.06080	0.05430	**-11%**
Runoff Surface	Initial Loss Value (ft)	0.000233	0.0003495	**50%**	0.01616	0.01615	**0%**	0.06080	0.06080	**0%**
Runoff Surface	Fixed Runoff Coefficient	0.2	0.3	**50%**	0.01616	0.01703	**5%**	0.06080	0.08250	**36%**
Ground Infiltration	Percolation Percentage Infiltrating	66	99	**50%**	0.01616	0.02174	**35%**	0.06080	0.06740	**11%**
Ground Infiltration	Percolation Coefficient	0.47	0.705	**50%**	0.01616	0.01587	**-2%**	0.06080	0.05650	**-7%**
Ground Infiltration	Percolation Threshold	60	90	**50%**	0.01616	0.01512	**-6%**	0.06080	0.05890	**-3%**

Table 5-5. WWF Parameters Sensitivity Analysis Summary - Fast Response

ICM Grid Table	Field	Input Parameter Values			Model Results_Fast Responds Volume (MG)			Model Results_Fast Responds Peak Flow (MGD)		
		Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference
Subcatchment	Contributing Area	215.788	323.682	**50%**	0.00500	0.00751	**50%**	0.04750	0.07130	**50%**
Land Use	Default Area 1 (%)	1.28	1.92	**50%**	0.00500	0.00751	**50%**	0.04750	0.07130	**50%**
Runoff Surface	Runoff Routing Value	13	19.5	**50%**	0.00500	0.00501	**0%**	0.04750	0.04100	**-14%**
Runoff Surface	Initial Loss Value (ft)	0.000233	0.0003495	**50%**	0.00500	0.00500	**0%**	0.04750	0.04750	**0%**
Runoff Surface	Fixed Runoff Coefficient	0.2	0.3	**50%**	0.00500	0.00751	**50%**	0.04750	0.07130	**50%**
Ground Infiltration	Percolation Percentage Infiltrating	66	99	**50%**	0.00500	0.00500	**0%**	0.04750	0.04750	**0%**
Ground Infiltration	Percolation Coefficient	0.47	0.705	**50%**	0.00500	0.00500	**0%**	0.04750	0.04750	**0%**
Ground Infiltration	Percolation Threshold	60	90	**50%**	0.00500	0.00500	**0%**	0.04750	0.04750	**0%**

Table 5-6. WWF Parameters Sensitivity Analysis Summary - Slow Response

ICM Grid Table	Field	Input Parameter Values			Model Results_Slow Responds Volume (MG)			Model Results_Slow Responds Peak Flow (MGD)		
		Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference	Scenario 1	Scenario 2	% Difference
Subcatchment	Contributing Area	215.788	323.682	**50%**	0.01115	0.01674	**50%**	0.01530	0.02300	**50%**
Land Use	Default Area 1 (%)	1.28	1.92	**50%**	0.01115	0.01674	**50%**	0.01530	0.02300	**50%**
Runoff Surface	Runoff Routing Value	13	19.5	**50%**	0.01115	0.01115	**0%**	0.01530	0.01530	**0%**
Runoff Surface	Initial Loss Value (ft)	0.000233	0.0003495	**50%**	0.01115	0.01115	**0%**	0.01530	0.01530	**0%**
Runoff Surface	Fixed Runoff Coefficient	0.2	0.3	**50%**	0.01115	0.00952	**-15%**	0.01530	0.01310	**-14%**
Ground Infiltration	Percolation Percentage Infiltrating	66	99	**50%**	0.01115	0.01674	**50%**	0.01530	0.02300	**50%**
Ground Infiltration	Percolation Coefficient	0.47	0.705	**50%**	0.01115	0.01087	**-3%**	0.01530	0.01090	**-29%**
Ground Infiltration	Percolation Threshold	60	90	**50%**	0.01115	0.01011	**-9%**	0.01530	0.01370	**-10%**

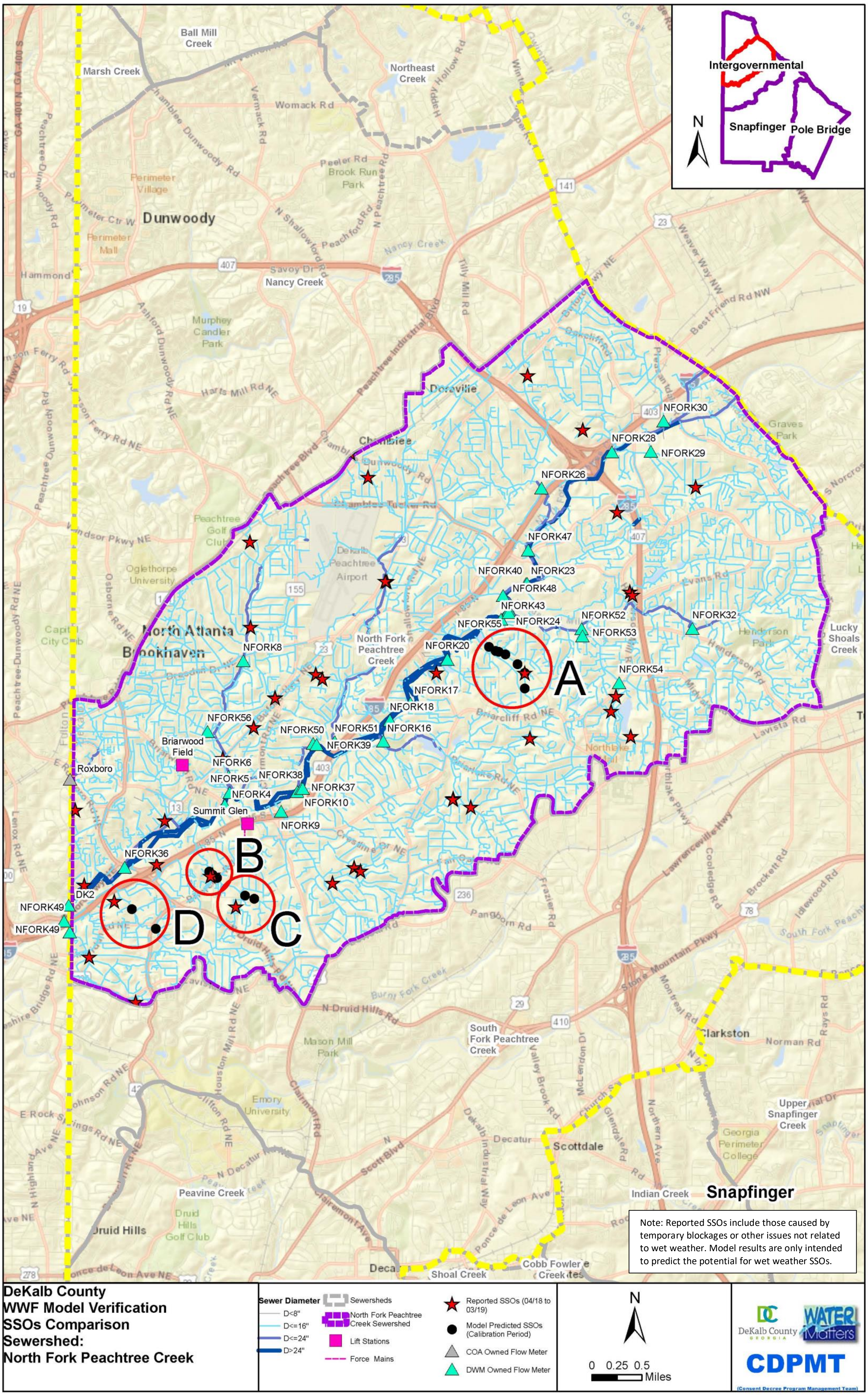
5.4 Model Verification

As discussed in the 2017 base model report (CDPMT, 2017), where adequate data were available, the verification used data and observations that are independent of those used for model calibration to provide added confidence that the model was sufficiently robust to realistically evaluate conditions other than those for which it was calibrated. The dynamic WWF calibrated model was further verified through the following check:

- SSOs recorded during the flow monitoring period were used to compare the model results in combination with the monitored depth at the meter. However, the model did not necessarily reproduce the recorded SSOs because certain causes of SSOs (for example, debris) cannot be directly modeled.
- One storm event within the 2018 6-month calibration period was used to compare the model-predicted volume, peak flow, and depth with the monitored meter data.

For the SSOs verification, Figure 5-3 shows a map with recorded SSO locations (red stars) vs. model-predicted SSO locations (black dots). The findings are summarized below:

- The model predicted SSOs at areas with SSOs recorded, which proved the model was sufficiently calibrated at these locations:
  - Area A recorded multiple SSOs in metershed NFORK20. The observed depth at the downstream meter NFORK20 met the depth calibration criteria for all 9 events.
  - Areas B recorded multiple SSOs in metershed DK2. The observed depth at the downstream meter DK2 met the depth calibration criteria for all 9 events.
- The model predicted SSOs for areas with recorded SSOs nearby, but not the exact model-predicted SSO locations as:
  - Area C. There were recorded SSOs nearby, but not the exact model-predicted SSO locations. These manholes are near upstream from Area B, which had both predicted and observed SSOs. The manholes where the model predicted SSOs were shallower manholes, with depth of approximately 5 ft.
  - Area D. There were recorded SSOs nearby, but not the exact model-predicted SSO locations. Downstream meter DK2 had good depth calibration where calibration criteria were met for all 9 events. The model indicated the flat sewers and sewers with negative slope are the cause of the model-predicted SSOs. Field verification for this area is recommended.
- For areas with SSOs recorded but no predicted SSOs from the model, the reported SSOs resulted from the following, as noted in the SSO records.
  - Temporary downstream blockages: including grease, roots, debris, and rags, etc.
  - Condition of sewer mains: for example, cracked and/or broken mains, defects in mains. SSO records indicated these mains were repaired immediately.
  - Bypass pump malfunction at private manholes.
  - The reported SSOs were outside of the model calibration periods. For example, the reported SSO occurred when groundwater infiltration was higher and likely with increased rainfall depth and/or intensity.



Note: Reported SSOs include those caused by temporary blockages or other issues not related to wet weather. Model results are only intended to predict the potential for wet weather SSOs.

Figure 5-3. Model Verification: SSOs Check

For the NFPC sewershed model, the November 12, 2018, event had a total of 2.6 inches of rainfall and was selected for model verification. It was within the flow monitoring period for NFPC calibration and occurred during extreme wet conditions as compared to the first 5 months of the flow monitoring period. Because of the high antecedent moisture condition, the observed peak flow was close to the peak flow observed during the October 10, 2018, storm, which had 3.1 inches of rainfall and was close to the 1-year, 24-hour event. Verification can take on many forms and purposes, the November 12, 2018, event was chosen because it exhibited different influencing parameters from those for which the model was calibrated. There were other storm events during the monitoring period that could have been selected for verification and have a better flow meter match but would not have provided as broad an understanding of the model limits.

Appendix D includes a summary table with the comparison results based on the same criteria as used in calibration. As expected, the model consistently underpredicted flows at most meters for the extreme verification event selected (excluding the ones with data quality issues, as noted in the table). However, the flow hydrograph followed the same pattern at most meters, as shown in Appendix D. Increasing the default Area 1 (%) (the dummy imperviousness) is recommended to cover the gaps while using the model to simulate storms with high antecedent moisture condition.

While for this event, the model underpredicted the meter data, it replicated locations of observed SSOs. The model parameters could be adjusted to better replicate the November event. However, because the soil conditions and amount of wet weather events observed in DeKalb system were greater than average, these extreme conditions should not be replicated by the base model to match exclusively, as it would be overly conservative. A seasonal variation factor is recommended for scenarios where the County wants to test system behavior during uncharacteristically wet seasons.

SECTION 6

System Capacity Assessment

6.1 System Performance Criteria

As discussed in 2017 base model report (CDPMT, 2017), the depth or elevation to which water rises in the sewer system (the hydraulic grade line [HGL]) was the primary model output to evaluate system performance and simulation acceptance. The detailed discussion of the use of the criteria and the assumptions is provided in the 2017 base model report and summarized below.

Figure 6-1 illustrates and describes the updated HGL system performance criteria selected by DWM to be achieved during the design storm conditions and used to review model results for WWF capacity assessment simulations, which is the focus of this section.

This criterion was applied to all County sewers, not just the CD extent sewers, as it was important to identify any model-projected SSO location. Private property critical elevations, such as basement flooding, were not evaluated or considered in the model output. It was assumed that existing critical elevations would have already been identified from historical storm events. Therefore, any sewer recommended for upsizing would be required by the County to be evaluated during design for any local critical elevations that might need to be addressed in the design.

With DWM's agreement, the 2-year, 24-hour design storm was used for the WWF flow capacity assessment simulation, and the DWF criteria of less than full pipe during dry weather flow was used to identify areas with capacity deficiencies.

Design storm details were as follows:

- Rainfall depth and duration for the selected annual exceedance comes from;
  - NOAA Atlas 14 (Perica et al., 2013) is referenced in the most recent update of the 2016 edition of Georgia Stormwater Management Manual (AECOM et al., 2016).
  - NOAA Station: Atlanta WB City.
  - NOAA Atlas 14: total 2-year, 24-hour total rainfall depth of 3.70 inches.
- Intra-storm rainfall distribution comes from Soil Conservation Service (SCS) Type II Distribution (NRCS, 2015): hourly time interval with peak intensity of 1.58 inches per hour.

Figure 6-2 presents the design storm hourly distribution. The hourly design storm was globally applied to the modeled areas.

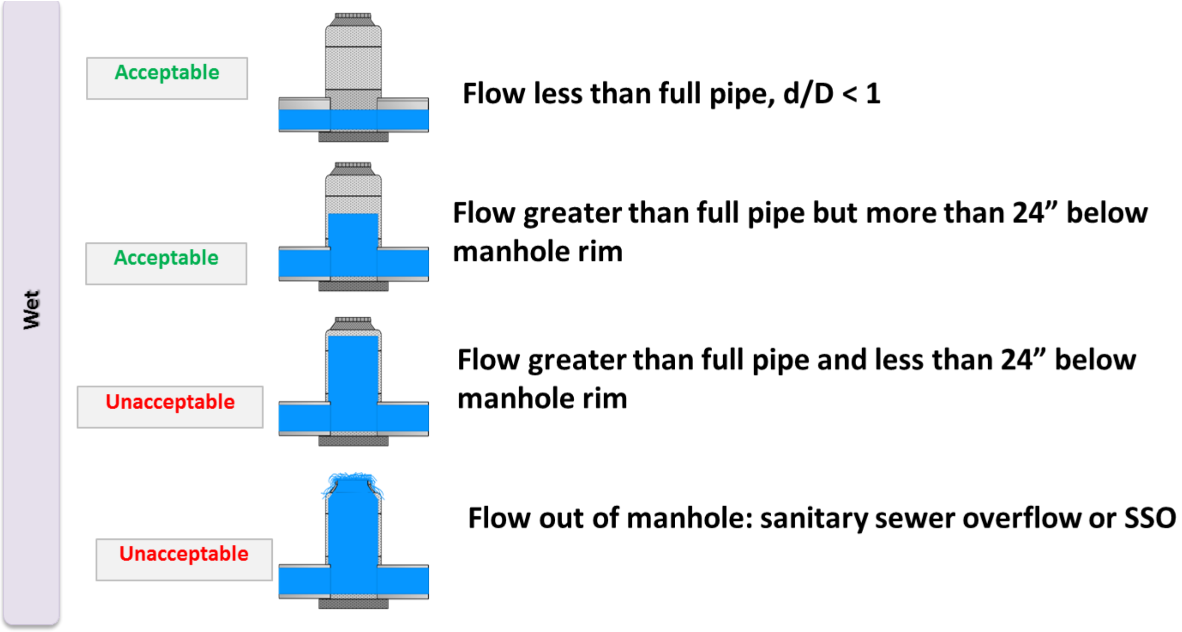


Figure 6-1. System Performance Criteria

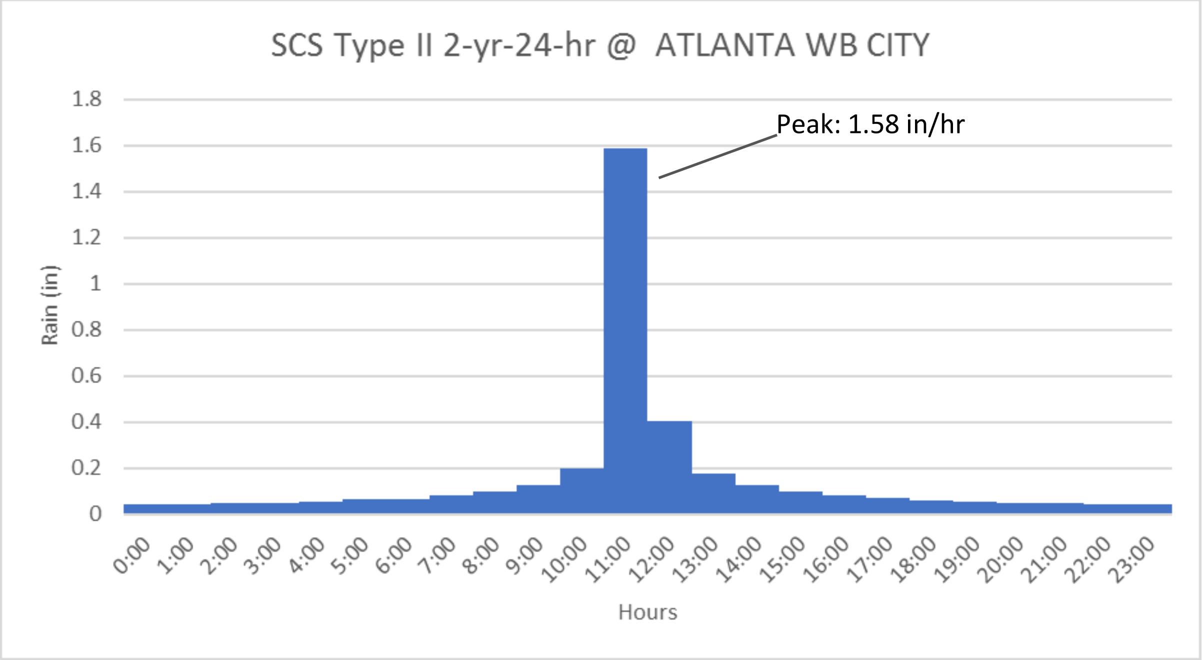


Figure 6-2. SCS Type II 2-year, 24-hour Design Storm

6.2 NFPC System Capacity Assessment Modeling Results

For NFPC system capacity assessment, the calibrated hydraulic model was updated to reflect the ideal system condition with clean pipes. Both DWF and WWF conditions were simulated while WWF results were the focus for existing system capacity assessment. This report evaluated current performance based only on existing flows and did not consider future projected flow, which is considered in system capacity improvement project evaluation (*See* Section 6.3).

Figure 6-3 shows the model-predicted DWF results for the NFPC sewershed. The majority of the system segments were not surcharged during DWF, except for 131 sewer pipe segments that had negative sewer pipe gradients, sewer pipe jumps at manhole, or other assumed GIS attributes. These locations were recommended for further investigation.

Figure 6-4 presents the WWF capacity assessment results. The majority of the system met the performance criteria. Based on the capacity assessment results, approximately 1.4 percent (176 sewer pipe segments) of the gravity lines exceeded the capacity criteria. There were a total 26 SSOs predicted for the 2-year, 24-hour design storm. A total of 13 of the 26 SSOs were near the same area as predicted by the model calibration discussed in Section 5.4. For the remaining 13 SSOs:

- Two SSOs (at manholes 18-291-s103 and 18-292-s027) are within metershed NFORK29 with recorded SSOs nearby. The model predicted a small amount of flooding (<0.004 MG) among the smaller-diameter pipes (8- and 10-inch-diameter) during the design storm condition.
- Four SSOs (at manholes 18-318-s009, 18-318-s019, 18-318-s021, and 18-318-s207) are within metershed NFORK30. These SSOs are related to a downstream bottleneck sewer, which has a smaller diameter (9.5 inches) than both upstream and downstream pipes (12 inches). Additionally, the force main had a limited number of qualified calibration days because of frequent level jumps and data losses. Therefore, model confidence at this area is not very high.
- Four SSOs (at manholes 18-202-s009, 18-202-s019, 18-202-s020, and 18-237-s042) are within metershed NFORK6 with recorded SSOs. The pipe diameters in this stretch of pipes are inconsistent. Starting from the most upstream manhole of 18-237-s042 going downstream, the pipe diameter changes from 20 inches to 22 inches, to 24 inches, to 18 inches, to 15 inches, to 22 inches. This created several bottlenecks that caused the model-predicted SSOs. These locations were recommended for additional field survey to confirm the pipe sizes.
- One SSO (at manhole 18-295-s068) is within metershed NFORK26 with recorded SSOs nearby. This SSO is related to downstream bottleneck sewers that smaller diameters (8 inches) than both upstream and downstream pipes (10 inches).
- One SSO (at manhole 18-159-s200) is within metershed NFORK9 with recorded SSOs.
- One SSO (at manhole 18-195-s017) is within metershed NFORK10 with recorded SSOs nearby. This SSO is related to downstream bottleneck sewers that have smaller diameters (8 inches) than both upstream (10 inches) and downstream pipes (42 inches).

6.3 System Capacity Improvement Projects Evaluation

The hydraulic model can be used not only for capacity assessment of the existing system but also to identify projects to address capacity limitations. In developing potential projects for pipe sizing and storage, DWM shall consider projected growth and development so that no SSOs would be expected to occur as a result of a representative two (2) year twenty-four (24) hour storm event.

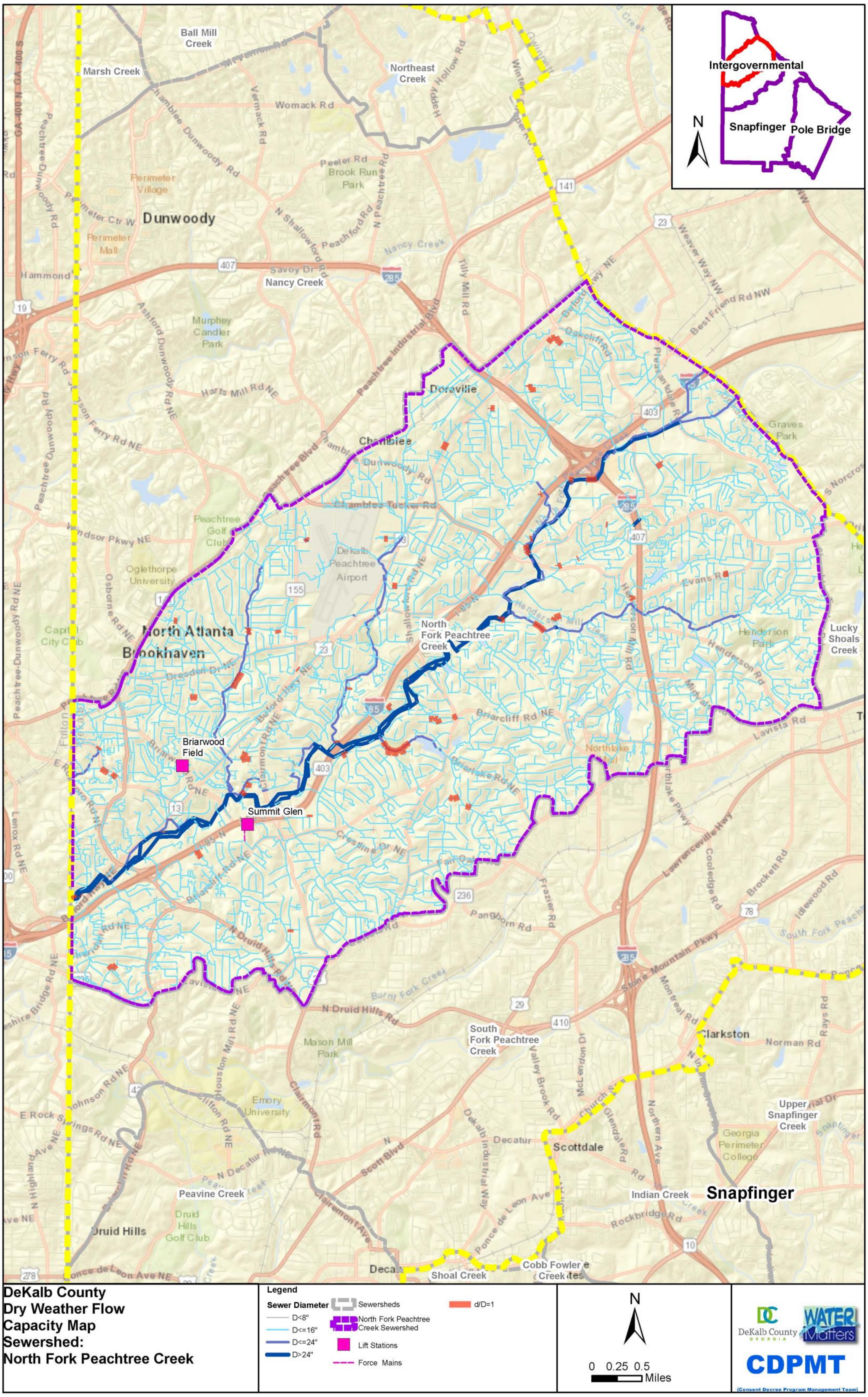


Figure 6-3. NFPC Dry Weather Flow Model Capacity Assessment Results
As of September 2019

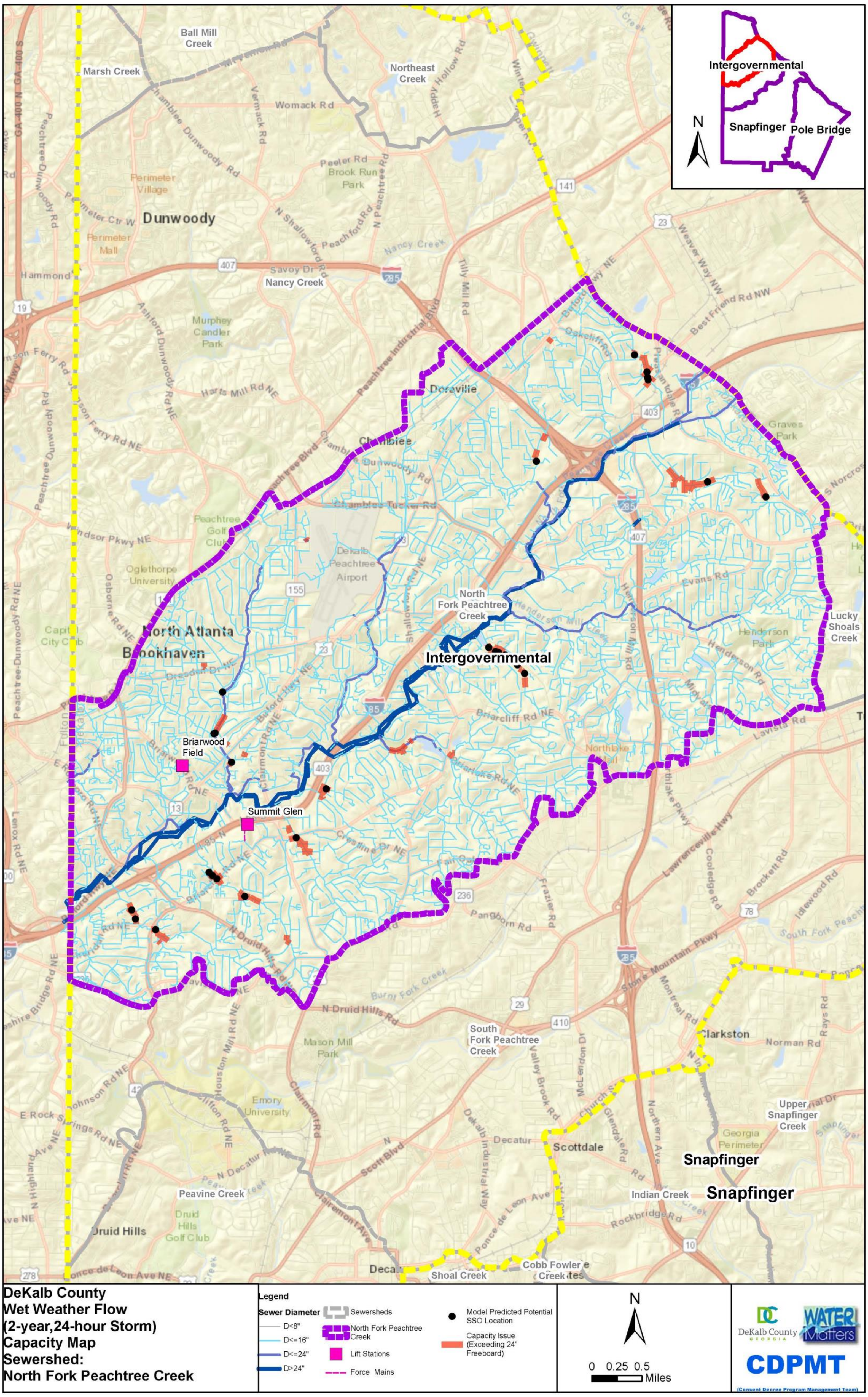


Figure 6-4. NFPC Wet Weather Flow Model Capacity Assessment Results
As of September 2019

SECTION 7

Capacity Request Evaluation Using Dynamic Model

7.1 Background

Prior to the dynamic model completion, the County has been using a Maximum Month Average Day Flow (MMADF) condition steady-state model to process capacity requests along with the protocols presented in two County documents: Interim Sanitary Sewer Capacity Evaluation Program (hereafter, “the Program”) (DeKalb County, 2017a), which described the Program components and requirements and, Interim Standard Operating Procedures (SOP), which provided standardized procedures for evaluating capacity availability (DeKalb County, 2017b). The procedures were discussed in detail in the 2017 model report and summarized below.

The County evaluated the MMADF in comparison with other hydrological conditions. The County determined that the MMADF represented an acceptable hydrologic modeling condition and level of service risk for evaluating potential SSOs resulting from proposed new increased flows. The MMADF wet weather condition could give the County adequate conveyance protection and give new capacity requestors an opportunity to sustain growth within the County’s service area. The MMADF would be one component of the County’s multi-faceted capacity considerations that contributed to the MMADF condition selection.

The MMADF was initially determined by selecting the meter flow from the wettest month recorded from the County’s January through June 2015 flow monitoring results. The MMADF will need to be updated over time and as needed, as the MMADF will vary depending on how dry or wet the year’s rainfall produced. When evaluating a new capacity request, the MMADF factor would be applied to the calibrated DWF.

After the County and EPA/Georgia Environmental Protection Division accept the dynamic model described herein and the MCD and the appended CAP are entered in Federal Court, the steady-state MMADF model scenario will be replaced with the dynamic model and capacity request evaluations will be based on the flow conditions, requirements, and procedures described in the CAP. (Appendix D to MCD, CAP, Section 1.4).

7.2 Approach

The dynamic model was developed with guidance by the CD requirements. Page 41, Paragraph 28 (g) of the CD relates to the model’s capabilities and its use for evaluating new capacity requests:

> “The Model is capable of predicting the flow regime of those portions of the WCTS receiving flows from proposed developments. The Model will assist the County in assuring the availability of WCTS and WWTF capacity prior to permitting new development. Once the Model is fully developed for each Sewershed, the County shall authorize new sewer service connections or increases in flow from existing sewer service connections in that Sewershed only after certifying that the receiving portions of the WCTS have adequate collection and transmission capacity and the applicable WWTF has adequate treatment capacity to accept flows from such new sewer service connections and/or increases in flows from existing service connections. The Program shall set forth specific definitions and parameters for how the County will determine the adequacy of collection, transmission and treatment capacity. In developing estimates and projections for certifying adequate capacity, the

> County shall use flow meter data, the Model, and sound engineering judgment. All certifications of adequate collection, transmission and treatment capacity shall be made by a professional engineer registered in the State of Georgia and shall be approved by a responsible party of the County as defined by 40 C.F.R. § 122.22(b). The County shall maintain all such certifications and all data on which such certifications are based."

To proceed with the capacity request evaluation, the dynamic model setup for capacity assessment can be adopted directly as base model by following the SOP for the MMADF steady-state model to:

- Update the model network to reflect the latest recorded system infrastructure
- Update the model flow input updates from the most current sewershed or basin flow study
- add the subcatchment data representing the required DWF rates from pending, conditionally approved, and approved capacity requests

The SOP for the MMADF steady-state model contains guidance for scenario naming and management.

7.3 Assumptions

In addition to the assumptions stated in previous sections, the following considerations are noted for capacity request evaluation:

- The current model focuses on infrastructure within the CD extent as defined in Section 3.2. Pipelines and facilities outside the CD extent may have lower data accuracy. Further field verification is recommended if those areas affect the capacity request study.
- The capacity assessment model assumes ideal conditions without maintenance issues including temporary blockages.
- The model DWF distribution is based on 2015 water billing data. For areas outside the 2015 billing data coverage or experiencing significant changes since 2015, temporary flow monitoring is recommended to refine the DWF distribution with the areas affected by the capacity request.
- The initial loss parameters in the model assumed the same as calibration.

7.4 System Performance Criteria

System modeling performance criteria for capacity request simulation should continue to use the sewer flow depth or elevation as the primary model output to evaluate performance and acceptance. Acceptance evaluation will be specified through the capacity request program protocol update.

7.5 Hydraulic Modeling Results

Capacity request modeling will be described in the CAP, and the associated documents will discuss how the dynamic model results are to be evaluated for capacity request applications.

SECTION 8

Recommendations

Recommendations for further development and use of the WCTS hydraulic model are provided as follows:

- Conduct additional field investigations to improve the model representations of the network physical attributes. The recommended locations for field check were included in selection sets in the delivered ICM model files, and also exported as shape files included in the model delivery package. This is particularly important in those cases where field verification is recommended to verify model results and areas outside the CD model extents (as noted in Section 7.3). Specific items noted in the report include:
  - 11 shallow manholes (<2 ft) not investigated (Section 3.4)
  - 131 sewers with negative slopes as shown in GIS (Section 6.2)
  - Locations with bottlenecks causing the model-predicted SSOs from 2-year, 24-hour design storm (Section 6.2)
- Verify length of force main for Briarwood Field Lift Station with the County. Various sources of information provide differing lengths.
- Improve model BSF distribution by:
  - Using more recent year records as reliable water meter data become available.
  - Further refining the distribution at large user locations (both wastewater discharger and water users) as more information becomes available.
  - Installing temporary meters at major branch sewers within NFORK17, NFORK36, NFORK39, NFORK43, and NFORK54 metersheds contributing areas to confirm the DWF model input assumptions resulting from mass balance issues
  - Further evaluation of those large water users as the County's sewer variance program information becomes available
- Improve model accuracy for RDII simulations. As indicated during the model verification, the model could underpredict the extreme wet conditions observed during November 2018. A seasonal variation factor should be used for scenarios where the County wants to test system behavior during uncharacteristically wet seasons as a short-term solution. As a long-term solution, the County should consider building out the GIM further. By using additional parameters in the GIM, even widely varying antecedent conditions can be more accurately represented in the model.
- Maintain permanent flow meters at major locations including major interconnections with the COA to reflect flow condition changes of the post-PASARP.
- Use the model to answer questions about the existing system and its performance.
- Conduct a study to evaluate other design storm alternatives including alternating block for various rainfall distribution and understand the impact from different design storms on master planning.
- Use the model along with other tools to optimize the master planning alternatives.
- Update the model as the hydraulic system changes to reflect new piping, upgraded pump stations, and new connections.
- Update the model to reflect the impact of pipe rehabilitation.

- Update the model software/version for both the GIS and the modeling software, after evaluation, when software vendors offer a new version.
- Upgrade the model for periodic capacity assessment to support master planning and to evaluate whether the WCTS has capacity for both ever-changing regulatory expectations and growth projections.

SECTION 9

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Appendix A
Storm Event Selection

		Storm Event 1			Storm Event 2				Storm Event 3					Storm Event 4				Storm Event 5			
	24 hour total rain (in)	0.93			1.11				0.76					0.58				1.02			
Meter ID	Rain Gauge	6/1/18	RDII Respond	Model Calib	6/26/18	6/27/18	RDII Respond	Model Calib	7/5/18	7/6/18	7/7/18	RDII Respond	Model Calib	7/15/18	7/16/18	RDII Respond	Model Calib	7/20/18	7/21/18	RDII Respond	Model Calib
NFORK4	RGNFORK4	BD	Y	N	BD	BD	Y	N	OK	OK	OK	slight	maybe	OK	OK	Y	Maybe	OK	BD	Y	N
NFORK5	RGNFORK4	BD	Y	N	MD	MD	NA	N	MD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK6	RGNFORK4	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK8	RGNFORK5	OK	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	OK	Y	Y	GD	GD	Y	Y
NFORK9	RGNFORK4	MD	Y	Y	GD	GD	slight	maybe	GD	GD	GD	Y	Y	GD	GD	slight	maybe	BD	GD	Y	Maybe
NFORK10	RGNFORK4	GD	Y	Y	GD	GD	Y	Y	BD	OK	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK16	RGNFORK1	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	N	maybe	GD	GD	Y	Y
NFORK17	RGNFORK1	NM	NA	N	GD	OK	Y	Y	GD	BD	GD	Y	N	GD	GD	Y	Y	GD	GD	Y	Y
NFORK18	RGNFORK1	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK20	RGNFORK1	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK23	RGNFORK3	GD	Y	Y	OK	OK	Y	Y	GD	BD	BD	slight	N	BD	BD	Y	N	BD	BD	Y	N
NFORK24	RGNFORK1	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK26	RGNFORK3	BD	N	N	BD	BD	N	N	BD	BD	BD	N	N	BD	BD	N	N	BD	BD	N	N
NFORK28	RGNFORK2	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	Y	maybe	GD	GS	Y	Y
NFORK29	RGNFORK2	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	maybe	GD	GD	Y	maybe	GD	BD	N	N
NFORK30	RGNFORK2	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GS	Y	maybe	GD	GS	Y	Y
NFORK32	RGNFORK6	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	N	maybe	GD	GD	Y	Y	GD	GD	Y	Y
NFORK36	RGSFORK3	GD	Y	Y	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK37	RGNFORK4	OK	Y	N	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK38	RGNFORK4	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK39	RGNFORK4	AD	Y	maybe	AD	AD	Y	Y	AD	AD	AD	Y	Y	AD	AD	Y	maybe	AD	AD	Y	Y
NFORK40	RGNFORK3	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	maybe	GD	GD	Y	Y	GD	GD	Y	Y
NFORK43	RGNFORK1	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK47	RGNFORK3	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	Y	Y	GD	GD	Y	Y
NFORK48	RGNFORK1	GD	Y	Y	OK	OK	Y	Y	OK	OK	OK	Y	Y	OK	OK	Y	maybe	OK	OK	Y	maybe
NFORK49_2	RGSFORK3	NM	NA	N	NM	NM	NA	N	NM	NM	NM	NA	N	NM	NM	NA	N	NM	NM	NA	N
NFORK50	RGNFORK4	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	maybe	GD	GD	Y	Y
NFORK51	RGNFORK4	GD	Y	Y	GD	GD	Y	Y	GD	OK	GD	Y	Y	GD	OK	Y	Y	GD	OK	Y	Y
NFORK52	RGNFORK2	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
NFORK53	RGNFORK2	GD	Y	Y	GD	GD	slight	maybe	GD	GD	GD	Y	Y	GD	GD	Y	maybe	GD	GD	Y	Y
NFORK54	RGSFORK2	GD	slight	maybe	GD	GD	slight	maybe	GD	GD	GD	Y	maybe	GD	GD	Y	maybe	GD	GD	Y	Y
NFORK55	RGNFORK1	GD	Y	maybe	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	maybe	GD	GD	Y	Y
NFORK56	RGNFORK5	GD	slight	maybe	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
DK2	RGSFORK3	GD	Y	Y	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y
Roxboro	RGNFORK5	GD	slight	maybe	GD	GD	slight	maybe	GD	GD	GD	Y	Y	GD	GD	Y	Y	GD	GD	Y	Y

Flow Meter QC Tags

Code	Format	Title	Description
NM	NM	No Meter	Meter not installed.
OB	OB	Over Flow / Bypass	Meter expected to read zero flow except during large rain events.
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GS	GS	Good Surcharge	Surcharge conditions with good data
OK	OK	OK	Minor issues observed in data. Requires use of comments field.
OS	OS	OK Surcharge	Surcharge observed which is suspicious, but not necessarily erroneous.
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BS	BS	Bad Surcharge	Surcharge conditions with bad data
AD	AD	Amended Data	Collected data modified in Excel to account for incorrect inputs to meter. **Use with caution.**
MD	MD	Missing Data	More than 16 hours of missing data.

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		Storm Event 6							Storm Event 7					Storm Event 8					Storm Event 9				
	24 hour total rain (in)	1.44							0.81					0.57					3.12				
Meter ID	Rain Gauge	7/30/18	7/31/18	8/1/18	8/2/18	8/3/18	RDII Respond	Model Calib	8/17/18	8/18/18	8/19/18	RDII Respond	Model Calib	9/25/18	9/26/18	9/27/18	RDII Respond	Model Calib	10/9/18	10/10/18	10/11/18	RDII Respond	Model Calib
NFORK4	**RGNFORK4**	MD	**BD**	**BD**	**BD**	**BD**	N	N	**BD**	**BD**	**BD**	Y	N	OK	OK	OK	slight	maybe	OK	**BD**	GD	Y	N
NFORK5	**RGNFORK4**	GD	GD	GD	OK	GD	Y	Y	MD	MD	**BD**	NA	N	AD	AD	AD	Y	Y	GD	GD	GD	Y	Y
NFORK6	**RGNFORK4**	GD	GD	GS	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK8	**RGNFORK5**	GD	OK	OS	OK	GD	Y	Y	GD	GD	GD	Y	Y	OK	GD	GD	Y	maybe	GD	GD	GD	Y	Y
NFORK9	**RGNFORK4**	MD	MD	MD	MD	MD	NA	N	MD	MD	MD	NA	N	GD	GD	GD	Y	Y	GD	GS	GS	Y	Y
NFORK10	**RGNFORK4**	GD	GD	GD	GD	GD	Y	maybe	GD	GD	GD	Y	maybe	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK16	**RGNFORK1**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK17	**RGNFORK1**	GD	GD	GD	OK	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	OK	Y	Y
NFORK18	**RGNFORK1**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK20	**RGNFORK1**	GD	GD	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK23	**RGNFORK3**	**BD**	**BD**	**BD**	**BD**	**BD**	Y	N	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK24	**RGNFORK1**	GD	GD	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	slight	Y	GD	GD	GD	Y	Y
NFORK26	**RGNFORK3**	**BD**	**BD**	**BD**	**BD**	**BD**	N	N	**BD**	**BD**	**BD**	N	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK28	**RGNFORK2**	GD	OS	GS	OS	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GS	Y	Y
NFORK29	**RGNFORK2**	**BD**	**BD**	**BD**	**BD**	**BD**	N	N	**BD**	**BD**	**BD**	N	N	GD	OK	OK	Y	Y	GD	GD	GD	Y	Y
NFORK30	**RGNFORK2**	GD	BS	GD	GD	GD	Y	maybe	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	MD	MD	MD	NA	N
NFORK32	**RGNFORK6**	GD	GD	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK36	**RGSFORK3**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK37	**RGNFORK4**	GD	OK	GD	**BD**	**BD**	Y	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	**BD**	Y	N
NFORK38	**RGNFORK4**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	slight	Y	GD	GD	GD	slight	Y	GD	GD	GD	Y	Y
NFORK39	**RGNFORK4**	AD	AD	AD	AD	AD	Y	Y	AD	AD	AD	Y	maybe	AD	AD	AD	Y	Y	AD	AD	AD	Y	Y
NFORK40	**RGNFORK3**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK43	**RGNFORK1**	OK	GD	GD	GD	GD	Y	Y	MD	MD	MD	NA	N	GD	GD	GD	slight	maybe	MD	MD	MD	NA	N
NFORK47	**RGNFORK3**	GD	GD	GD	GD	GD	Y	Y	MD	MD	MD	NA	N	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK48	**RGNFORK1**	OK	OK	OK	OK	GD	Y	Y	OK	OK	OK	Y	Y	OK	OK	OK	slight	maybe	OK	OK	GD	Y	Y
NFORK49_2	**RGSFORK3**	**NM**	**NM**	**NM**	**NM**	**NM**	NA	N	**NM**	**NM**	**NM**	NA	N	**NM**	**NM**	**NM**	NA	N	**NM**	**NM**	**NM**	NA	N
NFORK50	**RGNFORK4**	GD	GD	GD	GD	GD	Y	Y	MD	MD	MD	NA	N	GD	GD	GD	slight	Y	GD	GD	GD	Y	Y
NFORK51	**RGNFORK4**	GD	OK	OK	OK	OK	Y	Y	MD	MD	MD	NA	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y
NFORK52	**RGNFORK2**	GD	GD	GD	GD	GD	Y	Y	MD	MD	MD	NA	N	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK53	**RGNFORK2**	GD	GD	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	slight	Y	GD	GD	GD	Y	Y
NFORK54	**RGSFORK2**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	GD	N	maybe	GD	GD	GD	Y	Y
NFORK55	**RGNFORK1**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y
NFORK56	**RGNFORK5**	GD	GD	OK	OK	**BD**	Y	N	MD	MD	MD	NA	N	OK	GD	GD	Y	maybe	GD	**BD**	**BD**	Y	N
DK2	**RGSFORK3**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Maybe	GD	GD	GD	Y	Y	GD	GD	**BD**	Y	N
Roxboro	**RGNFORK5**	GD	GD	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y

Flow Meter QC Tags

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AD	AD	Amended Data	Collected data modified in Excel to account for incorrect inputs to meter. **Use with caution.**
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		Storm Event 10					Storm Event 11					Storm Event 12					
	24 hour total rain (in)	1.04					2.65					1.22					
Meter ID	**Rain Gauge**	**10/24/18**	**10/25/18**	**10/26/18**	**RDII Respond**	**Model Calib**	**11/11/18**	**11/12/18**	**11/13/18**	**RDII Respond**	**Model Calib**	**11/13/18**	**11/14/18**	**11/15/18**	**RDII Respond**	**Model Calib**	**Notes**
NFORK4	**RGNFORK4**	**BD**	**BD**	GD	Y	N	**BD**	**BD**	GD	Y	N	GD	GD	GD	Y	Y	
NFORK5	**RGNFORK4**	GD	GD	GD	slight	maybe	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK6	**RGNFORK4**	GD	GD	GD	Y	Y	GD	GS	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK8	**RGNFORK5**	OK	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK9	**RGNFORK4**	GD	GD	GD	Y	Y	GD	OS	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK10	**RGNFORK4**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK16	**RGNFORK1**	GD	GD	GD	Y	Y	GD	OK	OK	Y	Y	OK	GD	GD	Y	Y	
NFORK17	**RGNFORK1**	GD	GD	GD	Y	Y	GD	GD	**BD**	Y	N	**BD**	**BD**	GD	Y	N	
NFORK18	**RGNFORK1**	**BD**	**BD**	GD	Y	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK20	**RGNFORK1**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK23	**RGNFORK3**	GD	OK	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK24	**RGNFORK1**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK26	**RGNFORK3**	GD	OK	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK28	**RGNFORK2**	GD	GD	GD	Y	Y	GD	GD	**BS**	Y	maybe	BS	**BD**	GD	Y	N	
NFORK29	**RGNFORK2**	GD	GD	OK	Y	Y	GD	GD	GD	Y	Y	GD	GD	**BD**	Y	N	
NFORK30	**RGNFORK2**	MD	MD	MD	NA	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK32	**RGNFORK6**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK36	**RGSFORK3**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK37	**RGNFORK4**	GD	GD	GD	Y	Y	GD	OK	GD	Y	Y	GD	GD	OK	Y	Y	
NFORK38	**RGNFORK4**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK39	**RGNFORK4**	AD	AD	AD	Y	Y	AD	AD	AD	Y	Y	AD	AD	AD	Y	Y	
NFORK40	**RGNFORK3**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK43	**RGNFORK1**	MD	MD	MD	NA	N	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK47	**RGNFORK3**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK48	**RGNFORK1**	OK	OK	GD	slight	maybe	OK	OK	GD	Y	Y	GD	OK	GD	Y	Y	
NFORK49_2	**RGSFORK3**	**NM**	**NM**	GD	Y	N	OK	GS	OK	Y	Y	OK	GD	OS	Y	Y	Meter installed on 10/25/2018
NFORK50	**RGNFORK4**	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK51	**RGNFORK4**	GD	GD	OK	Y	Y	GD	GD	GD	Y	Y	GD	GD	OK	Y	Y	
NFORK52	**RGNFORK2**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK53	**RGNFORK2**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK54	**RGSFORK2**	GD	GD	GD	slight	maybe	**BD**	**BD**	**BD**	Y	N	**BD**	**BD**	**BD**	Y	N	
NFORK55	**RGNFORK1**	GD	GD	GD	Y	maybe	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
NFORK56	**RGNFORK5**	**BD**	**BD**	**BD**	Y	N	GD	OK	OK	Y	Y	OK	GD	GD	Y	Y	
DK2	**RGSFORK3**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	
Roxboro	**RGNFORK5**	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	GD	GD	GD	Y	Y	

Flow Meter QC Tags

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Rain Gauge:	RGNFORK1
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.11	0.19	0.24	0.27	0.27	0.27	0.27	0.27
	6/1/18	0.68	1.12	1.12	1.12	1.19	1.28	1.28	1.55
	6/2/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.29
	6/8/18	0.27	0.44	0.52	0.52	0.52	0.52	0.52	0.52
	6/11/18	0.39	0.48	0.55	0.57	0.57	0.62	0.62	0.62
	6/13/18	0.10	0.10	0.10	0.10	0.12	0.20	0.21	0.21
	6/15/18	0.32	0.53	0.69	0.70	0.70	0.70	0.70	0.70
	6/16/18	0.10	0.10	0.10	0.10	0.10	0.16	0.16	0.80
	6/18/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	6/21/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	6/22/18	0.69	0.73	0.80	0.82	0.82	0.82	0.85	0.85
	6/25/18	0.20	0.29	0.38	0.39	0.46	0.62	0.64	0.64
	6/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/27/18	0.39	0.40	0.40	0.44	0.50	0.58	0.71	0.71
	6/28/18	0.37	0.46	0.51	0.52	0.52	0.54	0.54	1.25
	6/29/18	0.23	0.33	0.33	0.33	0.33	0.33	0.33	0.33
	7/1/18	0.17	0.19	0.23	0.28	0.29	0.29	0.34	0.34
	7/4/18	0.16	0.17	0.17	0.18	0.19	0.19	0.19	0.19
	7/6/18	0.59	1.09	1.51	1.53	1.55	1.55	1.55	1.55
	7/13/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/16/18	0.22	0.36	0.37	0.37	0.37	0.37	0.37	0.37
	7/16/18	0.07	0.09	0.16	0.19	0.19	0.19	0.25	0.62
	7/19/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/21/18	0.68	0.86	0.87	0.92	0.93	0.93	0.93	0.93
	7/21/18	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.94
	7/22/18	0.03	0.05	0.07	0.09	0.09	0.09	0.09	0.09
	7/23/18	0.49	0.79	0.97	1.00	1.00	1.00	1.00	1.00
	7/24/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	1.02
	7/31/18	0.48	0.82	0.85	1.03	1.43	1.56	1.57	1.57
	8/1/18	0.40	0.50	0.67	0.79	0.88	1.20	1.29	1.82
	8/7/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	8/8/18	0.03	0.04	0.05	0.07	0.08	0.09	0.09	0.09

Rain Gauge:	RGNFORK1
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	8/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.10
	8/9/18	0.43	0.53	0.61	0.66	0.67	0.81	0.81	0.91
	8/17/18	0.10	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	8/18/18	0.24	0.28	0.36	0.37	0.60	0.67	0.67	0.81
	8/20/18	0.08	0.14	0.21	0.28	0.28	0.28	0.28	0.28
	8/21/18	0.21	0.31	0.31	0.31	0.31	0.31	0.31	0.31
	9/1/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/8/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/9/18	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
	9/10/18	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	9/11/18	0.01	0.02	0.03	0.03	0.03	0.03	0.06	0.06
	9/13/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/16/18	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
	9/17/18	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	9/24/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/26/18	0.10	0.18	0.18	0.18	0.18	0.19	0.19	0.19
	9/26/18	0.21	0.38	0.42	0.43	0.47	0.47	0.47	0.66
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/9/18	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03
	10/9/18	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.05
	10/10/18	0.01	0.01	0.02	0.03	0.03	0.05	0.07	0.09
	10/10/18	0.30	0.40	0.57	0.98	1.33	1.93	2.80	2.90
	10/16/18	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	10/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
	10/25/18	0.11	0.15	0.19	0.32	0.42	0.60	0.98	1.03
	10/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.70
	11/1/18	0.13	0.18	0.27	0.37	0.46	0.47	0.47	0.47
	11/2/18	0.02	0.02	0.02	0.03	0.05	0.07	0.07	0.54
	11/5/18	0.16	0.17	0.20	0.21	0.21	0.31	0.43	0.43
	11/6/18	0.11	0.18	0.22	0.23	0.24	0.28	0.36	0.53
	11/7/18	0.06	0.12	0.23	0.38	0.41	0.42	0.42	0.42
	11/8/18	0.13	0.19	0.29	0.35	0.37	0.52	0.84	0.92

Rain Gauge:	RGNFORK1
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.51	0.86
	11/11/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	11/12/18	0.13	0.23	0.45	0.83	1.04	1.60	2.17	2.56
	11/14/18	0.14	0.24	0.38	0.52	0.65	0.93	1.36	1.52
	11/23/18	0.09	0.13	0.20	0.31	0.35	0.41	0.43	0.44
	11/25/18	0.02	0.02	0.02	0.04	0.04	0.04	0.05	0.06
	11/29/18	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	11/29/18	0.14	0.27	0.27	0.27	0.27	0.27	0.35	0.35

Rain Gauge:	RGNFORK2
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.04	0.06	0.11	0.15	0.15	0.15	0.16	0.16
	6/1/18	0.52	0.62	0.67	0.67	0.73	0.86	0.86	1.02
	6/8/18	0.24	0.43	0.63	0.68	0.68	0.68	0.68	0.68
	6/9/18	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
	6/10/18	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.05
	6/11/18	0.22	0.42	0.67	0.70	0.70	0.70	0.70	0.70
	6/12/18	0.01	0.01	0.01	0.01	0.01	0.01	0.71	0.71
	6/13/18	0.03	0.03	0.03	0.04	0.05	0.06	0.06	0.06
	6/14/18	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.07
	6/15/18	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	6/16/18	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	6/21/18	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	6/22/18	0.48	0.54	0.74	0.75	0.75	0.75	0.79	0.79
	6/24/18	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	6/25/18	0.12	0.14	0.18	0.20	0.26	0.26	0.27	0.27
	6/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.27	0.28
	6/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
	6/27/18	0.64	0.70	0.73	0.76	0.82	0.92	1.32	1.90
	6/29/18	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	7/1/18	0.10	0.19	0.27	0.35	0.35	0.36	0.36	0.36
	7/4/18	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
	7/4/18	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.25
	7/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03
	7/6/18	0.27	0.28	0.33	0.34	0.38	0.39	0.39	0.39
	7/7/18	0.07	0.13	0.13	0.13	0.13	0.13	0.13	0.48
	7/13/18	0.05	0.07	0.09	0.10	0.10	0.10	0.10	0.10
	7/16/18	0.11	0.18	0.19	0.19	0.19	0.20	0.20	0.20
	7/16/18	0.21	0.41	0.54	0.55	0.55	0.55	0.59	0.79
	7/19/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/21/18	0.92	1.02	1.05	1.10	1.11	1.11	1.11	1.11
	7/21/18	0.31	0.32	0.32	0.32	0.32	0.32	0.35	1.43
	7/22/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.36

Rain Gauge:	RGNFORK2
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	7/22/18	0.02	0.04	0.06	0.08	0.09	0.09	0.09	0.10
	7/23/18	0.63	0.82	0.84	0.84	0.84	0.84	0.84	0.86
	7/24/18	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.91
	7/31/18	0.54	0.72	0.80	0.95	1.38	1.49	1.49	1.49
	8/1/18	0.33	0.46	0.56	0.85	0.92	1.37	1.48	1.63
	8/2/18	0.14	0.20	0.30	0.47	0.62	0.69	1.02	2.11
	8/8/18	0.02	0.02	0.03	0.05	0.05	0.05	0.05	0.05
	8/9/18	0.57	0.71	0.85	0.91	0.93	0.94	0.94	0.99
	8/10/18	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.95
	8/17/18	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	8/18/18	0.27	0.34	0.47	0.47	0.67	0.85	0.85	0.95
	8/20/18	0.21	0.29	0.34	0.44	0.45	0.45	0.45	0.45
	8/21/18	0.21	0.28	0.28	0.28	0.28	0.46	0.46	0.63
	9/8/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/9/18	0.03	0.04	0.04	0.07	0.07	0.07	0.07	0.07
	9/11/18	0.01	0.02	0.04	0.04	0.04	0.04	0.04	0.04
	9/11/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
	9/18/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/26/18	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	9/26/18	0.12	0.21	0.28	0.29	0.31	0.33	0.33	0.37
	9/27/18	0.27	0.29	0.30	0.38	0.38	0.38	0.39	0.62
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.40
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.39
	10/2/18	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	10/9/18	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
	10/10/18	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.06
	10/10/18	0.30	0.41	0.62	1.14	1.53	2.32	3.09	3.12
	10/16/18	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	10/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
	10/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/25/18	0.11	0.20	0.24	0.39	0.49	0.68	1.12	1.17
	10/26/18	0.01	0.01	0.01	0.01	0.02	0.03	0.03	1.06
	11/1/18	0.13	0.18	0.26	0.40	0.51	0.52	0.52	0.52

Rain Gauge:	RGNFORK2
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/2/18	0.02	0.03	0.03	0.04	0.06	0.07	0.08	0.59
	11/5/18	0.05	0.07	0.09	0.09	0.13	0.19	0.19	0.19
	11/6/18	0.14	0.21	0.25	0.25	0.26	0.31	0.40	0.40
	11/7/18	0.08	0.15	0.27	0.42	0.47	0.47	0.48	0.48
	11/8/18	0.19	0.22	0.31	0.39	0.40	0.56	0.91	1.02
	11/12/18	0.18	0.31	0.57	0.98	1.22	1.93	2.53	2.98
	11/14/18	0.06	0.10	0.19	0.32	0.45	0.75	1.21	1.36
	11/15/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	1.21
	11/23/18	0.09	0.14	0.22	0.35	0.39	0.46	0.50	0.51
	11/25/18	0.01	0.02	0.03	0.04	0.04	0.04	0.04	0.04
	11/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.05
	11/30/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Rain Gauge:	RGNFORK3
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.05	0.09	0.14	0.17	0.17	0.17	0.21	0.21
	6/1/18	0.54	0.66	0.68	0.68	0.74	0.87	0.87	1.07
	6/8/18	0.40	0.58	0.82	0.84	0.84	0.84	0.84	0.84
	6/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/10/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
	6/11/18	0.25	0.43	0.62	0.63	0.63	0.64	0.64	0.64
	6/13/18	0.03	0.05	0.05	0.06	0.07	0.09	0.09	0.09
	6/14/18	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.10
	6/15/18	0.24	0.41	0.44	0.44	0.44	0.44	0.44	0.44
	6/16/18	0.19	0.23	0.24	0.24	0.24	0.24	0.24	0.24
	6/18/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	6/21/18	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	6/22/18	0.43	0.49	0.64	0.66	0.66	0.66	0.70	0.70
	6/23/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.71
	6/24/18	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	6/25/18	0.17	0.20	0.31	0.32	0.37	0.37	0.37	0.37
	6/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.38
	6/27/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03
	6/27/18	0.65	0.67	0.68	0.73	0.78	0.85	1.25	1.88
	6/29/18	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	7/1/18	0.11	0.19	0.29	0.39	0.39	0.39	0.39	0.39
	7/4/18	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24
	7/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.25
	7/6/18	0.19	0.25	0.25	0.32	0.44	0.44	0.44	0.44
	7/7/18	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.45
	7/7/18	0.04	0.08	0.10	0.10	0.10	0.10	0.11	0.40
	7/13/18	0.08	0.10	0.16	0.17	0.17	0.17	0.17	0.17
	7/16/18	0.35	0.63	0.84	0.84	0.84	0.84	0.84	0.84
	7/16/18	0.38	0.64	0.88	0.88	0.88	0.88	0.88	1.72
	7/16/18	0.02	0.03	0.04	0.04	0.04	0.04	0.92	1.76
	7/21/18	0.82	0.91	0.98	1.01	1.04	1.04	1.04	1.04
	7/21/18	0.38	0.38	0.38	0.38	0.38	0.38	0.41	1.42

Rain Gauge:	RGNFORK3
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	7/22/18	0.03	0.04	0.06	0.07	0.08	0.08	0.08	0.08
	7/23/18	0.31	0.56	0.63	0.66	0.66	0.66	0.66	0.66
	7/24/18	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.79
	7/31/18	0.32	0.39	0.42	0.57	0.96	1.07	1.08	1.08
	8/1/18	0.30	0.44	0.68	1.05	1.10	1.45	1.55	1.61
	8/2/18	0.11	0.16	0.24	0.38	0.51	0.59	0.90	2.08
	8/8/18	0.01	0.02	0.03	0.05	0.05	0.05	0.05	0.05
	8/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
	8/9/18	0.54	0.82	0.93	0.98	0.99	0.99	1.00	1.05
	8/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	8/18/18	0.26	0.38	0.61	0.62	0.84	1.00	1.00	1.01
	8/20/18	0.15	0.18	0.32	0.41	0.42	0.42	0.43	0.43
	8/21/18	0.17	0.28	0.28	0.28	0.28	0.45	0.45	0.60
	9/9/18	0.20	0.30	0.30	0.31	0.31	0.31	0.31	0.31
	9/10/18	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04
	9/11/18	0.01	0.02	0.03	0.03	0.03	0.03	0.07	0.07
	9/16/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/16/18	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03
	9/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
	9/24/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/26/18	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	9/26/18	0.12	0.19	0.22	0.22	0.24	0.25	0.25	0.32
	9/27/18	0.11	0.14	0.14	0.20	0.20	0.21	0.21	0.39
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.22
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.23
	10/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/9/18	0.01	0.01	0.01	0.02	0.03	0.04	0.05	0.06
	10/10/18	0.22	0.34	0.50	0.88	1.19	1.93	2.54	2.58
	10/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/25/18	0.10	0.14	0.19	0.31	0.41	0.59	0.95	1.01
	10/26/18	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.89
	10/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.16
	11/1/18	0.09	0.14	0.22	0.32	0.41	0.41	0.41	0.41

Rain Gauge:	RGNFORK3
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/2/18	0.02	0.02	0.03	0.03	0.05	0.07	0.10	0.48
	11/5/18	0.04	0.05	0.08	0.09	0.12	0.17	0.17	0.17
	11/6/18	0.13	0.20	0.24	0.24	0.25	0.28	0.37	0.37
	11/7/18	0.07	0.13	0.24	0.39	0.43	0.44	0.44	0.44
	11/8/18	0.12	0.16	0.26	0.33	0.35	0.52	0.79	0.86
	11/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.34	0.81
	11/12/18	0.14	0.25	0.47	0.84	1.06	1.67	2.15	2.53
	11/14/18	0.10	0.15	0.23	0.35	0.48	0.76	1.18	1.30
	11/23/18	0.08	0.13	0.20	0.31	0.34	0.41	0.44	0.45
	11/25/18	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.04
	11/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.05
	11/30/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Rain Gauge:	RGNFORK4
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.03	0.05	0.06	0.06	0.06	0.06	0.06	0.06
	6/1/18	0.32	0.58	0.58	0.58	0.82	0.91	0.91	0.97
	6/2/18	0.26	0.32	0.37	0.37	0.37	0.38	0.38	1.29
	6/8/18	0.41	0.52	0.66	0.67	0.67	0.67	0.67	0.67
	6/11/18	0.47	0.94	1.36	1.43	1.43	1.55	1.55	1.55
	6/13/18	0.03	0.03	0.05	0.07	0.08	0.12	0.12	0.12
	6/15/18	0.12	0.13	0.14	0.14	0.14	0.14	0.14	0.14
	6/16/18	0.01	0.01	0.01	0.01	0.01	0.01	0.15	0.15
	6/16/18	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.08
	6/18/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	6/21/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/22/18	0.28	0.35	0.41	0.43	0.45	0.45	0.48	0.48
	6/25/18	0.24	0.35	0.45	0.51	0.58	0.81	0.82	0.82
	6/27/18	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	6/27/18	0.07	0.11	0.13	0.19	0.22	0.33	0.39	0.41
	6/28/18	0.16	0.25	0.26	0.27	0.27	0.29	0.29	0.67
	7/1/18	0.09	0.10	0.19	0.20	0.20	0.20	0.20	0.20
	7/6/18	0.19	0.26	0.33	0.52	0.55	0.56	0.56	0.56
	7/7/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.38
	7/16/18	0.08	0.10	0.12	0.12	0.12	0.12	0.12	0.12
	7/16/18	0.15	0.18	0.27	0.28	0.28	0.28	0.30	0.42
	7/19/18	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	7/21/18	0.46	0.89	0.95	0.98	0.98	0.98	0.98	0.98
	7/22/18	0.02	0.04	0.06	0.07	0.07	0.07	0.07	0.07
	7/23/18	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.08
	7/23/18	0.28	0.53	0.54	0.54	0.91	0.92	0.92	0.93
	7/31/18	0.48	0.54	0.58	0.76	1.02	1.12	1.13	1.13
	8/1/18	0.38	0.62	0.94	1.11	1.20	1.43	1.52	1.56
	8/2/18	0.07	0.12	0.19	0.30	0.44	0.51	0.91	1.97
	8/3/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.59
	8/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	8/8/18	0.02	0.04	0.06	0.09	0.10	0.10	0.10	0.10

Rain Gauge:	RGNFORK4
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
	Duration	15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	8/9/18	0.13	0.22	0.27	0.32	0.33	0.40	0.40	0.50
	8/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	8/17/18	0.09	0.11	0.11	0.11	0.11	0.11	0.11	0.12
	8/18/18	0.01	0.01	0.01	0.01	0.01	0.01	0.12	0.12
	8/18/18	0.18	0.27	0.27	0.28	0.35	0.43	0.43	0.55
	8/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	8/20/18	0.19	0.27	0.29	0.36	0.36	0.36	0.37	0.37
	8/21/18	0.22	0.25	0.26	0.26	0.26	0.28	0.28	0.38
	9/3/18	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	9/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.04
	9/9/18	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
	9/10/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06
	9/10/18	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.04
	9/16/18	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
	9/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/26/18	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19
	9/26/18	0.26	0.48	0.54	0.55	0.58	0.60	0.60	0.79
	9/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.61
	9/27/18	0.37	0.47	0.48	0.54	0.54	0.54	0.55	1.07
	9/28/18	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.08
	10/2/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	10/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/9/18	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.04
	10/10/18	0.26	0.46	0.69	1.07	1.57	2.21	3.36	3.45
	10/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/20/18	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
	10/25/18	0.07	0.12	0.19	0.24	0.33	0.47	0.85	0.91
	11/1/18	0.06	0.11	0.21	0.30	0.36	0.36	0.36	0.36
	11/2/18	0.03	0.04	0.04	0.04	0.07	0.09	0.09	0.45
	11/5/18	0.04	0.06	0.06	0.08	0.10	0.15	0.15	0.15
	11/6/18	0.11	0.14	0.16	0.16	0.16	0.21	0.27	0.27
	11/7/18	0.06	0.12	0.22	0.37	0.41	0.41	0.41	0.41
	11/8/18	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.16

Rain Gauge:	RGNFORK4
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/9/18	0.17	0.23	0.25	0.26	0.28	0.37	0.54	0.59
	11/12/18	0.12	0.22	0.43	0.80	0.99	1.55	2.18	2.56
	11/14/18	0.01	0.01	0.02	0.04	0.04	0.04	0.08	0.17
	11/14/18	0.08	0.12	0.20	0.38	0.48	0.74	1.15	1.26
	11/23/18	0.06	0.12	0.18	0.29	0.34	0.39	0.41	0.42
	11/25/18	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06
	11/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.07
	11/30/18	0.01	0.02	0.03	0.03	0.03	0.04	0.04	0.04

Rain Gauge:	RGNFORK5
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.05	0.07	0.09	0.10	0.10	0.10	0.10	0.10
	6/1/18	0.18	0.23	0.23	0.23	0.37	0.46	0.47	0.70
	6/8/18	0.50	0.86	1.05	1.07	1.07	1.07	1.07	1.07
	6/11/18	0.54	0.79	1.01	1.01	1.02	1.06	1.06	1.06
	6/13/18	0.05	0.06	0.09	0.11	0.12	0.13	0.14	0.14
	6/15/18	0.04	0.06	0.07	0.07	0.07	0.07	0.07	0.07
	6/16/18	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	6/21/18	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	6/22/18	0.35	0.41	0.45	0.47	0.47	0.47	0.52	0.52
	6/25/18	0.15	0.19	0.29	0.30	0.39	0.46	0.48	0.48
	6/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/27/18	0.28	0.35	0.36	0.38	0.41	0.50	0.81	0.82
	6/28/18	0.29	0.34	0.37	0.38	0.38	0.41	0.41	1.22
	6/29/18	0.60	0.86	0.92	0.92	0.92	0.92	0.92	0.92
	7/1/18	0.05	0.07	0.11	0.14	0.14	0.14	0.14	0.14
	7/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/4/18	0.08	0.08	0.08	0.14	0.15	0.22	0.22	0.23
	7/5/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.24
	7/6/18	0.35	0.56	0.92	0.98	1.13	1.13	1.13	1.13
	7/13/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/15/18	1.04	1.41	1.61	1.65	1.65	1.65	1.66	1.66
	7/16/18	0.07	0.09	0.09	0.10	0.10	0.17	0.19	1.84
	7/19/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	7/21/18	0.72	0.94	0.95	0.99	1.00	1.00	1.00	1.00
	7/22/18	0.02	0.04	0.07	0.08	0.08	0.08	0.08	0.08
	7/23/18	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.09
	7/23/18	0.47	0.58	0.73	0.94	1.10	1.10	1.10	1.11
	7/31/18	0.26	0.45	0.70	0.82	1.33	1.53	1.55	1.55
	8/1/18	0.28	0.55	0.90	0.99	1.06	1.21	1.28	1.65
	8/2/18	0.07	0.14	0.24	0.36	0.48	0.55	1.09	1.84
	8/3/18	0.01	0.01	0.01	0.01	0.01	0.01	0.22	1.04
	8/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Rain Gauge:	RGNFORK5
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	8/7/18	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	8/8/18	0.02	0.03	0.04	0.07	0.09	0.09	0.09	0.09
	8/9/18	0.34	0.60	0.64	0.69	0.70	0.71	0.71	0.80
	8/18/18	0.31	0.45	0.58	0.58	0.75	0.87	0.87	0.87
	8/19/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.88
	8/20/18	0.38	0.65	0.71	0.77	0.77	0.77	0.77	0.77
	8/21/18	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.26
	8/29/18	0.31	0.44	0.48	0.48	0.48	0.48	0.48	0.48
	9/3/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
	9/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/10/18	0.19	0.22	0.22	0.22	0.22	0.22	0.22	0.22
	9/10/18	0.01	0.02	0.04	0.04	0.04	0.04	0.26	0.26
	9/12/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/16/18	0.01	0.02	0.03	0.04	0.04	0.04	0.04	0.04
	9/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/25/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/26/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03
	9/26/18	0.23	0.28	0.33	0.34	0.37	0.38	0.39	0.41
	9/27/18	0.15	0.24	0.25	0.32	0.33	0.33	0.33	0.60
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.34
	10/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	10/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
	10/10/18	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.04
	10/10/18	0.29	0.49	0.68	0.90	1.33	2.20	3.15	3.23
	10/18/18	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	10/25/18	0.11	0.13	0.19	0.29	0.40	0.56	1.00	1.05
	10/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.73
	11/1/18	0.12	0.16	0.24	0.33	0.40	0.42	0.42	0.42
	11/2/18	0.02	0.02	0.02	0.03	0.04	0.05	0.07	0.47
	11/2/18	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.06
	11/5/18	0.02	0.04	0.07	0.11	0.13	0.20	0.20	0.20
	11/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.14	0.21

Rain Gauge:	RGNFORK5
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/6/18	0.12	0.24	0.24	0.24	0.26	0.28	0.33	0.34
	11/7/18	0.06	0.12	0.23	0.36	0.39	0.40	0.40	0.40
	11/8/18	0.22	0.27	0.41	0.49	0.51	0.69	0.98	1.04
	11/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.69	1.01
	11/12/18	0.16	0.29	0.50	0.93	1.16	1.85	2.33	2.70
	11/14/18	0.14	0.20	0.28	0.40	0.53	0.87	1.29	1.40
	11/15/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.99
	11/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	11/23/18	0.08	0.13	0.21	0.34	0.38	0.45	0.47	0.47
	11/25/18	0.02	0.03	0.03	0.05	0.05	0.05	0.05	0.05
	11/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
	11/30/18	0.01	0.02	0.03	0.04	0.04	0.04	0.04	0.04

Rain Gauge:	RGNFORK6
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.10	0.11	0.16	0.19	0.19	0.19	0.19	0.19
	6/1/18	0.37	0.54	0.64	0.64	0.79	0.87	0.87	1.06
	6/2/18	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.88
	6/8/18	0.52	0.76	0.86	0.86	0.86	0.86	0.86	0.86
	6/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.87
	6/9/18	0.64	0.86	1.01	1.01	1.01	1.01	1.02	1.02
	6/11/18	0.13	0.19	0.28	0.31	0.32	0.32	0.32	0.32
	6/12/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.33
	6/13/18	0.17	0.21	0.21	0.21	0.34	0.35	0.39	0.39
	6/15/18	0.20	0.21	0.22	0.22	0.22	0.22	0.22	0.22
	6/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/18/18	0.33	0.35	0.36	0.36	0.36	0.36	0.36	0.36
	6/21/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/22/18	0.42	0.68	1.14	1.22	1.23	1.26	1.30	1.30
	6/23/18	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1.41
	6/24/18	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	6/25/18	0.62	0.78	0.80	0.80	0.80	1.04	1.05	1.06
	6/27/18	0.35	0.51	0.51	0.58	0.66	0.76	1.02	1.44
	6/29/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.46
	7/1/18	0.12	0.20	0.27	0.37	0.37	0.37	0.37	0.37
	7/4/18	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	7/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04
	7/7/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/13/18	0.01	0.02	0.03	0.03	0.03	0.04	0.04	0.04
	7/16/18	0.13	0.22	0.40	0.40	0.40	0.40	0.40	0.40
	7/16/18	0.01	0.02	0.03	0.03	0.03	0.03	0.43	0.43
	7/19/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/21/18	0.78	0.95	0.97	1.02	1.03	1.03	1.03	1.03
	7/21/18	0.37	0.46	0.46	0.46	0.46	0.46	0.50	1.49
	7/22/18	0.03	0.05	0.06	0.09	0.09	0.09	0.09	0.09
	7/23/18	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.10
	7/23/18	0.04	0.05	0.06	0.06	0.06	0.06	0.06	0.12

Rain Gauge:	RGNFORK6
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
	Duration	15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	7/24/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.07
	7/26/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	8/14/18	0.09	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	8/15/18	2.57	2.57	2.57	2.63	2.63	2.63	2.63	2.75
	8/16/18	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	8/17/18	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.09
	8/17/18	0.05	0.09	0.09	0.09	0.09	0.09	0.15	0.15
	8/18/18	0.29	0.36	0.45	0.45	0.53	0.65	0.65	0.74
	8/19/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.66
	8/20/18	0.03	0.05	0.07	0.09	0.09	0.09	0.09	0.09
	8/21/18	0.23	0.25	0.25	0.25	0.25	0.26	0.26	0.26
	8/22/18	0.01	0.01	0.01	0.01	0.01	0.01	0.26	0.27
	8/22/18	0.07	0.07	0.07	0.09	0.09	0.09	0.09	0.35
	9/1/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/3/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/7/18	0.07	0.13	0.13	0.14	0.14	0.16	0.21	0.21
	9/9/18	0.12	0.12	0.12	0.12	0.12	0.24	0.24	0.24
	9/11/18	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	9/12/18	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
	9/16/18	0.01	0.02	0.04	0.05	0.06	0.06	0.07	0.07
	9/18/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/22/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/24/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/25/18	0.02	0.03	0.03	0.05	0.05	0.05	0.05	0.06
	9/26/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.07
	9/26/18	0.27	0.35	0.41	0.43	0.44	0.46	0.46	0.48
	9/27/18	0.44	0.58	0.75	0.82	0.82	0.82	0.83	1.04
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.84
	10/9/18	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03
	10/10/18	0.01	0.01	0.02	0.03	0.03	0.04	0.04	0.06
	10/10/18	0.24	0.39	0.59	1.05	1.52	2.11	2.94	2.98
	10/11/18	0.02	0.02	0.02	0.02	0.02	0.02	1.22	2.97
	10/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Rain Gauge:	RGNFORK6
Sewershed	North Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	10/25/18	0.07	0.12	0.21	0.31	0.41	0.60	1.06	1.11
	10/26/18	0.01	0.01	0.01	0.02	0.03	0.03	0.04	1.04
	11/1/18	0.07	0.11	0.20	0.32	0.42	0.43	0.43	0.43
	11/2/18	0.01	0.02	0.02	0.02	0.03	0.05	0.17	0.48
	11/5/18	0.04	0.05	0.07	0.08	0.09	0.15	0.15	0.15
	11/6/18	0.16	0.26	0.32	0.32	0.33	0.34	0.40	0.40
	11/7/18	0.10	0.17	0.30	0.47	0.53	0.54	0.54	0.54
	11/8/18	0.31	0.34	0.48	0.49	0.50	0.63	0.82	0.94
	11/9/18	0.01	0.01	0.01	0.01	0.01	0.01	0.29	0.85
	11/12/18	0.16	0.30	0.53	0.91	1.17	1.64	2.37	2.84
	11/14/18	0.07	0.13	0.21	0.30	0.41	0.73	1.23	1.37
	11/23/18	0.08	0.16	0.25	0.38	0.42	0.49	0.53	0.54
	11/25/18	0.03	0.04	0.04	0.06	0.07	0.07	0.07	0.07
	11/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.08
	11/30/18	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02

Rain Gauge:	RGSFORK2
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.06	0.07	0.08	0.08	0.08	0.08	0.08	0.08
	6/1/18	0.10	0.12	0.16	0.22	0.25	0.33	0.33	0.41
	6/2/18	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.42
	6/8/18	0.13	0.23	0.24	0.24	0.24	0.24	0.24	0.24
	6/11/18	0.36	0.47	0.52	0.55	0.56	0.64	0.65	0.65
	6/13/18	0.22	0.25	0.25	0.25	0.25	0.29	0.30	0.30
	6/15/18	0.12	0.16	0.18	0.18	0.18	0.19	0.19	0.19
	6/18/18	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
	6/22/18	0.42	0.44	0.81	0.90	0.92	0.92	0.94	0.94
	6/25/18	0.17	0.25	0.25	0.27	0.31	0.55	0.56	0.56
	6/27/18	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	6/27/18	0.17	0.22	0.24	0.24	0.27	0.51	0.54	0.56
	6/28/18	0.14	0.22	0.24	0.24	0.24	0.25	0.26	0.79
	7/1/18	0.24	0.32	0.34	0.48	0.48	0.48	0.49	0.49
	7/5/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	7/6/18	0.30	0.42	0.59	0.60	0.60	0.60	0.60	0.60
	7/16/18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
	7/16/18	0.01	0.01	0.01	0.01	0.01	0.01	0.18	0.18
	7/19/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	7/21/18	0.48	0.84	0.88	0.92	0.92	0.92	0.92	0.92
	7/22/18	0.02	0.04	0.06	0.09	0.09	0.09	0.09	0.09
	7/23/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.04
	7/30/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	7/31/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	7/31/18	0.26	0.45	0.49	0.65	1.04	1.12	1.13	1.14
	8/1/18	0.64	0.73	0.76	0.79	0.93	1.29	1.39	1.44
	8/2/18	0.18	0.27	0.37	0.47	0.57	0.64	1.07	1.97
	8/4/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	8/8/18	0.02	0.04	0.06	0.09	0.10	0.11	0.11	0.11
	8/9/18	0.19	0.24	0.27	0.32	0.33	0.35	0.36	0.50
	8/16/18	0.03	0.06	0.07	0.09	0.09	0.09	0.09	0.09
	8/17/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
	8/17/18	0.02	0.04	0.04	0.04	0.04	0.04	0.05	0.14

Rain Gauge:	RGSFORK2
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
	Duration	15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	8/17/18	0.17	0.18	0.18	0.18	0.18	0.18	0.22	0.23
	8/18/18	0.01	0.01	0.01	0.01	0.01	0.01	0.19	0.23
	8/18/18	0.25	0.32	0.32	0.33	0.39	0.45	0.46	0.64
	8/20/18	0.12	0.12	0.15	0.21	0.22	0.22	0.22	0.22
	8/21/18	0.01	0.01	0.01	0.01	0.01	0.01	0.23	0.23
	8/21/18	0.44	0.45	0.45	0.45	0.45	0.45	0.45	0.46
	9/7/18	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	9/8/18	0.05	0.09	0.09	0.09	0.09	0.09	0.12	0.12
	9/9/18	0.05	0.05	0.05	0.05	0.05	0.09	0.09	0.09
	9/11/18	0.26	0.38	0.42	0.46	0.47	0.47	0.47	0.47
	9/15/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/16/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
	9/26/18	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
	9/26/18	0.18	0.23	0.24	0.25	0.28	0.30	0.30	0.33
	9/27/18	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.32
	9/27/18	0.21	0.38	0.50	0.56	0.57	0.57	0.57	0.81
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.11	0.59
	10/9/18	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03
	10/9/18	0.01	0.02	0.02	0.02	0.02	0.02	0.04	0.05
	10/10/18	0.01	0.01	0.02	0.02	0.03	0.04	0.06	0.09
	10/10/18	0.26	0.40	0.66	0.99	1.60	2.19	3.25	3.27
	10/20/18	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
	10/25/18	0.06	0.12	0.19	0.29	0.38	0.54	0.98	1.03
	10/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.95
	11/1/18	0.08	0.14	0.23	0.36	0.47	0.48	0.48	0.48
	11/2/18	0.01	0.01	0.01	0.02	0.02	0.04	0.14	0.53
	11/5/18	0.04	0.05	0.05	0.06	0.08	0.11	0.11	0.11
	11/5/18	0.07	0.10	0.12	0.13	0.13	0.15	0.21	0.21
	11/7/18	0.08	0.14	0.25	0.42	0.50	0.52	0.52	0.52
	11/8/18	0.29	0.43	0.46	0.48	0.49	0.59	0.80	0.96
	11/12/18	0.15	0.28	0.53	0.86	1.07	1.55	2.13	2.56
	11/14/18	0.05	0.10	0.17	0.27	0.41	0.69	1.12	1.26
	11/23/18	0.07	0.12	0.23	0.35	0.38	0.44	0.47	0.48

Rain Gauge:	RGSFORK2
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/25/18	0.03	0.04	0.05	0.08	0.09	0.09	0.10	0.10
	11/30/18	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04

Rain Gauge:	RGSFORK3
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	6/1/18	0.02	0.04	0.05	0.05	0.05	0.05	0.05	0.05
	6/1/18	0.25	0.30	0.33	0.44	0.58	0.61	0.61	0.66
	6/2/18	0.02	0.02	0.02	0.02	0.02	0.03	0.18	0.64
	6/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	6/8/18	0.44	0.64	0.70	0.70	0.70	0.70	0.70	0.70
	6/11/18	0.61	0.85	1.08	1.09	1.11	1.19	1.19	1.19
	6/13/18	0.02	0.03	0.05	0.09	0.11	0.11	0.11	0.11
	6/16/18	0.08	0.10	0.10	0.10	0.10	0.11	0.11	0.11
	6/18/18	0.33	0.52	0.55	0.55	0.55	0.55	0.55	0.55
	6/21/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	6/22/18	0.33	0.48	0.64	0.66	0.67	0.67	0.68	0.68
	6/23/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.04
	6/25/18	0.49	0.78	0.99	1.03	1.15	1.19	1.21	1.21
	6/27/18	0.60	0.85	0.86	0.86	0.86	0.86	0.86	0.86
	6/27/18	0.05	0.09	0.13	0.20	0.24	0.28	0.29	1.14
	6/28/18	0.23	0.31	0.33	0.34	0.34	0.37	0.37	0.66
	7/1/18	0.32	0.33	0.34	0.35	0.35	0.35	0.35	0.35
	7/4/18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19
	7/5/18	0.01	0.01	0.01	0.01	0.01	0.01	0.20	0.20
	7/6/18	0.49	0.56	0.61	0.63	0.63	0.64	0.64	0.64
	7/7/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.65
	7/16/18	0.15	0.22	0.27	0.27	0.27	0.27	0.27	0.27
	7/16/18	0.06	0.07	0.08	0.08	0.08	0.09	0.14	0.39
	7/19/18	0.02	0.03	0.05	0.06	0.06	0.06	0.06	0.06
	7/20/18	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.07
	7/21/18	0.79	1.03	1.13	1.16	1.16	1.16	1.16	1.16
	7/22/18	0.03	0.05	0.06	0.07	0.07	0.07	0.07	0.07
	7/23/18	0.11	0.13	0.20	0.29	0.36	0.38	0.38	0.38
	7/24/18	0.01	0.01	0.01	0.01	0.01	0.01	0.31	0.39
	7/31/18	0.55	0.89	1.08	1.20	1.29	1.49	1.58	2.09
	8/4/18	0.04	0.04	0.07	0.08	0.08	0.08	0.08	0.08
	8/7/18	0.23	0.34	0.55	0.62	0.62	0.62	0.62	0.62

Rain Gauge:	RGSFORK3
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

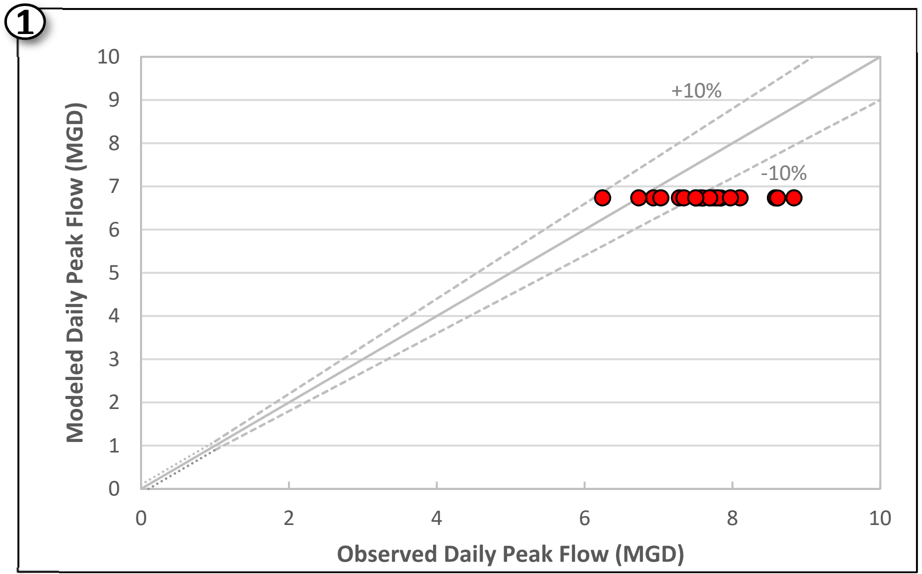
		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
Event	8/8/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.63
	8/8/18	0.03	0.05	0.06	0.10	0.11	0.11	0.11	0.12
	8/9/18	0.29	0.39	0.40	0.47	0.47	0.70	0.70	0.81
	8/16/18	0.16	0.27	0.28	0.28	0.28	0.28	0.28	0.28
	8/17/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.30
	8/17/18	0.16	0.31	0.34	0.34	0.34	0.34	0.36	0.36
	8/18/18	0.30	0.45	0.45	0.45	0.46	0.52	0.53	0.87
	8/20/18	0.18	0.19	0.20	0.26	0.26	0.26	0.26	0.26
	8/21/18	0.17	0.19	0.20	0.20	0.20	0.21	0.21	0.27
	8/29/18	0.27	0.38	0.47	0.47	0.47	0.47	0.47	0.47
	8/30/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.48
	9/7/18	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/10/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/11/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
	9/12/18	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
	9/16/18	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
	9/22/18	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	9/25/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	9/26/18	0.43	0.54	0.54	0.54	0.54	0.54	0.54	0.55
	9/26/18	0.34	0.47	0.59	0.59	0.64	0.66	0.67	1.20
	9/27/18	0.34	0.39	0.41	0.46	0.46	0.46	0.46	1.01
	9/28/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.47
	9/28/18	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.11
	10/1/18	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	10/9/18	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	10/10/18	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.08
	10/10/18	0.33	0.58	0.83	1.18	1.71	2.27	3.37	3.44
	10/20/18	0.02	0.03	0.03	0.05	0.05	0.05	0.05	0.05
	10/25/18	0.07	0.13	0.18	0.27	0.33	0.51	0.91	0.98
	10/26/18	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.89
	11/1/18	0.08	0.15	0.23	0.32	0.39	0.39	0.39	0.39
	11/2/18	0.03	0.04	0.04	0.04	0.07	0.09	0.09	0.48
	11/4/18	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Rain Gauge:	RGSFORK3
Sewershed	South Fork Peachtree Cr
Sewer Basin	Inter-Governmental

		Peak Precipitation Volume (inches)							
Duration		15-minute	30-minute	1-hour	2-hour	3-hour	6-hour	12-hour	24-hour
Return Frequency	1-year	0.86	1.17	1.49	1.92	2.04	2.34	2.76	3.36
	2-year	0.99	1.36	1.72	2.28	2.43	2.88	3.36	4.08
	5-year	1.17	1.66	2.17	2.80	3.03	3.60	4.32	4.80
	10-year	1.31	1.88	2.49	3.16	3.42	4.14	4.92	5.52
	25-year	1.51	2.19	2.95	3.68	3.96	4.80	5.64	6.48
	50-year	1.67	2.44	3.30	4.04	4.38	5.40	6.36	7.20
	100-year	1.82	2.68	3.65	4.42	4.83	5.82	6.96	7.92
	11/5/18	0.02	0.03	0.05	0.06	0.09	0.12	0.12	0.13
	11/6/18	0.12	0.14	0.16	0.17	0.17	0.22	0.33	0.33
	11/7/18	0.07	0.13	0.24	0.41	0.49	0.49	0.49	0.49
	11/8/18	0.04	0.05	0.05	0.07	0.07	0.08	0.08	0.50
	11/9/18	0.16	0.21	0.23	0.26	0.27	0.38	0.58	0.66
	11/12/18	0.14	0.26	0.50	0.84	1.02	1.57	2.12	2.48
	11/14/18	0.10	0.19	0.26	0.39	0.51	0.78	1.21	1.34
	11/15/18	0.01	0.01	0.01	0.01	0.01	0.01	0.31	1.30
	11/23/18	0.08	0.14	0.23	0.34	0.39	0.46	0.48	0.49
	11/25/18	0.04	0.05	0.05	0.08	0.08	0.09	0.09	0.09
	11/30/18	0.02	0.03	0.04	0.05	0.06	0.06	0.06	0.06

Appendix B
DWF Calibration

①



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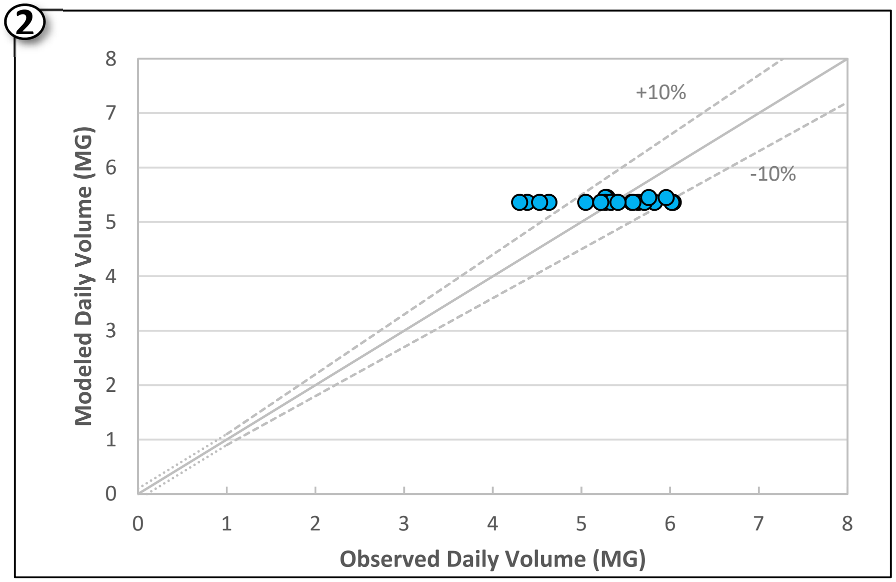

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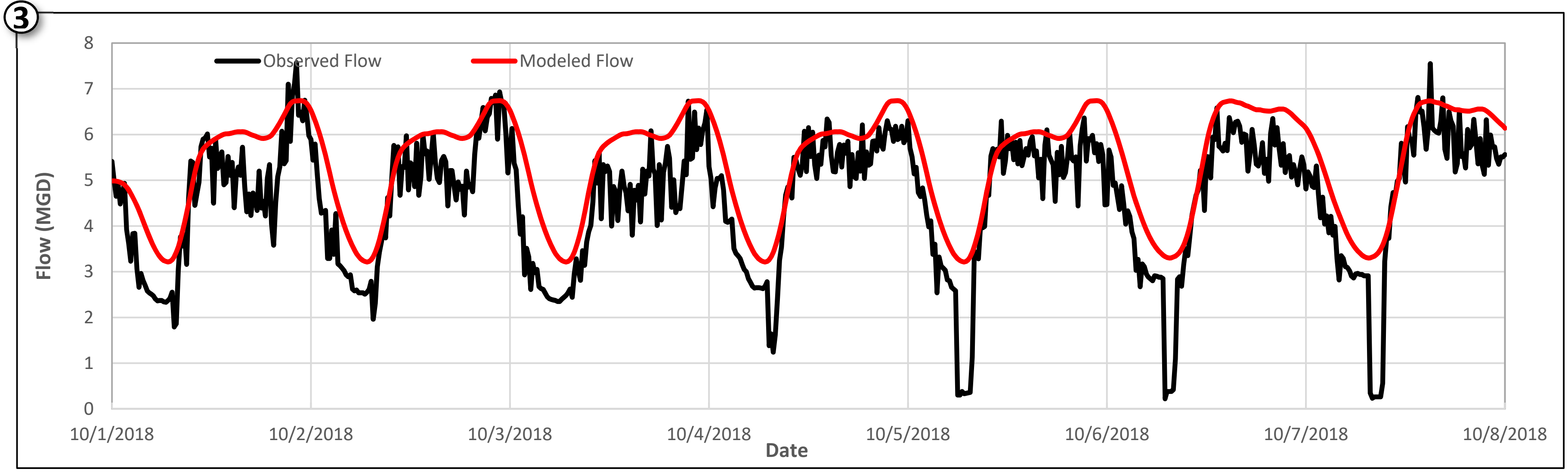


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK4**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

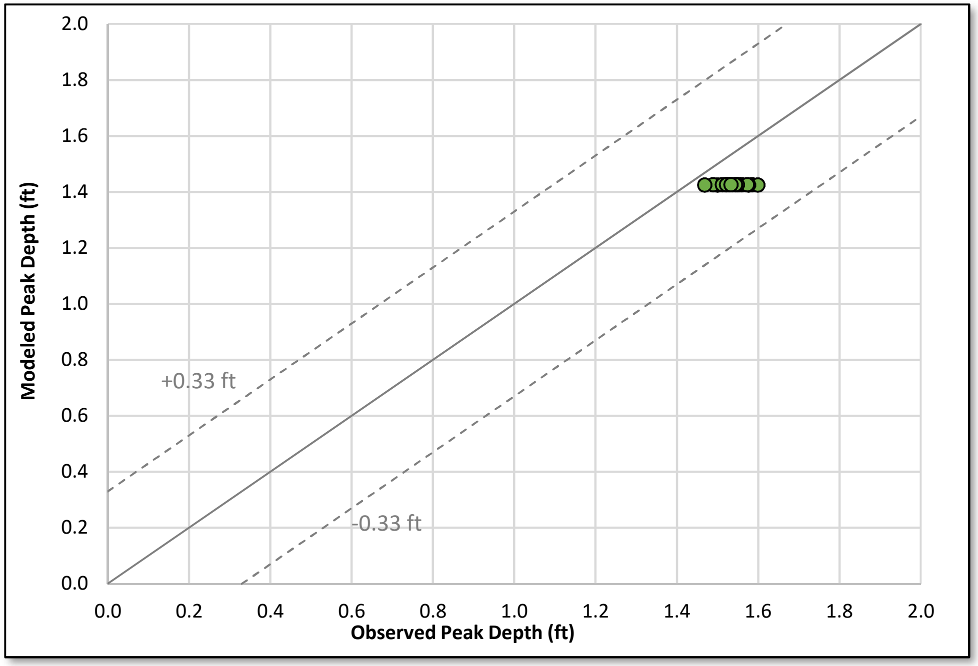
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

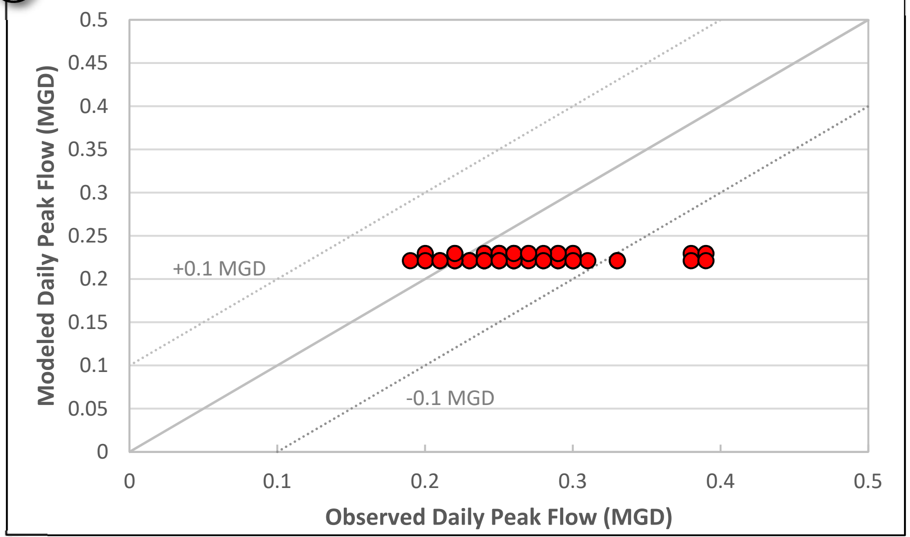
20



Flow Meter:

NFORK4

①



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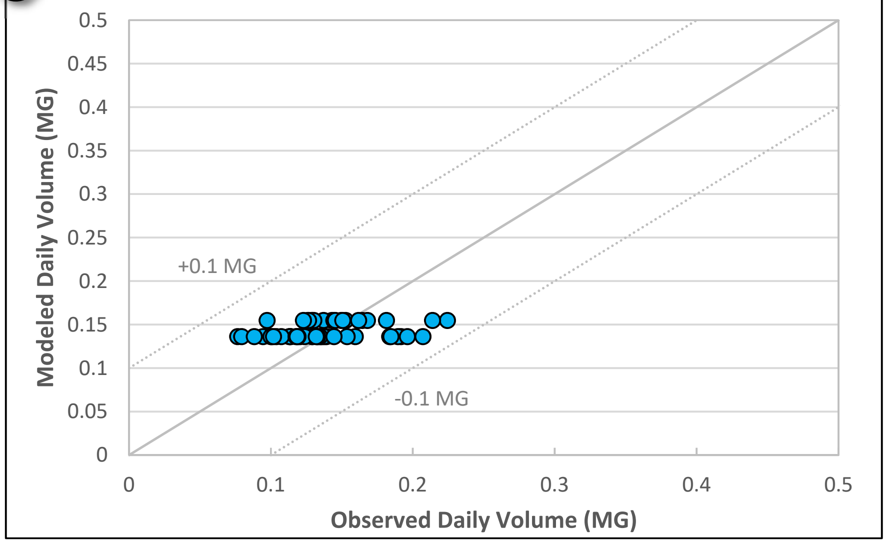

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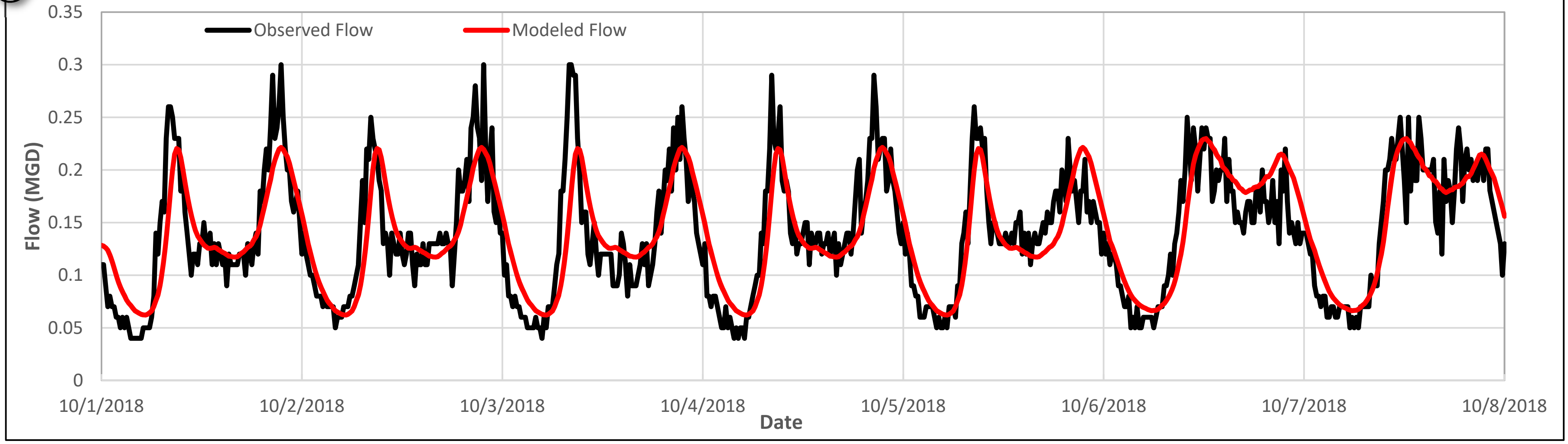


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK5**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

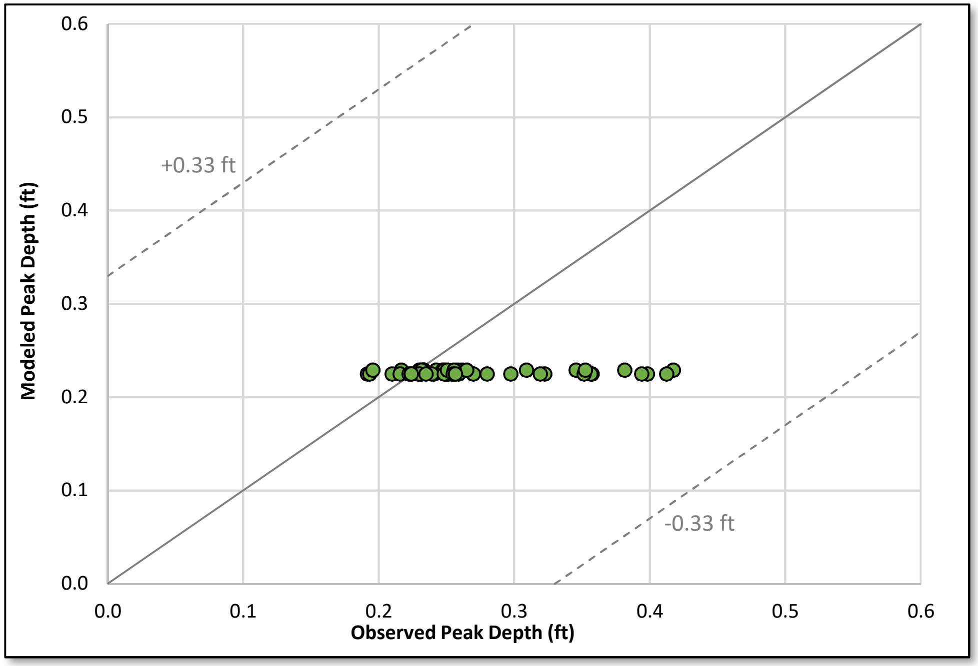
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

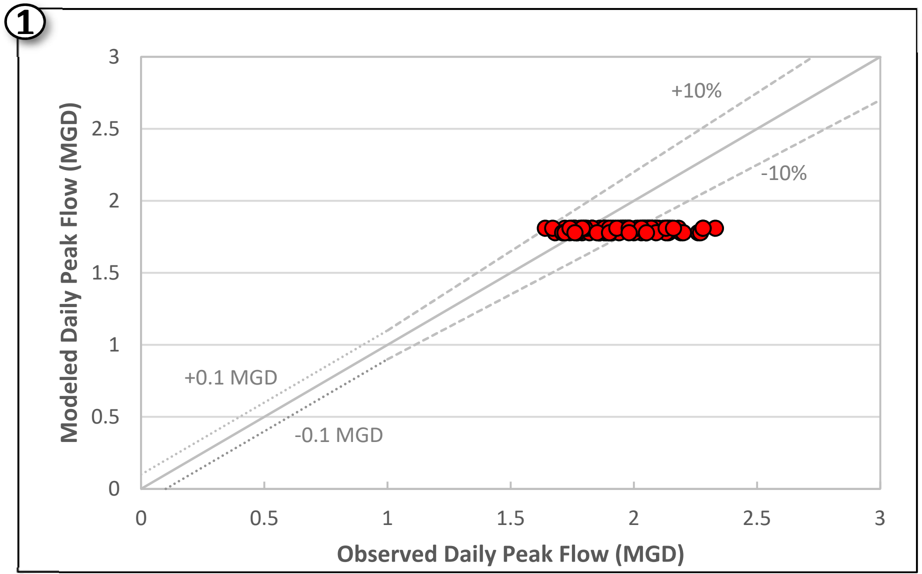
56



Flow Meter:

NFORK5

①



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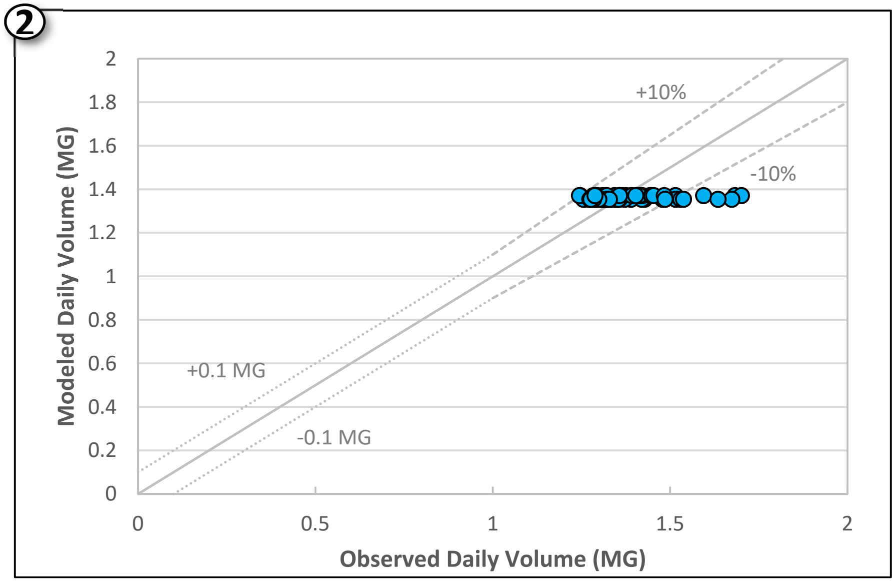

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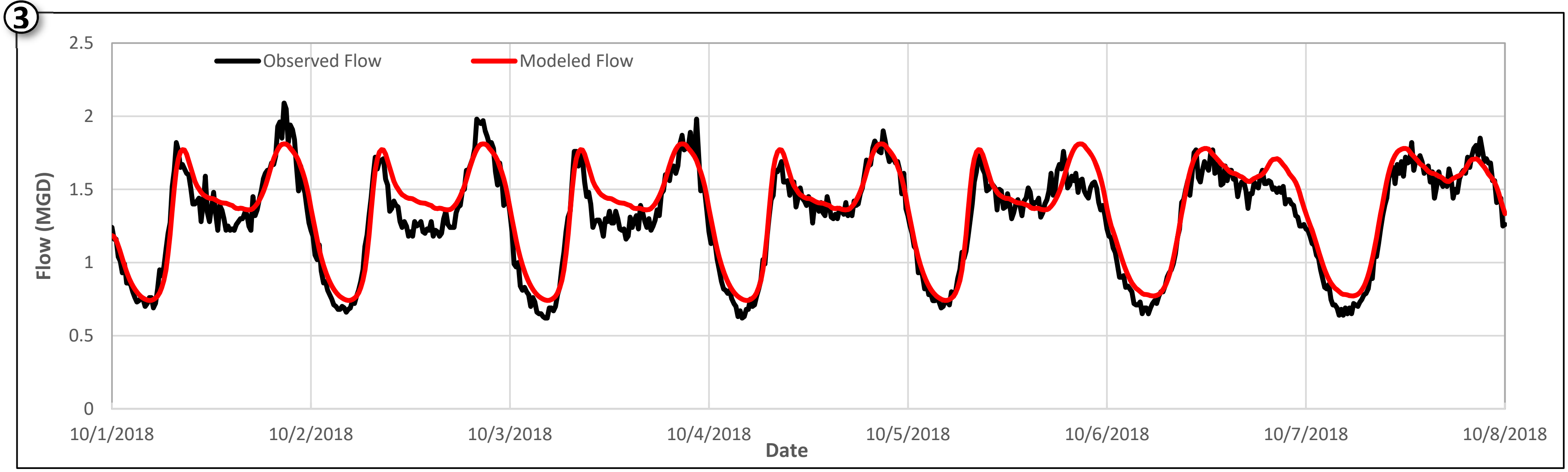


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK6**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

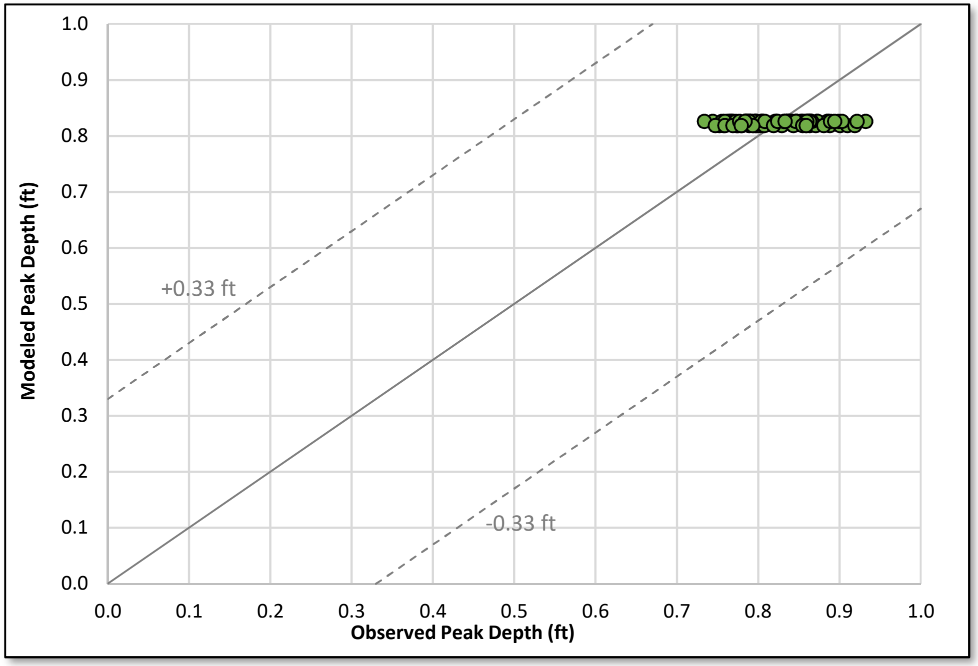
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

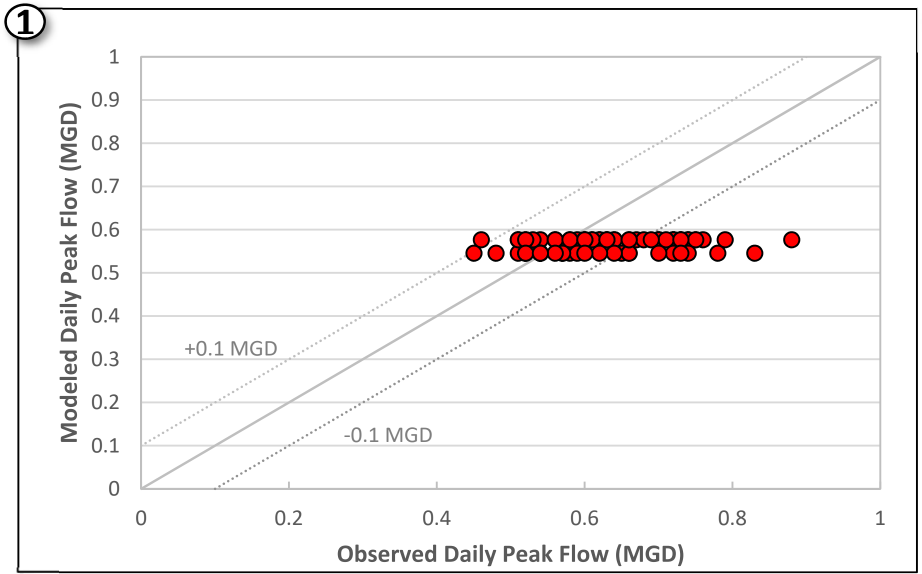
96



Flow Meter:

NFORK6

①



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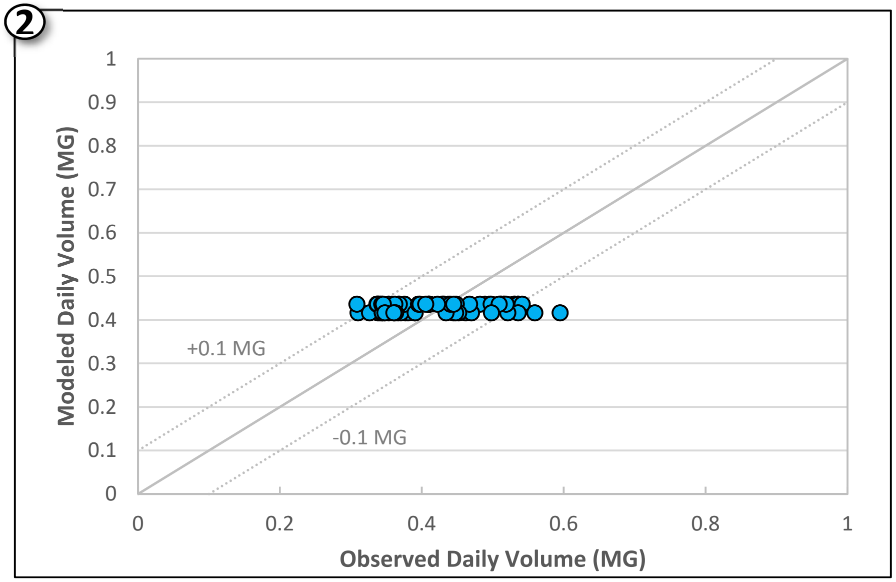

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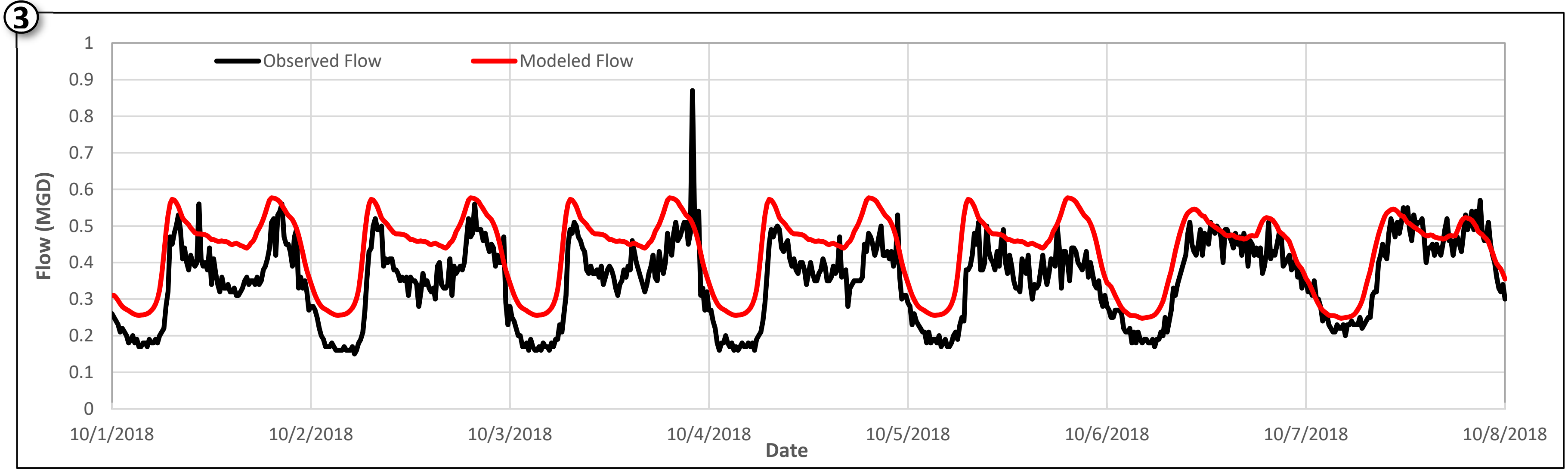


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK8**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

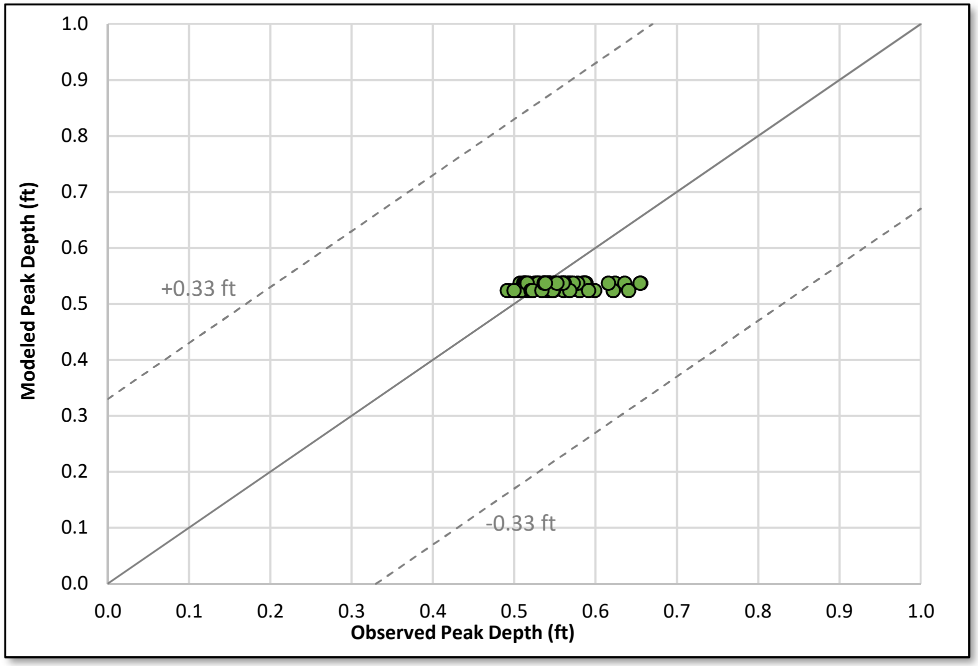
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

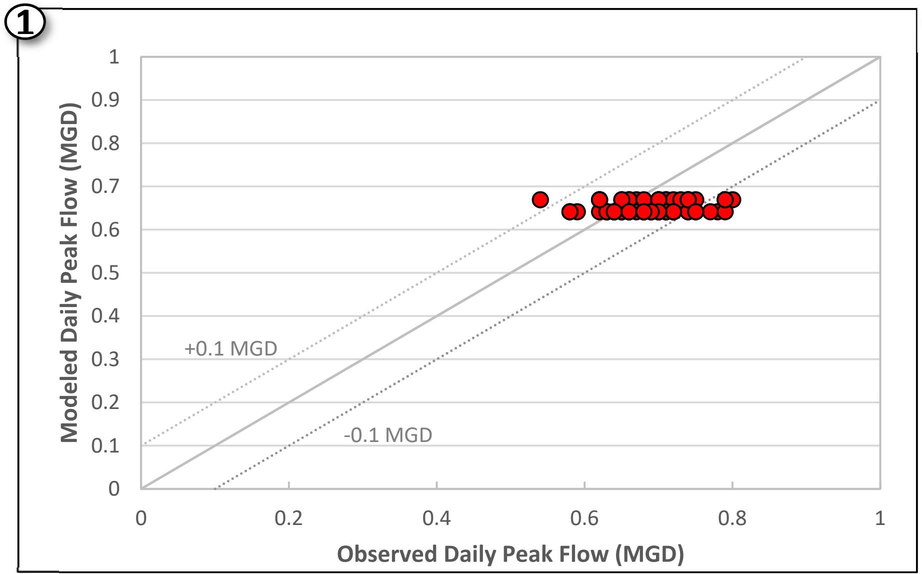
74



Flow Meter:

NFORK8

①



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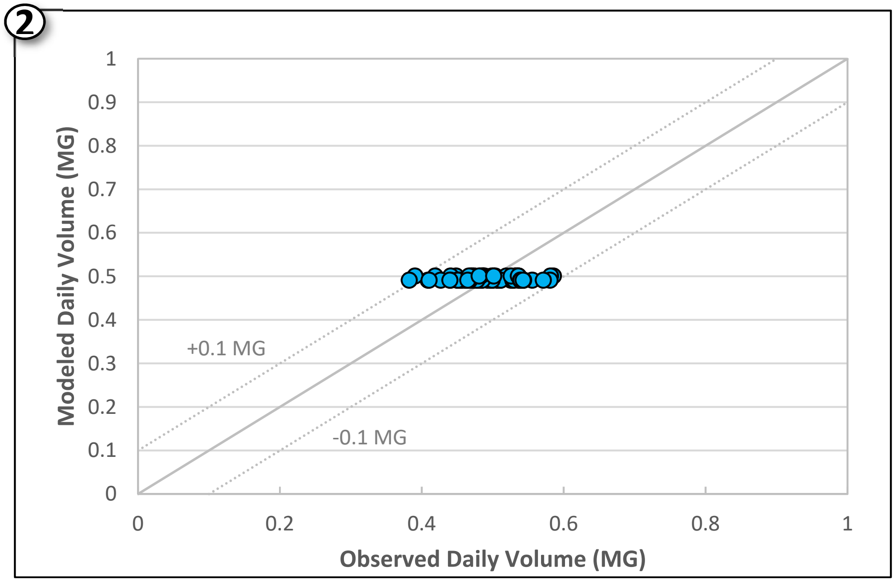

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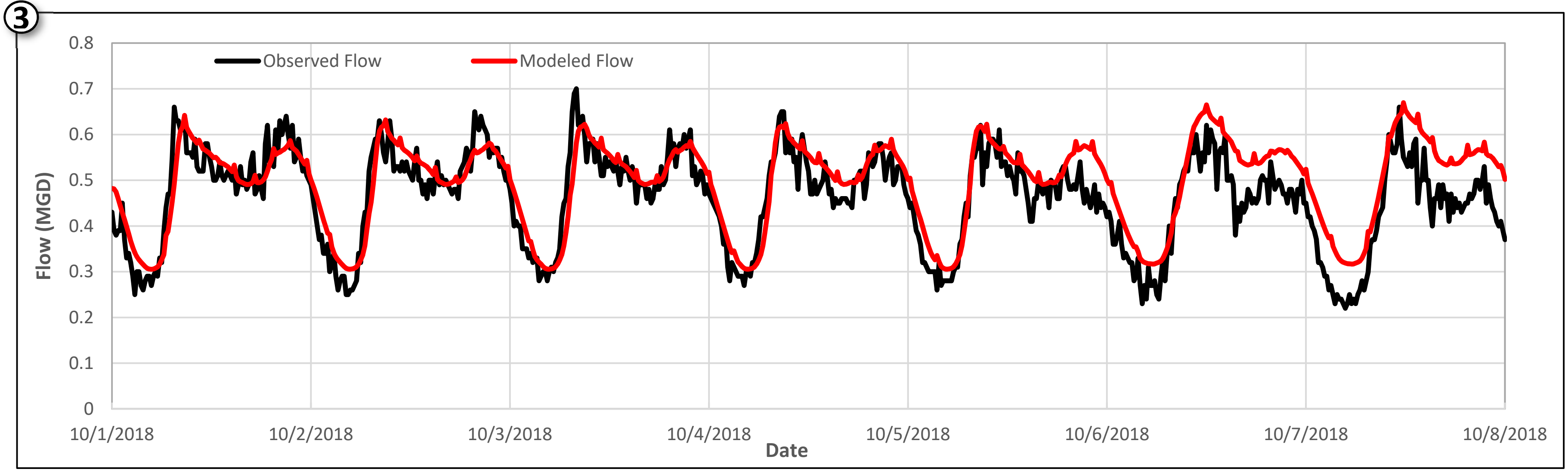


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK9**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

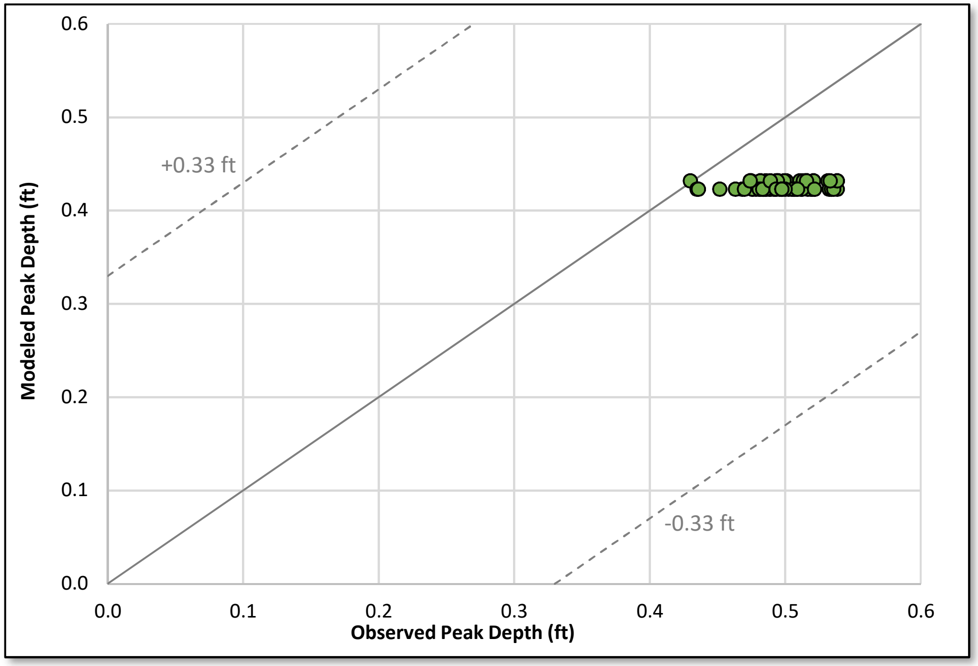
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

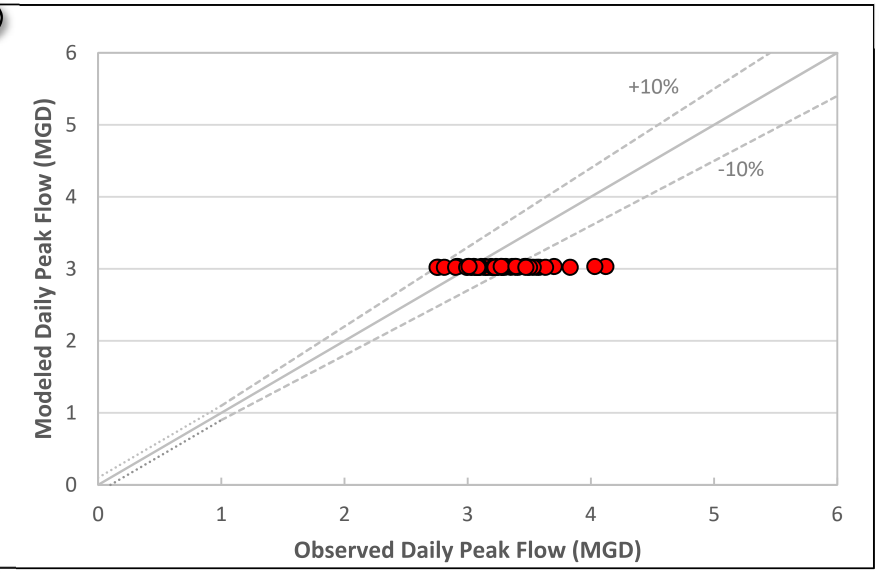
70



Flow Meter:

NFORK9

①



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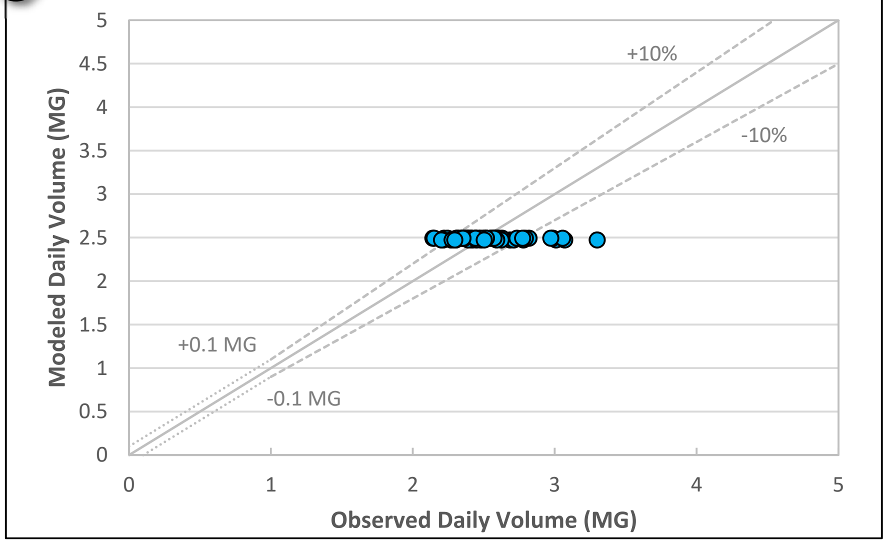

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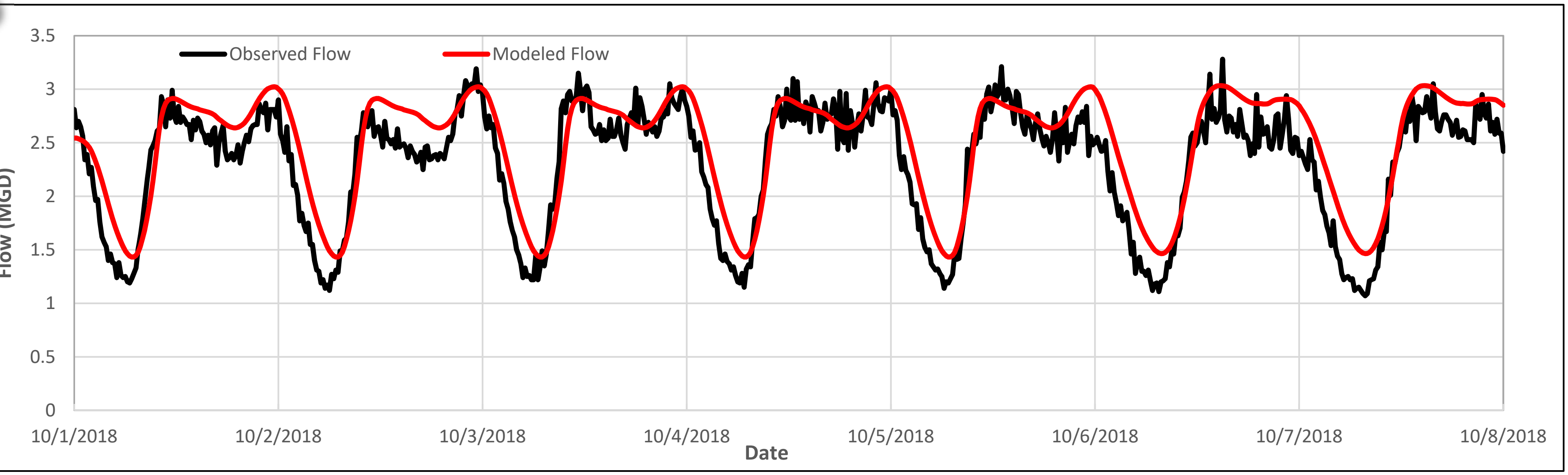


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK10**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

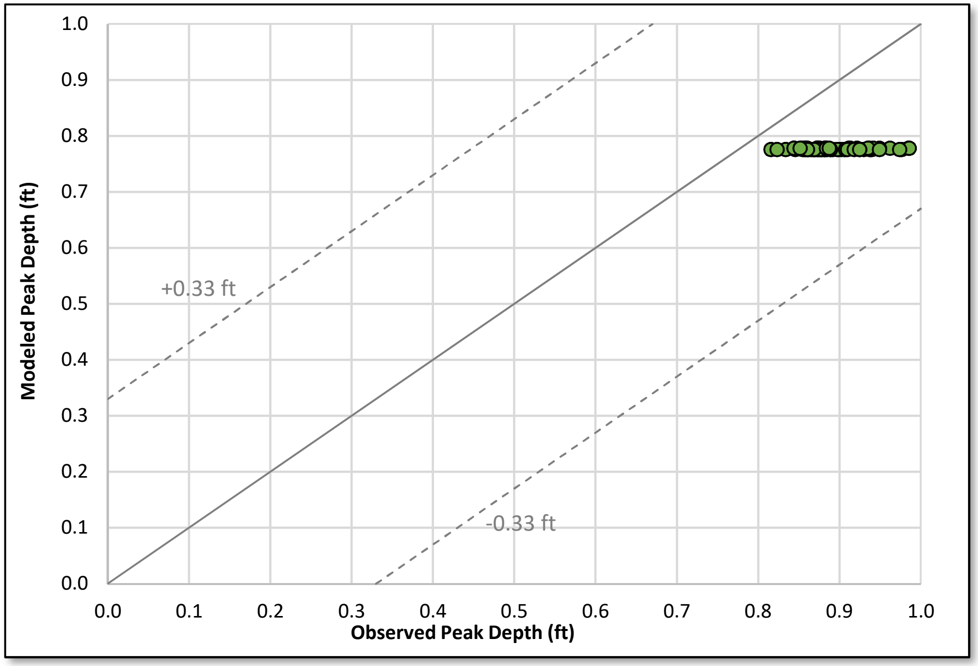
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

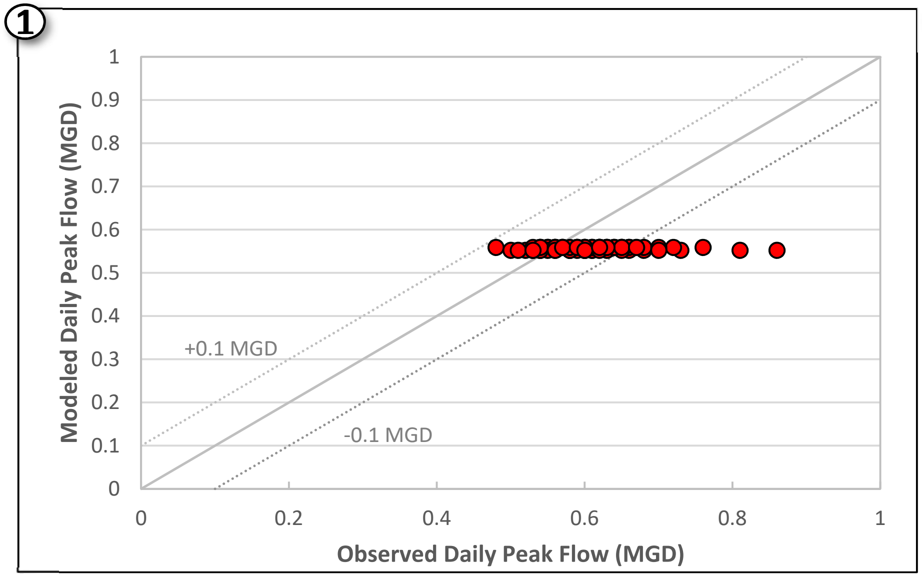
70



Flow Meter:

NFORK10

①



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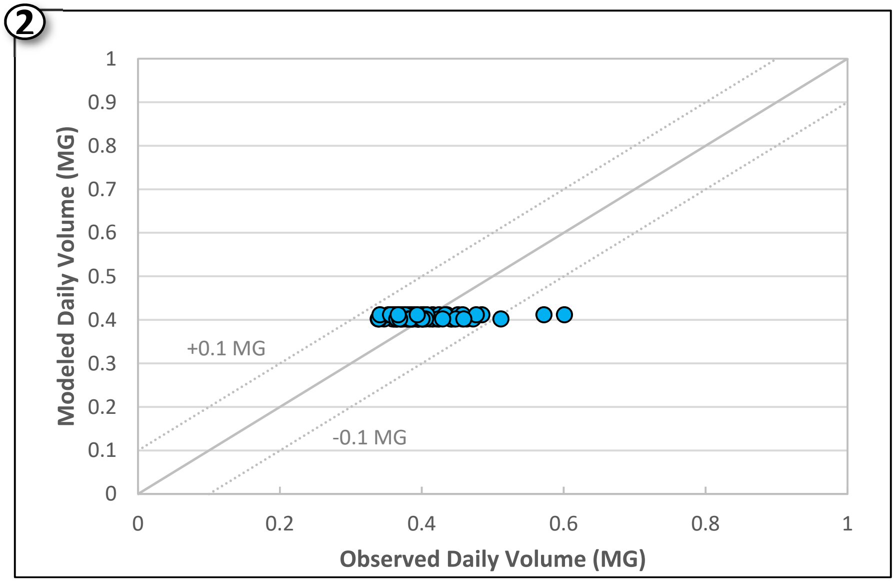

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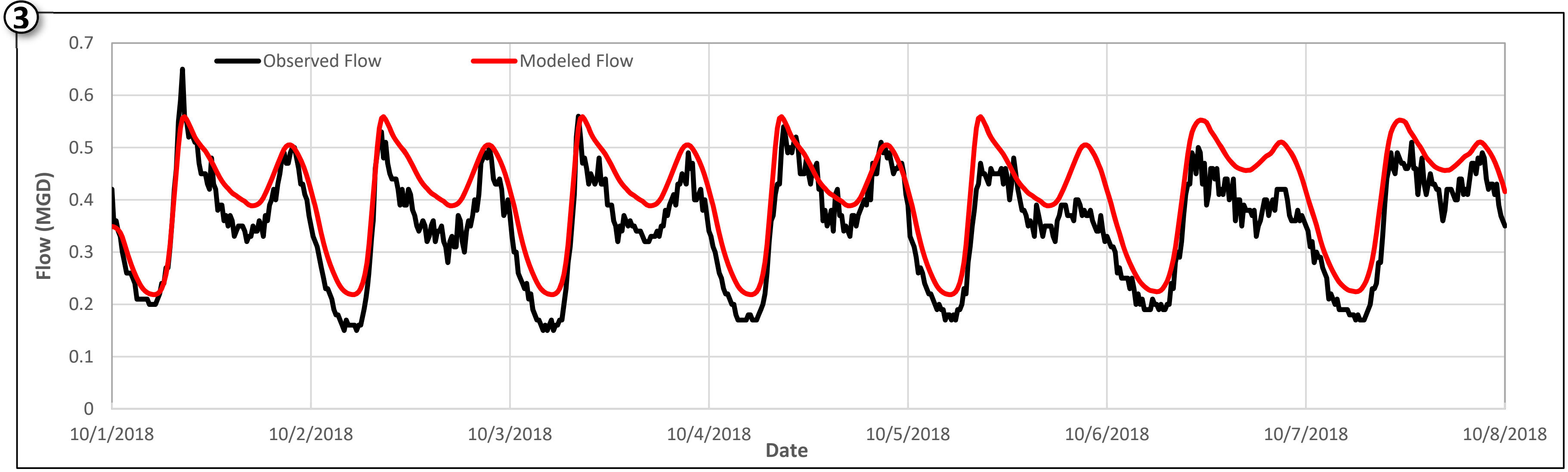


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK16**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

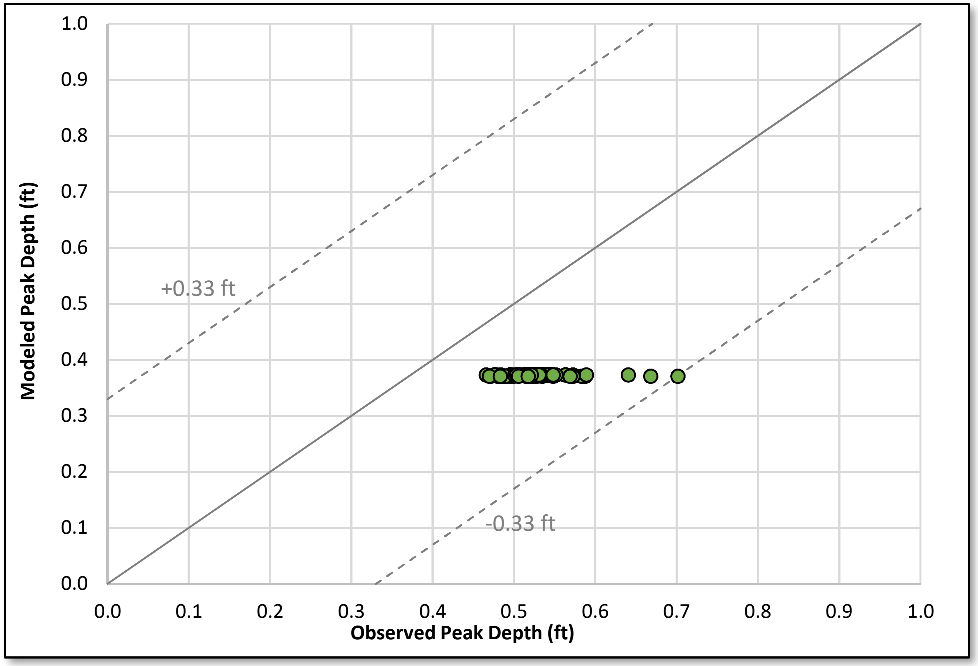
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

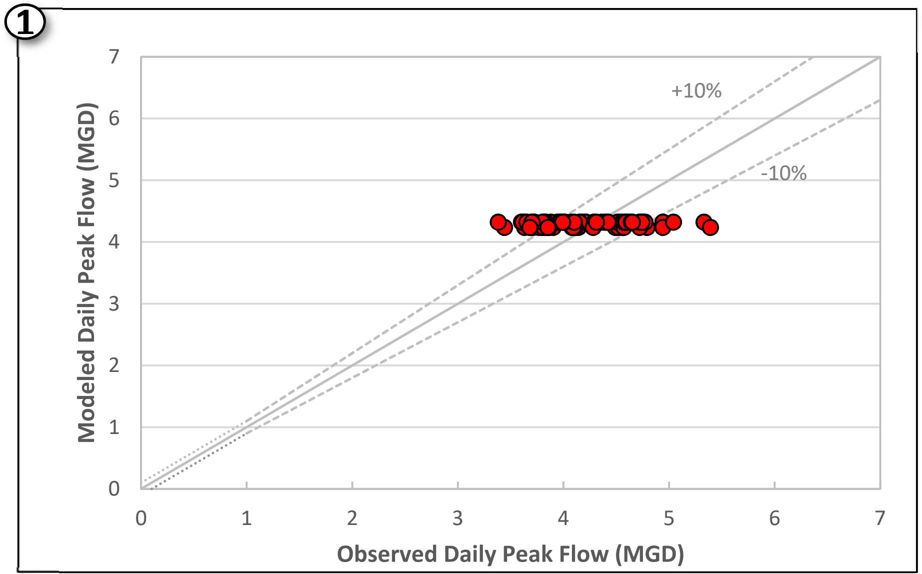
87



Flow Meter:

NFORK16

①



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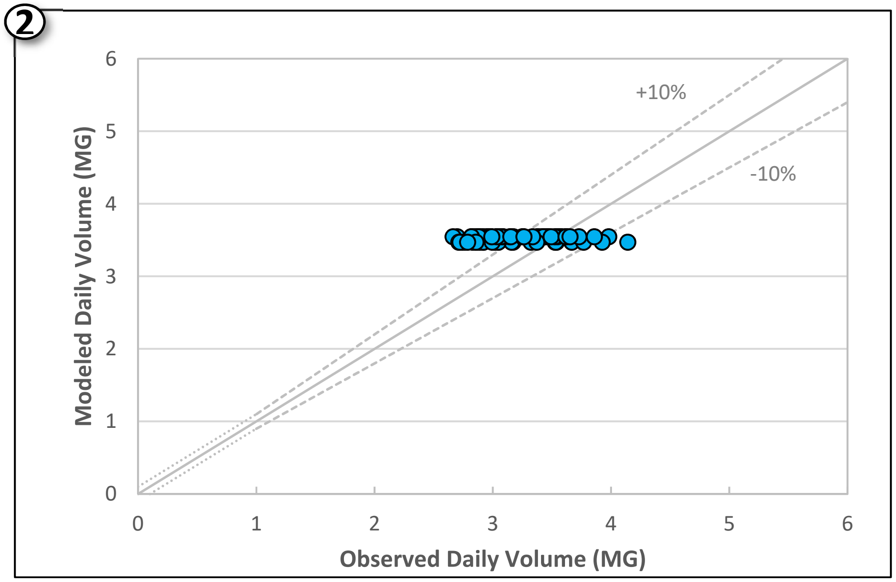

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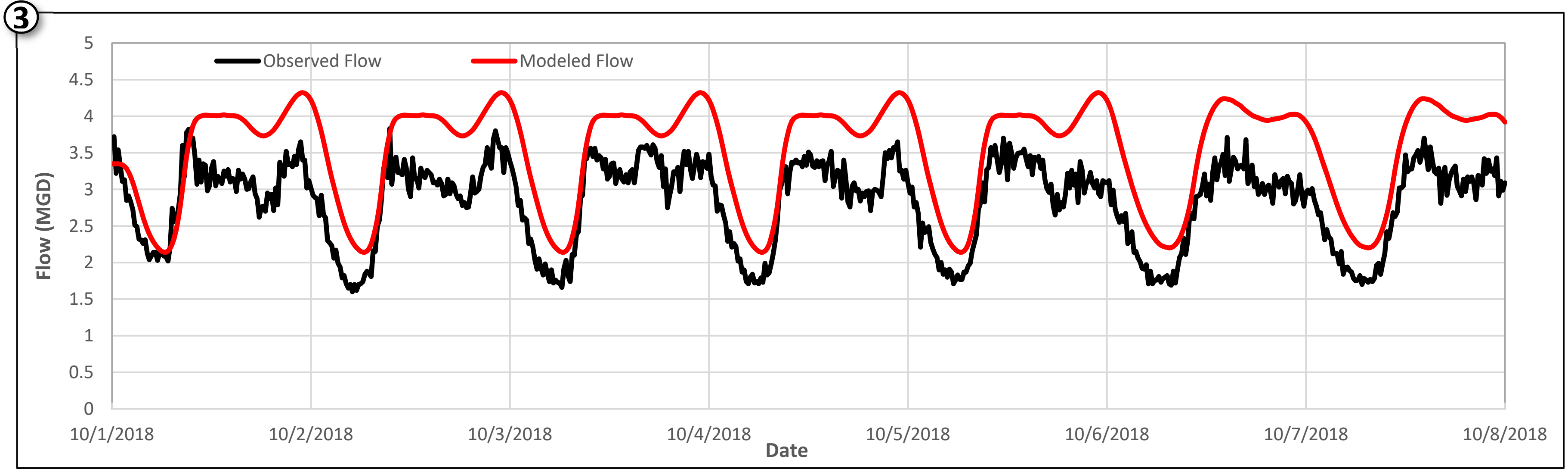


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK17**

Sewershed: **North Fork Peachtree Creek**

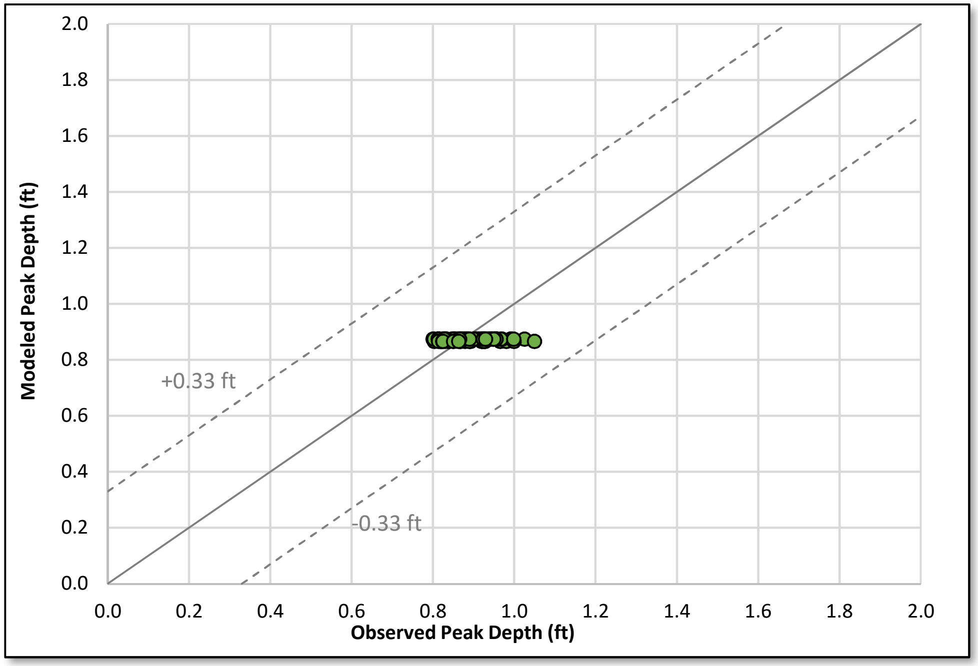
Sewer Basin: **Intergovernmental**

① Daily Volume

② Daily Peak Flow

③ One Week Time Series

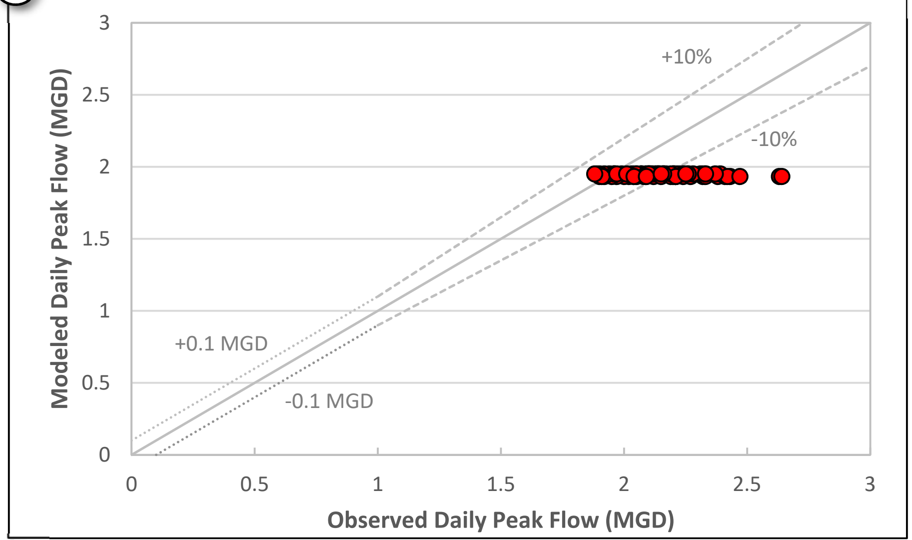
Total Compared Dry Days: **85**



Flow Meter:

NFORK17

①



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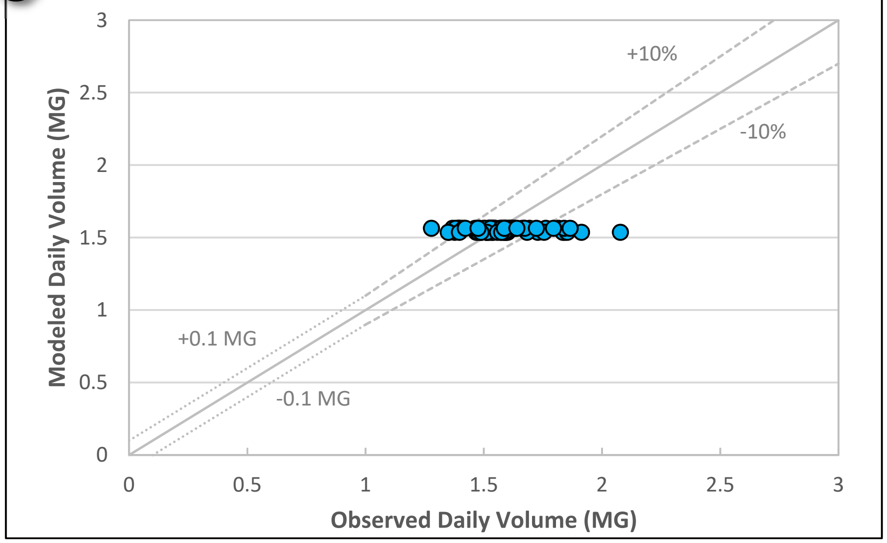

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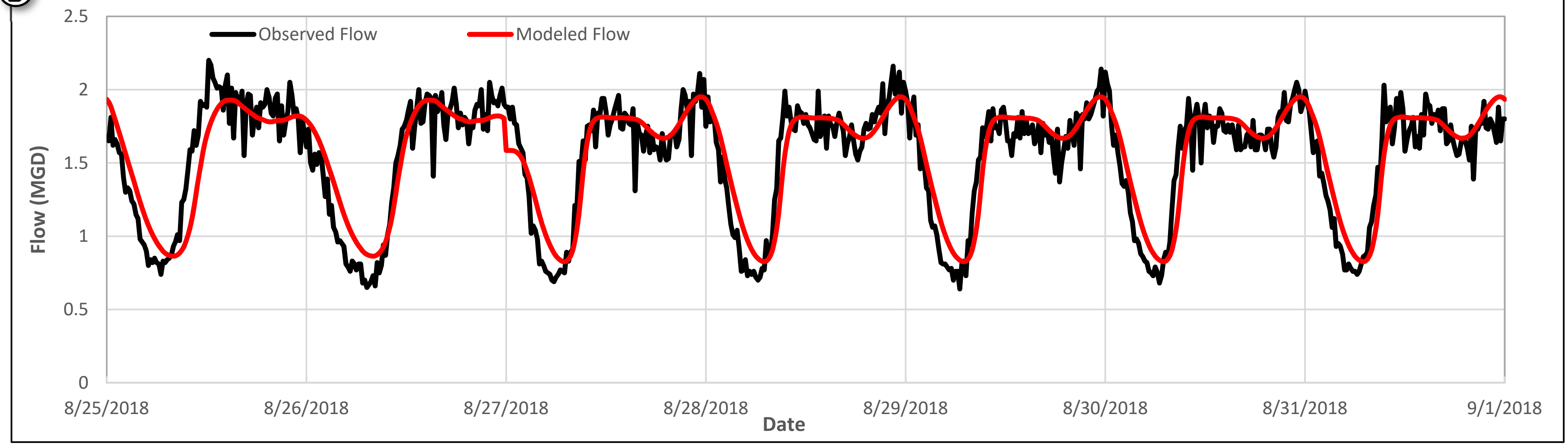


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK18**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

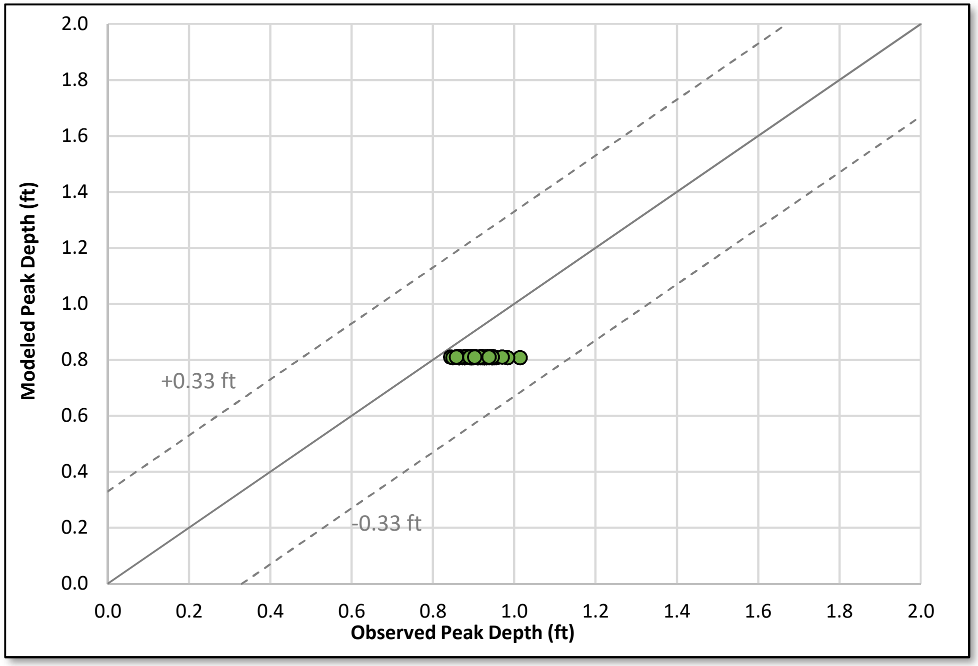
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

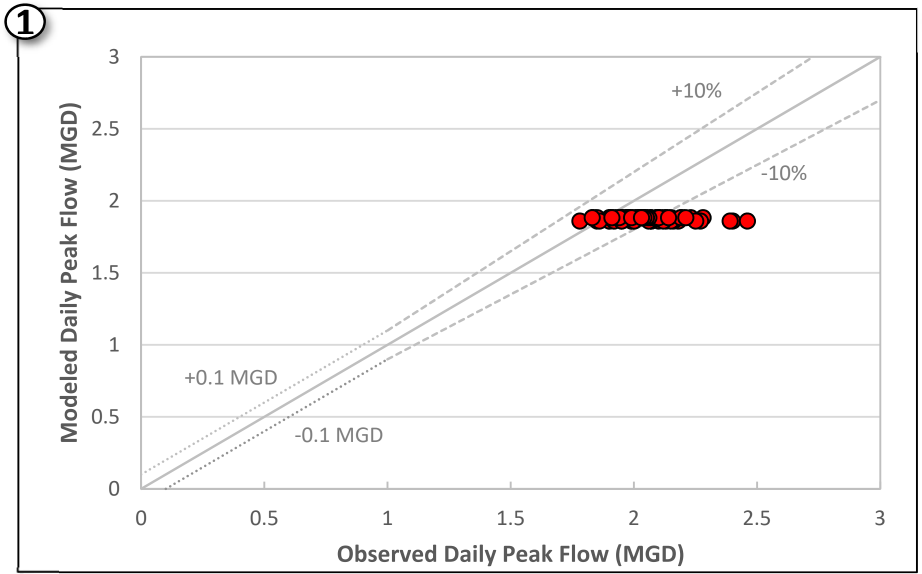
Total Compared Dry Days:

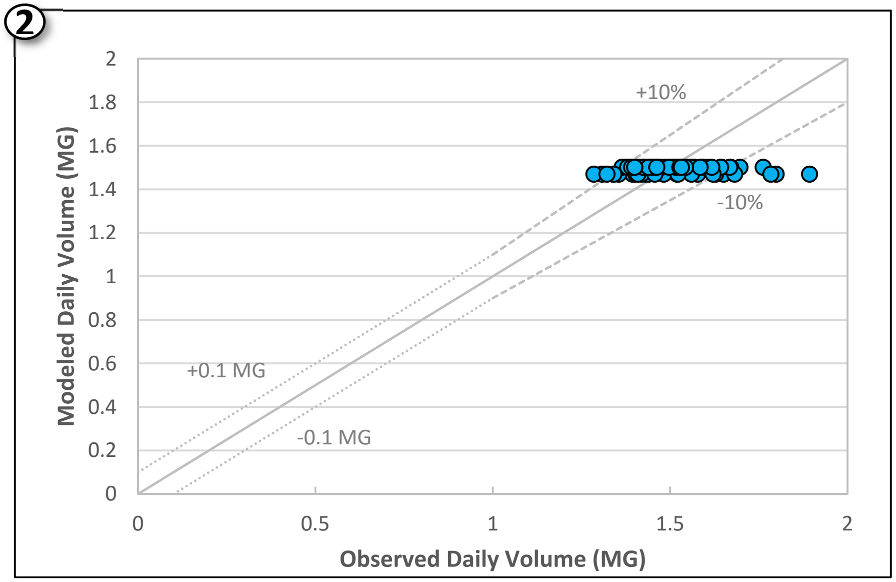
87

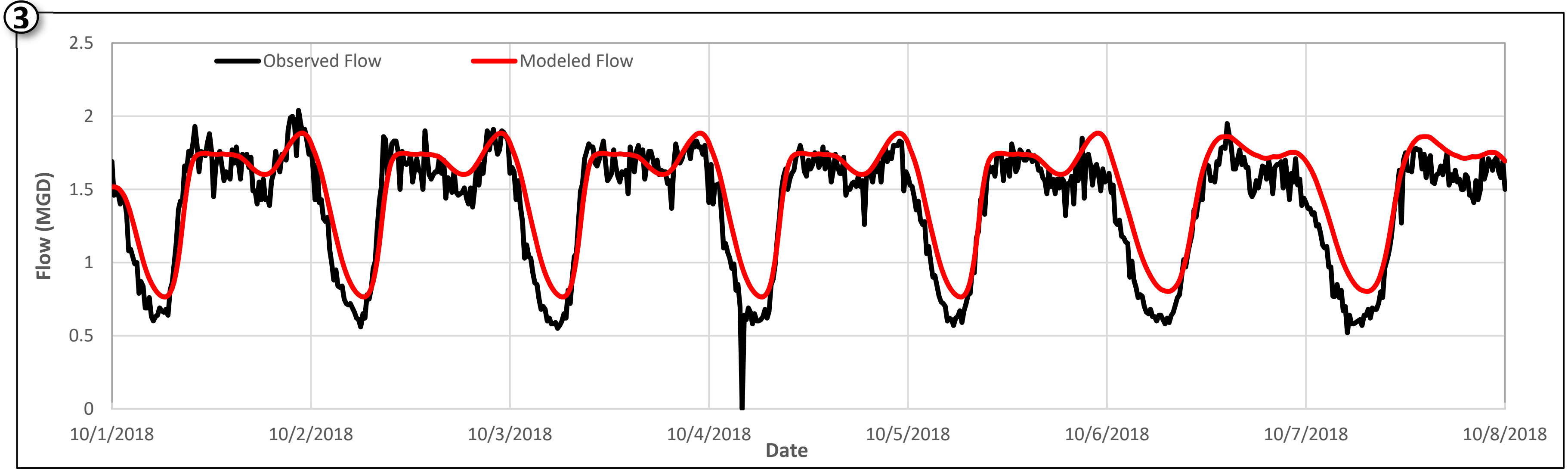


Flow Meter:

NFORK18







DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK20**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

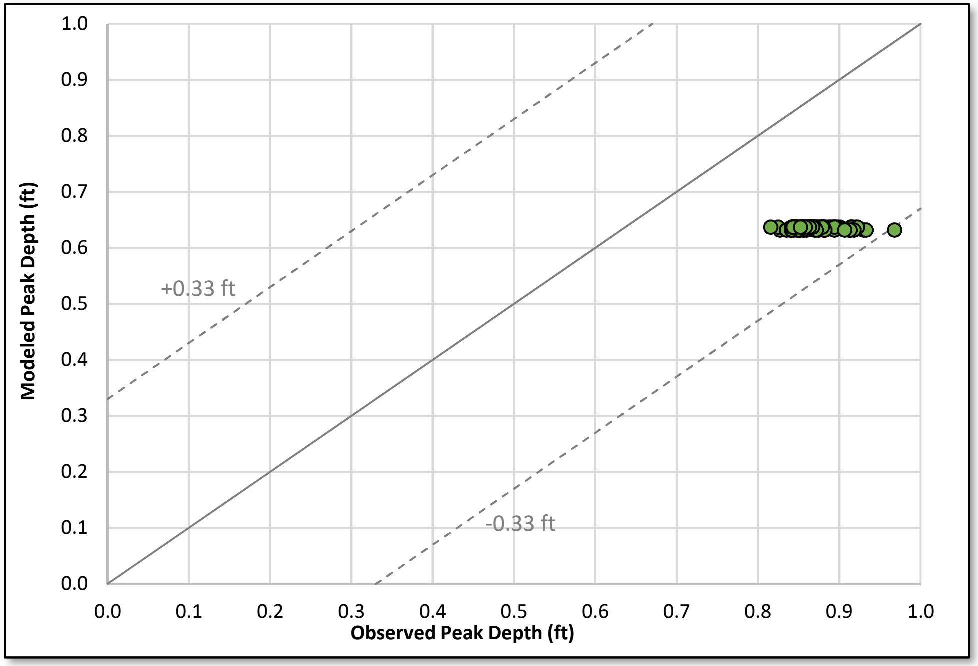
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

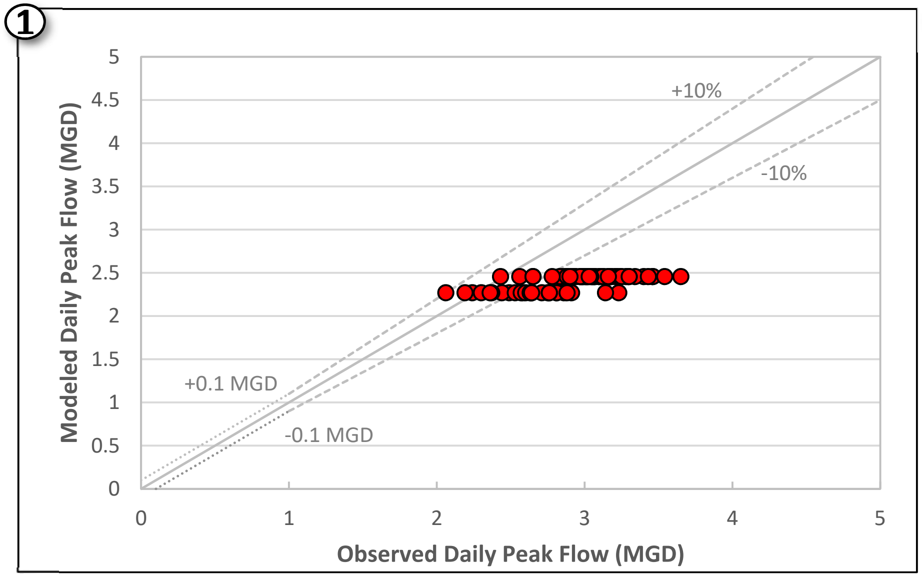
89



Flow Meter:

NFORK20

①



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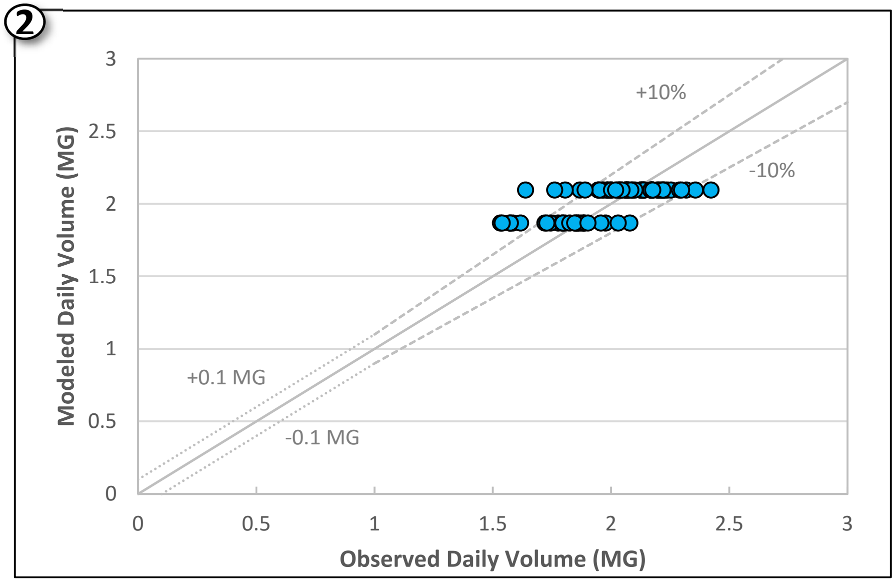

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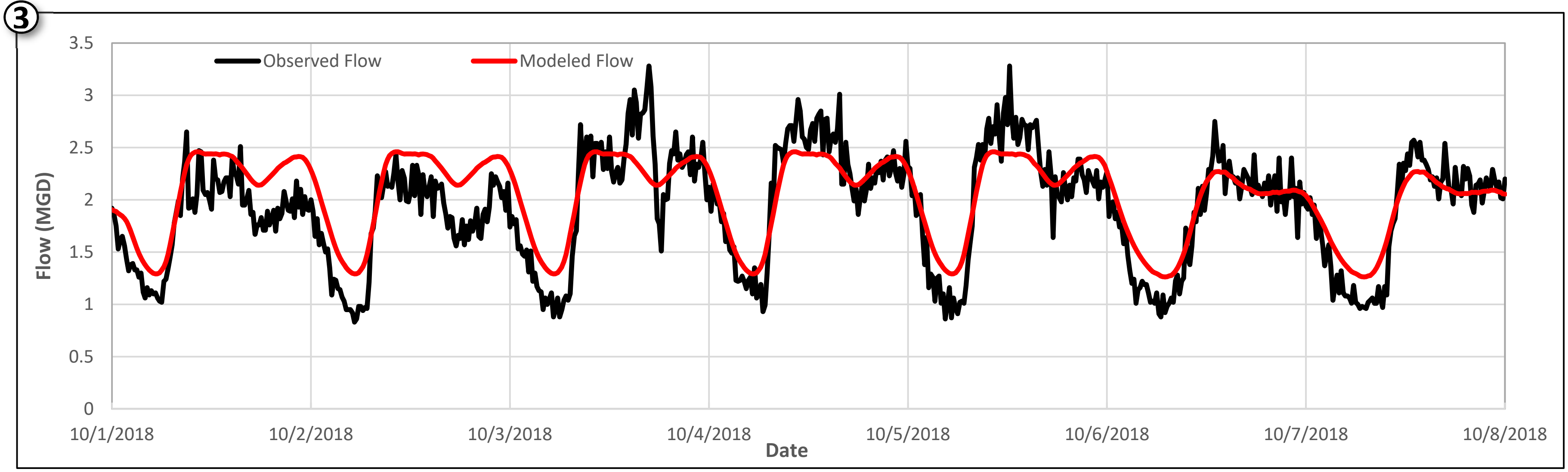


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK23**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

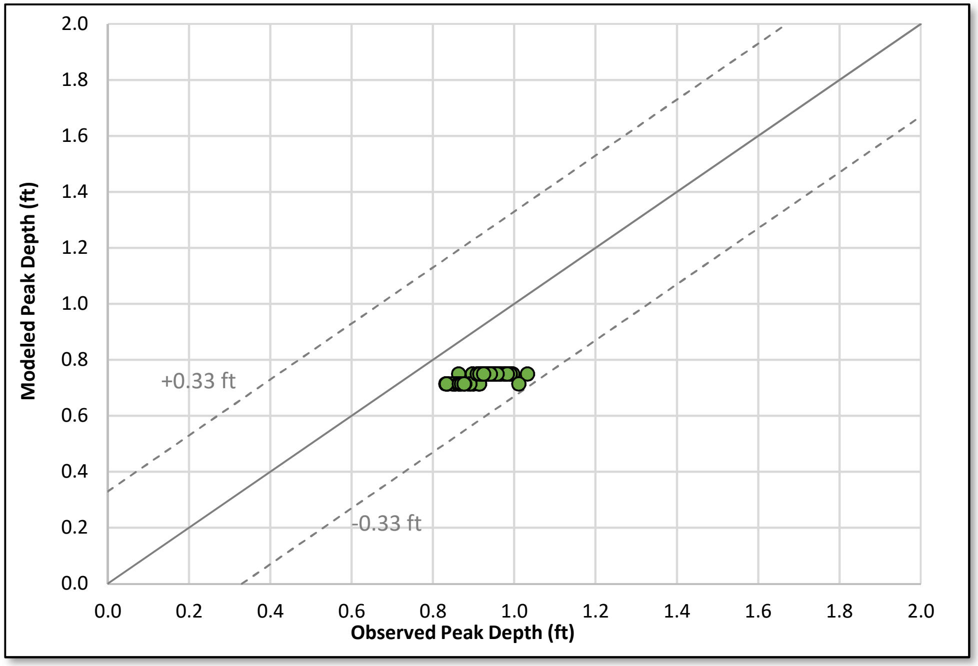
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

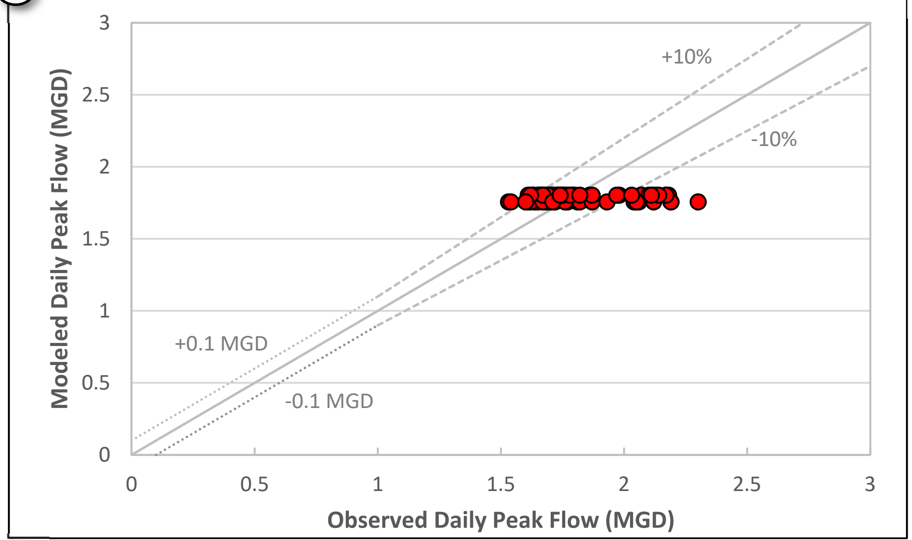
90



Flow Meter:

NFORK23

①



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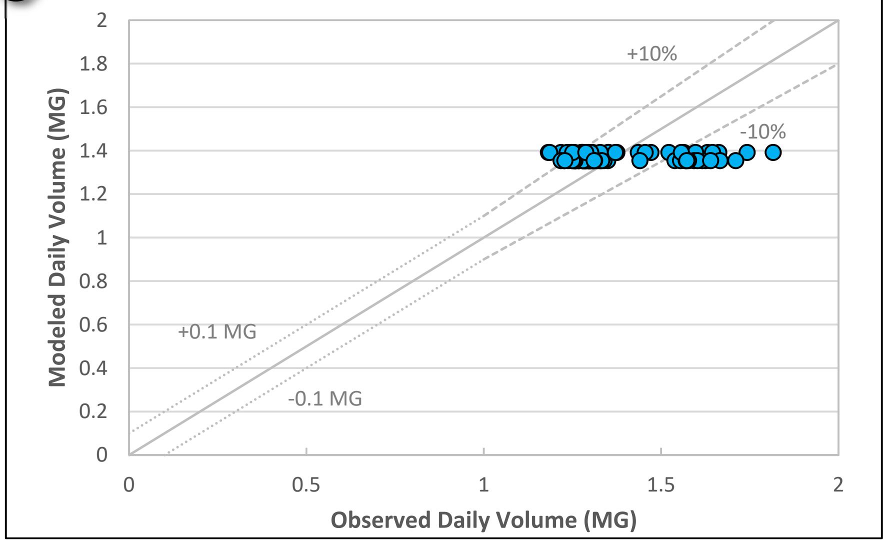

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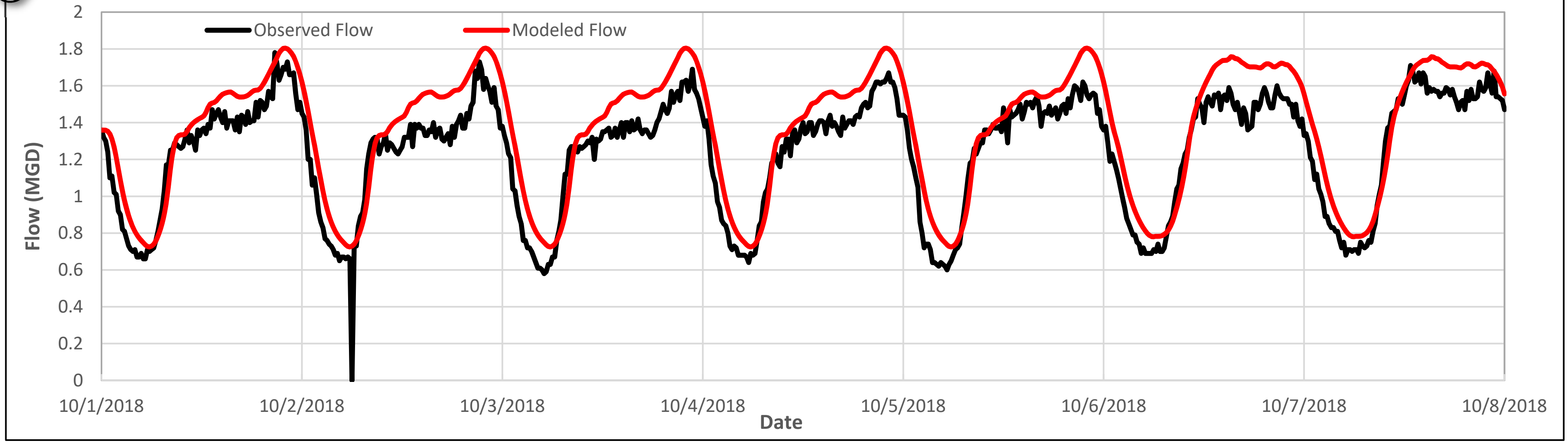


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK24**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

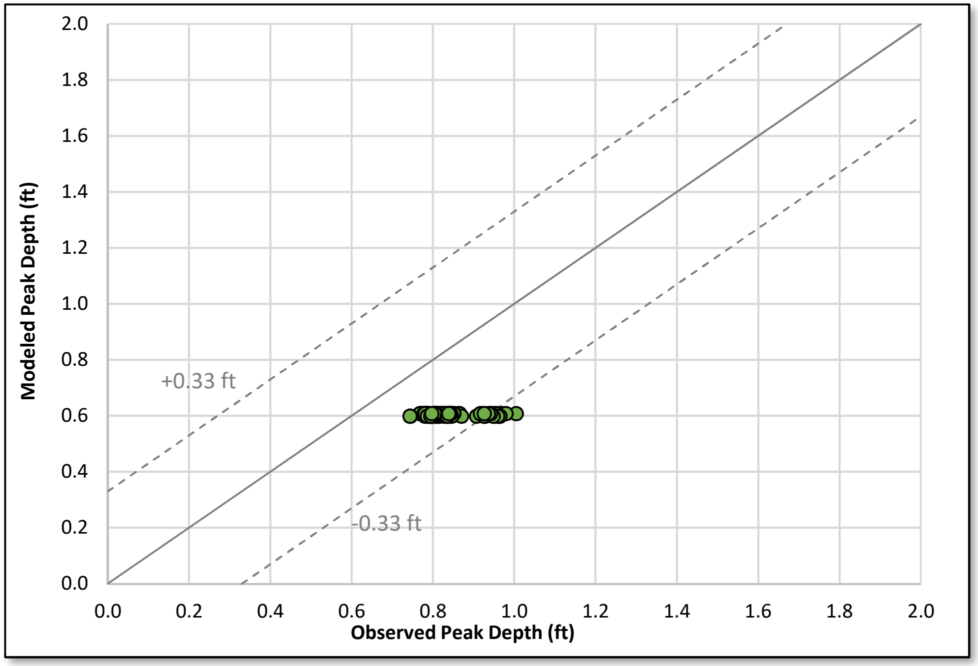
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

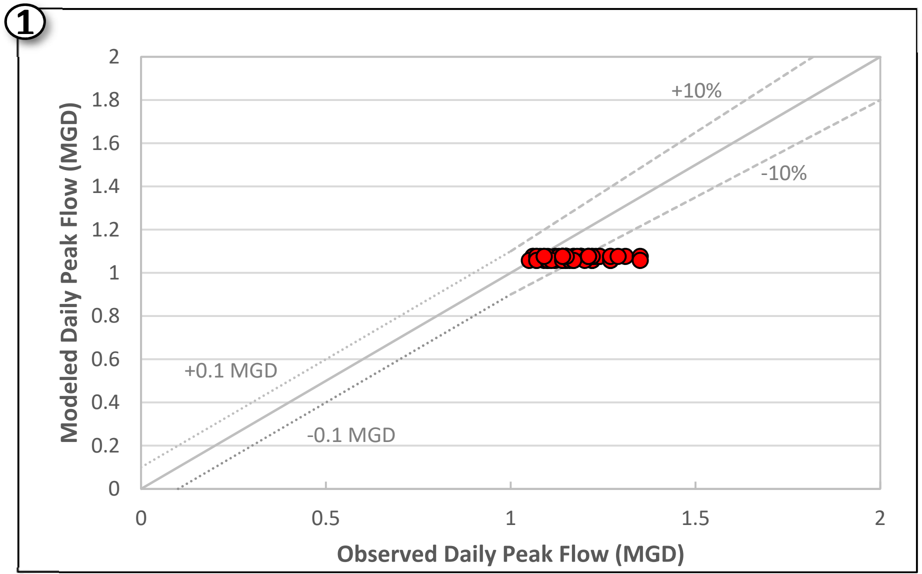
90



Flow Meter:

NFORK24

①



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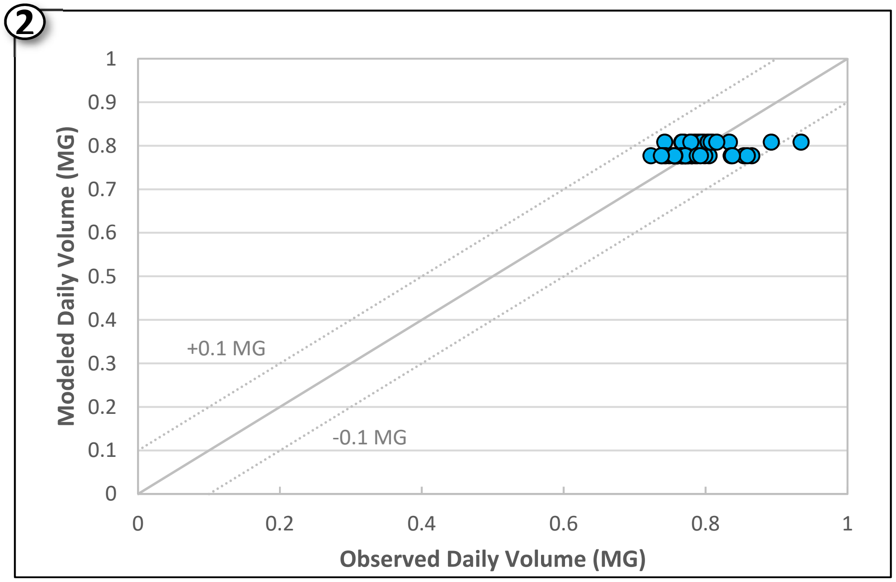

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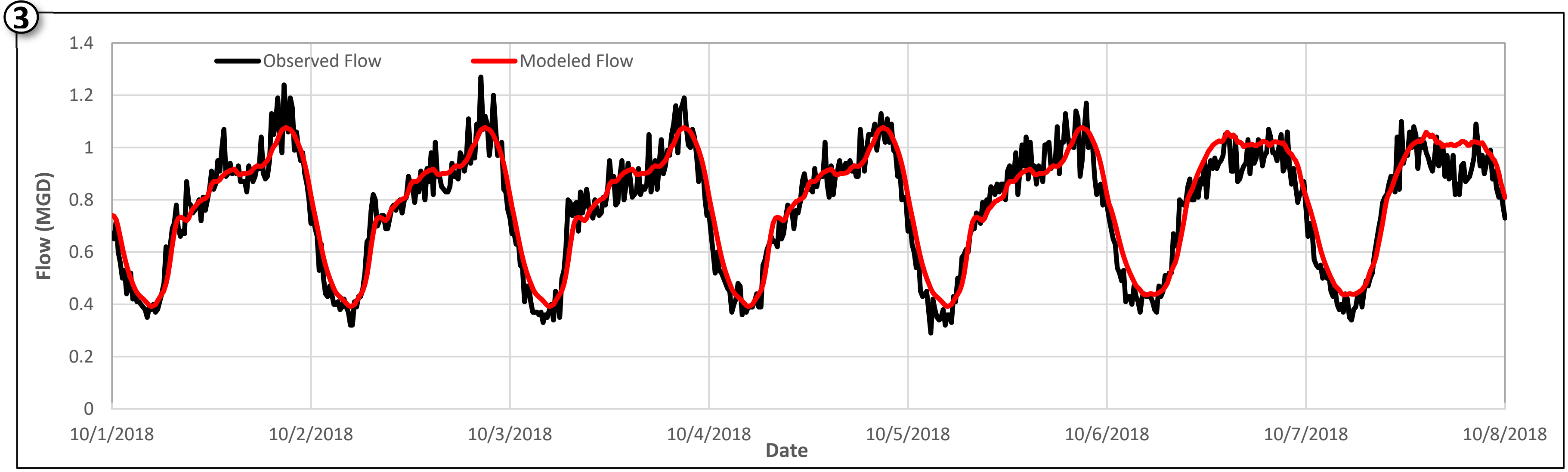


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK26**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

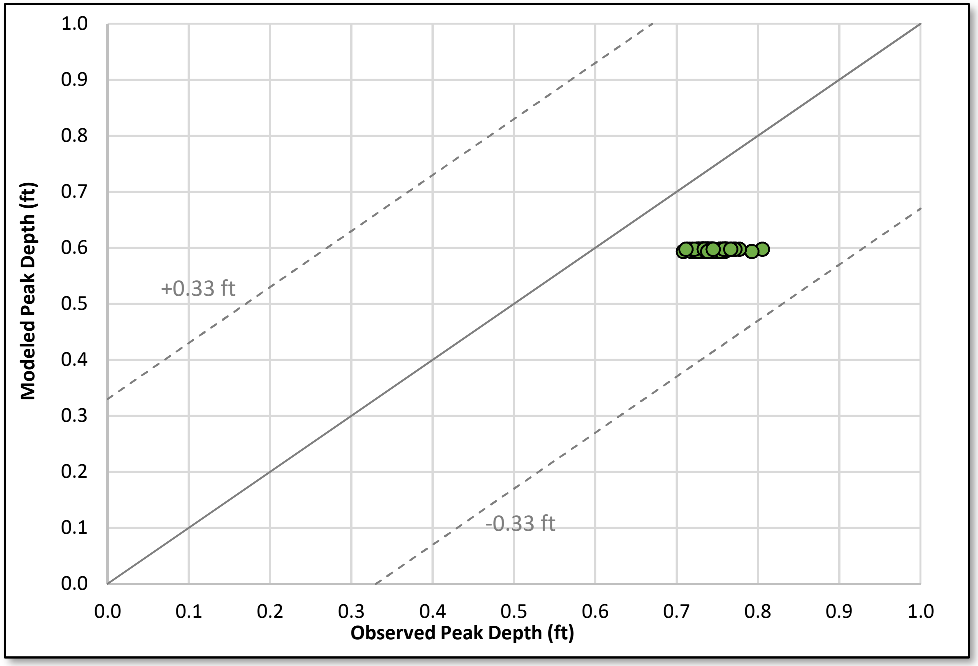
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

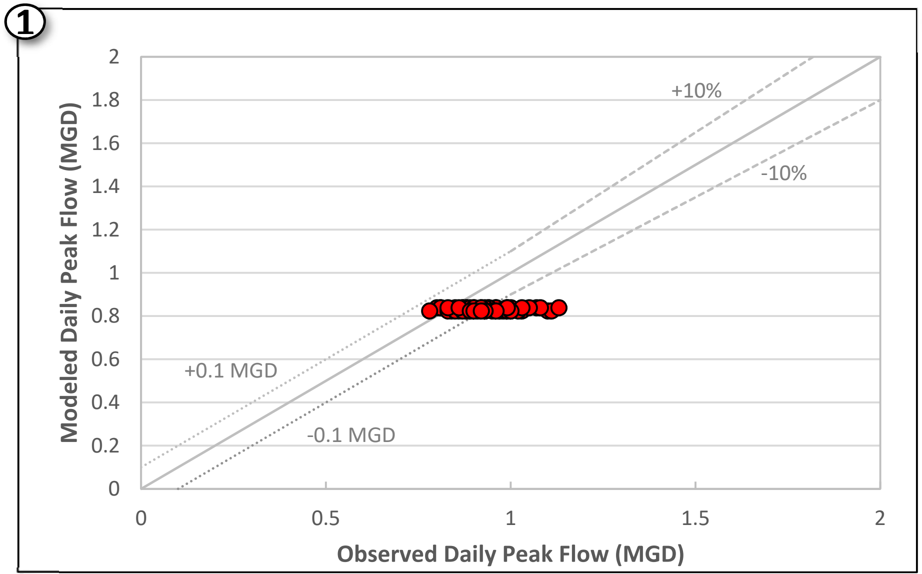
65



Flow Meter:

NFORK26

①



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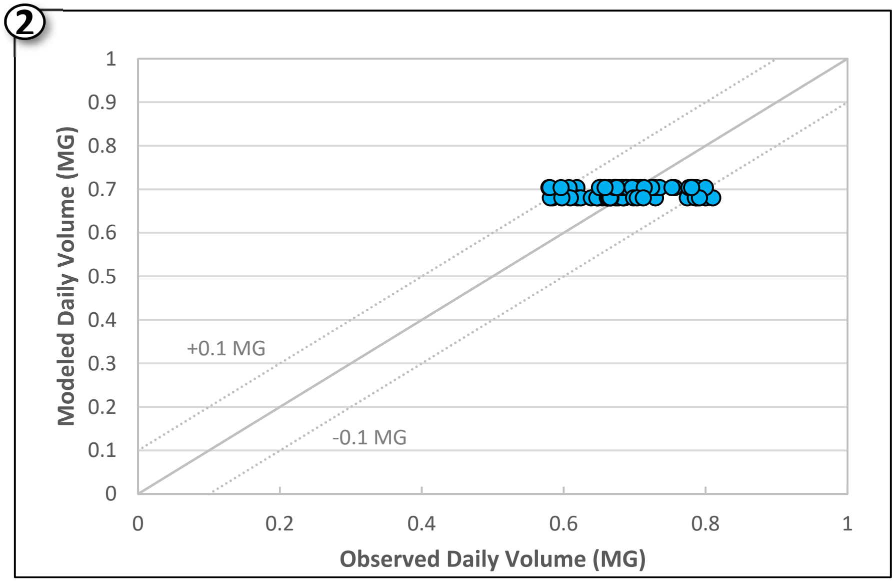

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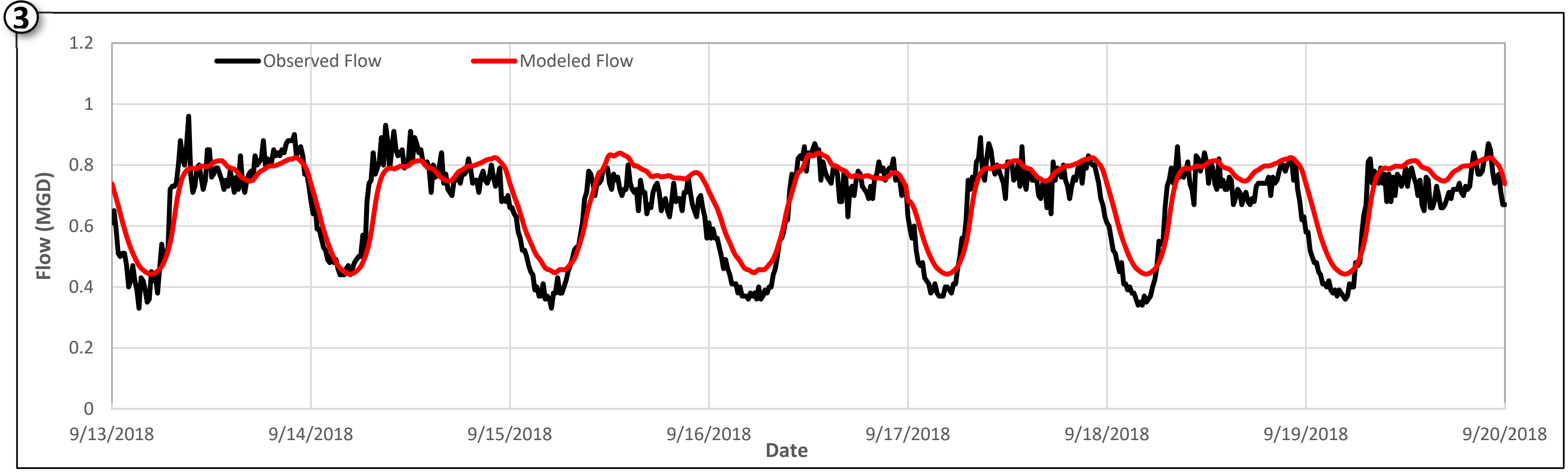


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK28**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

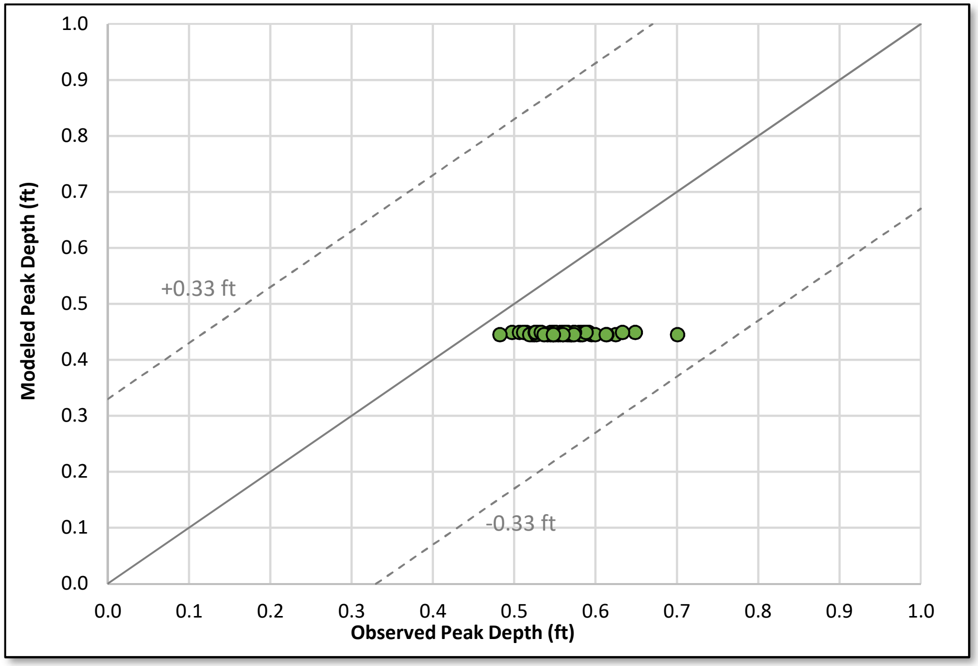
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

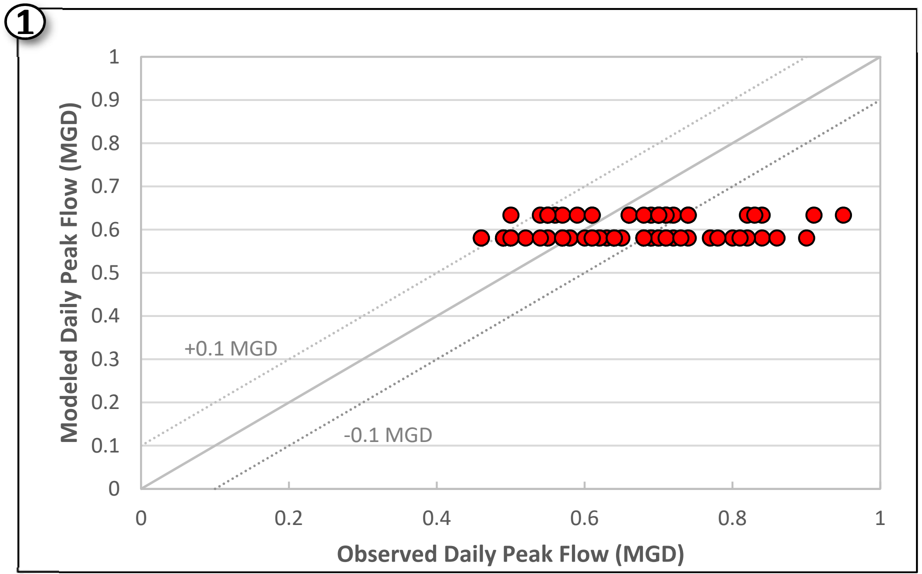
76



Flow Meter:

NFORK28

①



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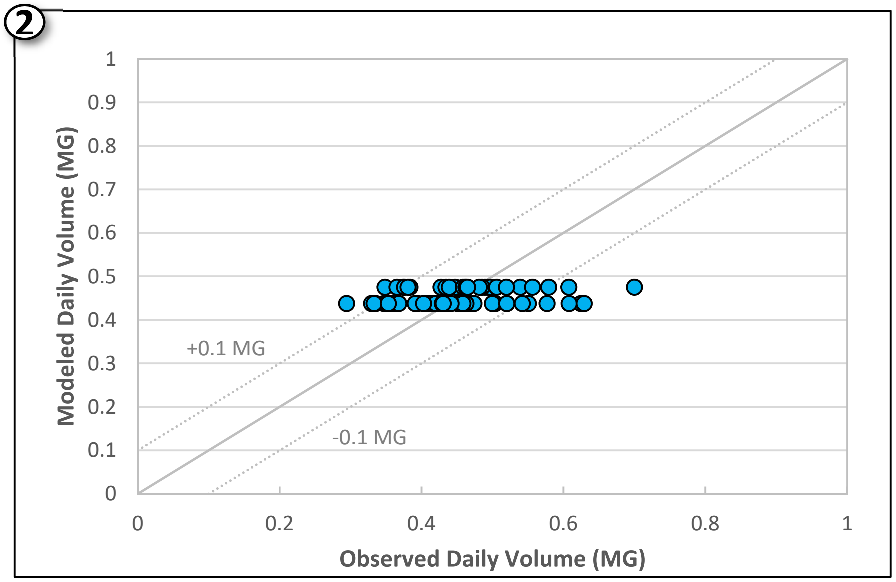

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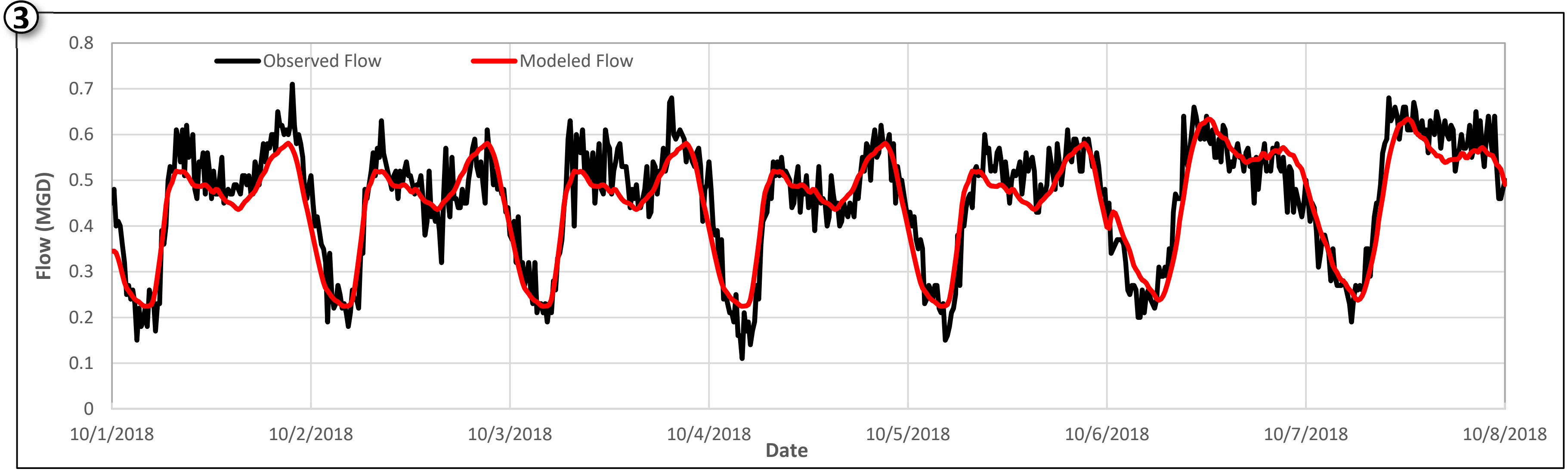


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK29**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

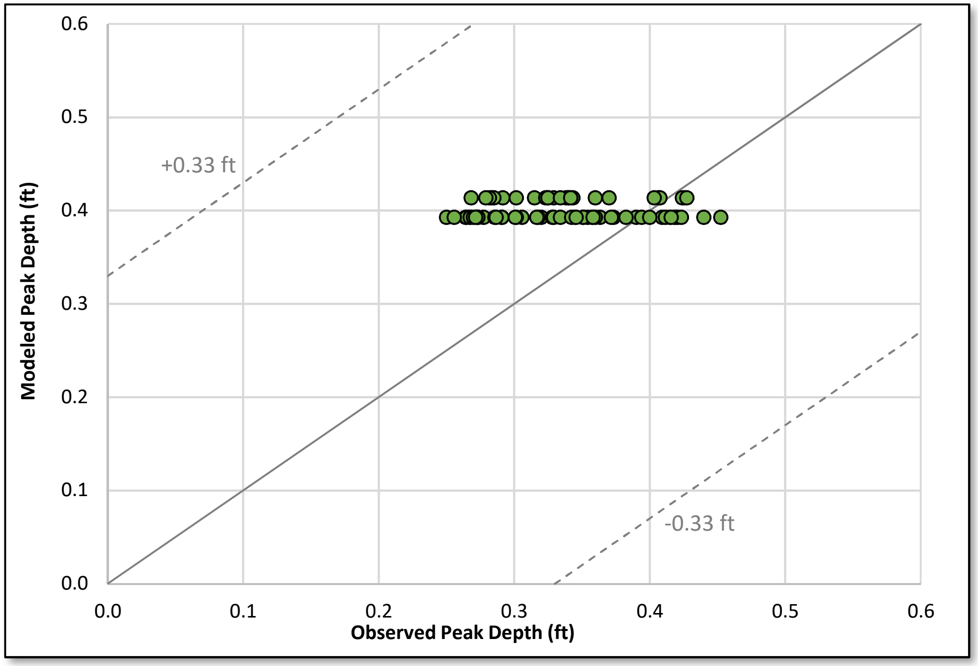
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

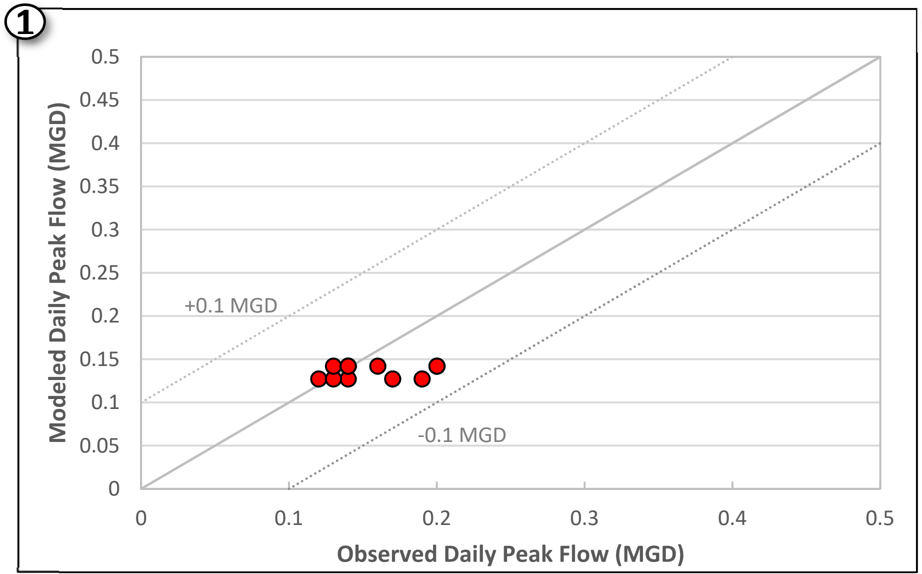
77



Flow Meter:

NFORK29

①



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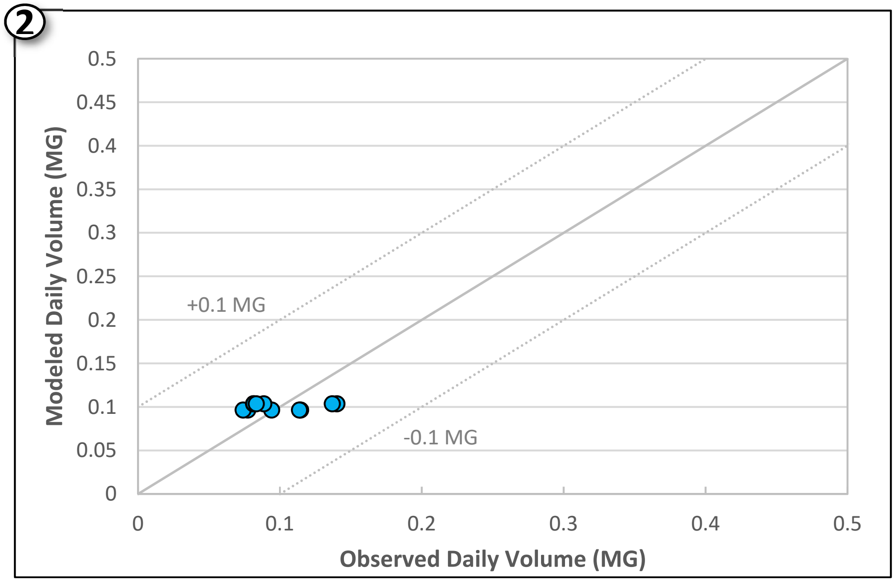

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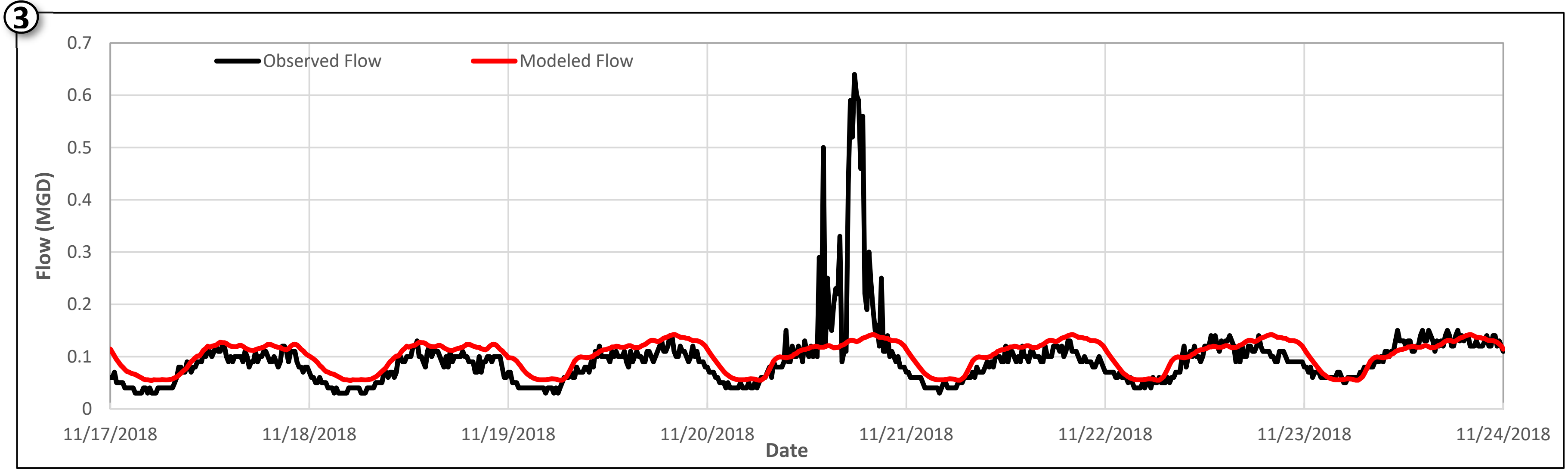


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK30**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

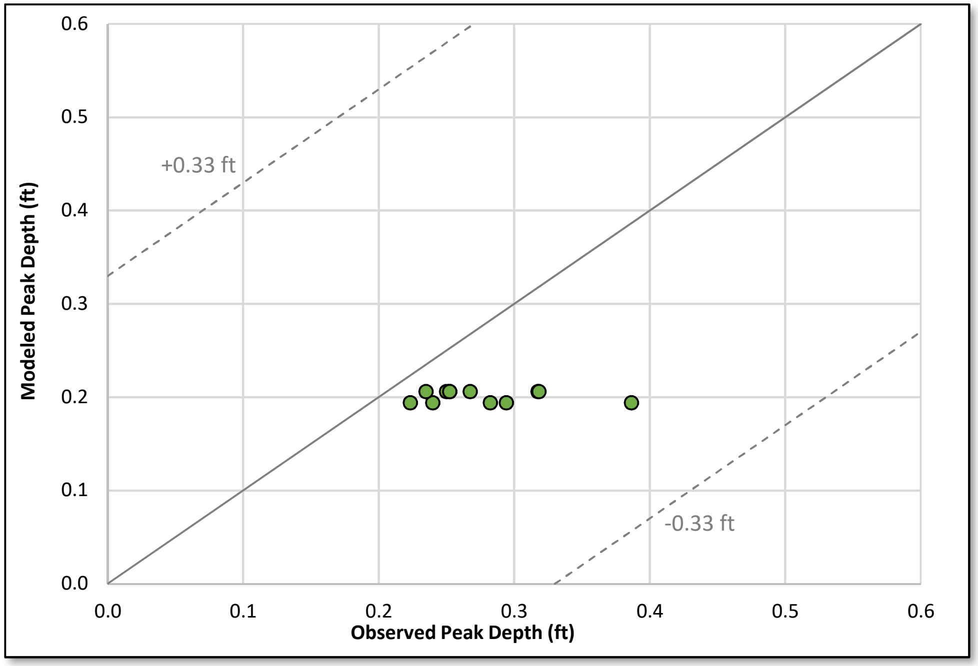
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

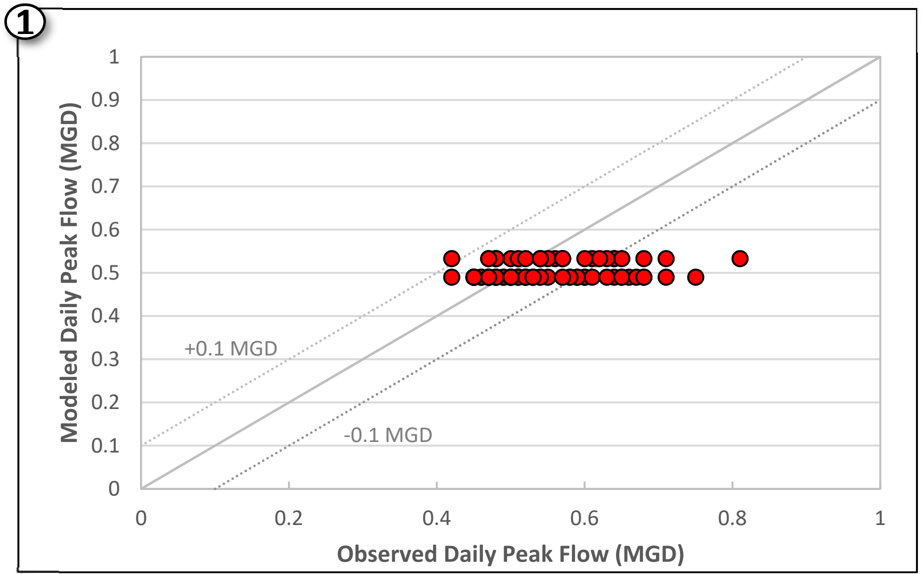
12



Flow Meter:

NFORK30

①



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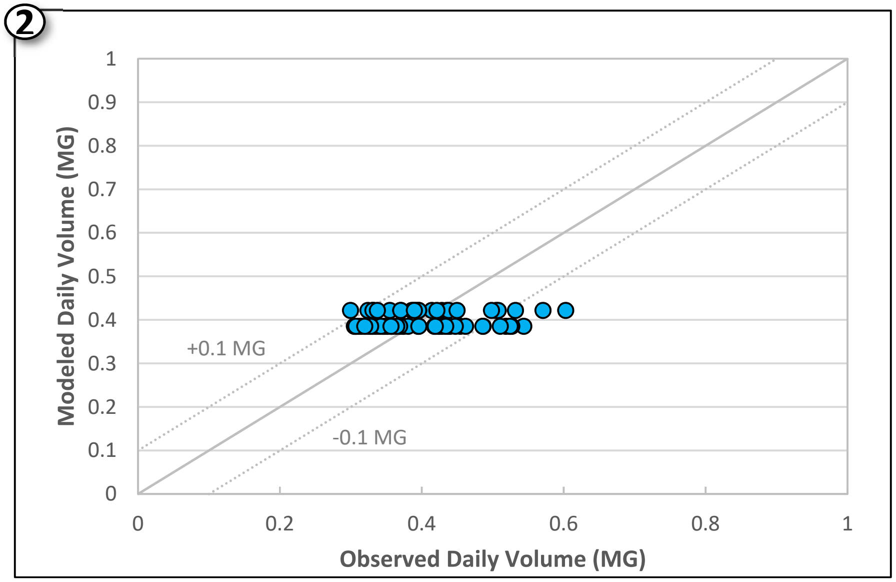

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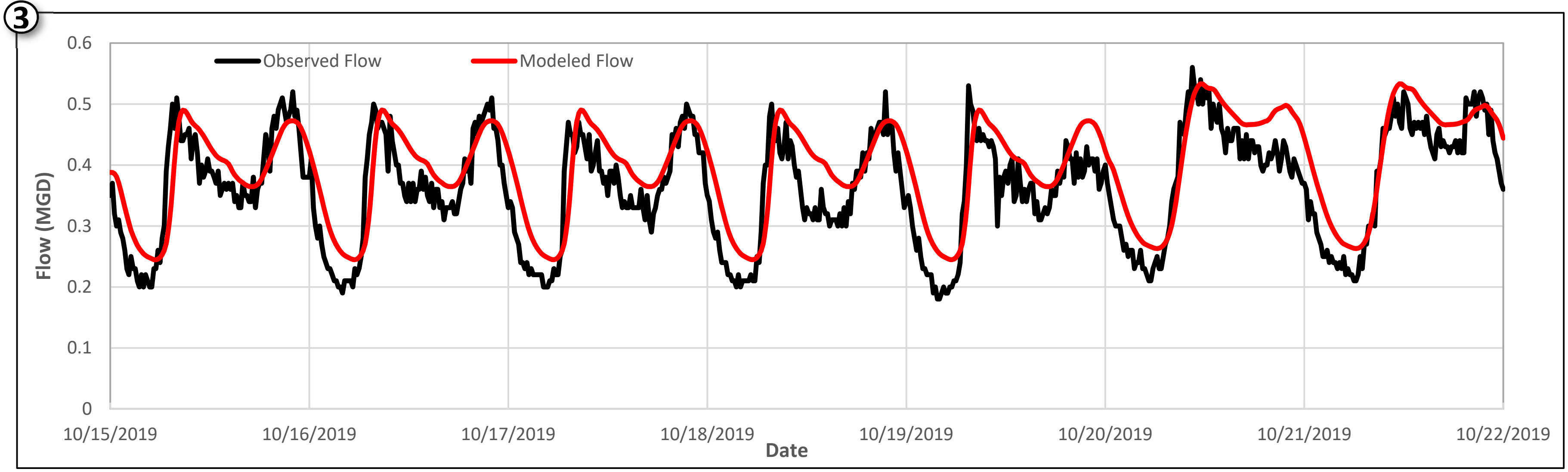


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK32**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

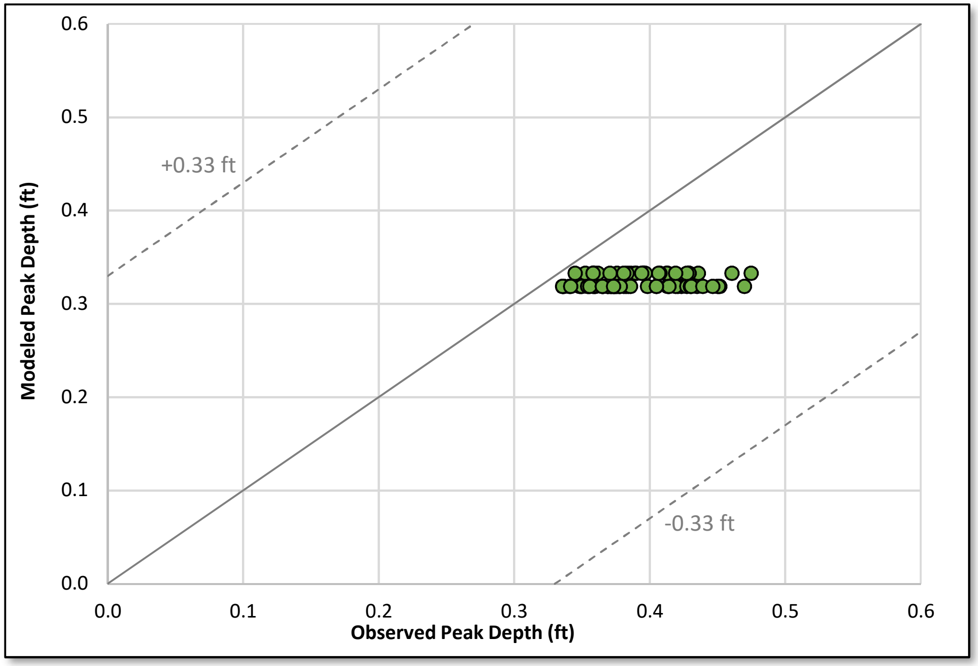
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

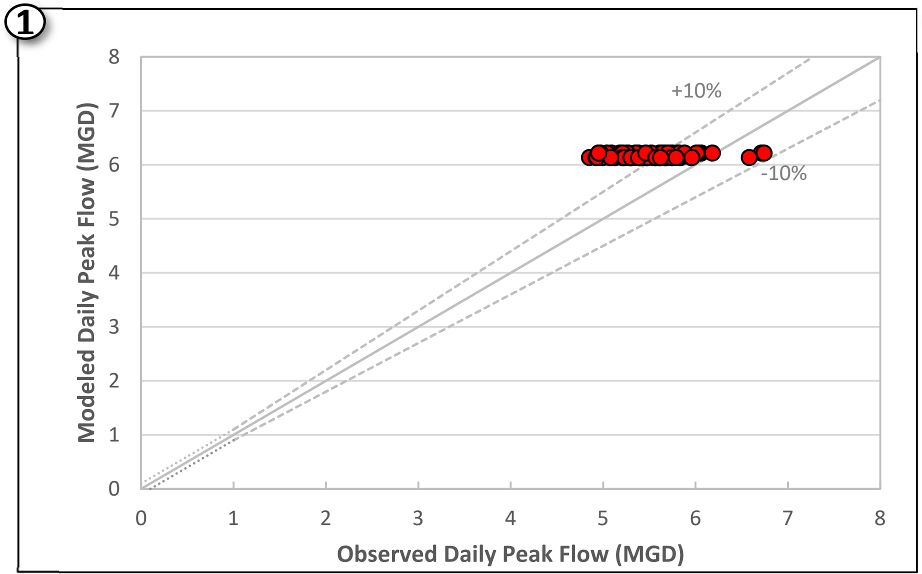
Total Compared Dry Days:

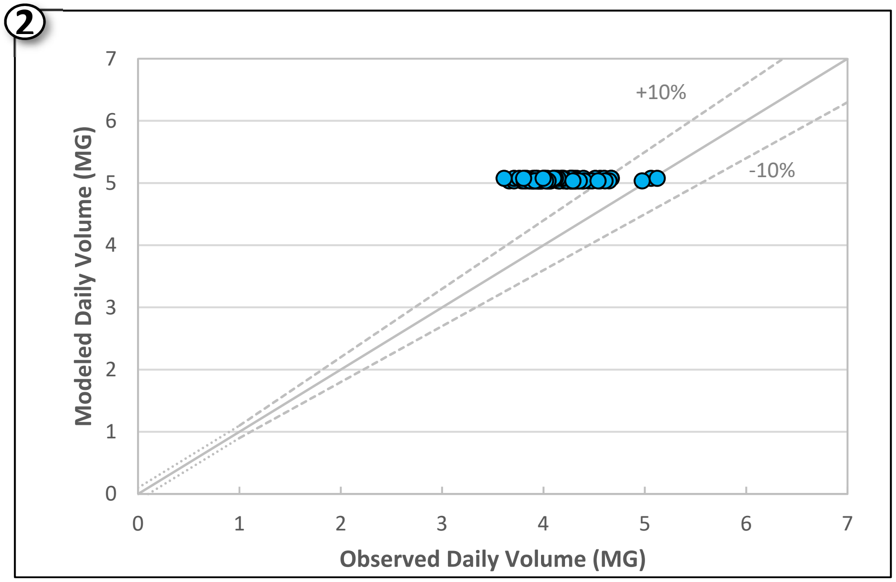
86

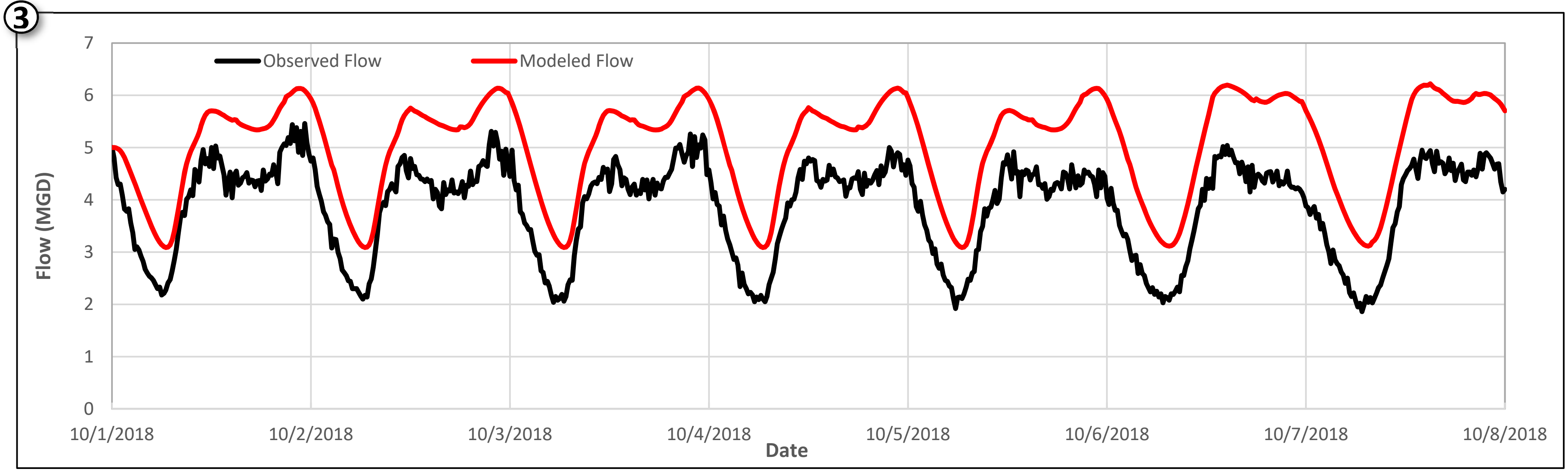


Flow Meter:

NFORK32







DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK36**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

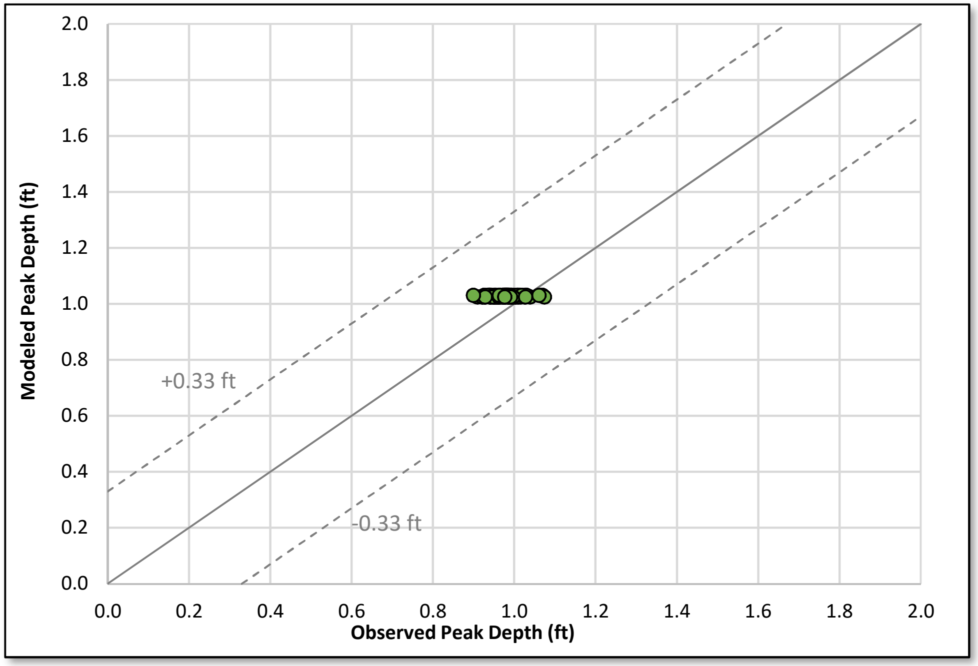
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

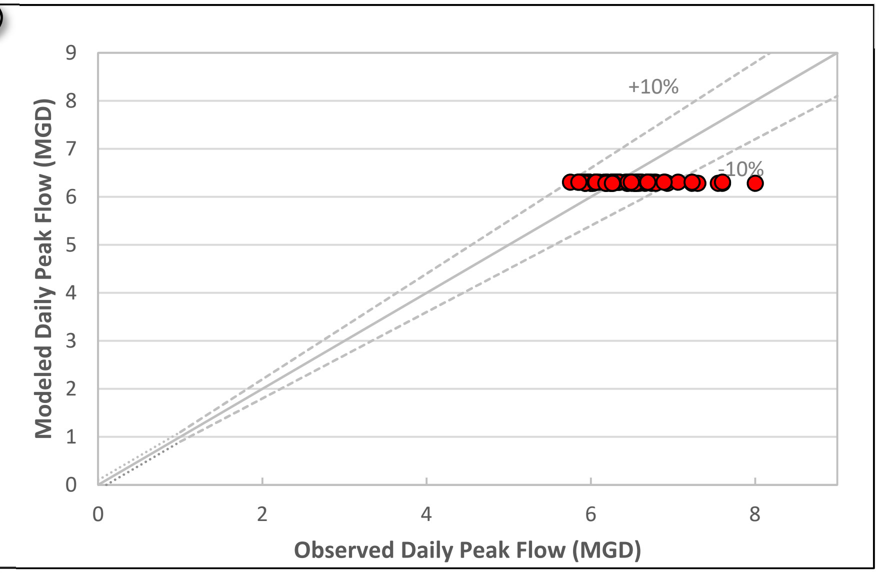
90



Flow Meter:

NFORK36

①



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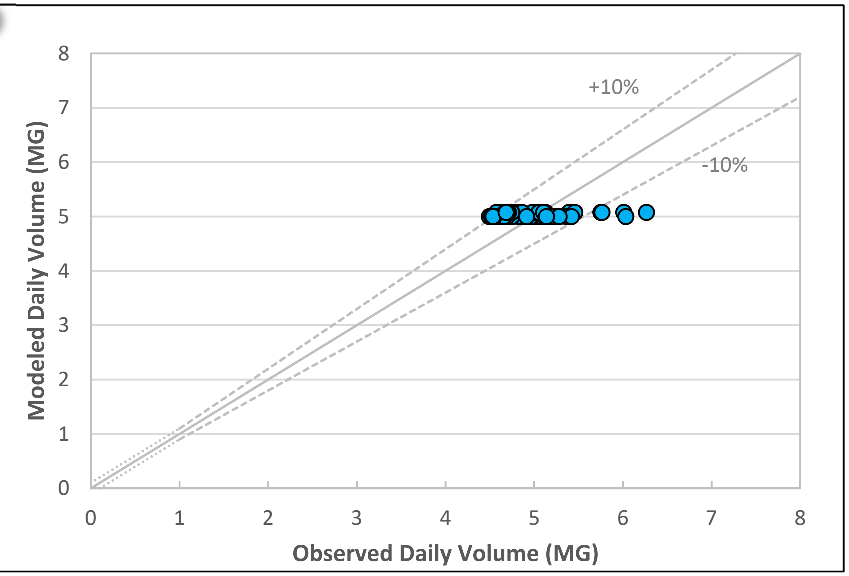

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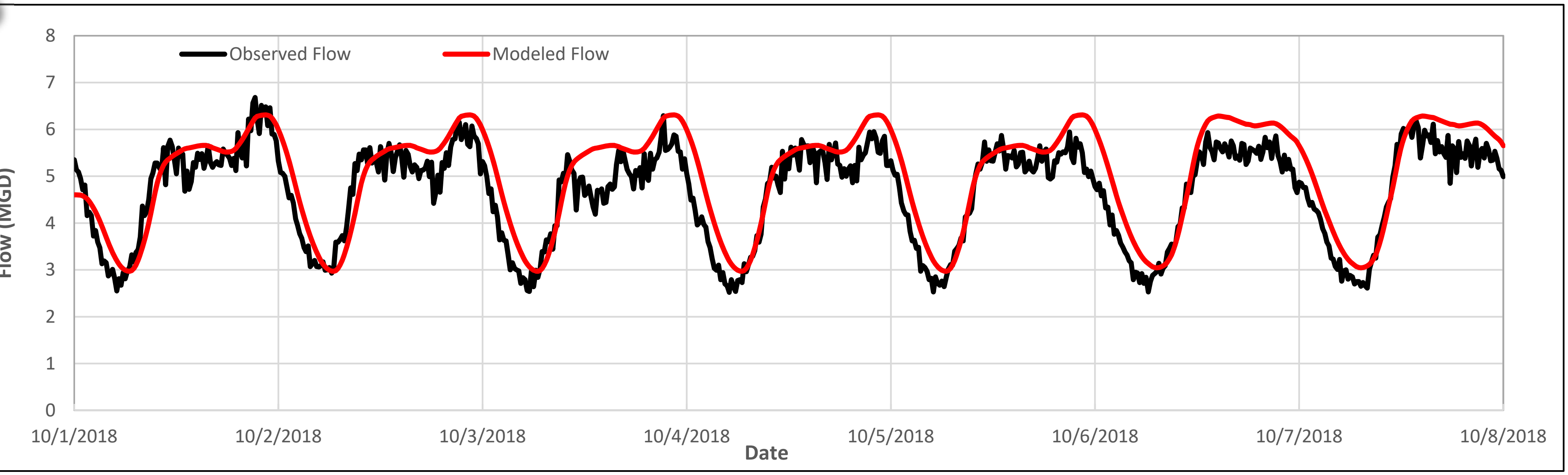


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK37**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

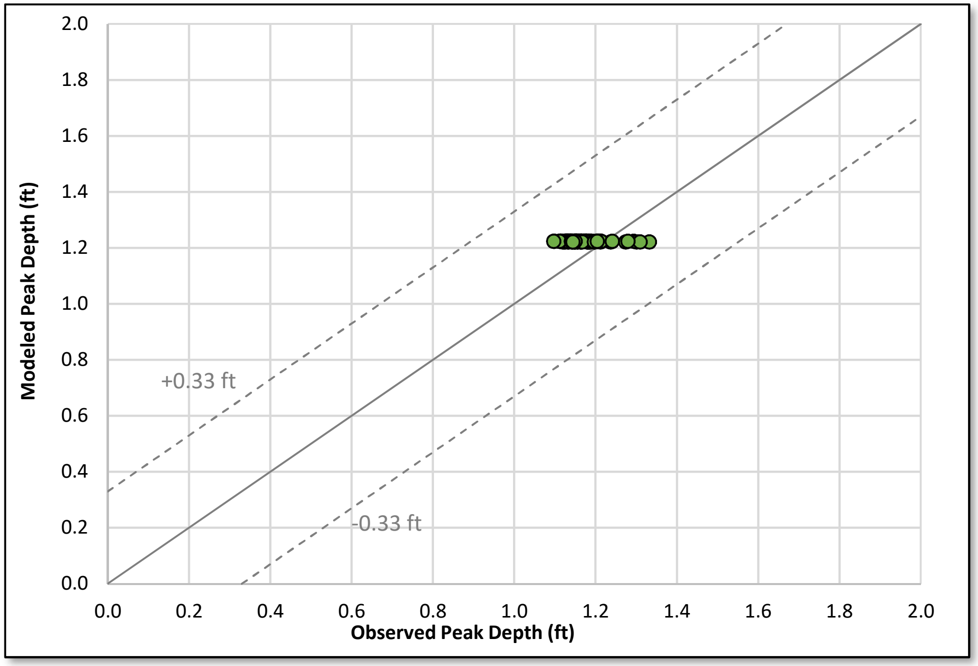
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

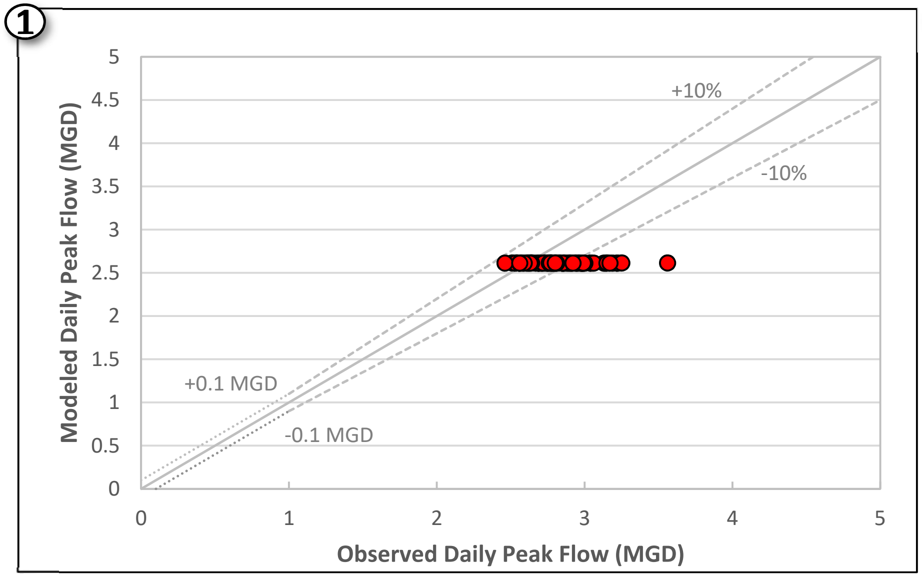
90



Flow Meter:

NFORK37

①



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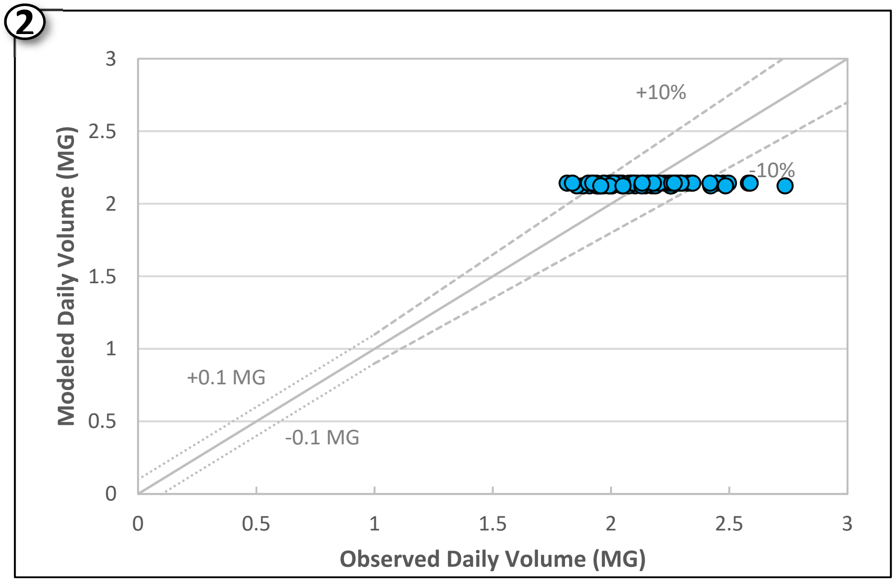

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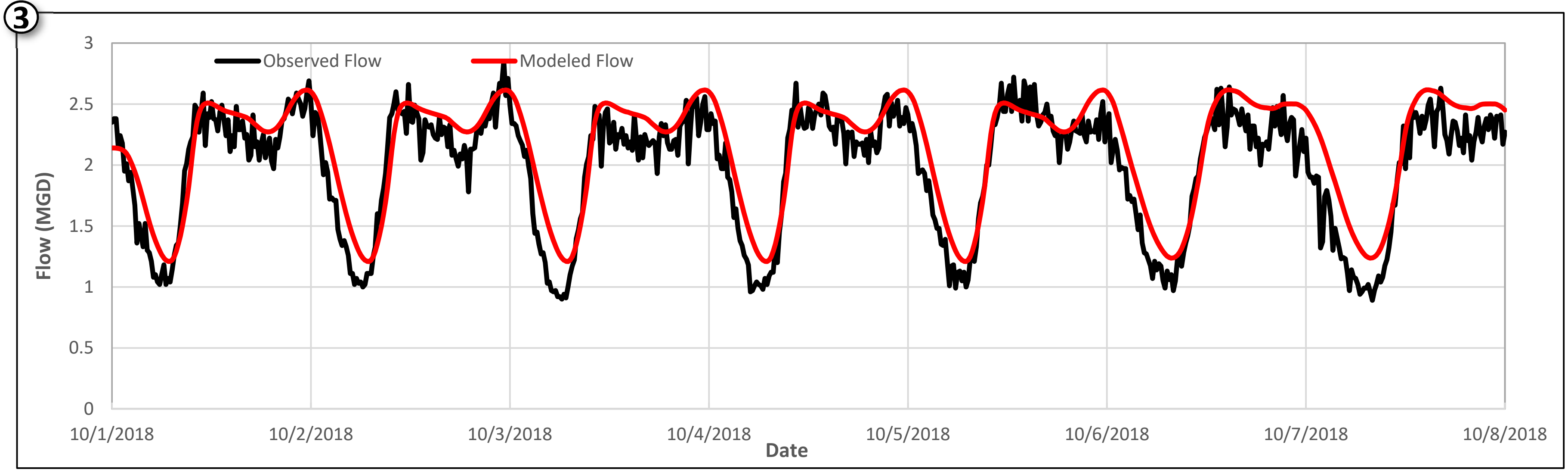


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK38**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

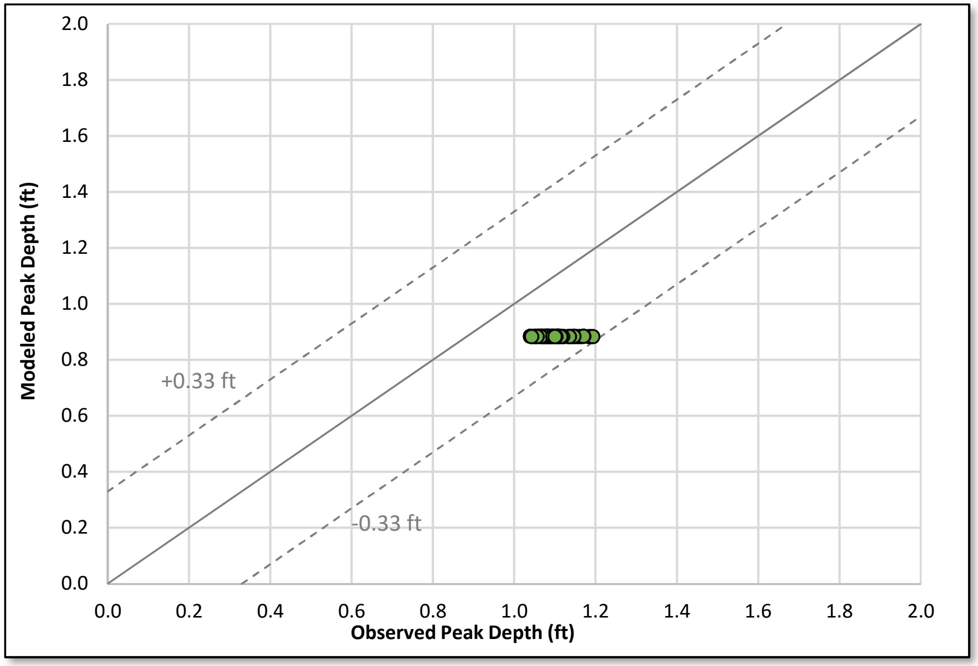
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

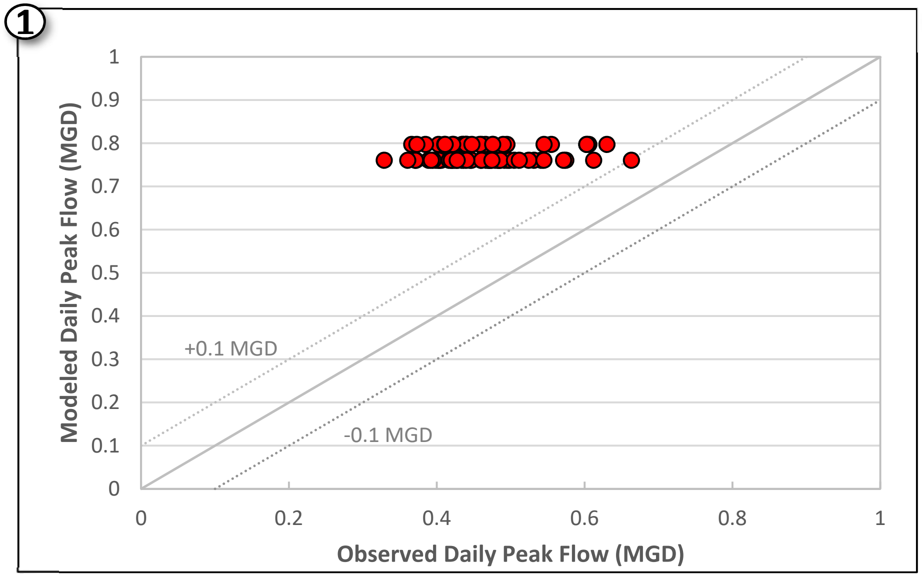
90



Flow Meter:

NFORK38

①



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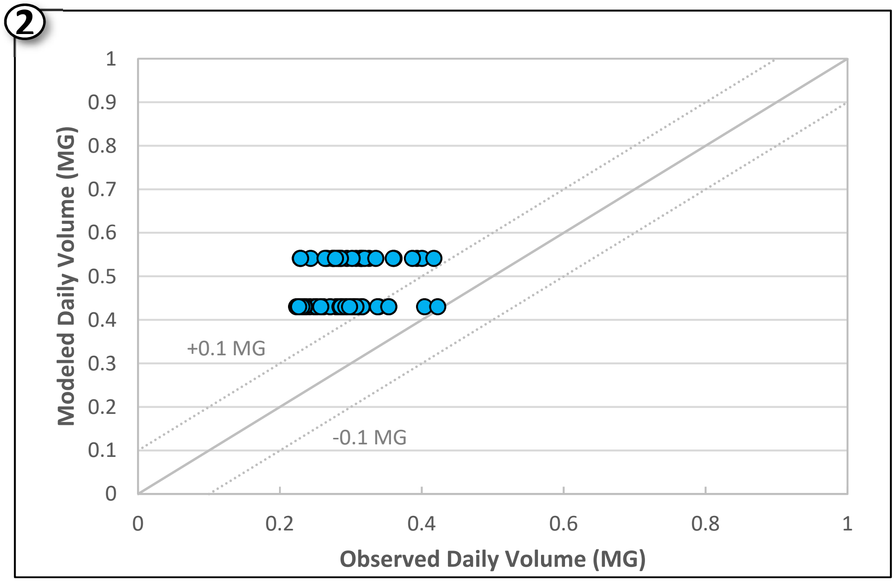

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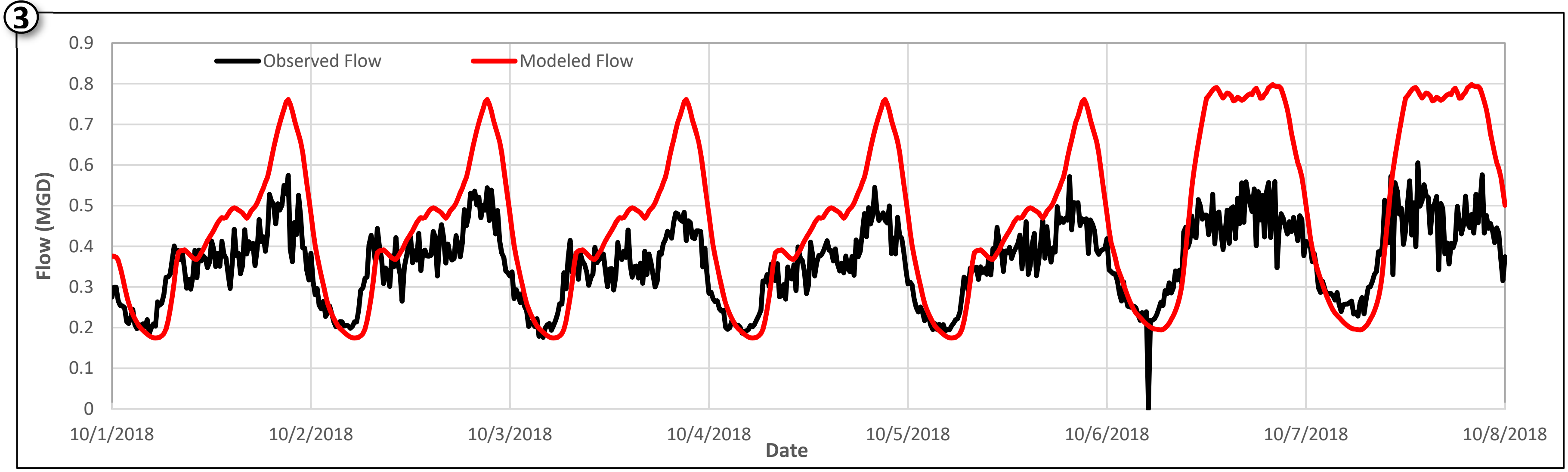


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK39**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

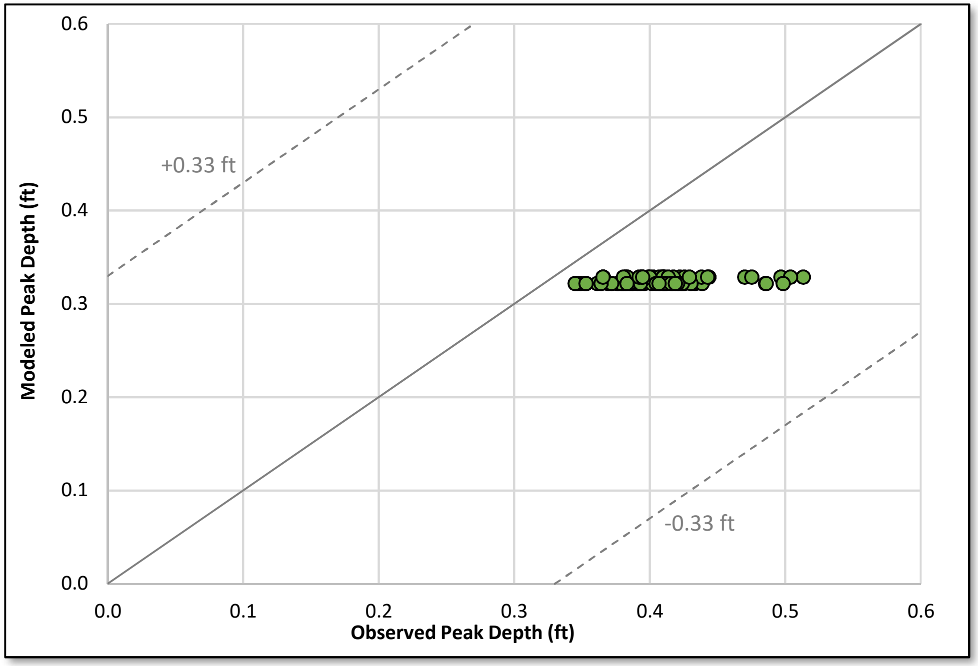
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

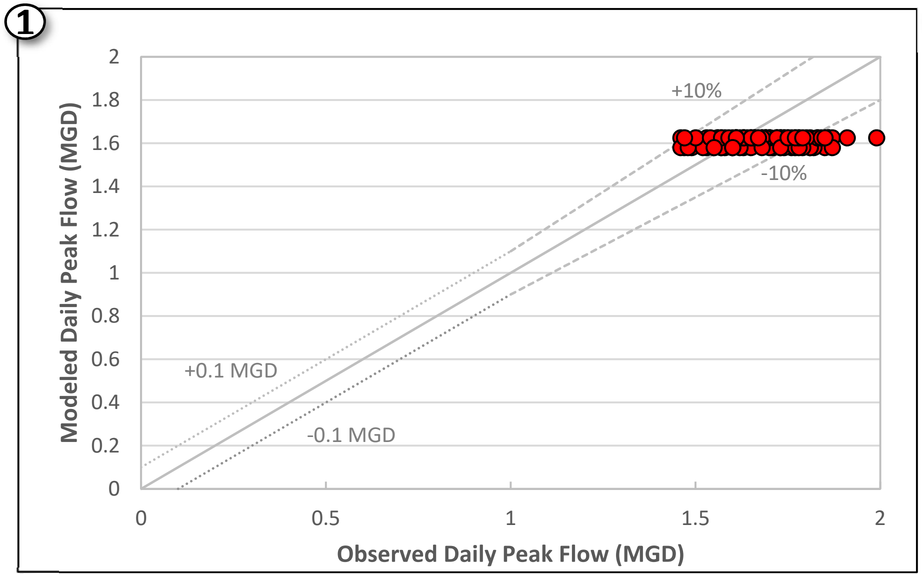
77



Flow Meter:

NFORK39

①



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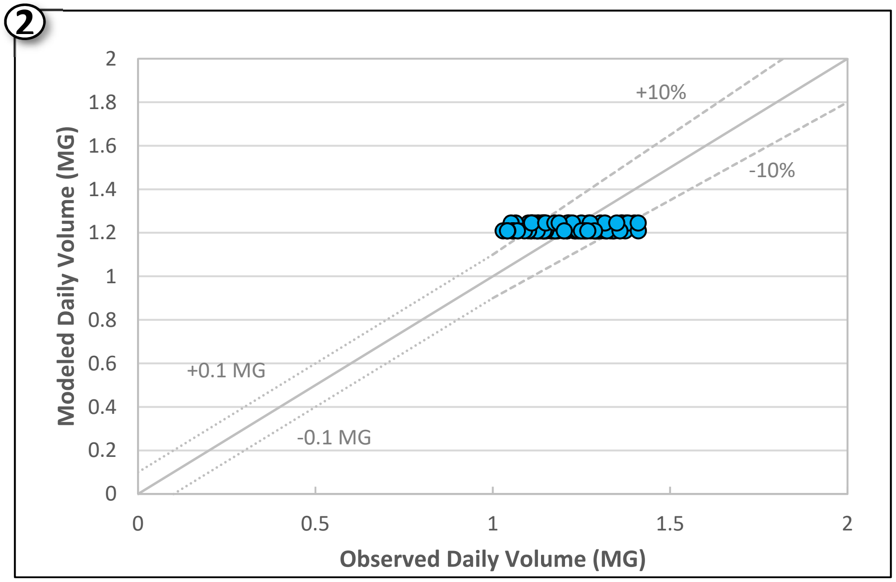

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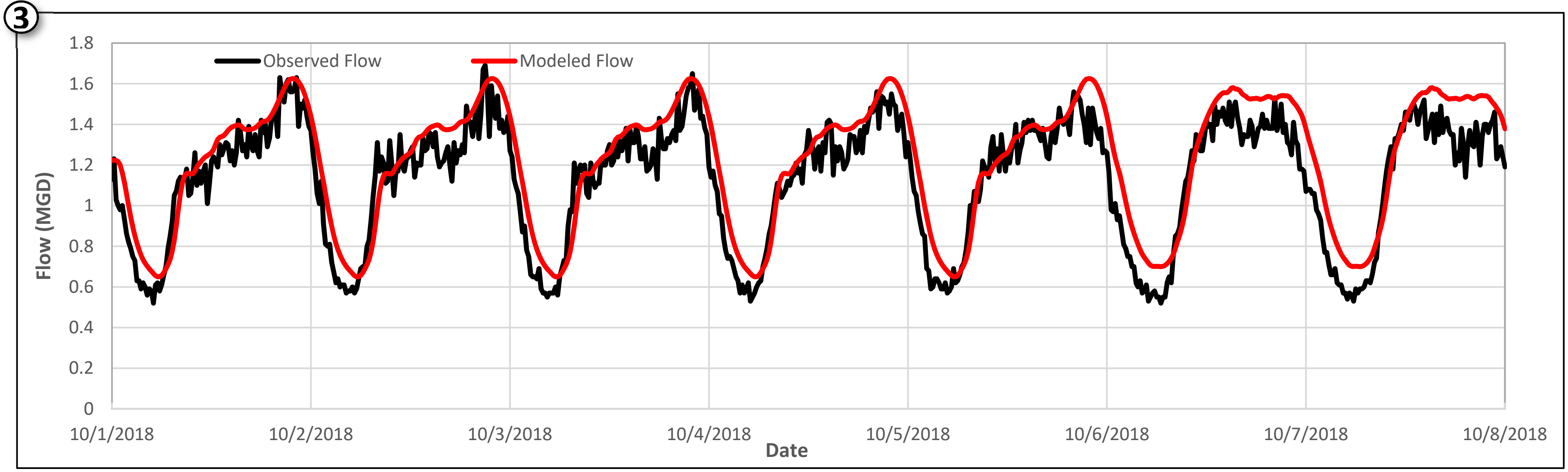


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK40**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

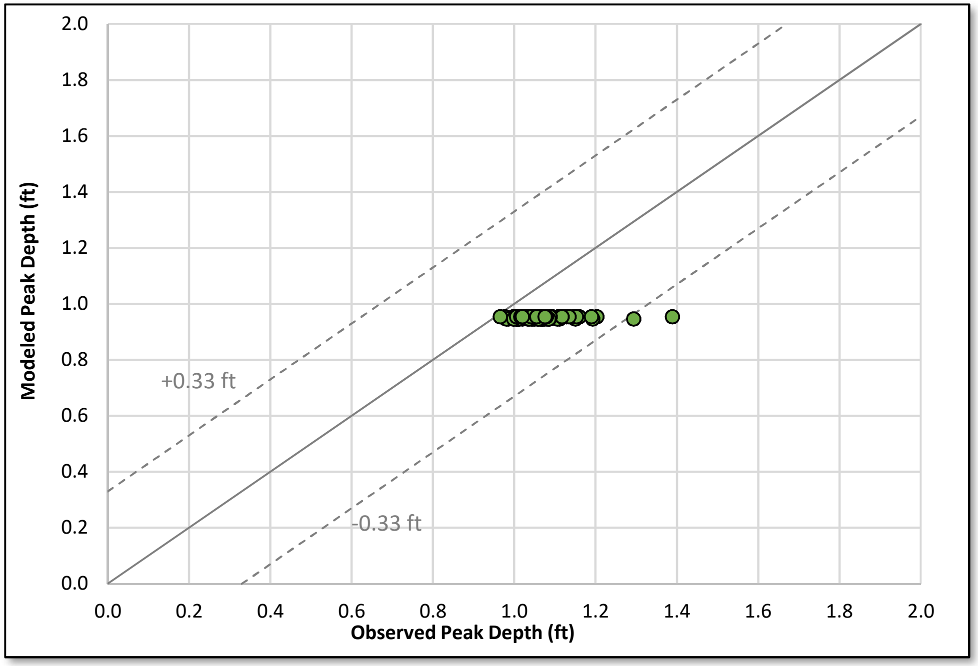
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

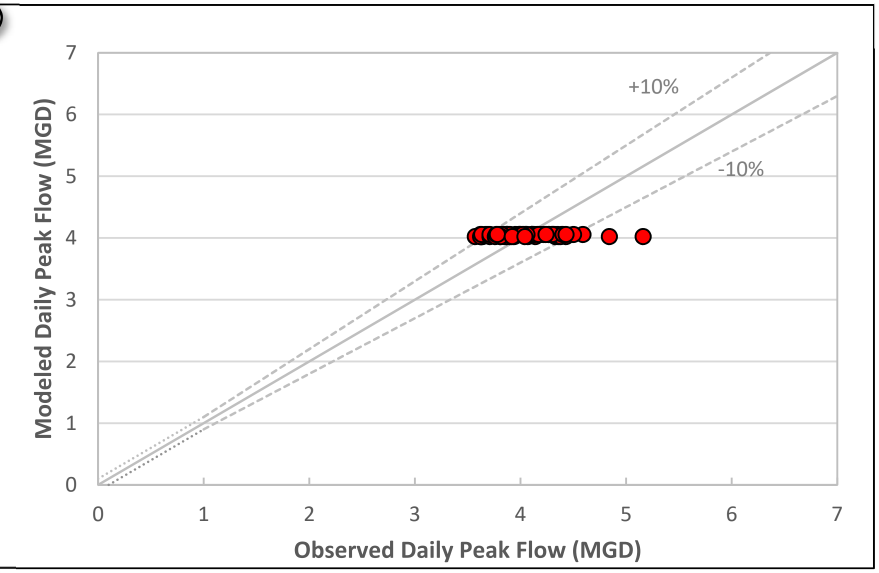
Total Compared Dry Days:

99



Flow Meter:
NFORK40

①



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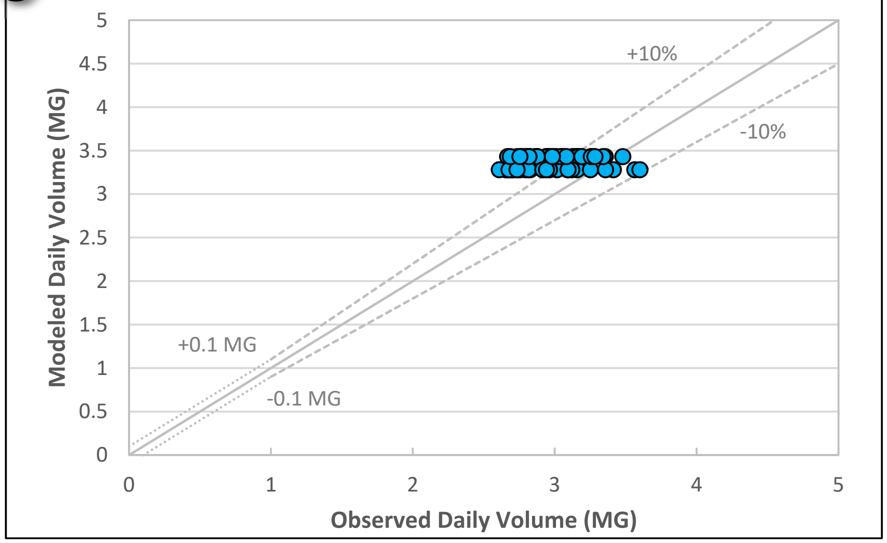

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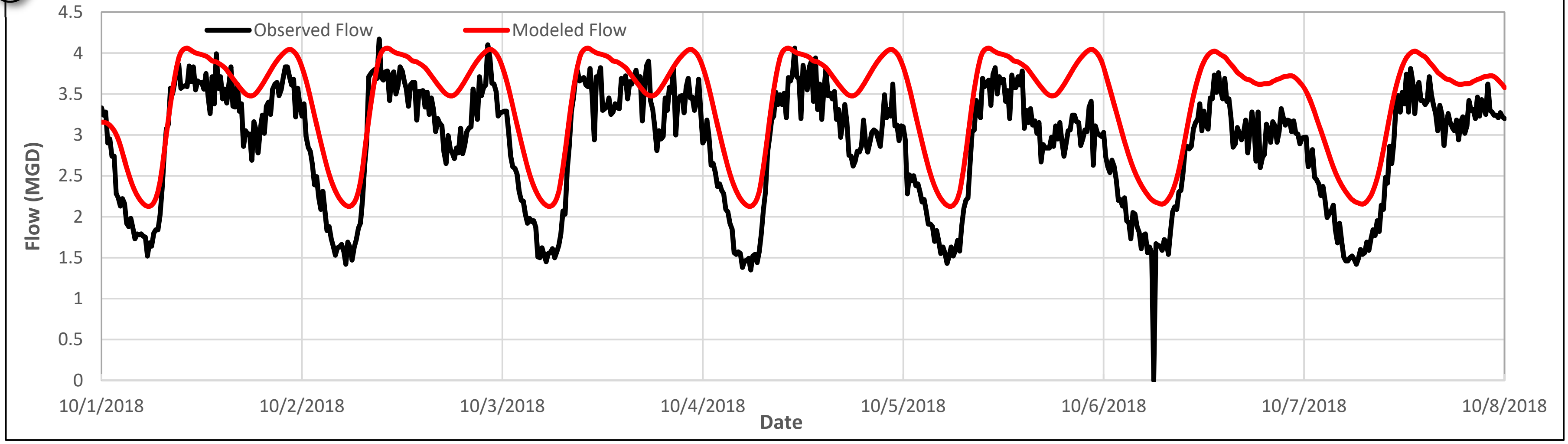


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK43**

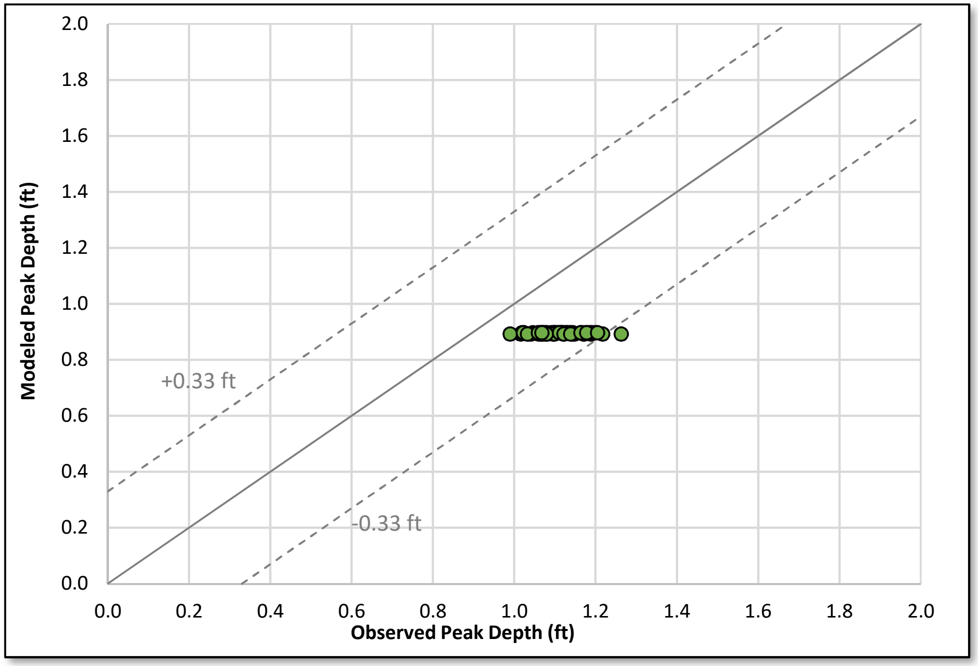
Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

① Daily Volume
② Daily Peak Flow
③ One Week Time Series

Total Compared Dry Days:

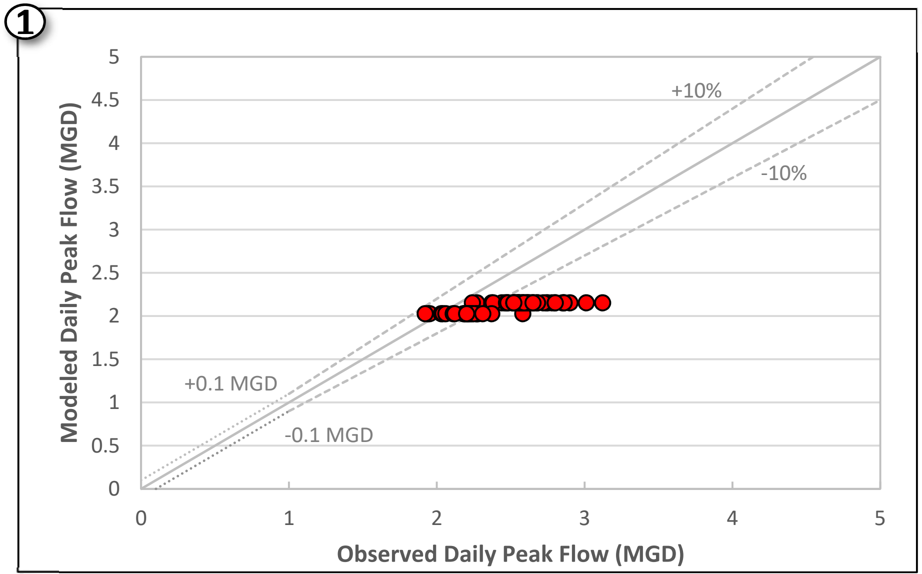
72



Flow Meter:

NFORK43

①



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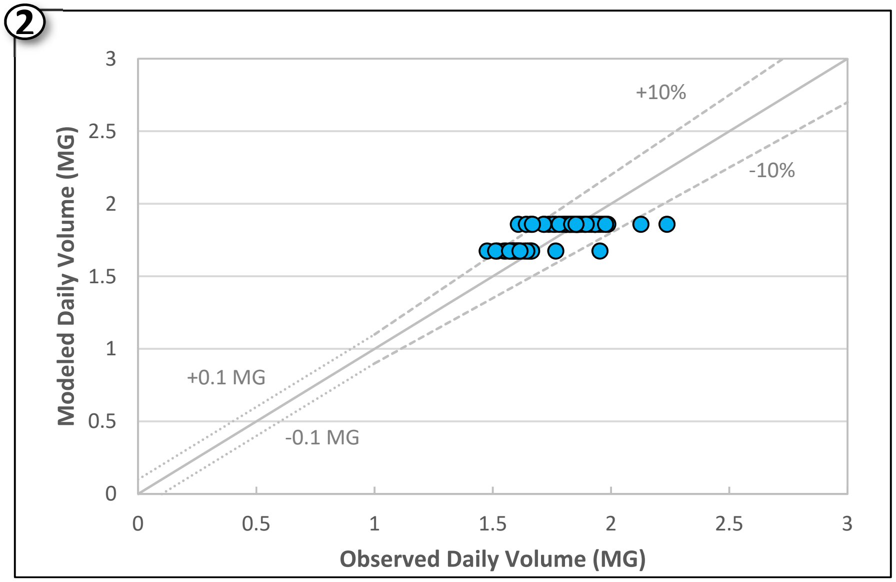

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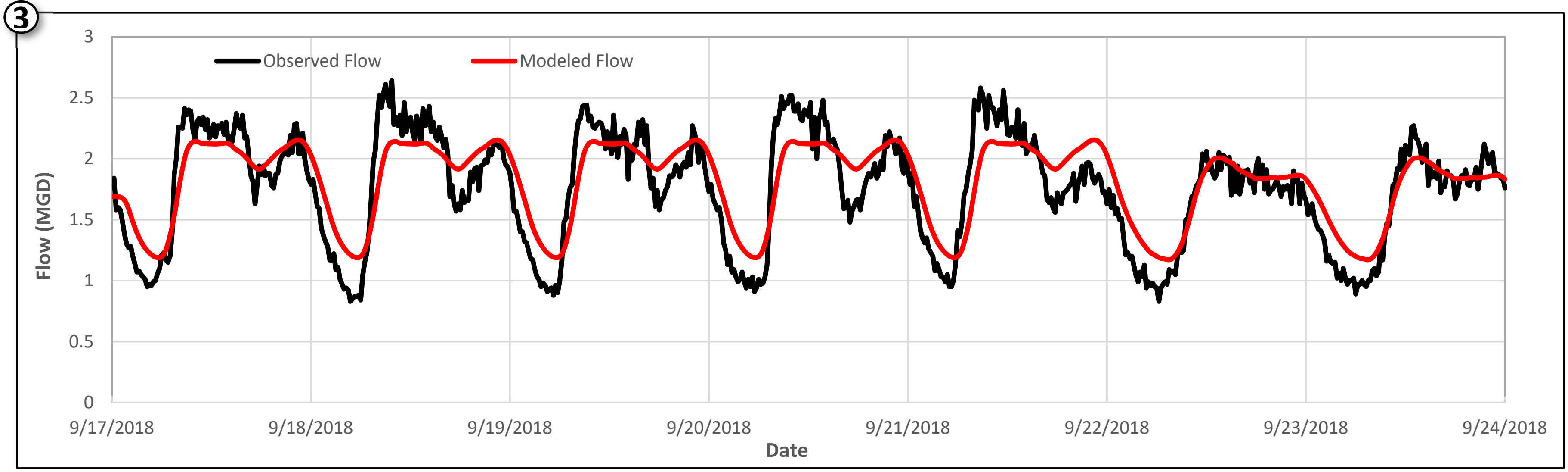


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK47**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

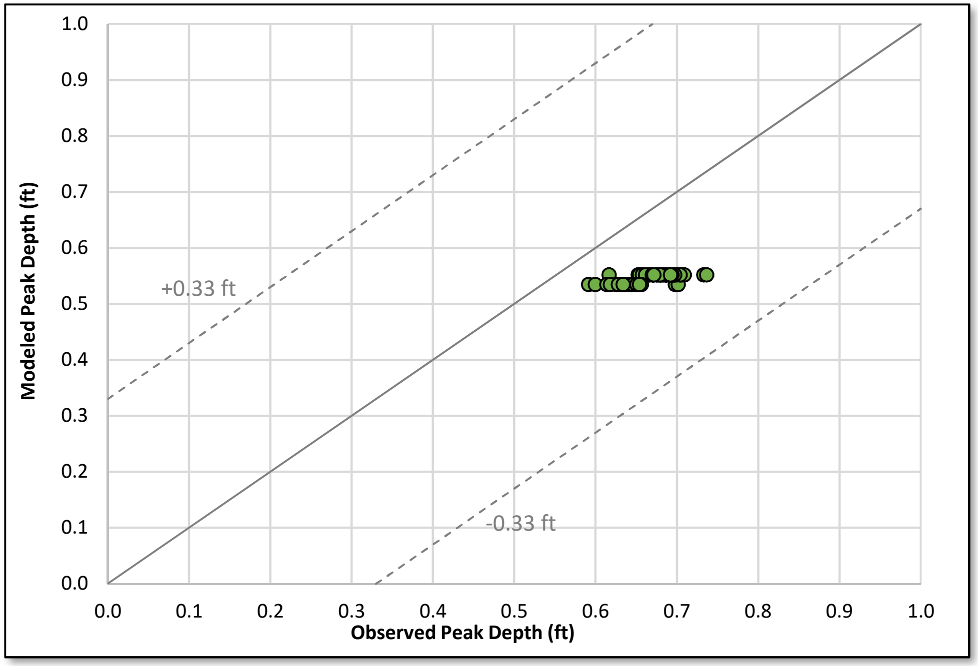
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

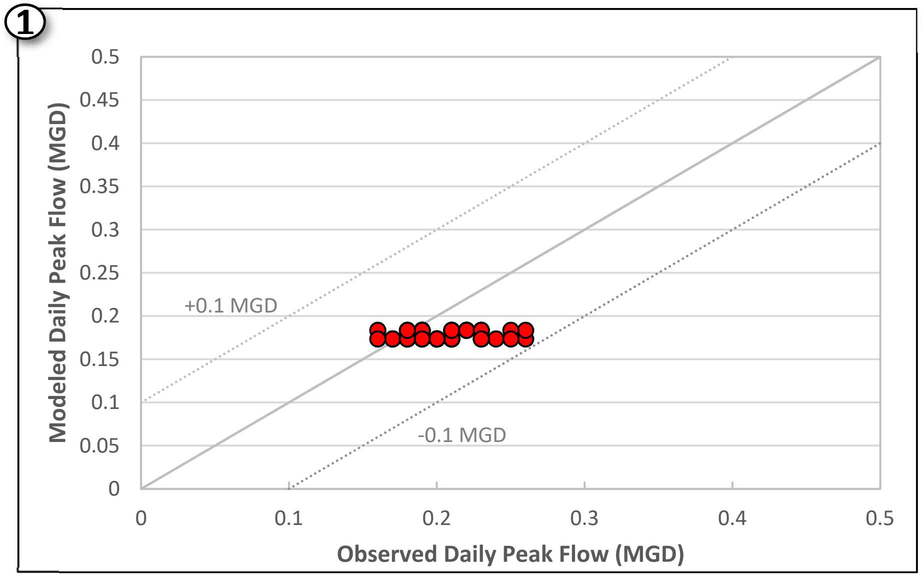
74



Flow Meter:

NFORK47

①



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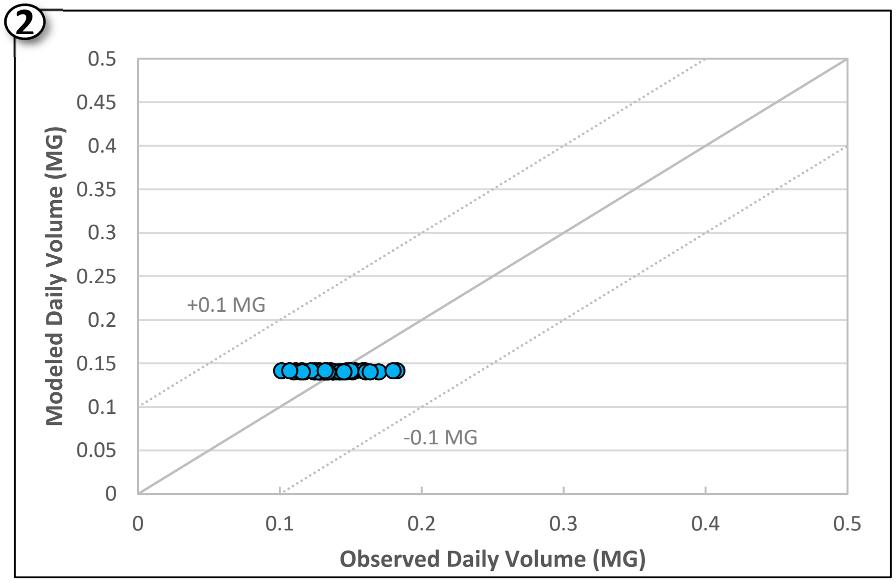

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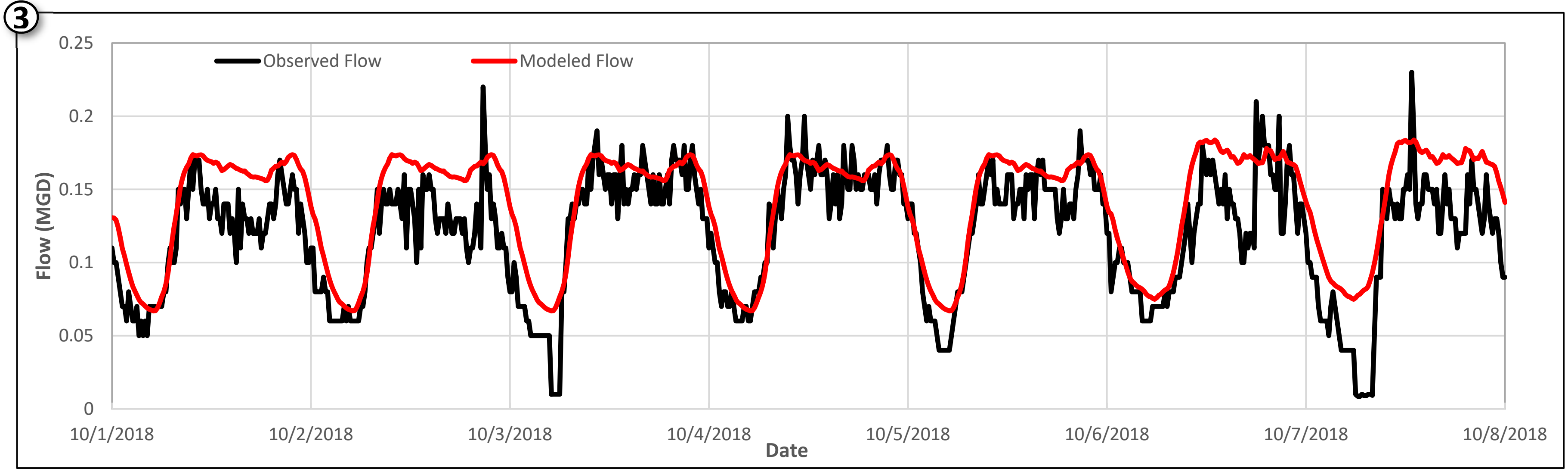


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK48**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

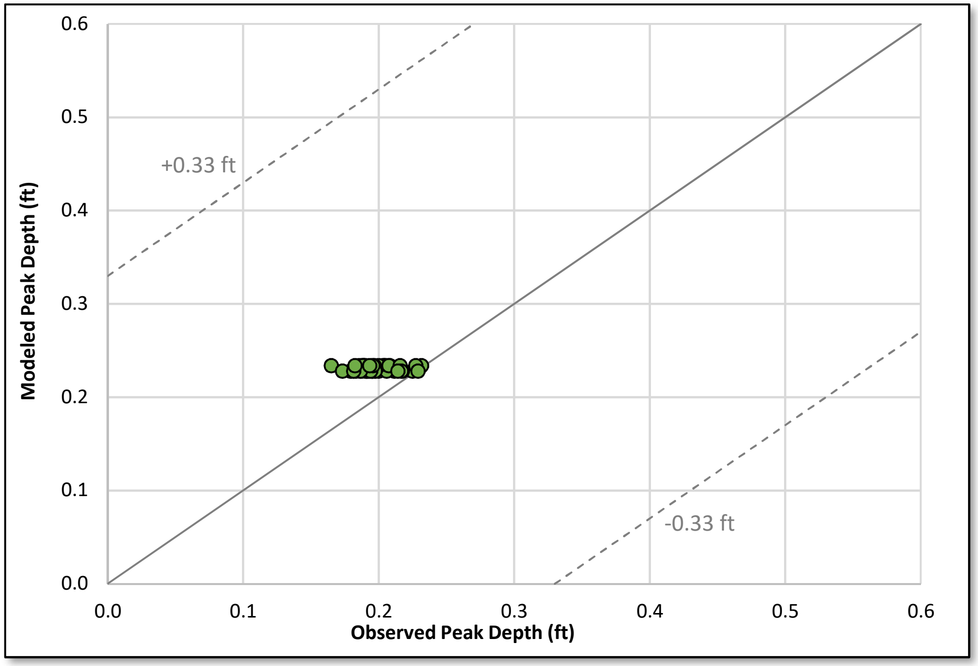
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

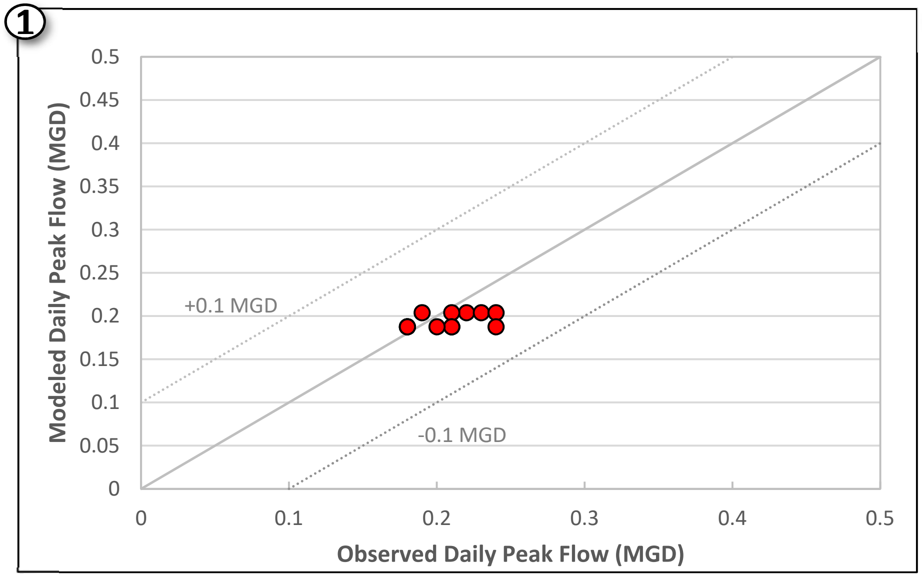
51



Flow Meter:

NFORK48

①



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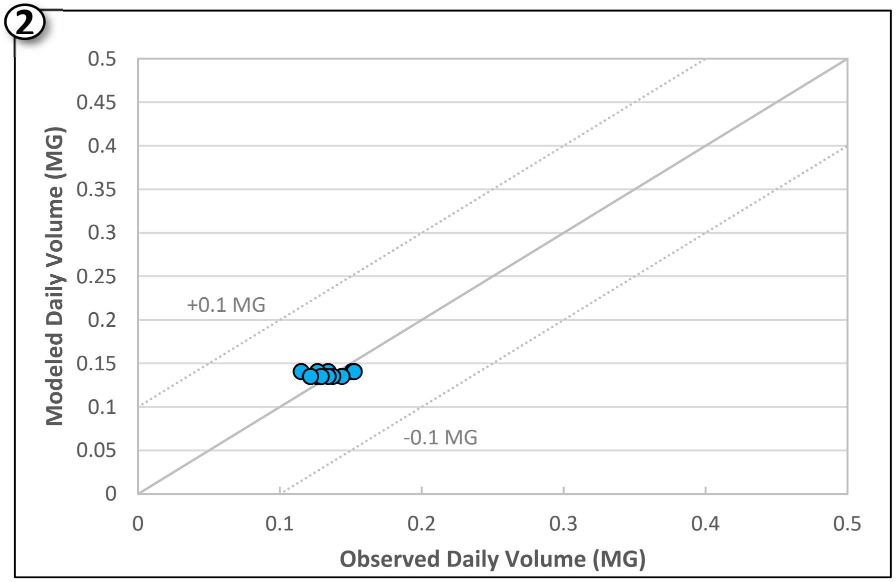

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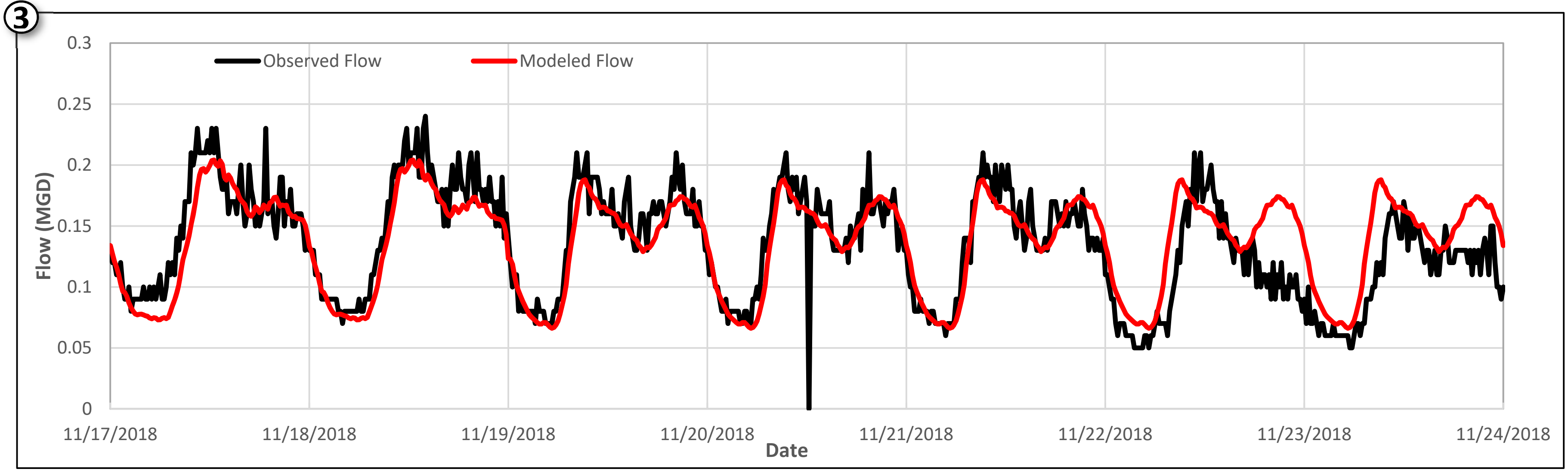


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK49_2**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

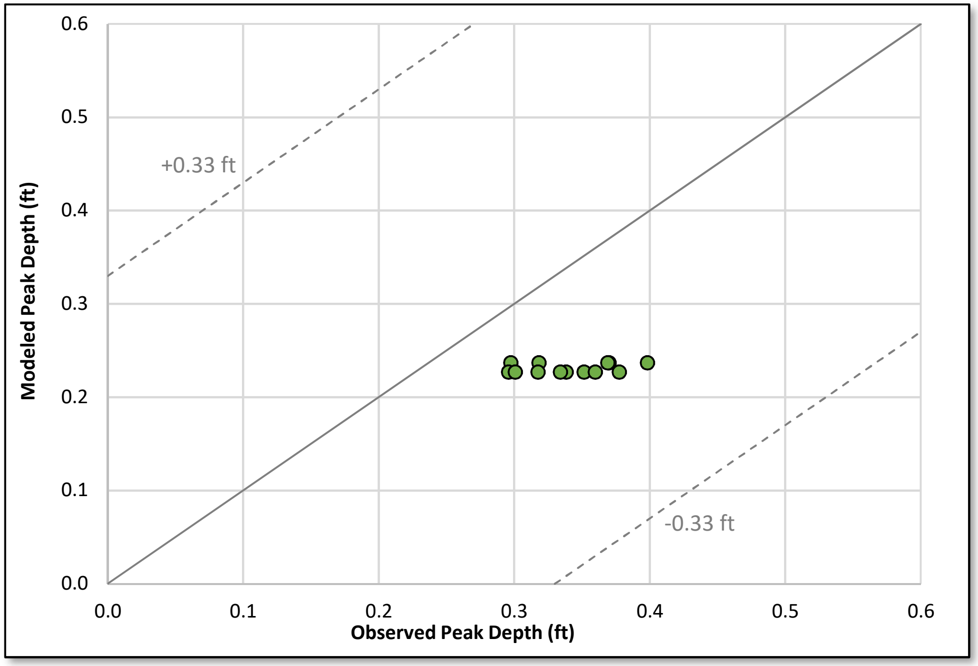
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

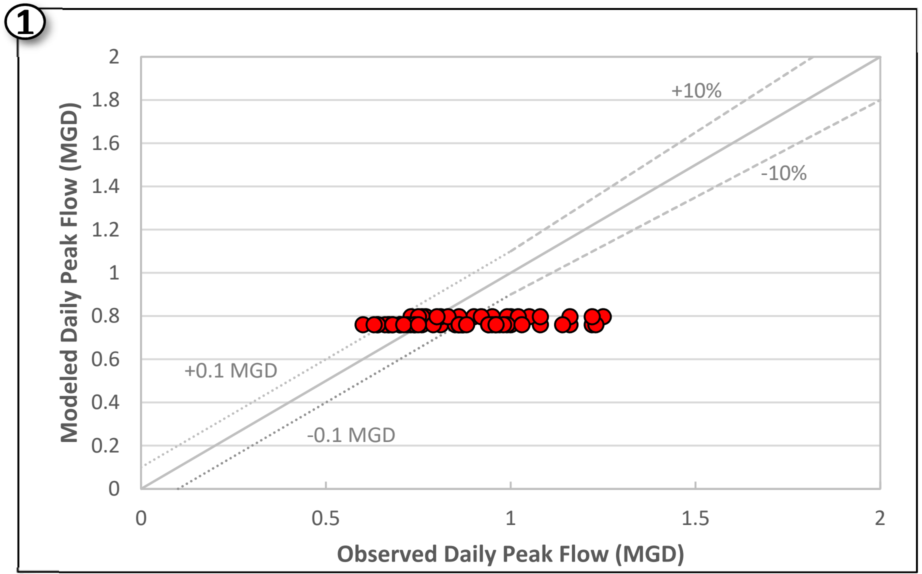
13



Flow Meter:

NFORK49_2

①



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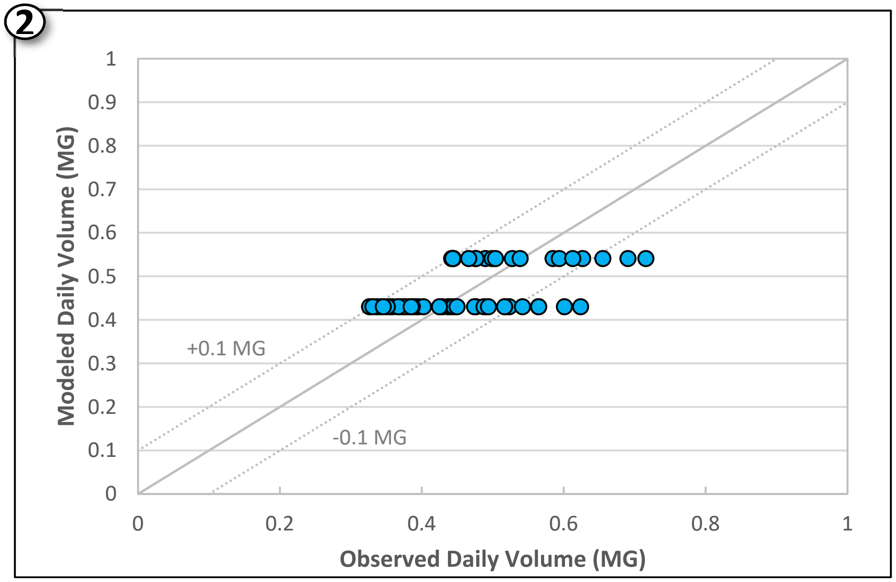

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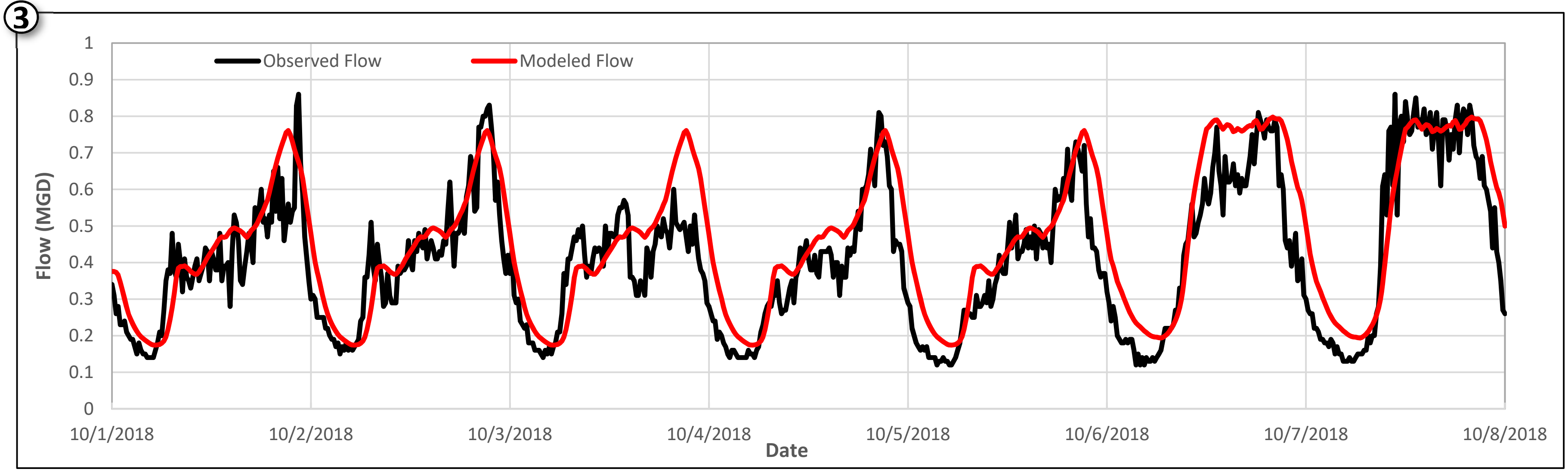


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK50**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

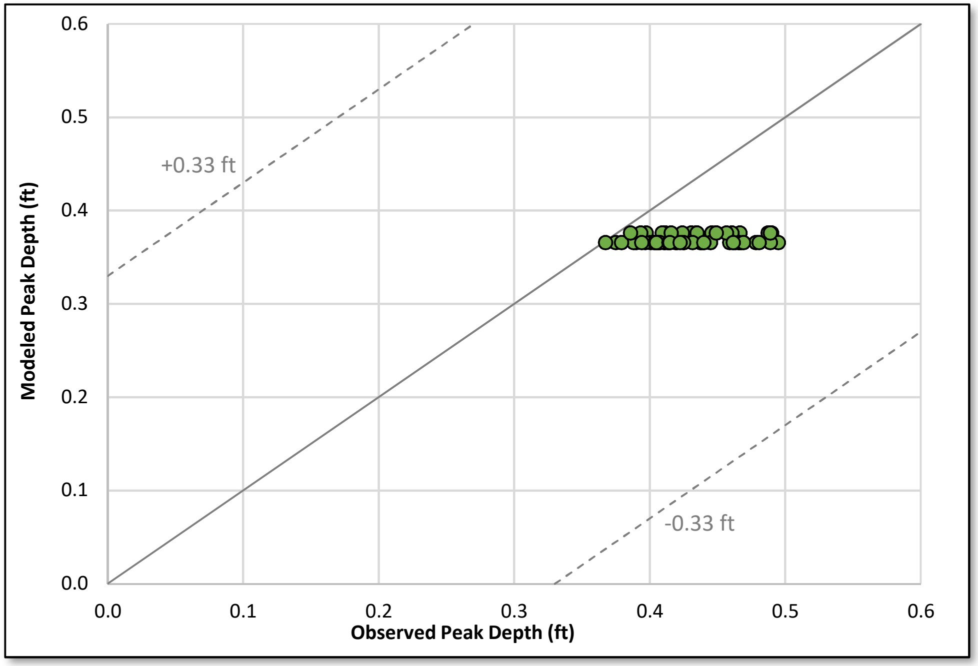
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

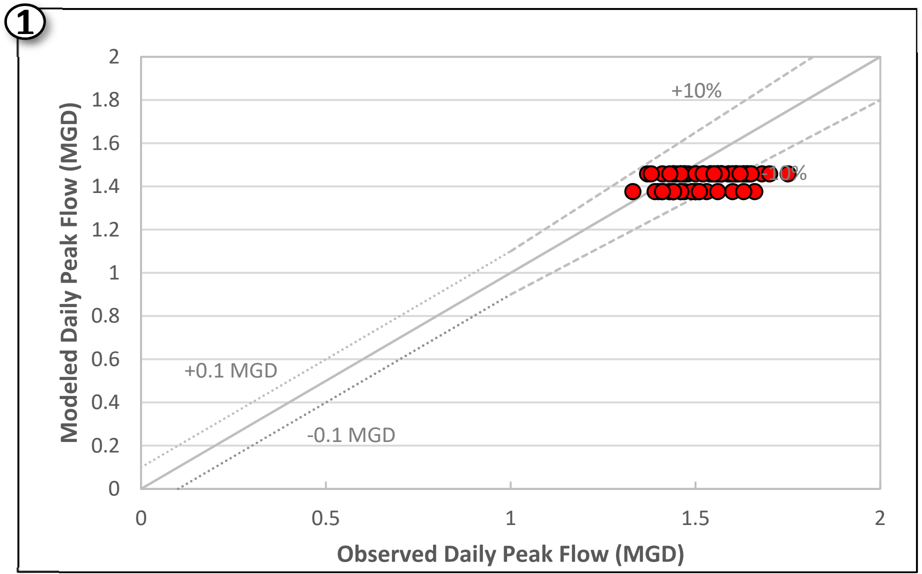
63



Flow Meter:

NFORK50

①



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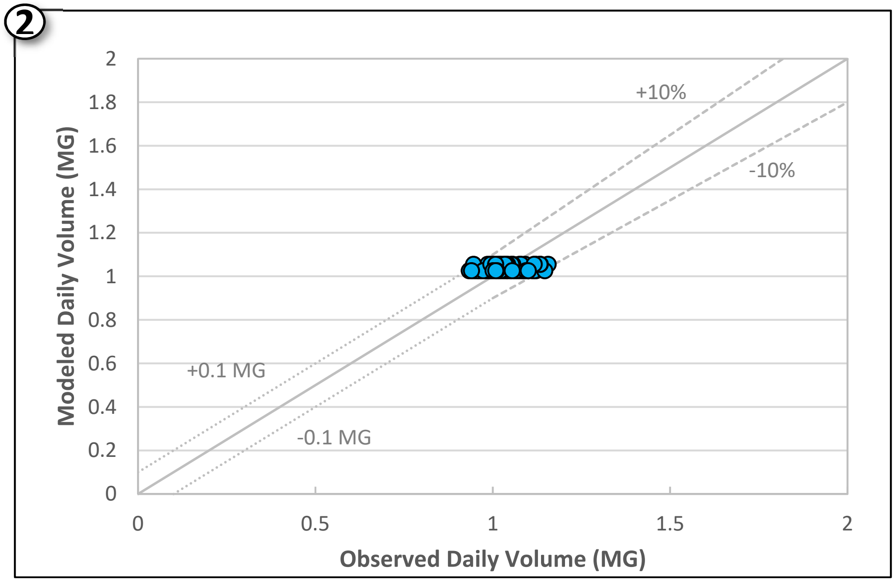

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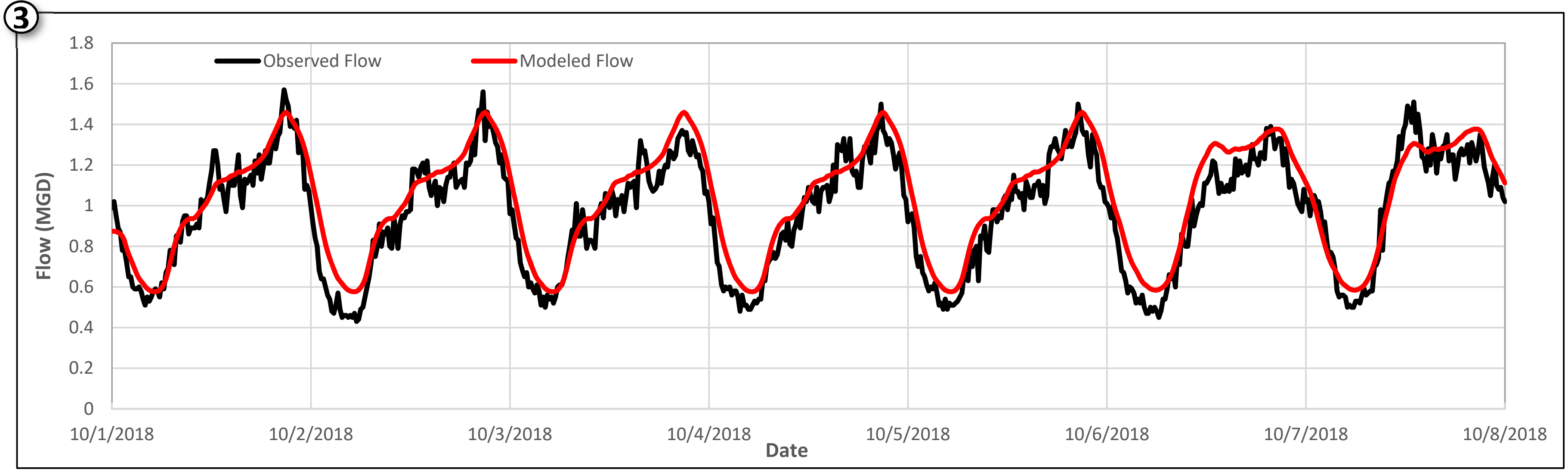


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK51**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

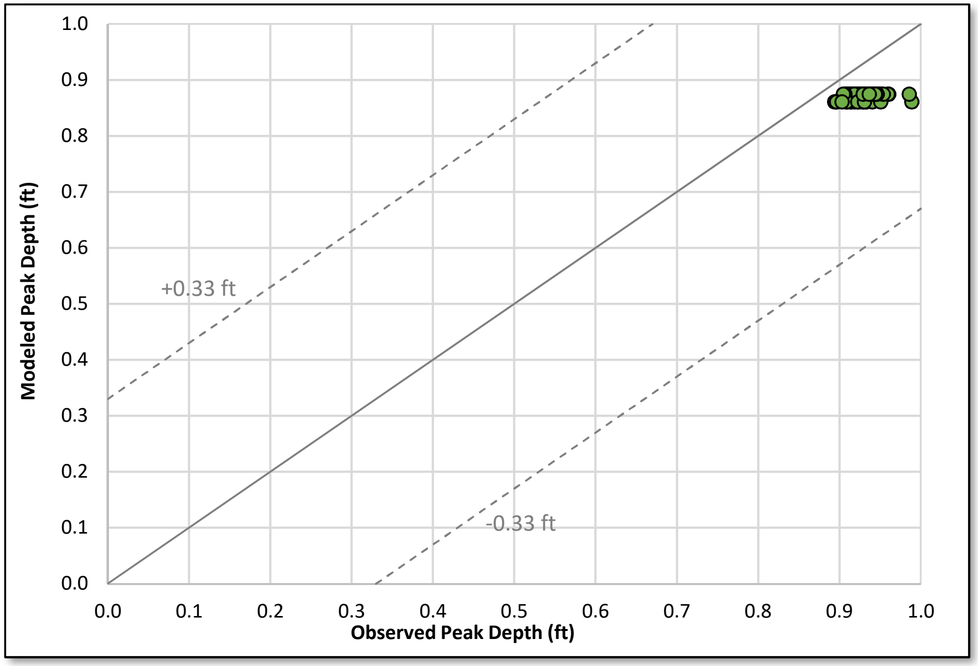
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

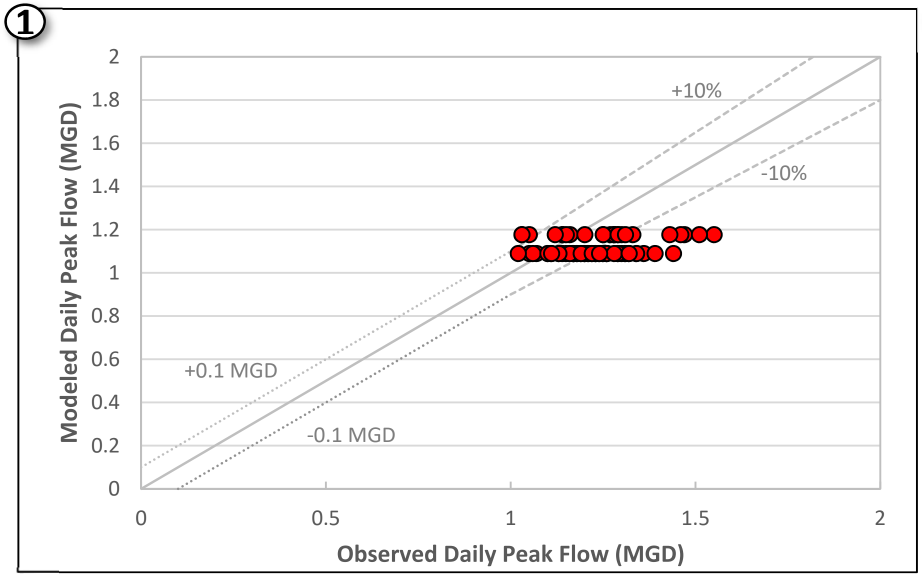
78



Flow Meter:

NFORK51

①



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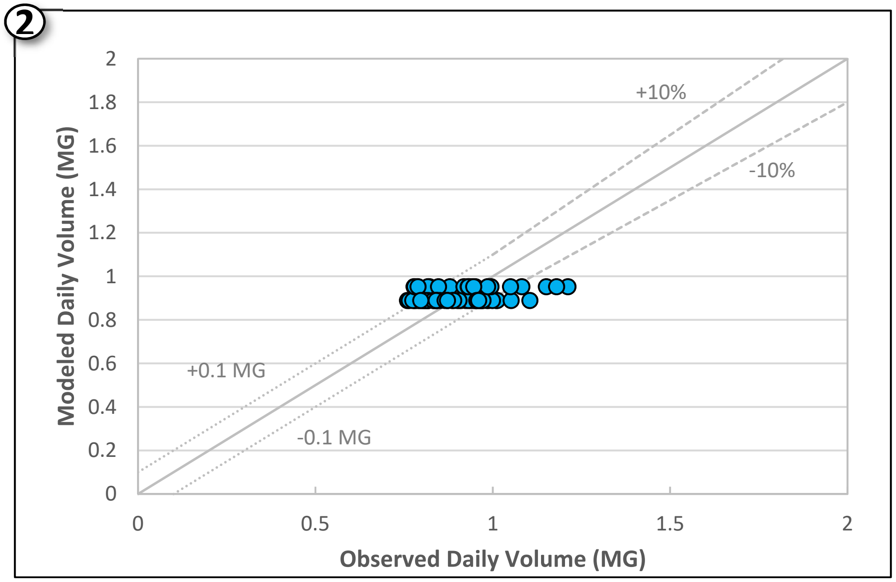

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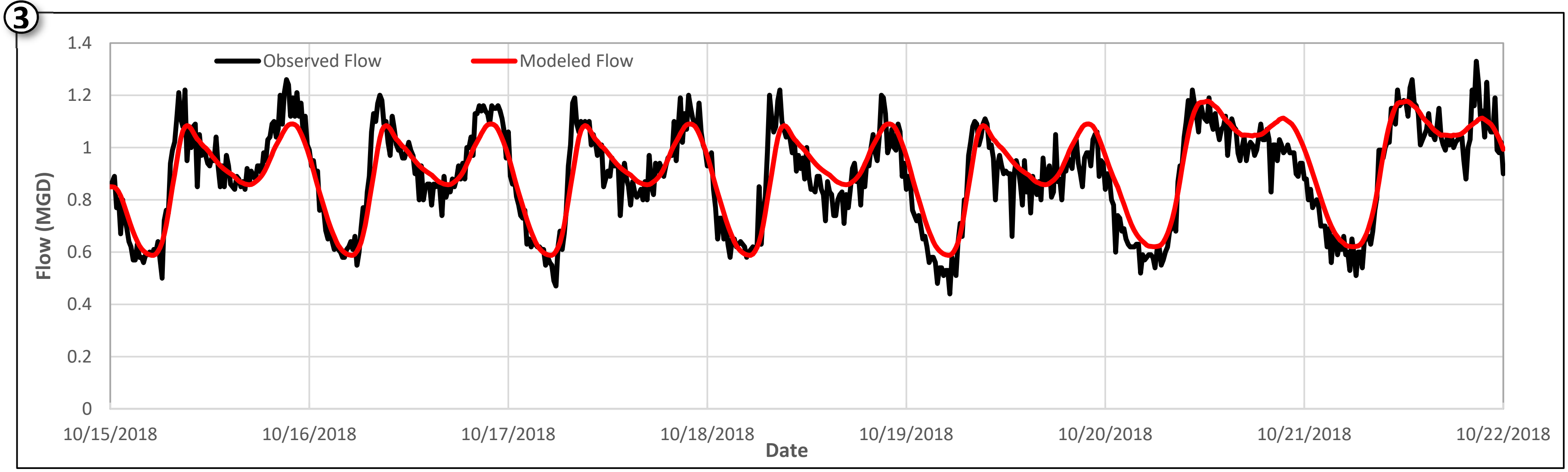


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK52**

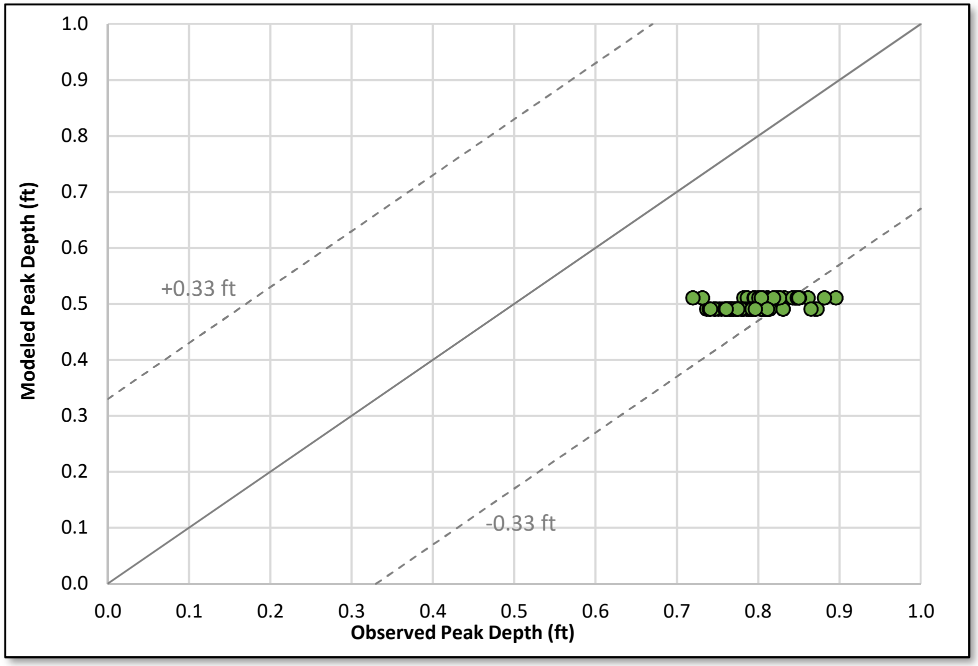
Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

① Daily Volume
② Daily Peak Flow
③ One Week Time Series

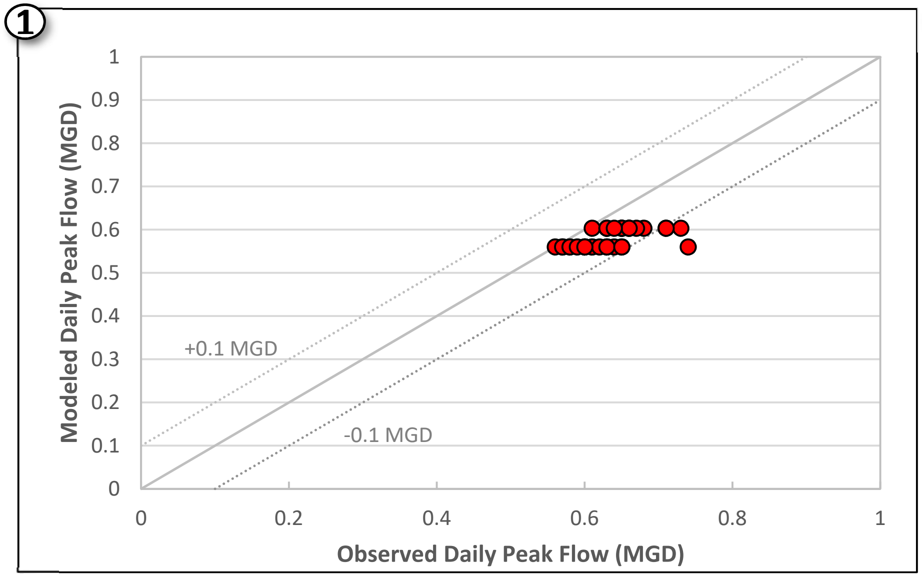
Total Compared Dry Days:

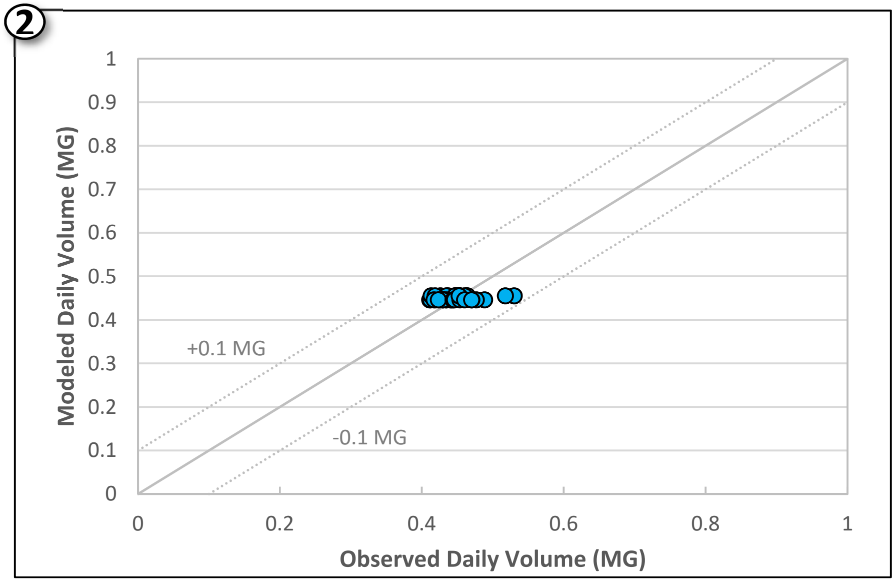
76

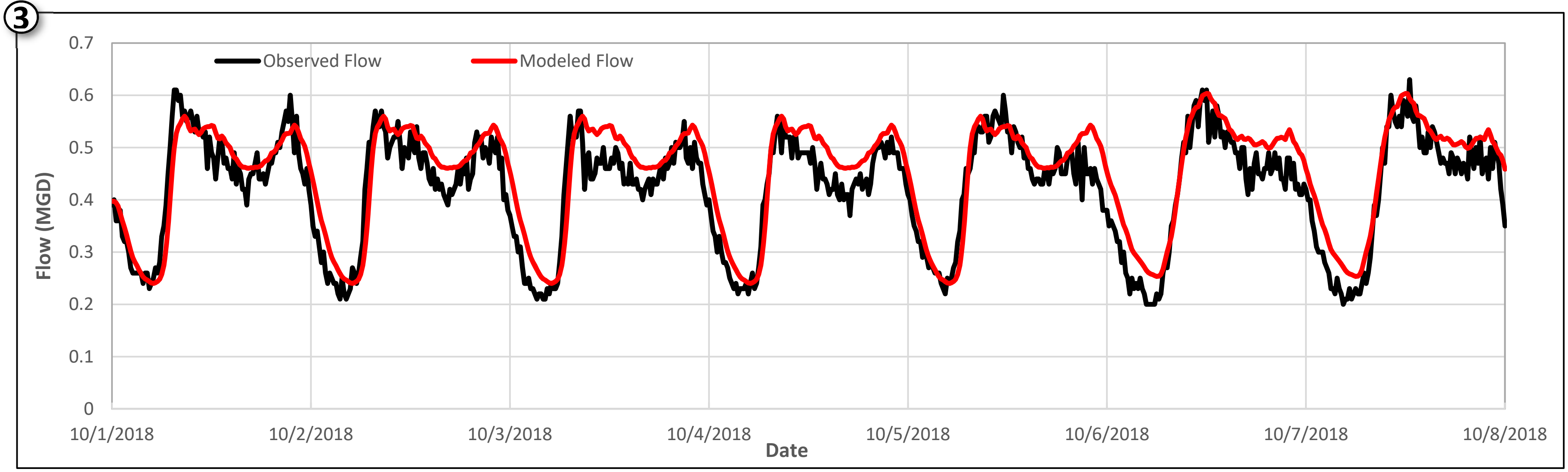


Flow Meter:

NFORK52







DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK53**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

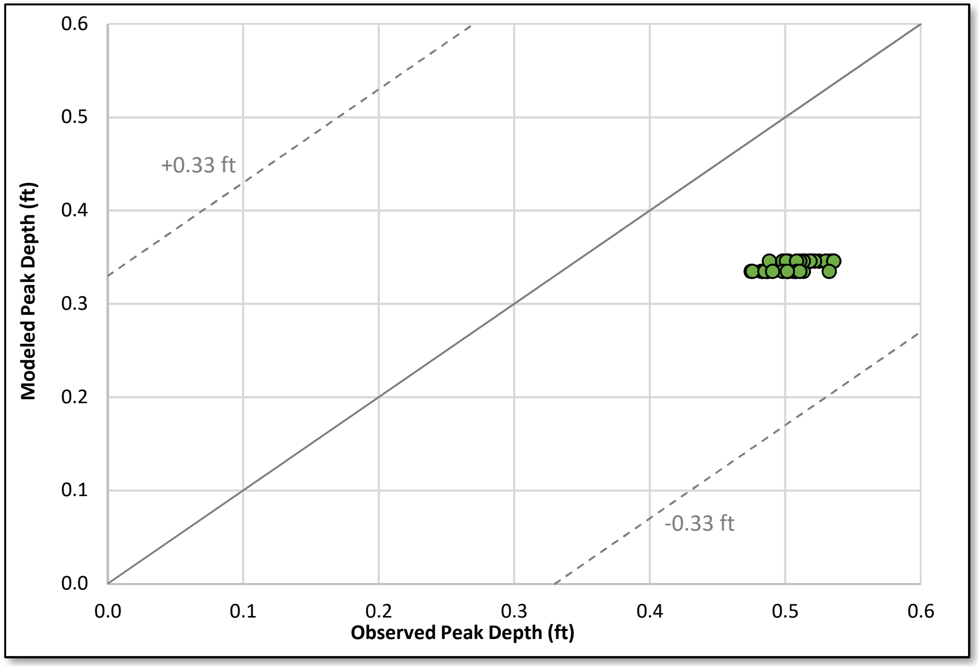
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

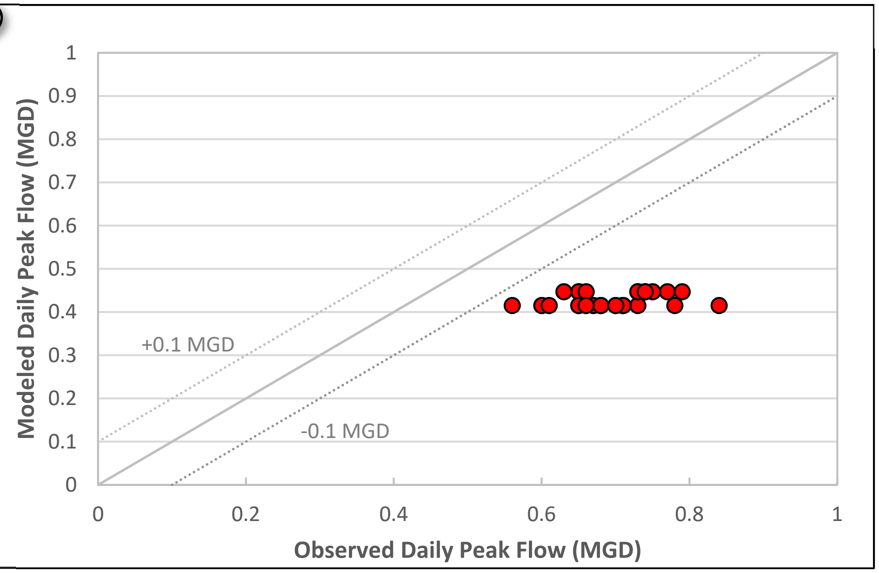
38



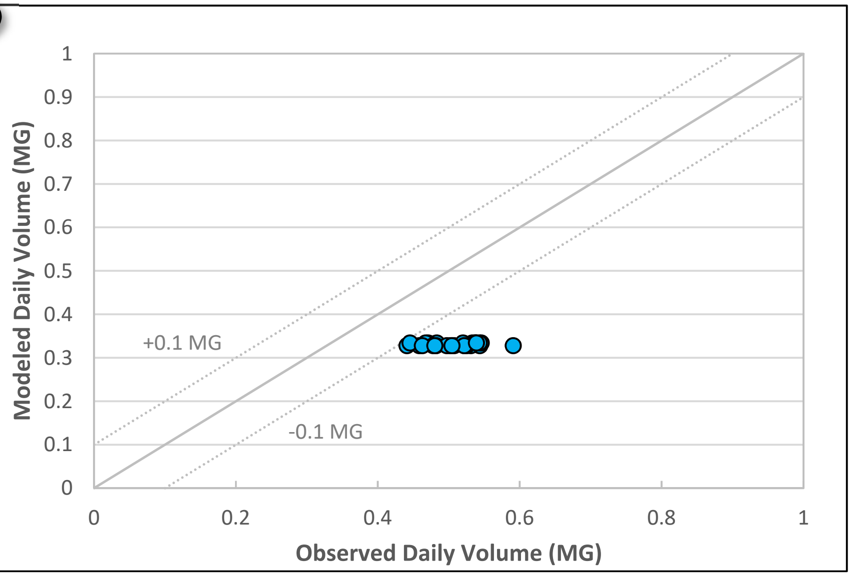
Flow Meter:

NFORK53

①



②



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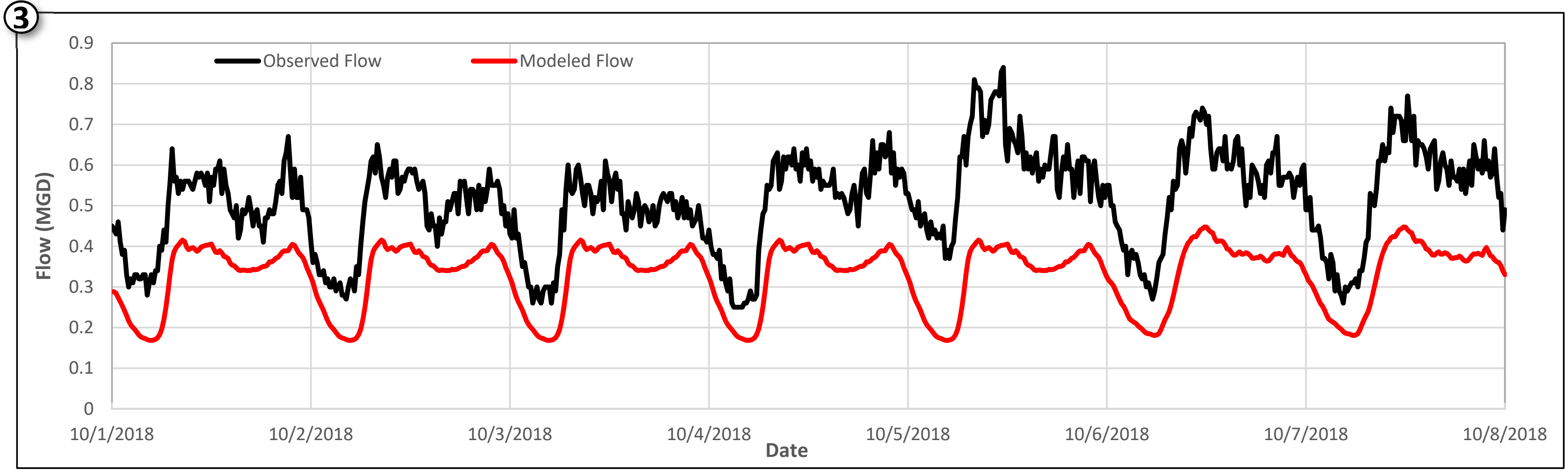


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK54**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

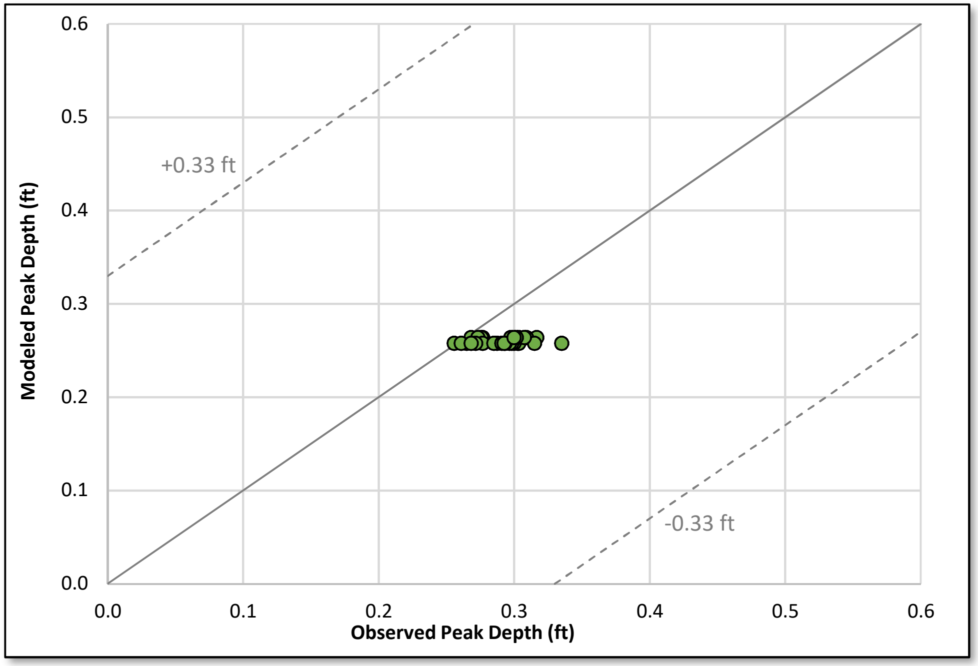
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

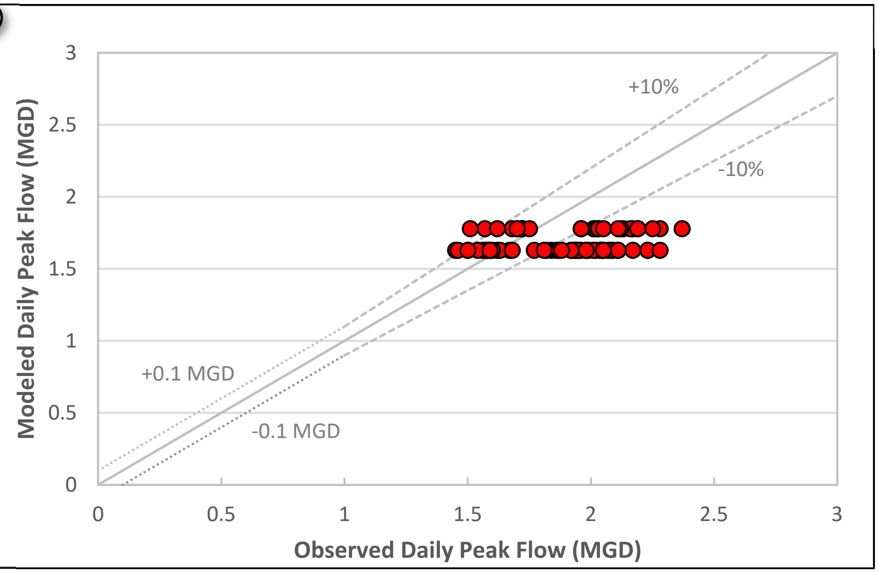
29



Flow Meter:

NFORK54

①



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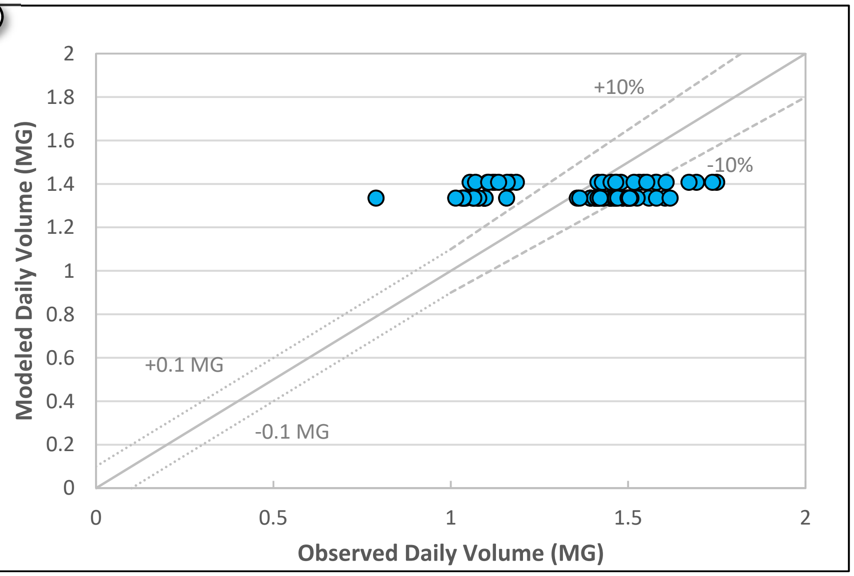

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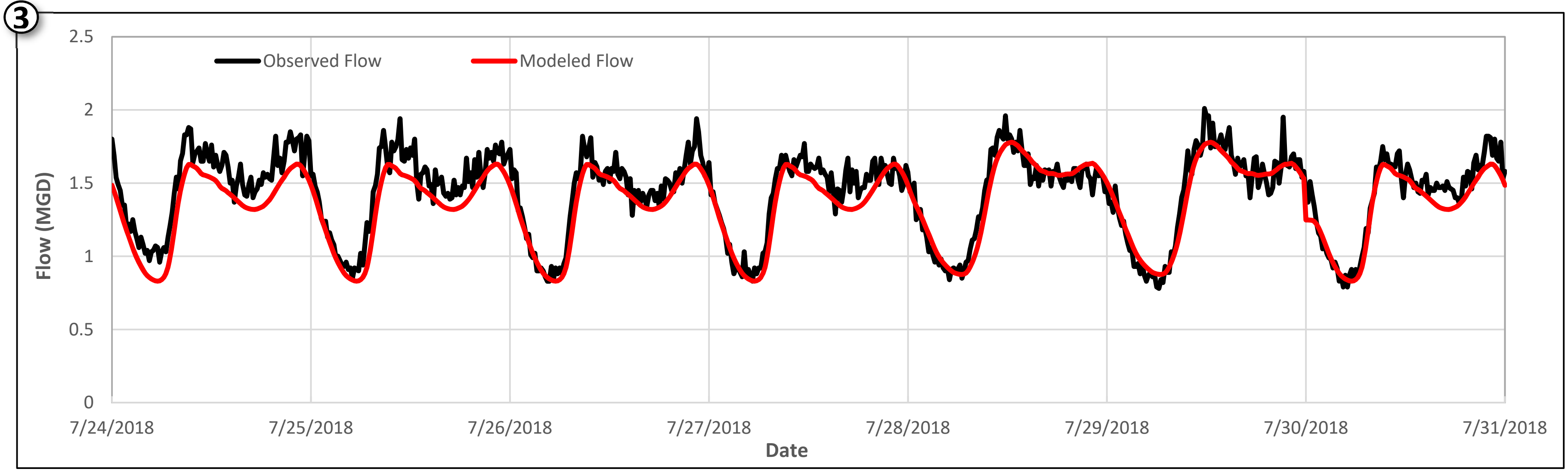


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK55**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

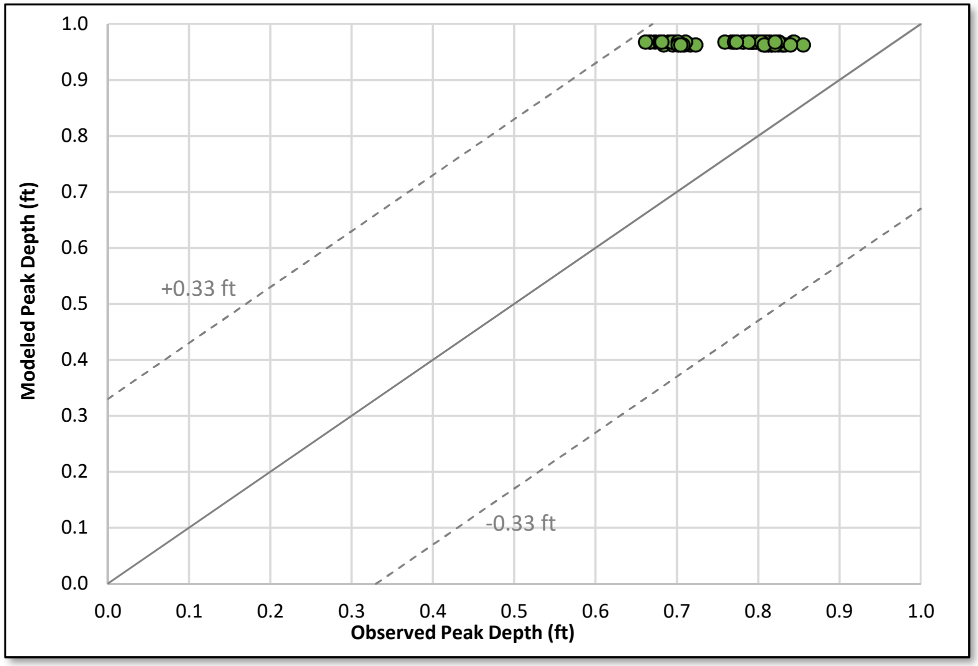
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

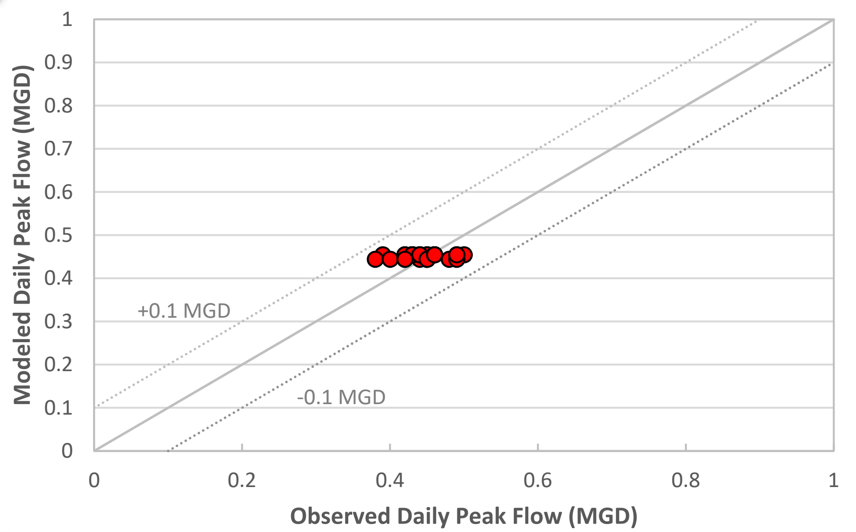
77



Flow Meter:

NFORK55

①



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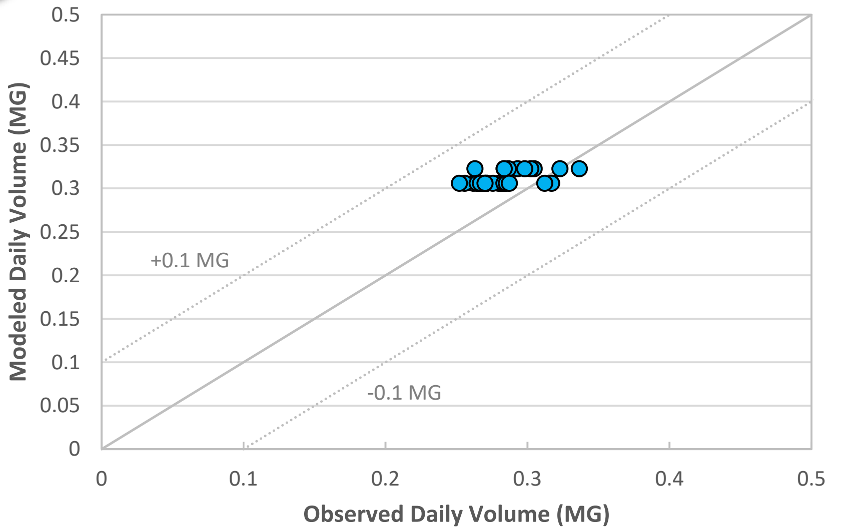

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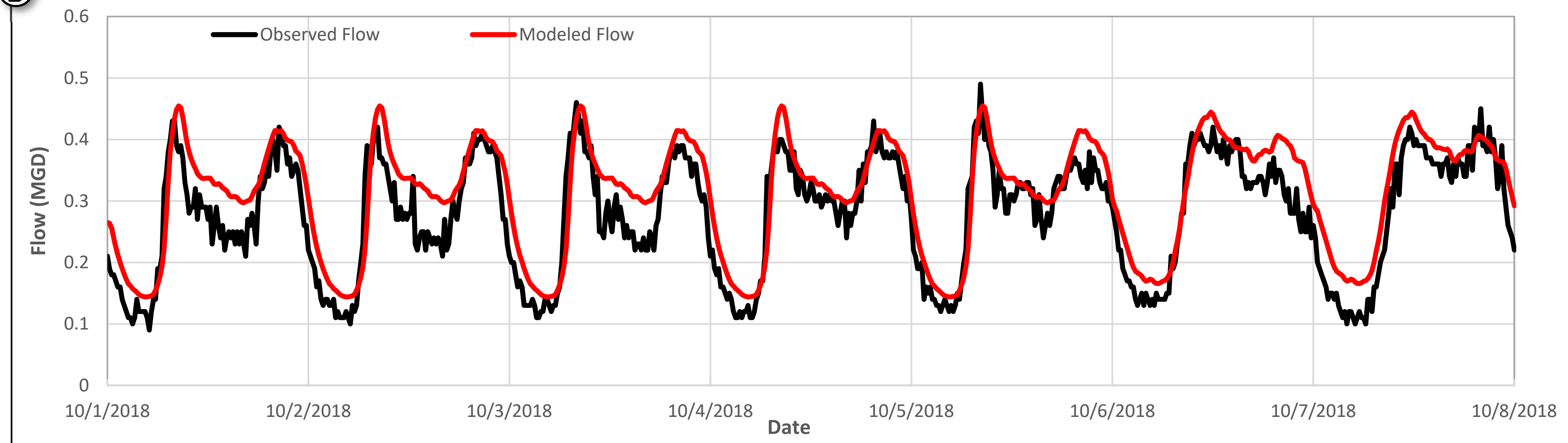


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **NFORK56**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

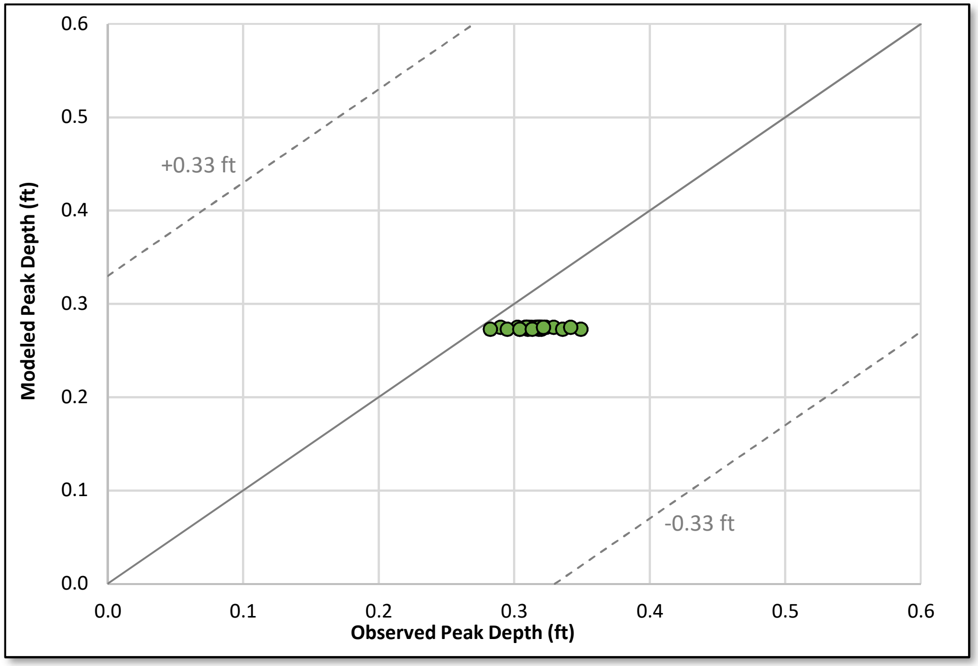
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days:

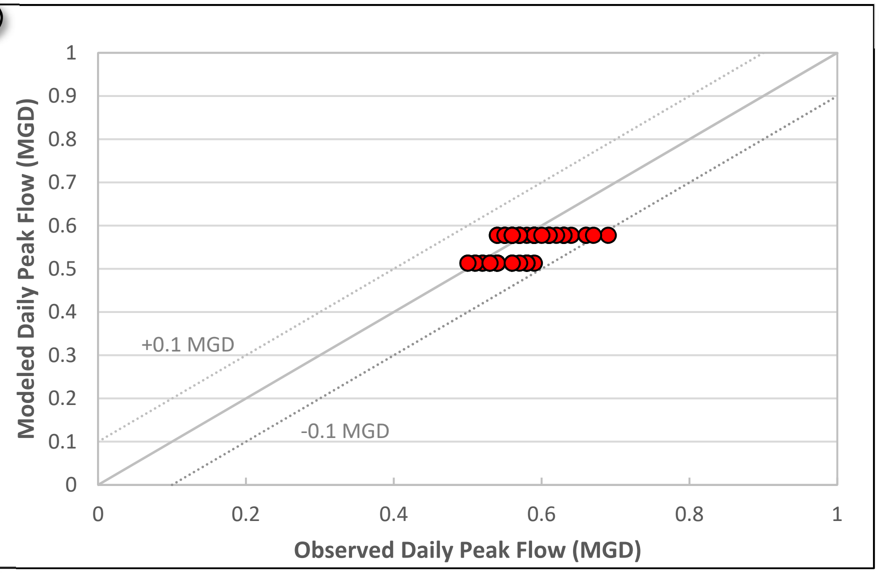
33



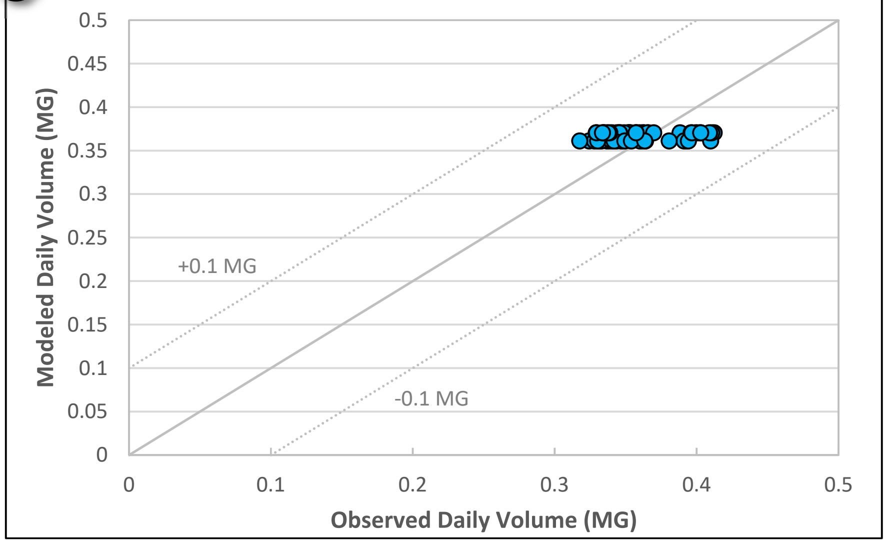
Flow Meter:

NFORK56

①



②



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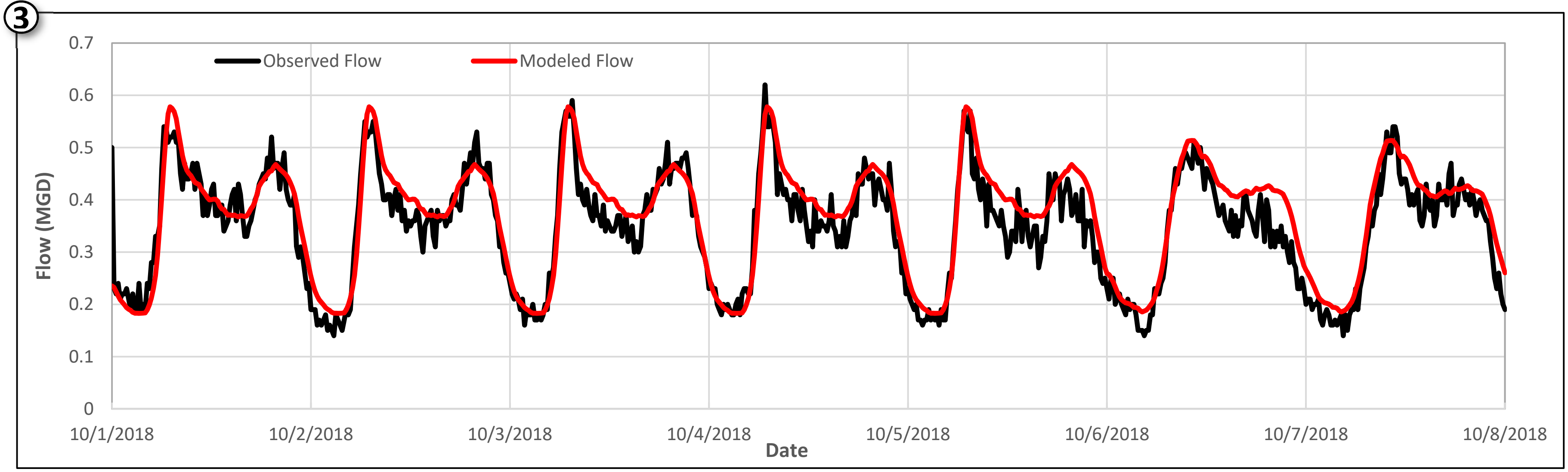


DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **Roxboro**

Sewershed: **North Fork Peachtree Creek**

Sewer Basin: **Intergovernmental**

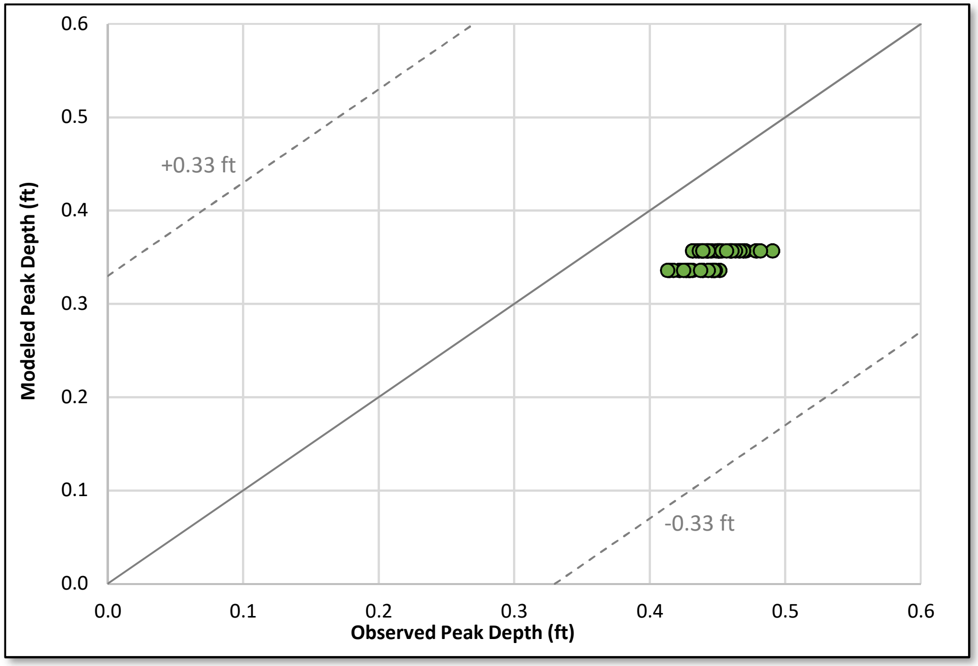
① Daily Volume

② Daily Peak Flow

③ One Week Time Series

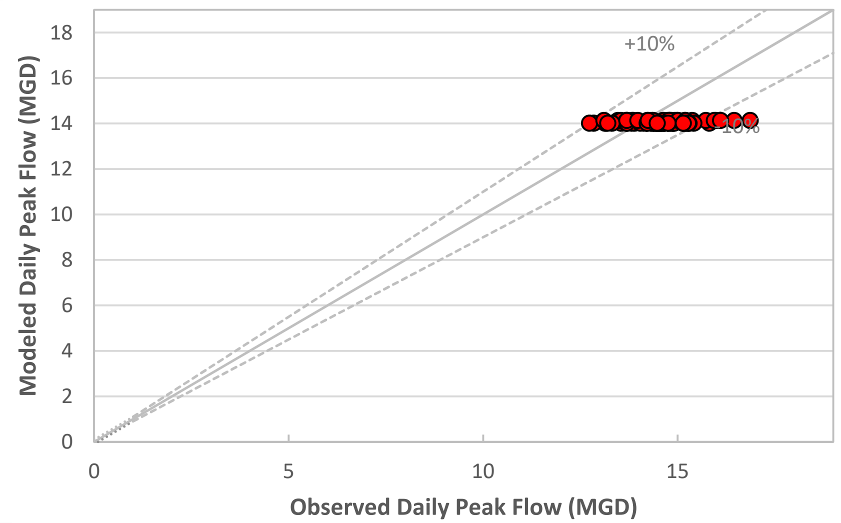
Total Compared Dry Days:

65

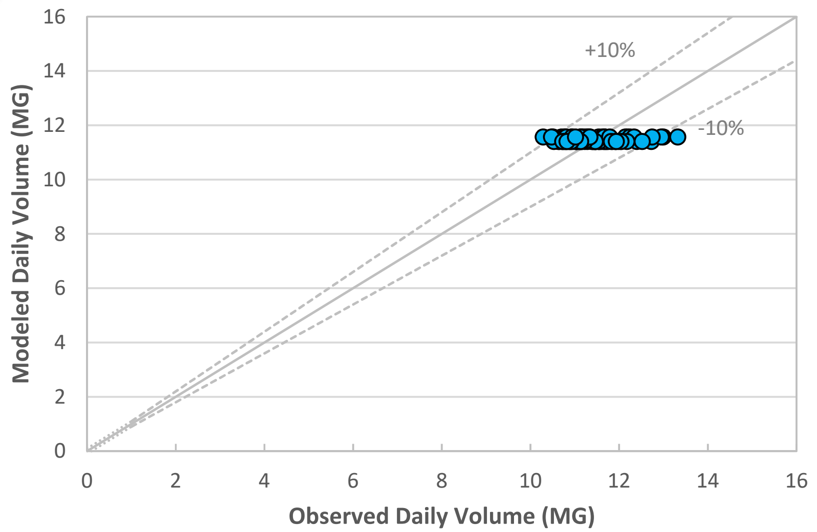


Flow Meter:
Roxboro

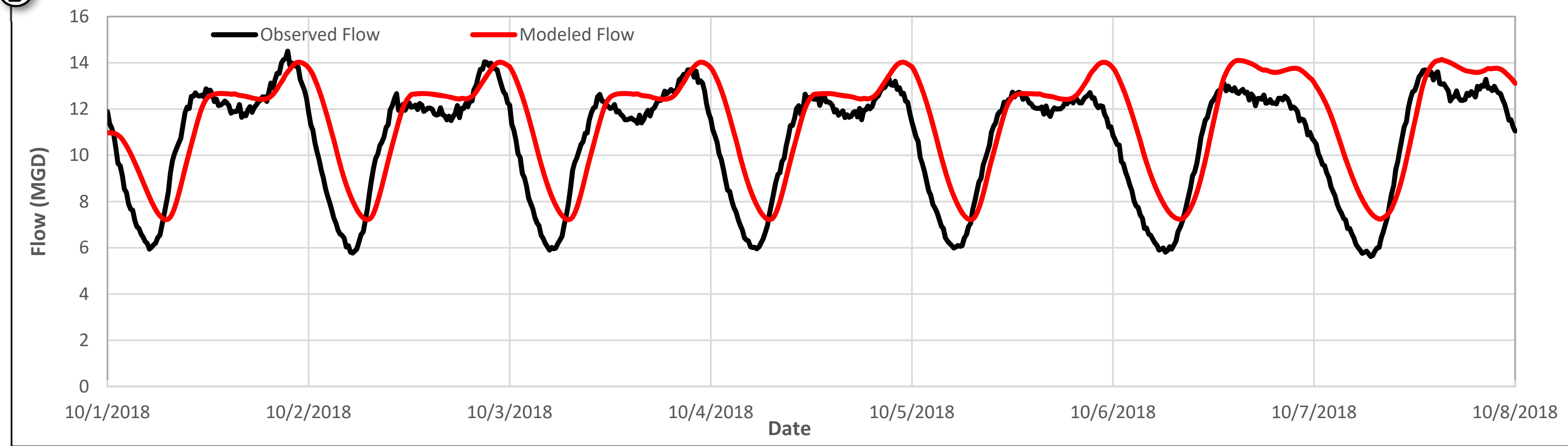
①



②



③



DeKalb Calibration Results

Dry Weather
Flow Summary

Flow Meter: **DK2**

Sewershed: **North Fork Peachtree Creek**

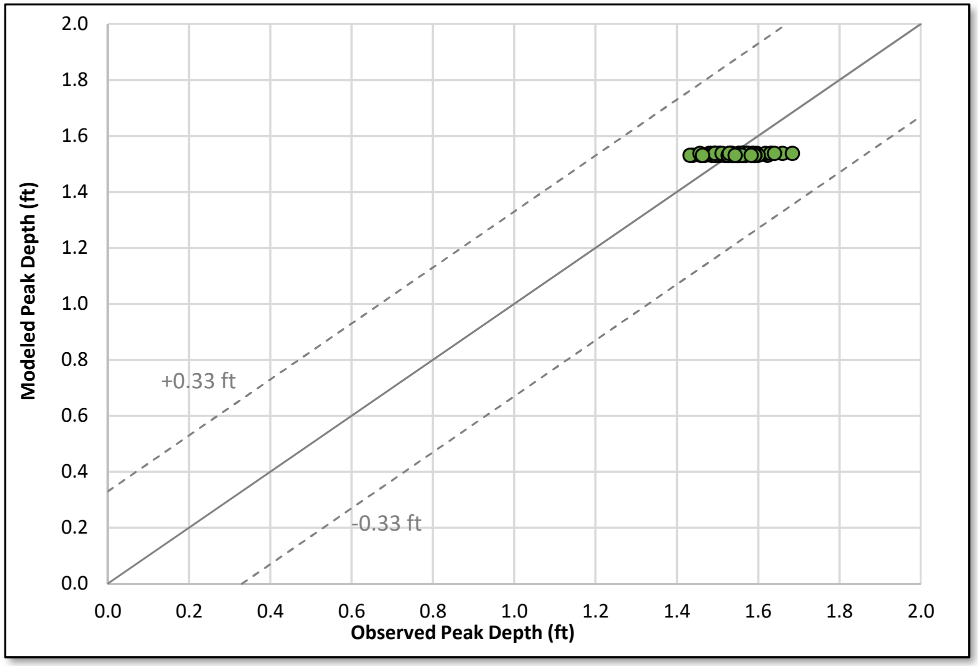
Sewer Basin: **Intergovernmental**

① Daily Volume

② Daily Peak Flow

③ One Week Time Series

Total Compared Dry Days: **87**



Flow Meter:

DK2

Appendix C
WWF Calibration

NFPC Sewershed Model WWF Calibration Summary

						Monitored				Modeled				Comparison						
Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
	NFORK4	1	6/1/18 14:30	6/2/18 14:30	Y	14.66	8.90	2.00	N	9.96	6.28	1.75	N	-32%	-29%	-0.25	0	0	1	
		2	6/27/18 17:30	6/29/18 17:30	Y	14.06	16.84	2.00	N	10.09	12.04	1.76	N	-28%	-29%	-0.24	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	Y	12.99	8.99	2.01	N	9.34	5.96	1.69	N	-28%	-34%	-0.32	0	0	1	
		4	7/16/18 0:00	7/16/18 12:00	Y	13.34	4.48	1.92	N	6.14	2.57	1.36	N	-54%	-43%	-0.56	0	0	0	
		5	7/21/18 6:30	7/21/18 18:30	Y	11.28	4.58	1.77	N	10.28	3.63	1.78	N	-9%	-21%	0.01	1	0	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	10.93	9.30	2.29	N	12.72	30.67	2.01	N	16%	230%	-0.28	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	7.50	4.97	1.59	N	8.11	5.84	1.57	N	8%	18%	-0.03	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	11.03	7.72	2.04	N	13.20	8.25	2.06	N	20%	7%	0.02	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	8.19	6.07	1.68	N	7.63	6.37	1.52	N	-7%	5%	-0.17	1	1	1	
	NFORK5	1	6/1/18 14:30	6/2/18 14:30	N	0.64	0.25	0.62	N	0.97	0.22	0.47	N	52%	-10%	-0.15	0	1	1	Low flow, used +/-0.1 mgd/MG criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	Y	0.00	0.00	0.00	N	0.51	0.35	0.34	N	NA	NA	NA	NA	NA	NA	
		3	7/6/18 16:00	7/7/18 16:00	N	0.58	0.12	0.45	N	0.59	0.21	0.36	N	1%	72%	-0.09	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.78	0.12	0.56	N	0.25	0.07	0.24	N	-68%	-38%	-0.32	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.69	0.13	0.51	N	1.58	0.18	0.60	N	129%	30%	0.08	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.26	1.26	0.76	N	1.57	1.15	0.60	N	25%	-9%	-0.16	1	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.31	0.14	0.27	N	0.93	0.21	0.45	N	199%	48%	0.18	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.44	0.47	0.50	N	1.22	0.49	0.52	N	-15%	4%	0.02	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	Y	0.21	0.12	0.21	N	0.48	0.23	0.33	N	129%	98%	0.12	0	0	1	
	NFORK6	1	6/1/18 14:30	6/2/18 14:30	N	3.23	1.63	1.21	N	2.92	1.60	1.04	N	-10%	-2%	-0.17	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	3.24	3.07	1.27	N	2.82	3.02	1.02	N	-13%	-2%	-0.24	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	5.00	1.59	2.04	Y	4.46	1.66	1.31	N	-11%	4%	-0.73	1	1	0	
		4	7/16/18 0:00	7/16/18 12:00	N	4.54	0.91	1.82	Y	5.59	0.95	1.51	N	23%	5%	-0.32	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	4.03	1.00	1.44	N	4.72	1.04	1.35	N	17%	4%	-0.09	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	5.44	9.17	4.32	Y	5.17	7.88	1.42	N	-5%	-14%	-2.90	1	0	0	
		7	9/26/18 16:00	9/27/18 16:00	N	2.19	1.40	0.90	N	2.94	1.49	1.05	N	34%	6%	0.15	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	4.59	2.47	1.61	N	4.55	2.26	1.32	N	-1%	-8%	-0.29	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	2.31	1.63	0.91	N	2.42	1.65	0.95	N	5%	1%	0.04	1	1	1	
	NFORK8	1	6/1/18 14:30	6/2/18 14:30	N	1.87	0.67	1.09	N	1.10	0.55	0.73	N	-41%	-19%	-0.36	0	0	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	2.54	1.28	1.12	N	1.58	1.08	0.87	N	-38%	-15%	-0.25	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	2.84	0.66	1.39	N	3.12	0.62	1.27	N	10%	-5%	-0.12	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	4.21	0.42	1.77	Y	4.93	0.48	2.21	Y	17%	15%	0.44	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	Y	2.69	0.44	1.25	N	3.19	0.41	1.30	N	19%	-7%	0.05	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	4.11	3.86	2.03	Y	3.07	2.82	1.26	N	-25%	-27%	-0.77	0	0	0	
		7	9/26/18 16:00	9/27/18 16:00	N	0.76	0.39	0.65	N	1.40	0.51	0.81	N	84%	31%	0.17	0	0	1	
		8	10/10/18 17:00	10/11/18 17:00	N	2.36	0.91	1.09	N	2.52	0.98	1.11	N	7%	8%	0.02	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.99	0.56	0.65	N	1.03	0.62	0.70	N	4%	10%	0.06	1	1	1	
	NFORK9	1	6/1/18 14:30	6/2/18 14:30	N	0.92	0.56	0.55	N	0.98	0.64	0.55	N	6%	13%	0.01	1	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.81	1.11	0.55	N	0.74	1.06	0.46	N	-8%	-4%	-0.09	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.93	0.52	0.55	N	0.94	0.56	0.54	N	1%	7%	-0.01	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.68	0.25	0.51	N	0.63	0.24	0.42	N	-7%	-1%	-0.09	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	1.05	0.30	0.80	N	1.27	0.38	0.88	N	21%	28%	0.08	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	0.00	0.00	0.00	N	1.48	2.89	1.51	Y	NA	NA	NA	NA	NA	NA	
		7	9/26/18 16:00	9/27/18 16:00	N	0.86	0.51	0.56	N	0.97	0.56	0.55	N	13%	11%	-0.01	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.34	0.81	2.55	Y	1.49	0.87	1.54	Y	11%	8%	-1.01	1	1	0	
		9	10/25/18 21:45	10/26/18 21:45	N	0.74	0.53	0.52	N	0.82	0.60	0.48	N	10%	12%	-0.04	1	1	1	
	NFORK10	1	6/1/18 14:30	6/2/18 14:30	N	4.95	3.04	1.09	N	5.48	3.02	1.12	N	11%	-1%	0.02	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	4.99	6.63	1.10	N	4.74	5.76	1.01	N	-5%	-13%	-0.08	1	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	4.99	3.04	1.10	N	6.02	2.96	1.18	N	21%	-3%	0.08	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	3.29	1.22	0.92	N	3.56	1.30	0.86	N	8%	6%	-0.06	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	4.34	1.56	1.03	N	4.81	1.73	1.03	N	11%	11%	0.00	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	7.89	17.96	1.37	N	6.00	14.56	1.18	N	-24%	-19%	-0.19	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	3.30	2.49	0.90	N	3.96	2.76	0.92	N	20%	11%	0.02	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	7.83	4.54	1.37	N	7.42	4.11	1.34	N	-5%	-9%	-0.03	1	1	1	

NFPC Sewershed Model WWF Calibration Summary

Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Monitored				Modeled				Comparison						
						Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
		9	10/25/18 21:45	10/26/18 21:45	N	4.32	3.06	0.98	N	3.93	3.09	0.91	N	-9%	1%	-0.06	1	1	1	
	NFORK16	1	6/1/18 14:30	6/2/18 14:30	N	0.94	0.61	0.67	N	1.43	0.56	0.59	N	53%	-8%	-0.09	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.74	0.88	0.57	N	0.89	0.96	0.46	N	20%	10%	-0.11	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.08	0.46	0.76	N	1.85	0.60	0.66	N	71%	30%	-0.10	0	0	1	
		4	7/16/18 0:00	7/16/18 12:00	Y	0.53	0.17	0.51	N	0.60	0.23	0.39	N	13%	40%	-0.12	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.89	0.26	0.67	N	1.25	0.34	0.55	N	41%	31%	-0.13	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.54	3.00	0.93	N	1.35	2.52	0.57	N	-13%	-16%	-0.36	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.70	0.41	0.57	N	0.83	0.47	0.45	N	19%	14%	-0.12	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.54	0.83	0.94	N	1.35	0.76	0.57	N	-12%	-8%	-0.38	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.82	0.50	0.63	N	0.74	0.54	0.42	N	-10%	7%	-0.20	1	1	1	
	NFORK17	1	6/1/18 14:30	6/2/18 14:30	Y	0.00	0.00	0.00	N	6.64	3.97	1.11	N	NA	NA	NA	NA	NA	NA	Mass balance issue for DWF. WWF are within calibration criteria range, considered calibrated.
		2	6/27/18 17:30	6/29/18 17:30	N	6.82	7.17	1.16	N	7.01	8.11	1.14	N	3%	13%	-0.01	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	5.44	3.95	1.05	N	5.74	3.82	1.02	N	5%	-3%	-0.03	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	4.33	1.72	0.93	N	4.42	1.80	0.88	N	2%	5%	-0.04	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	5.68	2.03	1.11	N	7.38	2.33	1.17	N	30%	15%	0.06	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	8.62	21.00	1.43	N	8.01	19.90	1.23	N	-7%	-5%	-0.20	1	1	1	
		7	9/26/18 16:00	9/27/18 16:00	Y	4.03	3.13	0.87	N	5.06	3.78	0.94	N	26%	20%	0.07	0	0	1	
		8	10/10/18 17:00	10/11/18 17:00	N	6.48	4.41	1.18	N	8.10	5.19	1.24	N	25%	18%	0.05	0	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	5.19	3.70	1.00	N	5.28	4.20	0.97	N	2%	13%	-0.04	1	1	1	
	NFORK18	1	6/1/18 14:30	6/2/18 14:30	N	3.49	2.20	1.21	N	3.32	1.85	1.04	N	-5%	-16%	-0.17	1	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	3.40	3.92	1.14	N	3.14	3.69	1.01	N	-8%	-6%	-0.13	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	3.06	1.89	1.14	N	3.76	1.81	1.10	N	23%	-4%	-0.03	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	2.02	0.77	0.88	N	2.52	0.82	0.92	N	25%	5%	0.03	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	2.86	1.01	1.08	N	3.22	1.09	1.02	N	13%	8%	-0.06	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	4.73	10.51	1.39	N	4.03	9.17	1.14	N	-15%	-13%	-0.25	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	2.07	1.51	0.89	N	2.67	1.72	0.94	N	29%	14%	0.05	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	3.90	2.58	1.29	N	4.55	2.59	1.20	N	17%	0%	-0.09	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	2.54	1.79	0.99	N	2.54	1.96	0.92	N	0%	10%	-0.07	1	1	1	
	NFORK20	1	6/1/18 14:30	6/2/18 14:30	N	3.51	2.03	1.19	N	2.98	1.73	0.82	N	-15%	-15%	-0.37	0	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	3.25	3.90	1.18	N	2.99	3.50	0.82	N	-8%	-10%	-0.36	1	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	3.06	1.75	1.13	N	3.31	1.67	0.88	N	8%	-4%	-0.25	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.92	0.73	0.85	N	2.37	0.77	0.73	N	23%	5%	-0.12	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	2.96	0.99	1.03	N	2.96	1.03	0.82	N	0%	4%	-0.21	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	4.93	11.25	1.40	N	3.69	8.66	0.94	N	-25%	-23%	-0.46	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	2.09	1.53	0.88	N	2.49	1.63	0.75	N	19%	6%	-0.13	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	3.74	2.34	1.17	N	4.12	2.38	0.99	N	10%	2%	-0.18	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	2.63	1.84	0.96	N	2.42	1.84	0.74	N	-8%	0%	-0.22	1	1	1	
	NFORK23	1	6/1/18 14:30	6/2/18 14:30	N	5.04	2.67	1.26	N	4.37	2.19	1.05	N	-13%	-18%	-0.21	1	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	4.82	3.46	1.42	N	4.52	4.69	1.07	N	-6%	36%	-0.35	1	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	3.37	2.27	0.98	N	3.30	2.06	0.89	N	-2%	-9%	-0.10	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	3.31	1.09	1.01	N	2.49	1.02	0.76	N	-25%	-6%	-0.25	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	5.15	1.35	1.28	N	4.34	1.24	1.04	N	-16%	-8%	-0.23	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	7.24	10.18	1.76	N	4.54	11.16	1.08	N	-37%	10%	-0.69	0	1	0	
		7	9/26/18 16:00	9/27/18 16:00	Y	2.42	1.77	0.91	N	3.08	2.20	0.86	N	27%	24%	-0.05	0	0	1	
		8	10/10/18 17:00	10/11/18 17:00	N	4.90	3.15	1.28	N	4.52	2.87	1.07	N	-8%	-9%	-0.21	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	3.50	2.35	1.05	N	3.24	2.41	0.88	N	-7%	3%	-0.18	1	1	1	
	NFORK24	1	6/1/18 14:30	6/2/18 14:30	N	2.62	1.65	0.99	N	2.74	1.58	0.77	N	4%	-4%	-0.22	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	2.33	3.12	0.95	N	2.88	3.14	0.79	N	23%	1%	-0.16	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	2.47	1.44	0.98	N	2.47	1.54	0.73	N	0%	7%	-0.25	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.81	0.61	0.82	N	2.38	0.73	0.71	N	31%	20%	-0.11	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	2.31	0.86	0.93	N	2.76	0.95	0.77	N	20%	10%	-0.16	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	2.76	8.24	1.03	N	3.49	7.76	0.89	N	27%	-6%	-0.15	0	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.86	1.32	0.86	N	2.01	1.44	0.64	N	8%	9%	-0.21	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	2.52	1.92	1.01	N	2.98	1.95	0.80	N	18%	2%	-0.21	1	1	1	

NFPC Sewershed Model WWF Calibration Summary

Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Monitored				Modeled				Comparison						
						Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
h Fork Peachtree Creek Basin (NFPC)		9	10/25/18 21:45	10/26/18 21:45	N	2.47	1.93	1.01	N	1.83	1.60	0.61	N	-26%	-17%	-0.40	0	0	1	
	NFORK26	1	6/1/18 14:30	6/2/18 14:30	Y	0.00	0.00	0.00	N	1.97	0.95	0.80	N	NA	NA	NA	NA	NA	NA	
		2	6/27/18 17:30	6/29/18 17:30	Y	13.29	18.50	0.87	N	2.06	1.87	0.82	N	-84%	-90%	-0.06	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	Y	10.18	8.98	0.77	N	1.42	0.89	0.68	N	-86%	-90%	-0.08	0	0	1	
		4	7/16/18 0:00	7/16/18 12:00	Y	12.91	4.17	0.46	N	1.82	0.45	0.77	N	-86%	-89%	0.31	0	0	1	
		5	7/21/18 6:30	7/21/18 18:30	Y	14.13	4.82	0.87	N	2.11	0.62	0.83	N	-85%	-87%	-0.04	0	0	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	12.65	8.62	1.26	N	2.53	4.56	0.90	N	-80%	-47%	-0.36	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.48	0.79	0.81	N	1.28	0.83	0.65	N	-14%	5%	-0.16	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.89	1.07	0.89	N	2.04	1.21	0.81	N	8%	13%	-0.08	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	1.28	0.90	0.78	N	1.13	0.95	0.61	N	-12%	5%	-0.17	1	1	1	
	NFORK28	1	6/1/18 14:30	6/2/18 14:30	N	1.73	0.96	1.27	N	2.11	0.83	0.87	N	22%	-14%	-0.40	1	0	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria.
		2	6/27/18 17:30	6/29/18 17:30	N	2.46	1.84	1.98	Y	2.20	1.71	0.93	N	-11%	-7%	-1.05	1	1	0	
		3	7/6/18 16:00	7/7/18 16:00	N	1.02	0.72	0.63	N	1.48	0.76	0.62	N	45%	5%	-0.01	0	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.65	0.41	1.54	N	0.95	0.35	0.48	N	-42%	-16%	-1.06	0	1	0	
		5	7/21/18 6:30	7/21/18 18:30	N	2.32	0.54	2.04	Y	2.23	0.54	0.97	N	-4%	0%	-1.07	1	1	0	
		5	7/31/18 15:15	8/5/18 15:15	N	2.90	5.10	3.27	Y	2.22	4.14	0.94	N	-24%	-19%	-2.33	0	0	0	
		7	9/26/18 16:00	9/27/18 16:00	N	1.11	0.70	0.71	N	1.33	0.76	0.57	N	20%	9%	-0.14	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.76	1.17	1.69	Y	2.30	1.19	1.05	N	31%	1%	-0.63	0	1	0	
		9	10/25/18 21:45	10/26/18 21:45	N	1.32	0.89	0.89	N	1.30	0.89	0.56	N	-1%	0%	-0.33	1	1	1	
	NFORK29	1	6/1/18 14:30	6/2/18 14:30	N	1.51	0.64	0.57	N	1.21	0.51	0.59	N	-20%	-21%	0.01	0	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	1.20	0.97	0.54	N	1.28	0.99	0.60	N	6%	2%	0.06	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.32	0.46	0.53	N	0.93	0.49	0.51	N	-29%	7%	-0.02	0	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.55	0.18	0.38	N	0.53	0.21	0.37	N	-4%	13%	-0.01	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	Y	0.29	0.01	0.51	N	1.32	0.32	0.61	N	356%	4835%	0.10	0	0	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	0.35	-0.38	0.57	N	1.28	2.49	0.60	N	266%	-750%	0.04	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.69	0.43	0.33	N	0.84	0.46	0.48	N	22%	7%	0.16	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.16	0.64	0.44	N	1.21	0.61	0.59	N	4%	-5%	0.14	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.74	0.55	0.36	N	0.77	0.51	0.45	N	3%	-7%	0.10	1	1	1	
	NFORK30	1	6/1/18 14:30	6/2/18 14:30	N	0.64	0.22	0.56	N	1.32	0.17	0.65	N	107%	-24%	0.09	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria. Limited number of qualified calibration days due to level jumps. FM was removed for cleaning 10/1 through 10/29.
		2	6/27/18 17:30	6/29/18 17:30	N	1.52	0.55	1.24	Y	1.40	0.35	0.67	N	-8%	-36%	-0.57	1	0	0	
		3	7/6/18 16:00	7/7/18 16:00	N	0.36	0.23	0.46	N	0.83	0.13	0.52	N	131%	-42%	0.06	0	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.52	0.12	1.53	Y	0.46	0.06	0.37	N	-69%	-53%	-1.16	0	1	0	
		5	7/21/18 6:30	7/21/18 18:30	N	1.51	0.19	1.66	Y	1.59	0.14	0.72	N	5%	-29%	-0.95	1	1	0	
		5	7/31/18 15:15	8/5/18 15:15	N	1.66	1.55	1.86	Y	1.42	0.83	0.67	N	-14%	-47%	-1.19	1	0	0	
		7	9/26/18 16:00	9/27/18 16:00	N	0.33	0.13	0.40	N	0.64	0.13	0.45	N	93%	-1%	0.05	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	Y	0.00	0.00	0.00	N	1.18	0.34	0.62	N	NA	NA	NA	NA	NA	NA	
		9	10/25/18 21:45	10/26/18 21:45	Y	0.00	0.00	0.00	N	0.52	0.19	0.39	N	NA	NA	NA	NA	NA	NA	
	NFORK32	1	6/1/18 14:30	6/2/18 14:30	N	1.16	0.56	0.56	N	0.74	0.47	0.39	N	-37%	-16%	-0.17	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	1.02	1.25	0.53	N	0.84	0.92	0.42	N	-18%	-26%	-0.11	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.62	0.47	0.43	N	0.62	0.44	0.36	N	0%	-8%	-0.07	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.51	0.18	0.38	N	0.50	0.20	0.32	N	-2%	12%	-0.06	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.87	0.27	0.50	N	0.98	0.32	0.45	N	13%	15%	-0.05	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.17	2.80	0.56	N	0.98	2.31	0.45	N	-17%	-17%	-0.11	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.52	0.34	0.38	N	0.56	0.42	0.34	N	8%	22%	-0.04	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	0.87	0.59	0.50	N	1.10	0.63	0.48	N	27%	8%	-0.02	0	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.72	0.47	0.44	N	0.63	0.48	0.36	N	-12%	3%	-0.08	1	1	1	
	NFORK36	1	6/1/18 14:30	6/2/18 14:30	N	8.93	5.76	1.25	N	9.54	6.04	1.31	N	7%	5%	0.06	1	1	1	Mass balance issue for DWF. WWF are within calibration criteria range, considered calibrated.
		2	6/27/18 17:30	6/29/18 17:30	N	8.44	10.69	1.22	N	8.67	11.34	1.25	N	3%	6%	0.03	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	11.57	5.06	1.47	N	11.87	5.95	1.48	N	3%	18%	0.01	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	8.05	2.39	1.25	N	9.71	2.82	1.32	N	21%	18%	0.07	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	7.47	2.84	1.17	N	9.79	3.54	1.32	N	31%	25%	0.15	0	0	1	
		5	7/31/18 15:15	8/5/18 15:15	N	14.51	30.98	1.79	N	13.73	29.35	1.61	N	-5%	-5%	-0.18	1	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	6.00	4.23	1.02	N	8.49	5.60	1.23	N	41%	32%	0.21	0	0	1	
		8	10/10/18 17:00	10/11/18 17:00	N	14.30	7.91	1.63	N	14.51	8.34	1.65	N	1%	5%	0.02	1	1	1	

NFPC Sewershed Model WWF Calibration Summary

Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Monitored				Modeled				Comparison						
						Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
DeKalb County Nort		9	10/25/18 21:45	10/26/18 21:45	N	6.89	5.09	1.09	N	7.61	6.14	1.15	N	10%	21%	0.06	1	0	1	
	NFORK37	1	6/1/18 14:30	6/2/18 14:30	N	9.17	5.28	1.51	N	9.56	5.90	1.58	N	4%	12%	0.07	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	9.01	12.38	1.50	N	9.65	11.30	1.59	N	7%	-9%	0.09	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	8.88	5.67	1.53	N	8.93	5.59	1.52	N	1%	-2%	-0.02	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	8.21	2.57	1.40	N	5.65	2.41	1.14	N	-31%	-6%	-0.26	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	7.68	3.18	1.37	N	9.95	3.47	1.61	N	30%	9%	0.24	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	Y	10.90	27.38	1.94	N	12.34	28.81	1.86	N	13%	5%	-0.08	1	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	6.62	4.92	1.22	N	7.68	5.47	1.37	N	16%	11%	0.16	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	Y	10.17	6.55	1.64	N	12.85	7.86	1.91	N	26%	20%	0.27	0	0	1	
		9	10/25/18 21:45	10/26/18 21:45	N	7.51	5.73	1.30	N	7.22	5.99	1.32	N	-4%	5%	0.02	1	1	1	
	NFORK38	1	6/1/18 14:30	6/2/18 14:30	N	4.96	3.39	1.40	N	4.89	2.63	1.18	N	-1%	-22%	-0.22	1	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	4.25	5.26	1.33	N	4.26	5.03	1.09	N	0%	-4%	-0.24	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	4.12	2.41	1.32	N	5.64	2.60	1.25	N	37%	8%	-0.07	0	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	2.66	1.08	1.11	N	3.24	1.13	0.96	N	22%	5%	-0.15	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	4.33	1.48	1.31	N	4.50	1.52	1.11	N	4%	3%	-0.21	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	6.93	15.97	1.65	N	5.61	12.71	1.24	N	-19%	-20%	-0.40	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	3.07	2.16	1.10	N	3.58	2.39	1.00	N	17%	10%	-0.09	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	6.72	3.78	1.63	N	6.64	3.66	1.38	N	-1%	-3%	-0.25	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	3.69	2.66	1.22	N	3.50	2.71	1.00	N	-5%	2%	-0.22	1	1	1	
	NFORK39	1	6/1/18 14:30	6/2/18 14:30	Y	1.19	0.34	0.63	N	1.65	0.60	0.46	N	39%	75%	-0.17	0	0	1	Mass balance issue for both DWF and WWF. Near flow split location with unverified pipe inverts. Consistently measured less flow than upstream NFORK50. Used NFORK50 for DWF inputs. WWF results are reasonable
		2	6/27/18 17:30	6/29/18 17:30	N	0.72	0.58	0.54	N	1.02	0.96	0.37	N	42%	66%	-0.16	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.24	0.38	0.63	N	1.19	0.58	0.40	N	-4%	51%	-0.23	1	0	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.69	0.16	0.53	N	0.52	0.17	0.28	N	-25%	7%	-0.25	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.91	0.19	0.57	N	2.15	0.42	0.53	N	137%	118%	-0.04	0	0	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.24	2.09	0.71	N	2.37	2.88	0.56	N	91%	38%	-0.15	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.90	0.44	0.62	N	1.60	0.52	0.45	N	77%	18%	-0.16	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.38	0.70	0.66	N	1.94	0.88	0.50	N	40%	26%	-0.16	0	0	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.48	0.29	0.40	N	0.80	0.55	0.33	N	65%	89%	-0.08	0	0	1	
	NFORK40	1	6/1/18 14:30	6/2/18 14:30	N	2.21	1.55	1.28	N	2.54	1.40	1.08	N	15%	-10%	-0.20	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	2.18	2.98	1.11	N	2.66	2.78	1.10	N	22%	-7%	-0.02	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	2.01	1.29	1.10	N	1.97	1.33	1.00	N	-2%	3%	-0.09	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.93	0.60	1.08	N	2.28	0.65	1.05	N	18%	10%	-0.04	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	2.28	0.86	1.16	N	2.58	0.85	1.09	N	13%	-1%	-0.07	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	2.31	7.55	1.18	N	3.23	6.81	1.17	N	40%	-10%	-0.02	0	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.75	1.17	1.29	N	1.80	1.27	0.98	N	3%	9%	-0.31	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	2.10	1.52	1.20	N	2.65	1.70	1.10	N	26%	11%	-0.11	0	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	1.90	1.33	1.09	N	1.63	1.41	0.95	N	-14%	6%	-0.14	1	1	1	
	NFORK43	1	6/1/18 14:30	6/2/18 14:30	N	6.26	3.74	1.48	N	6.38	3.79	1.15	N	2%	1%	-0.33	1	1	1	Mass balance issue for DWF. WWF are within calibration criteria range, considered calibrated.
		2	6/27/18 17:30	6/29/18 17:30	N	6.60	6.81	1.48	N	6.74	7.82	1.19	N	2%	15%	-0.28	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	4.48	3.21	1.20	N	5.45	3.62	1.05	N	22%	13%	-0.15	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	4.05	1.47	1.07	N	4.09	1.70	0.90	N	1%	15%	-0.17	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	6.03	1.97	1.45	N	7.38	2.28	1.25	N	22%	16%	-0.20	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	10.32	22.20	1.99	N	7.52	19.13	1.26	N	-27%	-14%	-0.73	0	0	0	
		7	9/26/18 16:00	9/27/18 16:00	N	3.99	3.09	1.12	N	4.91	3.65	1.00	N	23%	18%	-0.11	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	Y	0.00	0.00	0.00	N	8.15	5.09	1.31	N	NA	NA	NA	NA	NA	NA	
		9	10/25/18 21:45	10/26/18 21:45	Y	0.00	0.00	0.00	N	5.36	4.07	1.04	N	NA	NA	NA	NA	NA	NA	
	NFORK47	1	6/1/18 14:30	6/2/18 14:30	N	3.60	2.02	0.82	N	4.19	1.98	0.77	N	16%	-2%	-0.05	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	4.82	4.30	0.91	N	4.29	4.21	0.78	N	-11%	-2%	-0.13	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	2.78	1.95	0.69	N	3.07	1.86	0.66	N	10%	-4%	-0.04	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	2.72	0.90	0.69	N	2.39	0.92	0.58	N	-12%	2%	-0.10	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	4.05	1.11	0.86	N	4.22	1.14	0.77	N	4%	3%	-0.08	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	5.80	12.51	0.99	N	4.31	10.05	0.78	N	-26%	-20%	-0.21	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	2.46	1.82	0.67	N	2.86	1.96	0.64	N	16%	8%	-0.03	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	4.01	2.79	0.84	N	4.33	2.63	0.78	N	8%	-6%	-0.05	1	1	1	

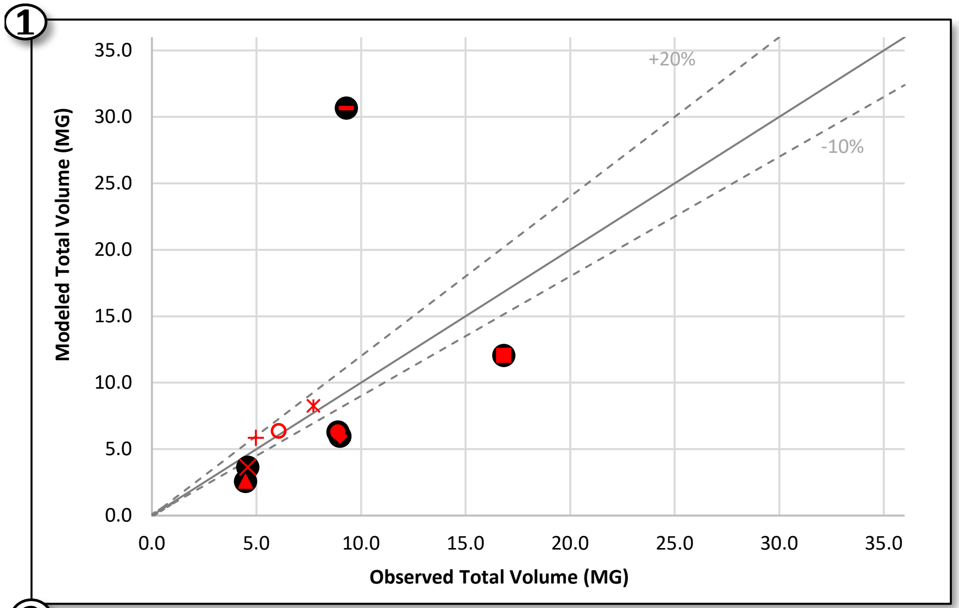
NFPC Sewershed Model WWF Calibration Summary

Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Monitored				Modeled				Comparison						
						Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
		9	10/25/18 21:45	10/26/18 21:45	N	3.32	2.16	0.75	N	2.93	2.17	0.64	N	-12%	0%	-0.11	1	1	1	
	NFORK48	1	6/1/18 14:30	6/2/18 14:30	N	0.42	0.11	0.30	N	0.55	0.18	0.41	N	32%	59%	0.11	0	1	1	Low flow, used +/-0.1MGD/MG criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.38	0.36	0.29	N	0.39	0.34	0.34	N	2%	-5%	0.06	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.54	0.18	0.36	N	0.63	0.20	0.44	N	17%	12%	0.08	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.25	0.07	0.21	N	0.25	0.07	0.27	N	-1%	4%	0.06	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.41	0.10	0.30	N	0.45	0.11	0.37	N	10%	7%	0.07	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	0.57	1.11	0.38	N	0.49	0.93	0.39	N	-14%	-17%	0.01	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.19	0.12	0.19	N	0.31	0.16	0.31	N	65%	33%	0.11	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	0.29	0.18	0.24	N	0.39	0.24	0.34	N	34%	36%	0.10	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.21	0.15	0.20	N	0.25	0.18	0.28	N	21%	19%	0.08	1	1	1	
	NFORK49_2	1	6/1/18 14:30	6/2/18 14:30	Y	0.00	0.00	0.00	N	0.46	0.16	0.36	N	NA	NA	NA	NA	NA	NA	Original NFORK49 contained data of questionable quality, and was stolen. Meter relocated to NFORK49_2. Data available from mid-day 10/25 on.
		2	6/27/18 17:30	6/29/18 17:30	Y	0.00	0.00	0.00	N	0.53	0.29	0.38	N	NA	NA	NA	NA	NA	NA	
		3	7/6/18 16:00	7/7/18 16:00	Y	0.00	0.00	0.00	N	0.87	0.16	0.49	N	NA	NA	NA	NA	NA	NA	
		4	7/16/18 0:00	7/16/18 12:00	Y	0.00	0.00	0.00	N	0.36	0.07	0.31	N	NA	NA	NA	NA	NA	NA	
		5	7/21/18 6:30	7/21/18 18:30	Y	0.00	0.00	0.00	N	1.37	0.12	0.63	N	NA	NA	NA	NA	NA	NA	
		5	7/31/18 15:15	8/5/18 15:15	Y	0.00	0.00	0.00	N	1.24	0.81	0.59	N	NA	NA	NA	NA	NA	NA	
		7	9/26/18 16:00	9/27/18 16:00	Y	0.00	0.00	0.00	N	0.69	0.16	0.44	N	NA	NA	NA	NA	NA	NA	
		8	10/10/18 17:00	10/11/18 17:00	Y	0.00	0.00	0.00	N	0.85	0.24	0.49	N	NA	NA	NA	NA	NA	NA	
		9	10/25/18 21:45	10/26/18 21:45	N	0.32	0.15	0.43	N	0.33	0.17	0.30	N	3%	13%	-0.13	1	1	1	
	NFORK50	1	6/1/18 14:30	6/2/18 14:30	N	2.05	0.82	0.60	N	1.65	0.60	0.54	N	-20%	-27%	-0.06	0	0	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	1.16	0.89	0.47	N	1.02	0.96	0.42	N	-12%	9%	-0.05	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.52	0.49	0.53	N	1.19	0.58	0.45	N	-22%	17%	-0.08	0	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.04	0.18	0.42	N	0.52	0.17	0.31	N	-50%	-8%	-0.11	0	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	1.15	0.33	0.44	N	2.15	0.42	0.63	N	87%	29%	0.19	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.98	3.38	0.53	N	2.37	2.88	0.65	N	20%	-15%	0.12	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.91	0.43	0.39	N	1.59	0.52	0.53	N	75%	20%	0.14	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.65	0.86	0.47	N	1.93	0.88	0.59	N	17%	3%	0.12	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.99	0.56	0.45	N	0.80	0.55	0.38	N	-20%	-1%	-0.07	0	1	1	
	NFORK51	1	6/1/18 14:30	6/2/18 14:30	N	3.07	1.42	1.20	N	2.91	1.34	1.07	N	-5%	-6%	-0.13	1	1	1	
		2	6/27/18 17:30	6/29/18 17:30	N	2.86	2.64	1.16	N	1.91	2.22	0.94	N	-33%	-16%	-0.22	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	2.61	1.25	1.15	N	2.50	1.19	1.02	N	-4%	-5%	-0.13	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	3.87	0.72	1.33	N	1.11	0.44	0.82	N	-71%	-39%	-0.51	0	0	0	
		5	7/21/18 6:30	7/21/18 18:30	N	2.96	0.77	1.22	N	3.60	0.77	1.15	N	21%	1%	-0.07	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	3.87	7.19	1.36	N	4.42	6.02	1.24	N	14%	-16%	-0.12	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.99	1.06	0.99	N	2.82	1.17	1.06	N	42%	11%	0.07	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	2.44	1.65	1.11	N	3.86	1.78	1.18	N	58%	8%	0.07	0	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	1.67	1.24	0.97	N	1.62	1.24	0.90	N	-3%	0%	-0.07	1	1	1	
	NFORK52	1	6/1/18 14:30	6/2/18 14:30	N	2.17	1.29	1.03	N	1.65	1.07	0.63	N	-24%	-17%	-0.40	0	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	1.88	2.67	0.98	N	1.91	2.13	0.71	N	2%	-20%	-0.27	1	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.32	1.01	0.91	N	1.44	1.00	0.59	N	9%	-1%	-0.32	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.22	0.46	0.80	N	1.10	0.46	0.49	N	-10%	1%	-0.31	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	1.83	0.62	0.98	N	2.24	0.71	0.78	N	23%	14%	-0.20	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	2.66	6.69	1.21	N	2.21	5.30	0.77	N	-17%	-21%	-0.45	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.24	0.89	0.78	N	1.32	0.96	0.55	N	6%	7%	-0.22	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.95	1.35	1.05	N	2.44	1.45	0.83	N	25%	8%	-0.22	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	1.55	1.07	0.88	N	1.40	1.11	0.58	N	-10%	4%	-0.30	1	1	1	
	NFORK53	1	6/1/18 14:30	6/2/18 14:30	N	0.74	0.41	0.52	N	0.63	0.48	0.35	N	-15%	16%	-0.16	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.76	0.86	0.52	N	0.70	0.95	0.37	N	-8%	10%	-0.15	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.91	0.43	0.55	N	0.93	0.49	0.44	N	2%	14%	-0.11	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.50	0.16	0.43	N	0.56	0.20	0.34	N	12%	25%	-0.09	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.89	0.27	0.57	N	1.10	0.32	0.47	N	24%	18%	-0.10	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	0.98	2.28	0.59	N	1.08	2.50	0.46	N	11%	9%	-0.13	1	1	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.64	0.46	0.52	N	0.67	0.47	0.36	N	4%	3%	-0.16	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.02	0.64	0.63	N	1.11	0.66	0.47	N	9%	2%	-0.16	1	1	1	

NFPC Sewershed Model WWF Calibration Summary

						Monitored				Modeled				Comparison						
Basin Name	Meter	Event ID	Event Start Time	Event End Time	Data Quality Issues?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (Ft)	Predicted Surcharge?	Peak Flow % Diff	Total Volume % Diff	Peak Depth Diff (ft)	Peak Flow Flag	Total Volume Flag	Peak Depth Flag	Notes for Calibration
		9	10/25/18 21:45	10/26/18 21:45	N	0.75	0.53	0.54	N	0.74	0.52	0.38	N	-2%	-2%	-0.16	1	1	1	
	NFORK54	1	6/1/18 14:30	6/2/18 14:30	N	0.64	0.44	0.27	N	0.50	0.36	0.27	N	-22%	-19%	0.00	0	1	1	Mass balance issue for DWF. Consistently measured less flow than upstream NFORK53. Used NFORK53 for DWF inputs. WWF are within calibration criteria range especially after excluding the DWF gaps, considered
		2	6/27/18 17:30	6/29/18 17:30	N	0.93	1.25	0.36	N	0.56	0.71	0.29	N	-40%	-43%	-0.07	0	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.79	0.57	0.33	N	0.80	0.37	0.34	N	2%	-35%	0.01	1	0	1	
		4	7/16/18 0:00	7/16/18 12:00	N	0.87	0.31	0.34	N	0.42	0.15	0.26	N	-52%	-51%	-0.08	0	0	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.98	0.36	0.36	N	0.98	0.25	0.37	N	0%	-30%	0.01	1	0	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.11	3.23	0.38	N	0.96	1.90	0.36	N	-14%	-41%	-0.02	1	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.59	0.44	0.26	N	0.54	0.35	0.28	N	-8%	-20%	0.03	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	0.95	0.67	0.35	N	1.01	0.54	0.37	N	6%	-19%	0.02	1	0	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.65	0.49	0.28	N	0.60	0.40	0.30	N	-8%	-19%	0.02	1	1	1	
	NFORK55	1	6/1/18 14:30	6/2/18 14:30	N	2.92	2.01	0.97	N	2.58	1.60	1.26	N	-12%	-20%	0.29	1	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	2.77	3.77	0.93	N	2.58	3.12	1.30	N	-7%	-17%	0.37	1	0	1	
		3	7/6/18 16:00	7/7/18 16:00	N	3.16	1.69	1.00	N	3.15	1.55	1.15	N	0%	-9%	0.15	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.71	0.66	0.78	N	1.65	0.68	0.97	N	-3%	3%	0.20	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	2.49	0.98	0.90	N	3.17	1.05	1.37	N	27%	7%	0.46	0	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	4.19	9.97	1.15	N	3.19	7.95	1.38	N	-24%	-20%	0.23	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	1.62	1.16	0.70	N	1.92	1.45	1.08	N	19%	25%	0.38	1	0	1	
		8	10/10/18 17:00	10/11/18 17:00	N	3.46	1.94	0.95	N	3.75	2.22	1.45	N	8%	14%	0.51	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	2.00	1.33	0.74	N	2.15	1.66	1.14	N	8%	25%	0.40	1	0	1	
	NFORK56	1	6/1/18 14:30	6/2/18 14:30	N	0.73	0.31	0.39	N	0.54	0.34	0.29	N	-27%	10%	-0.10	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.59	0.63	0.36	N	0.70	0.66	0.33	N	18%	4%	-0.04	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	0.94	0.34	0.48	N	1.12	0.36	0.42	N	19%	7%	-0.06	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	1.41	0.19	0.58	N	1.75	0.20	0.56	N	24%	6%	-0.01	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	0.99	0.22	0.47	N	1.19	0.22	0.43	N	20%	1%	-0.04	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.64	1.59	1.15	N	1.17	1.70	0.43	N	-29%	7%	-0.72	0	1	0	
		7	9/26/18 16:00	9/27/18 16:00	N	0.76	0.39	0.65	N	0.62	0.32	0.31	N	-19%	-17%	-0.34	0	1	1	
		8	10/10/18 17:00	10/11/18 17:00	Y	0.91	0.60	0.46	N	0.95	0.43	0.37	N	4%	-29%	-0.09	1	0	1	
		9	10/25/18 21:45	10/26/18 21:45	Y	0.31	0.16	0.24	N	0.55	0.35	0.29	N	78%	117%	0.05	0	0	1	
	DK2	1	6/1/18 14:30	6/2/18 14:30	N	23.58	16.20	2.03	N	21.16	13.50	1.87	N	-10%	-17%	-0.16	1	0	1	
		2	6/27/18 17:30	6/29/18 17:30	N	20.46	28.32	1.88	N	20.19	25.63	1.81	N	-1%	-10%	-0.07	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	25.47	13.55	2.12	N	22.17	13.10	1.91	N	-13%	-3%	-0.21	1	1	1	
		4	7/16/18 0:00	7/16/18 12:00	N	17.61	6.21	1.73	N	16.76	5.95	1.67	N	-5%	-4%	-0.05	1	1	1	
		5	7/21/18 6:30	7/21/18 18:30	N	19.07	8.00	1.81	N	19.78	7.88	1.79	N	4%	-2%	-0.01	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	35.89	81.17	2.55	N	28.02	66.31	2.18	N	-22%	-18%	-0.37	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	15.69	11.65	1.62	N	17.80	12.68	1.71	N	13%	9%	0.10	1	1	1	
		8	10/10/18 17:00	10/11/18 8:30	N	33.73	15.05	2.46	N	31.06	13.90	2.27	N	-8%	-8%	-0.19	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	17.89	13.84	1.74	N	16.18	13.83	1.65	N	-10%	0%	-0.09	1	1	1	
	Roxboro	1	6/1/18 14:30	6/2/18 14:30	N	1.21	0.42	0.05	N	0.66	0.40	0.38	N	-45%	-6%	0.33	0	1	1	Low flow, used +/-0.1MG volume criteria for events not meeting % criteria
		2	6/27/18 17:30	6/29/18 17:30	N	0.77	0.81	0.04	N	0.86	0.79	0.44	N	12%	-1%	0.39	1	1	1	
		3	7/6/18 16:00	7/7/18 16:00	N	1.81	0.48	0.07	N	1.33	0.41	0.55	N	-26%	-13%	0.48	0	1	1	
		4	7/15/18 22:00	7/16/18 12:00	N	2.34	0.32	0.08	N	2.05	0.24	0.68	N	-12%	-25%	0.60	1	1	1	
		5	7/21/18 4:30	7/21/18 18:30	N	1.61	0.30	0.06	N	1.45	0.26	0.57	N	-10%	-12%	0.51	1	1	1	
		5	7/31/18 15:15	8/5/18 15:15	N	1.90	2.33	0.83	N	1.31	2.00	0.54	N	-31%	-14%	-0.29	0	0	1	
		7	9/26/18 16:00	9/27/18 16:00	N	0.64	0.38	0.47	N	0.76	0.39	0.41	N	19%	3%	-0.06	1	1	1	
		8	10/10/18 17:00	10/11/18 17:00	N	1.08	0.58	0.62	N	1.11	0.50	0.50	N	3%	-13%	-0.13	1	1	1	
		9	10/25/18 21:45	10/26/18 21:45	N	0.66	0.40	0.48	N	0.63	0.42	0.37	N	-5%	5%	-0.11	1	1	1	

①



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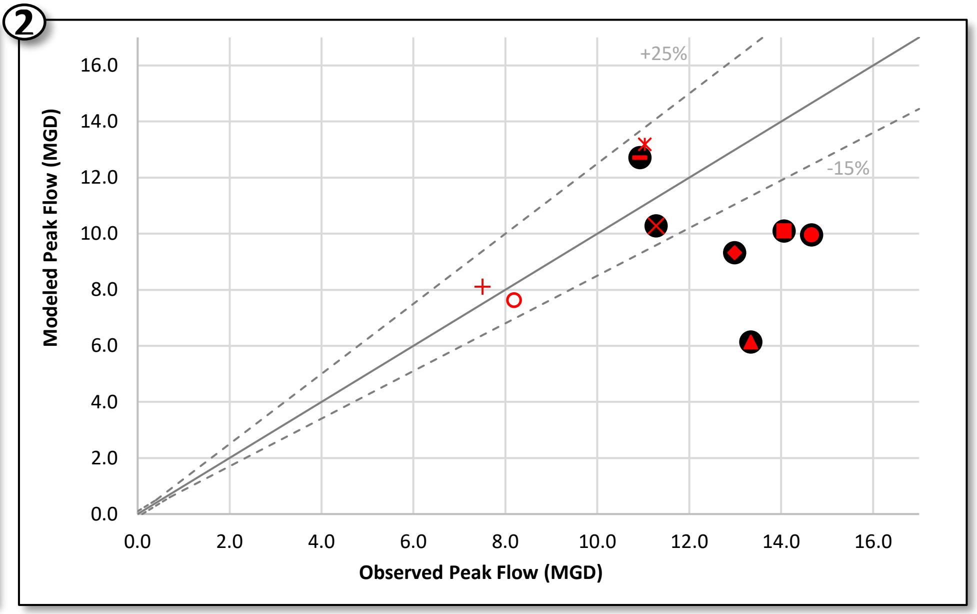

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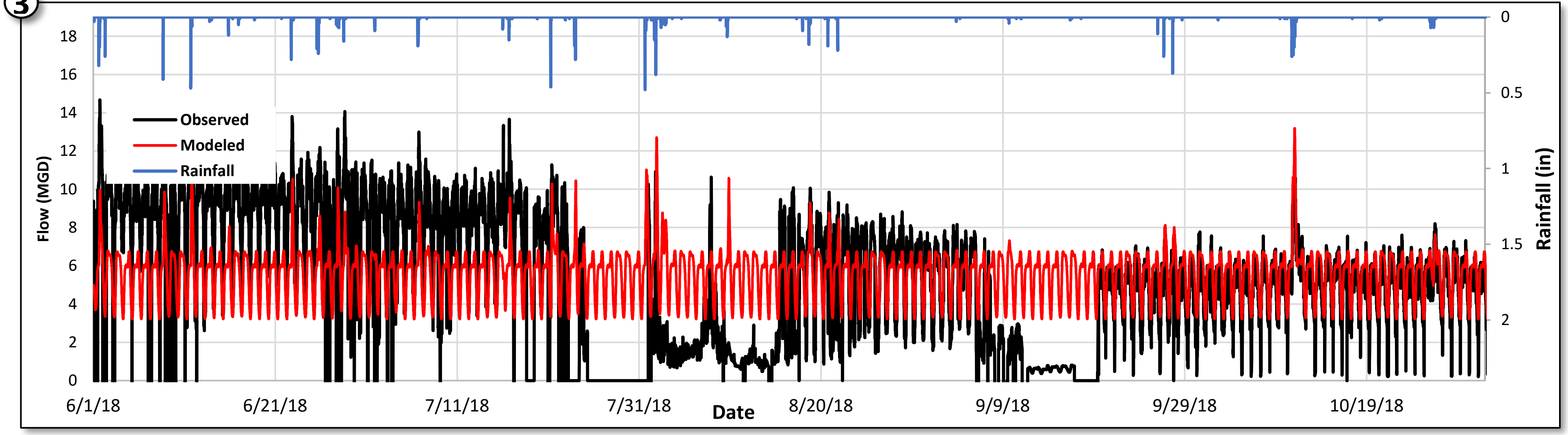


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK4

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

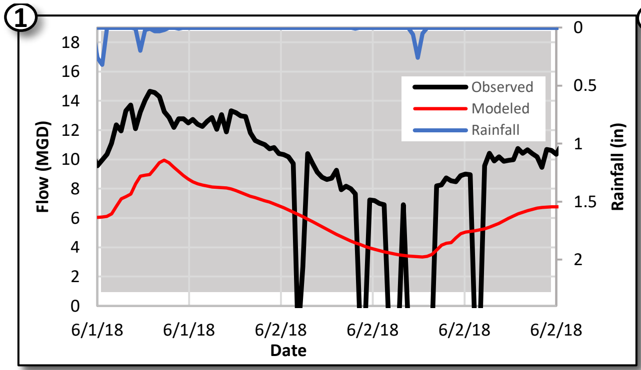
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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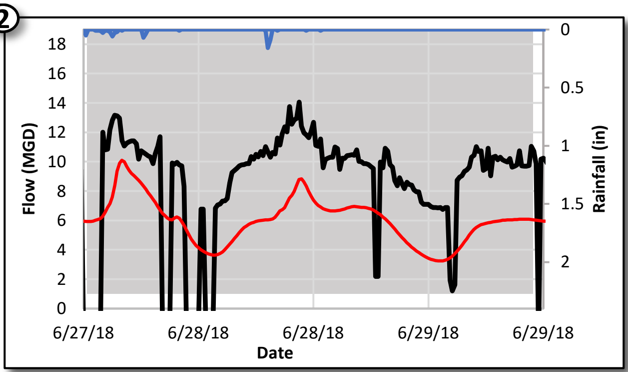

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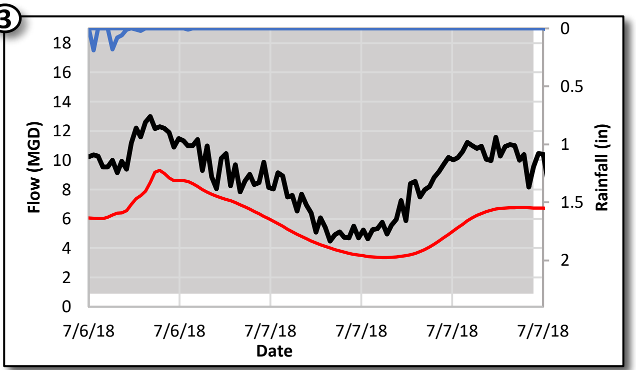

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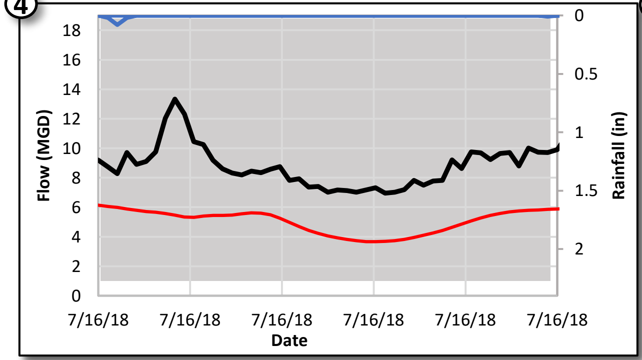

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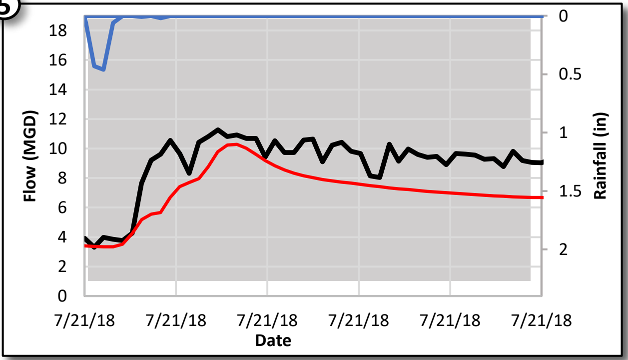

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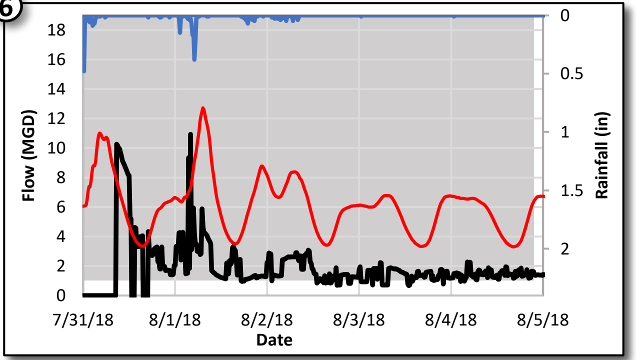

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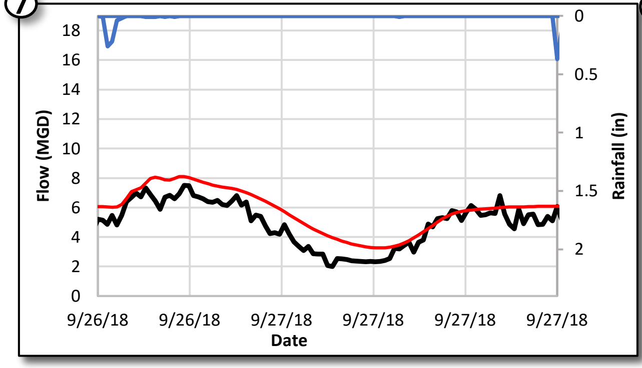

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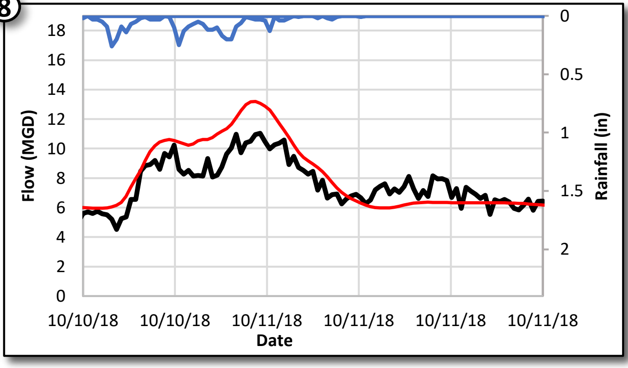

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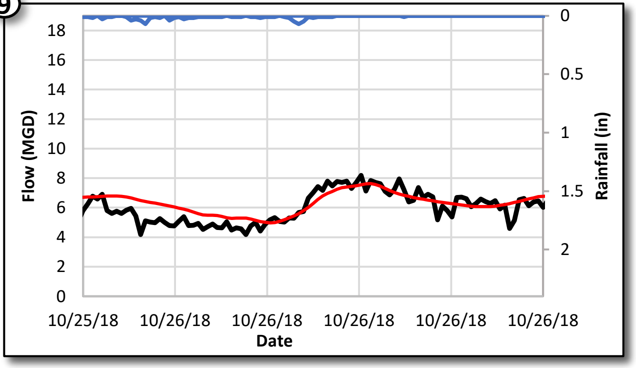


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK4

Sewershed:

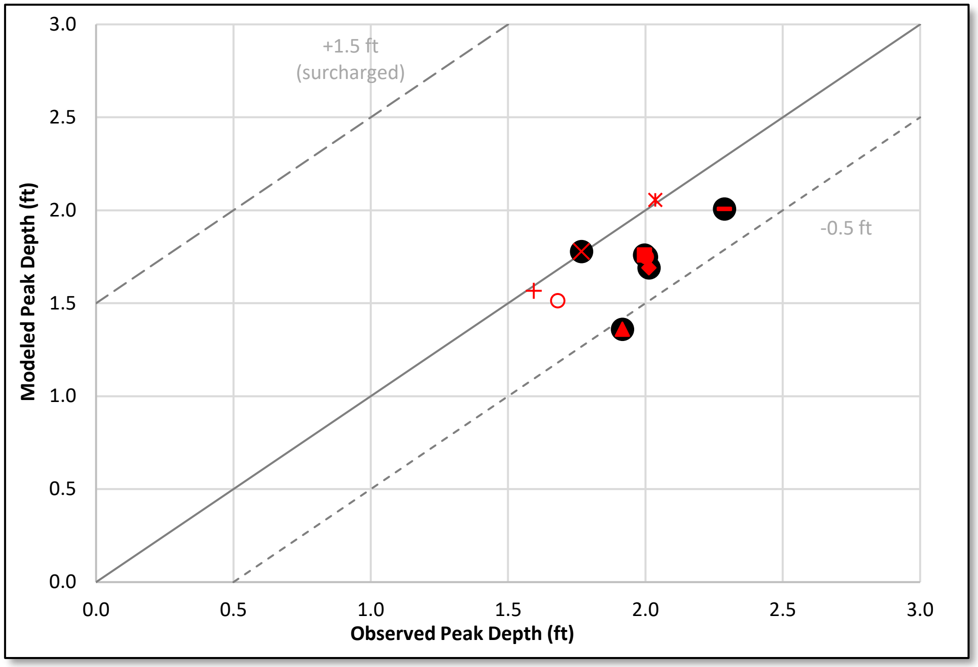
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



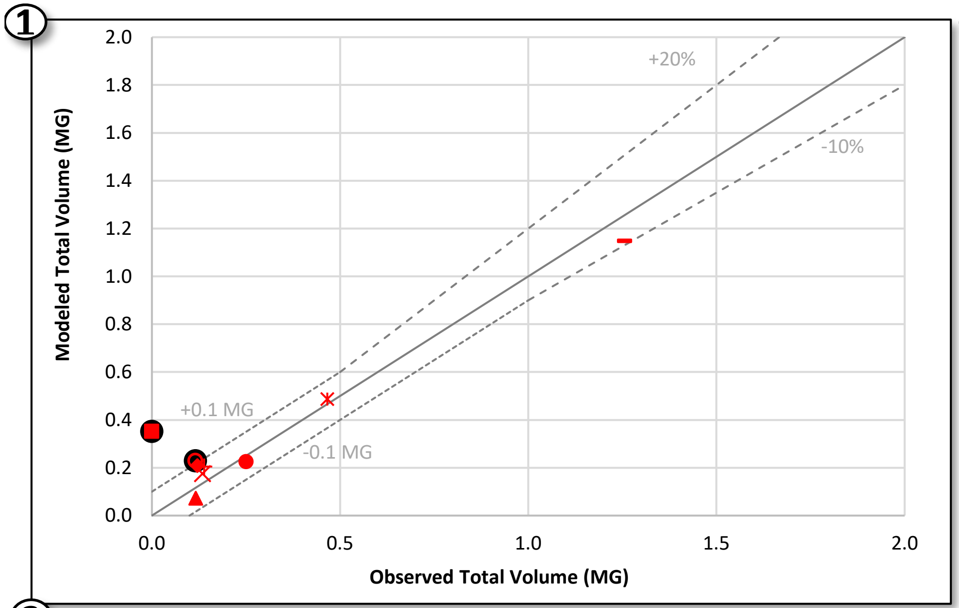
Flow Meter:

NFORK4

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
⬤ Data Quality Issues

①



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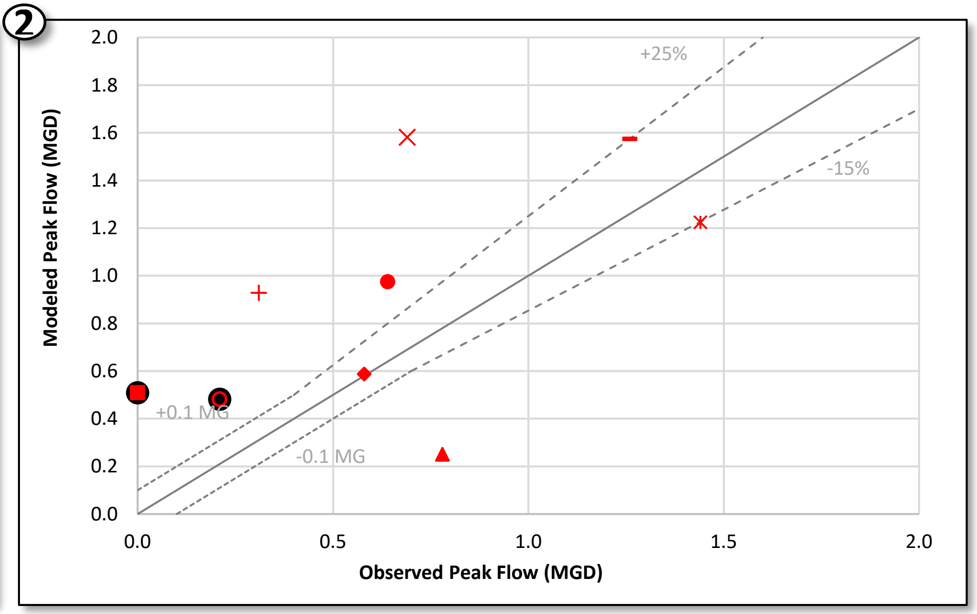

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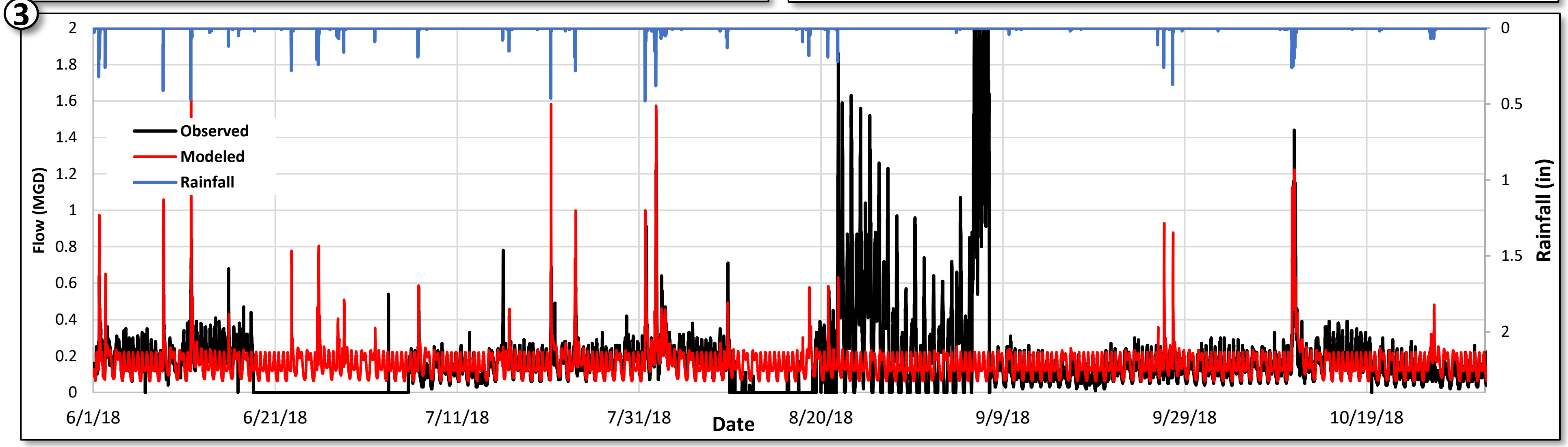


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK5

Sewershed:

North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

① Total Event Volume

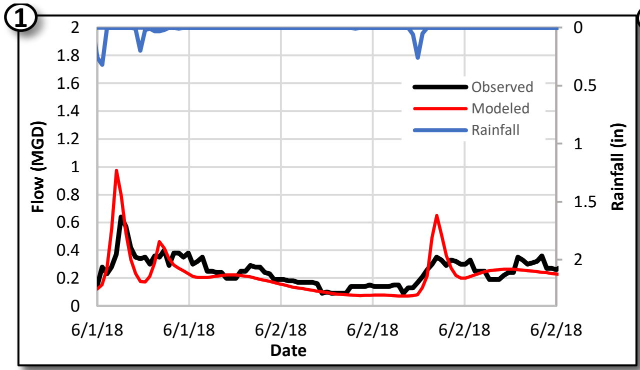
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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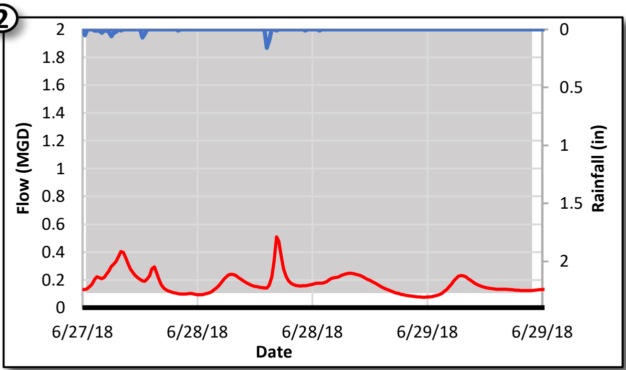

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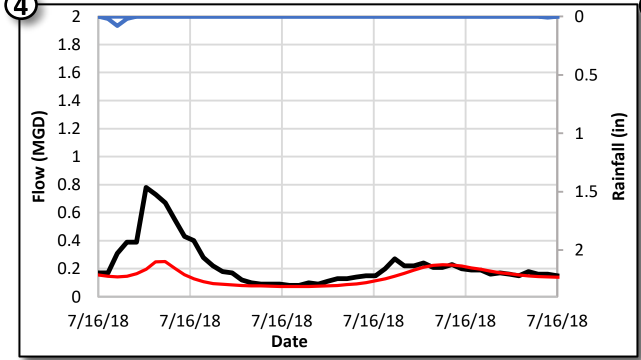

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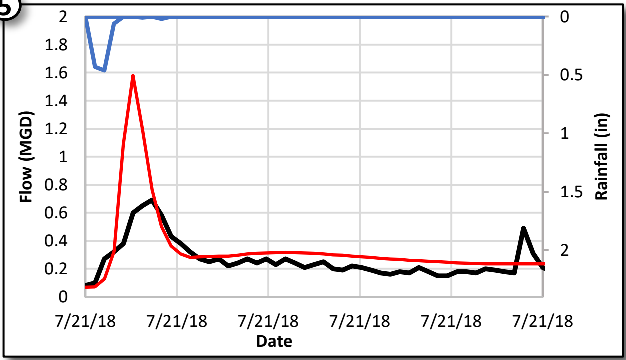

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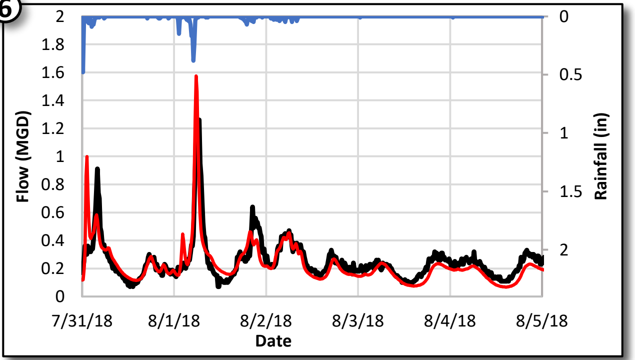

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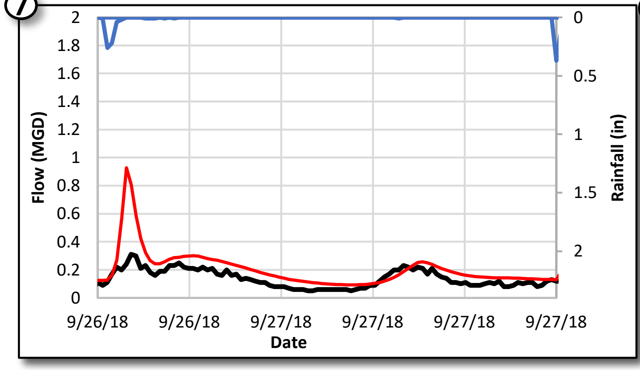

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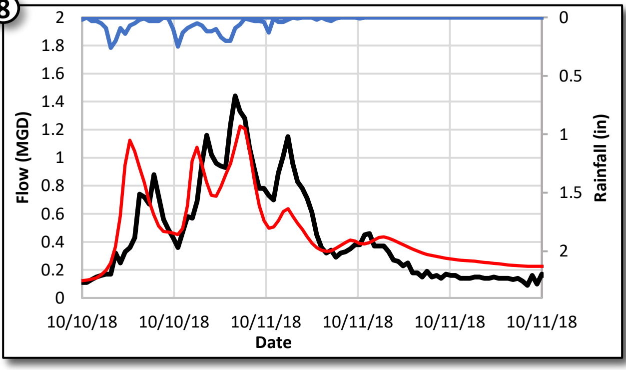

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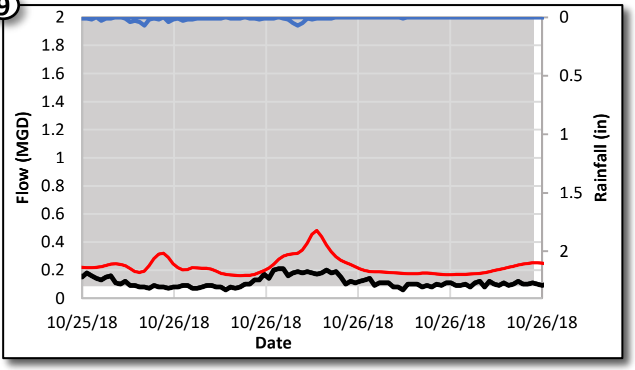


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK5

Sewershed:

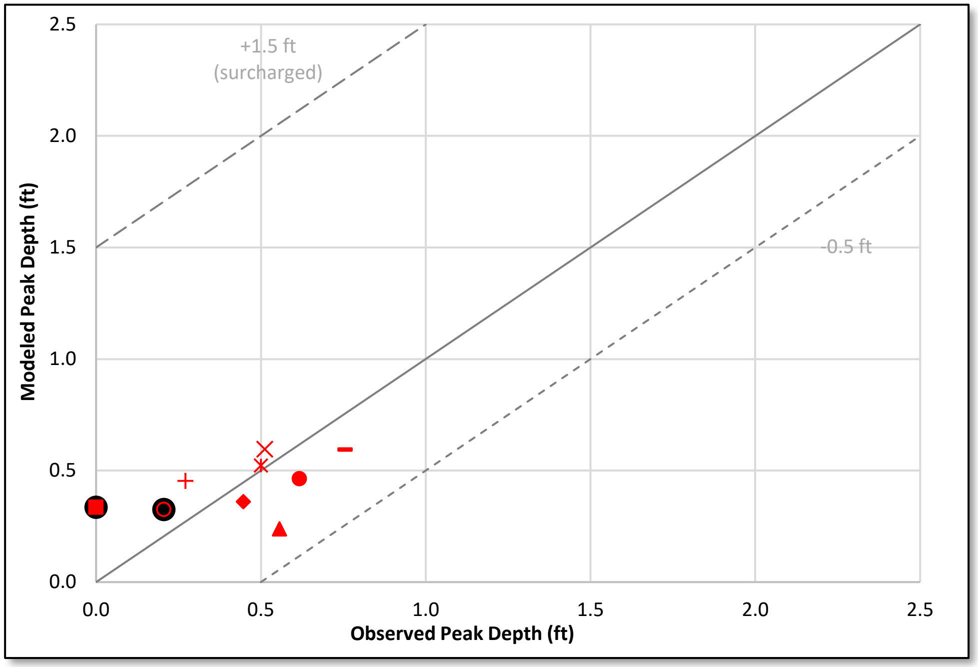
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



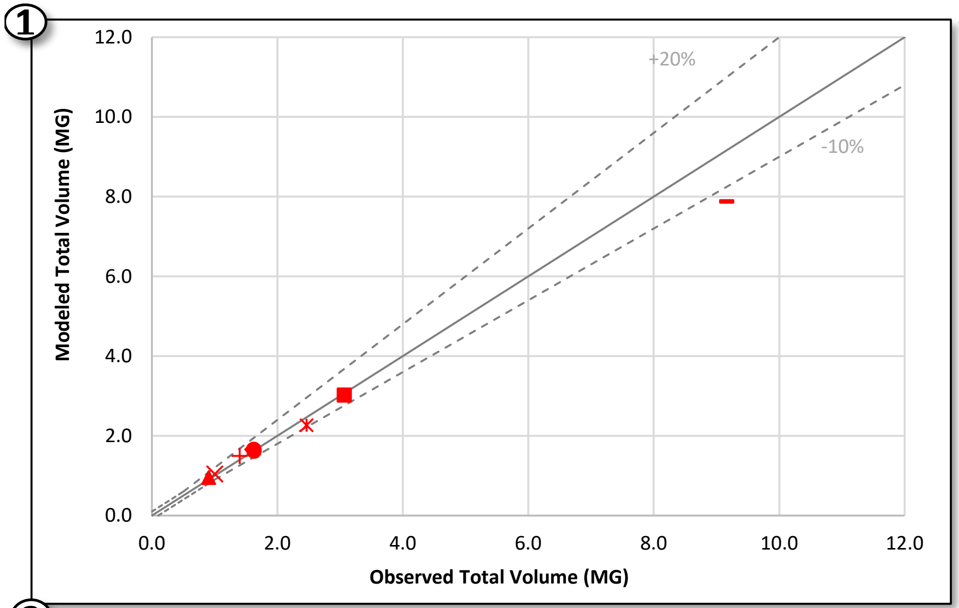
Flow Meter:

NFORK5

Events:

●	6/1/18	−	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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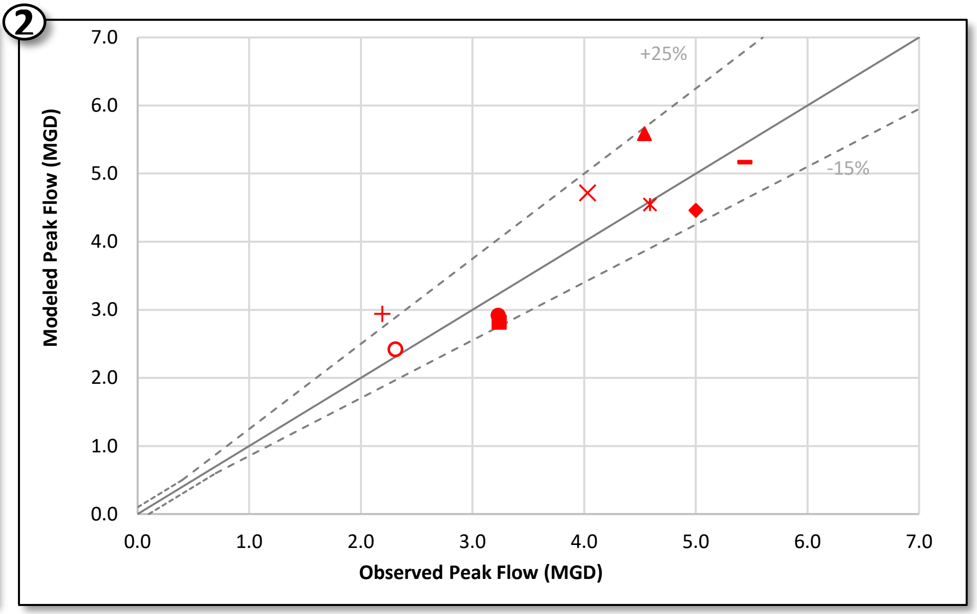

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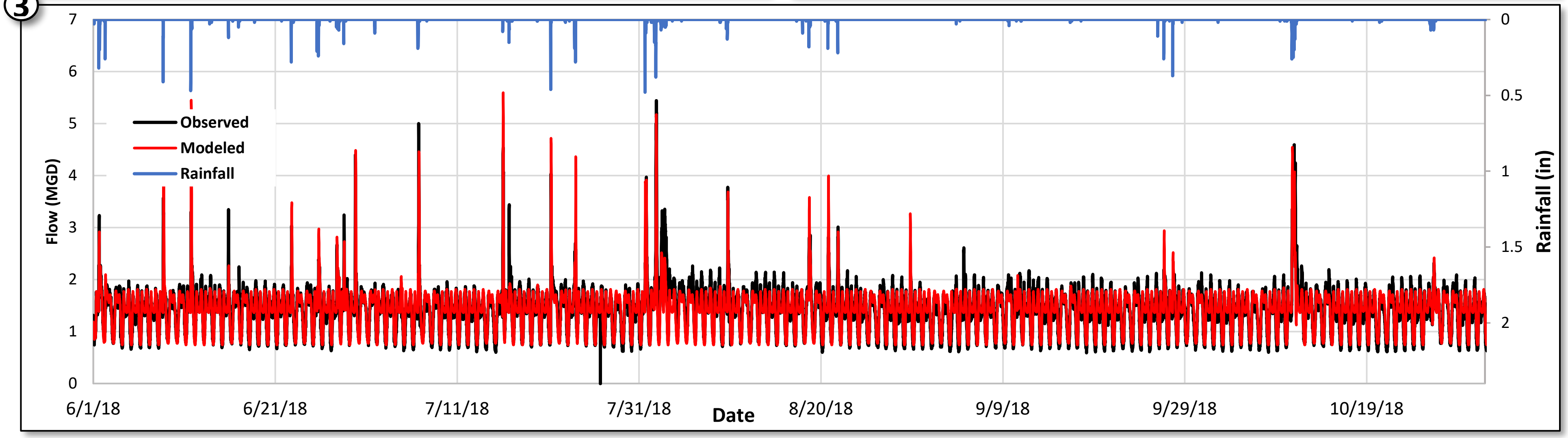


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK6

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

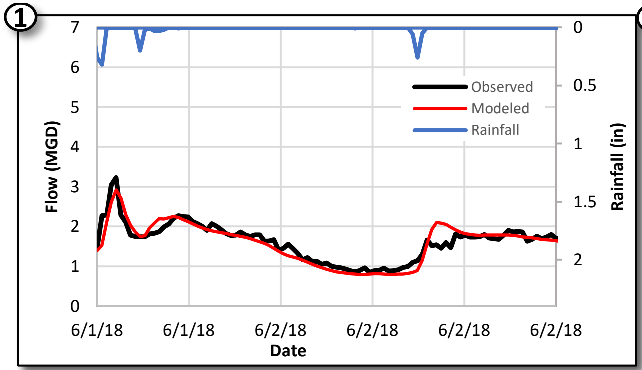
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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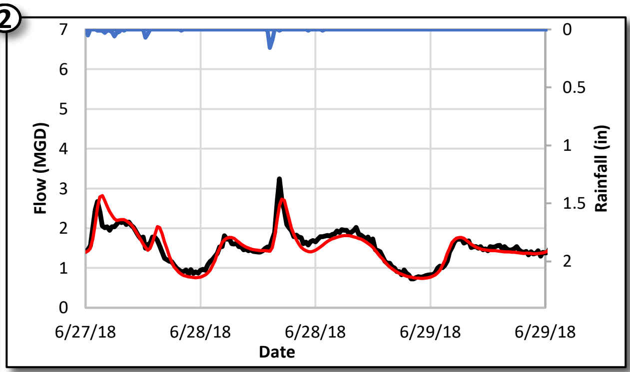

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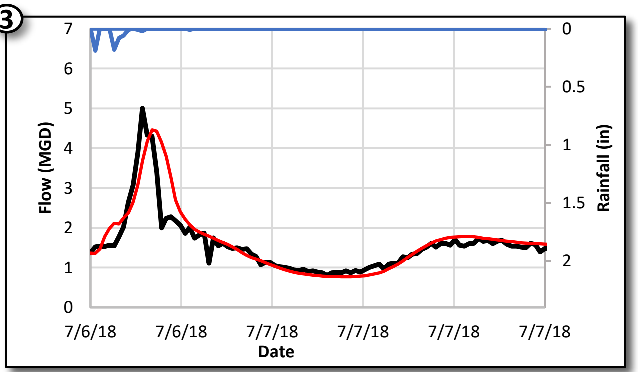

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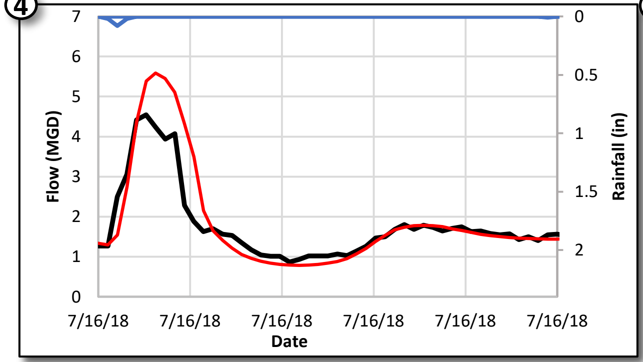

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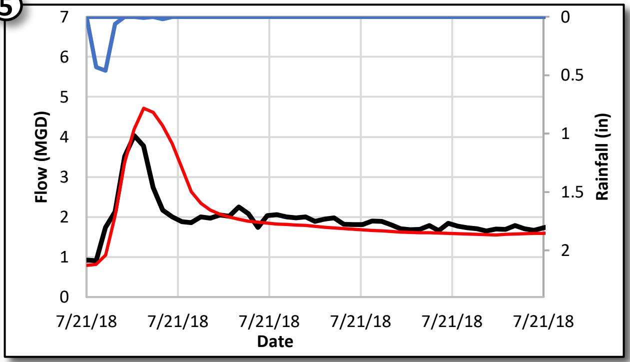

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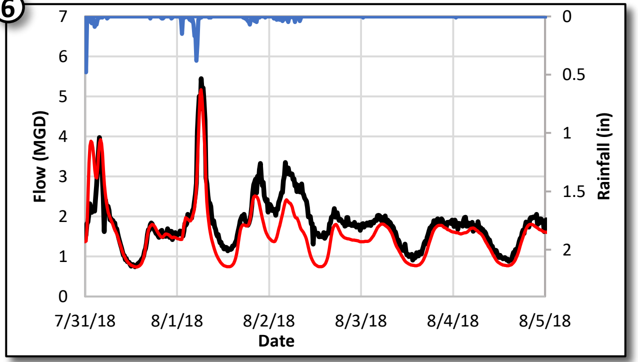

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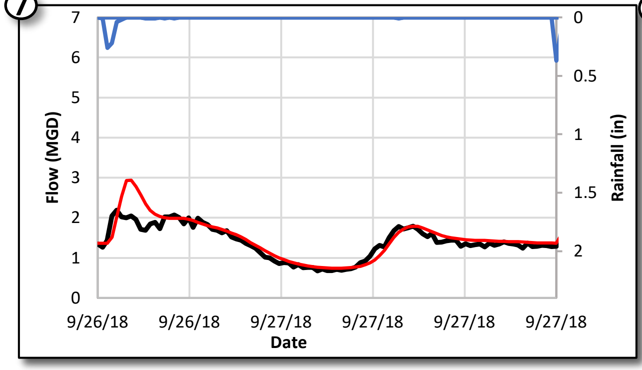

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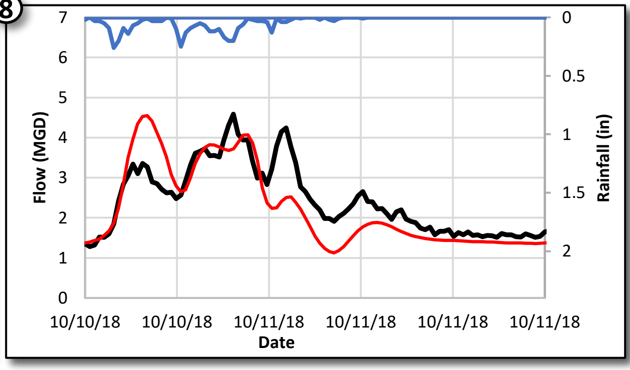

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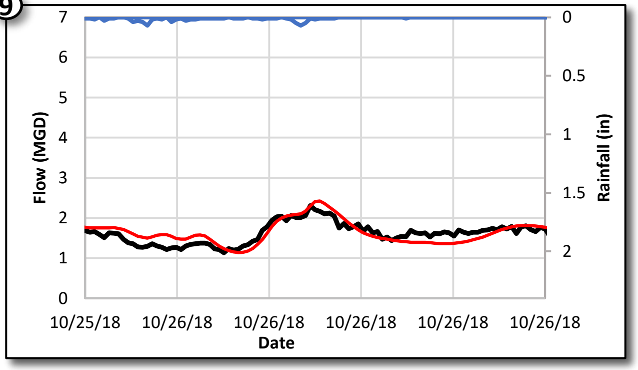


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK6

Sewershed:

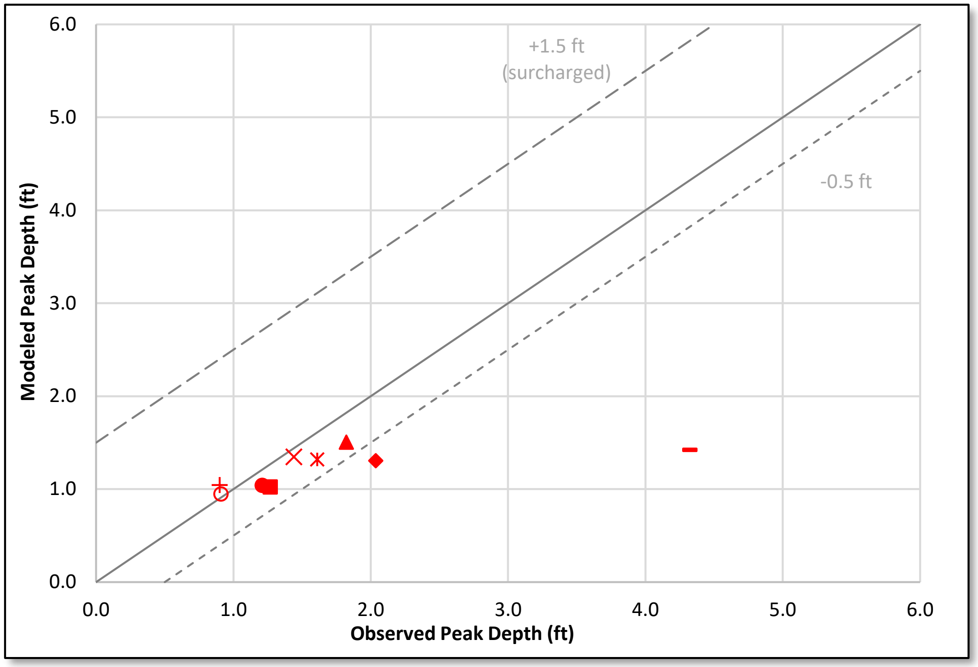
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



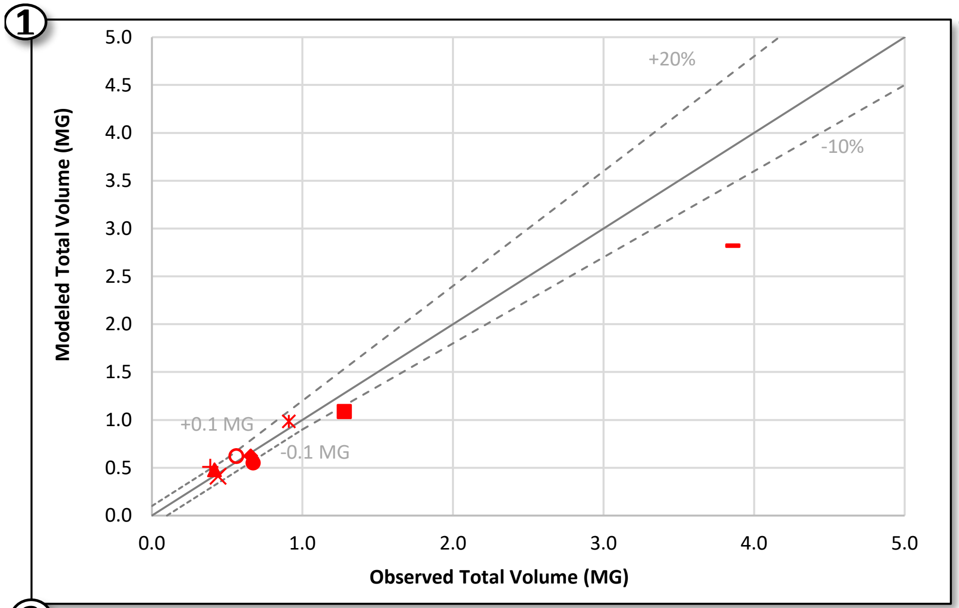
Flow Meter:

NFORK6

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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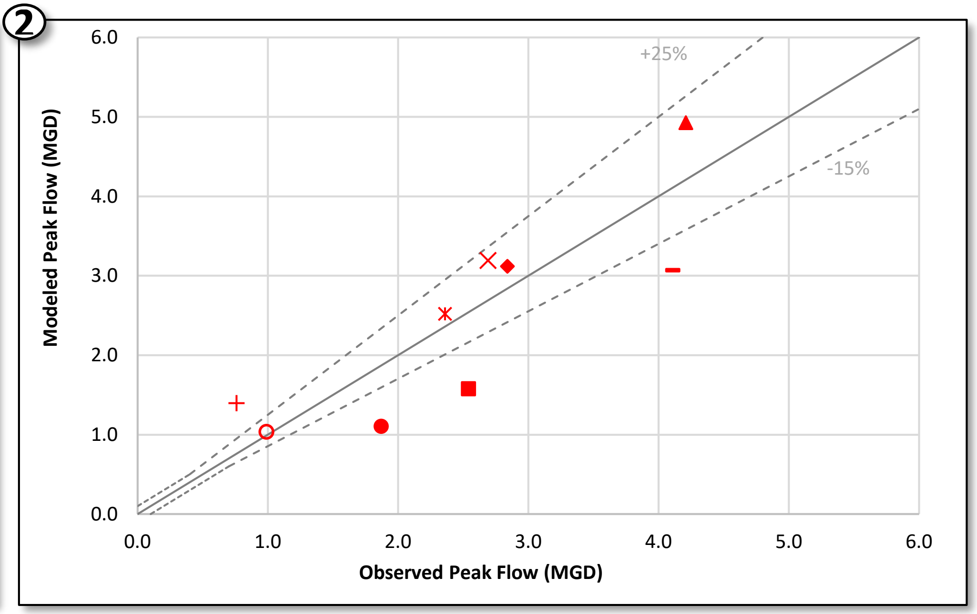

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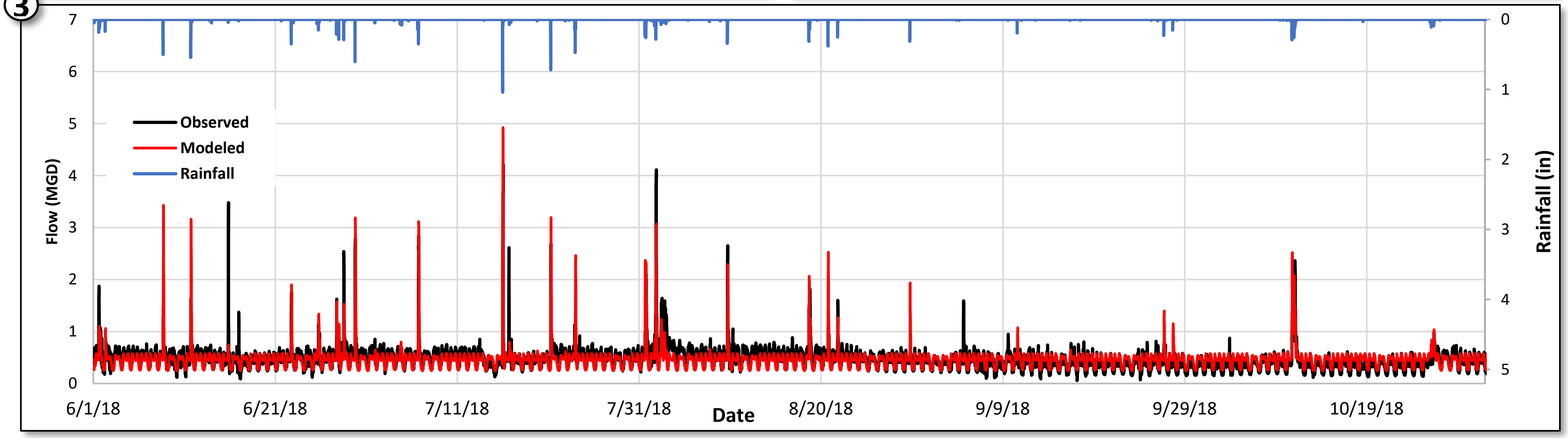


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK8

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

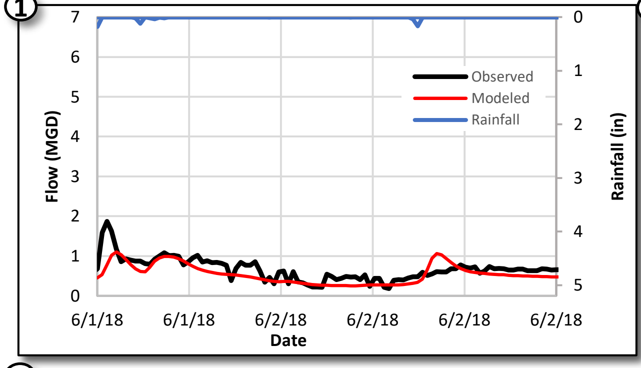
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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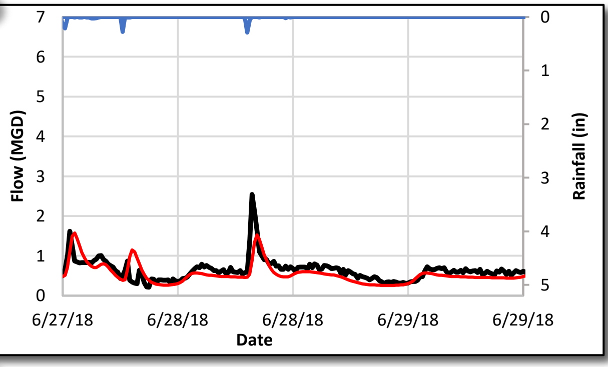

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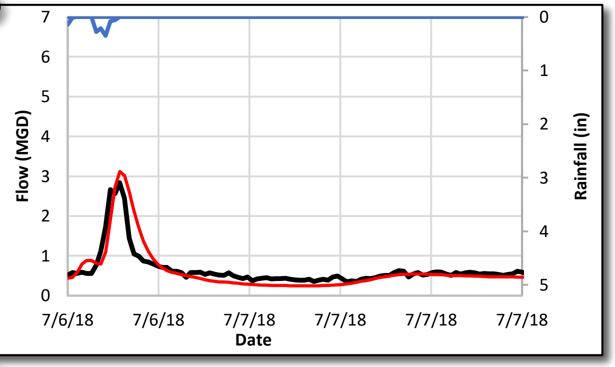

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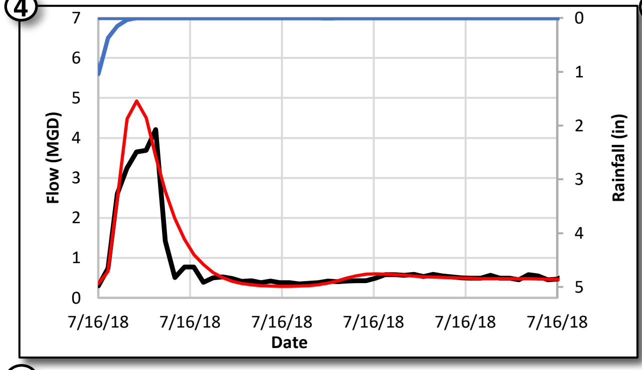

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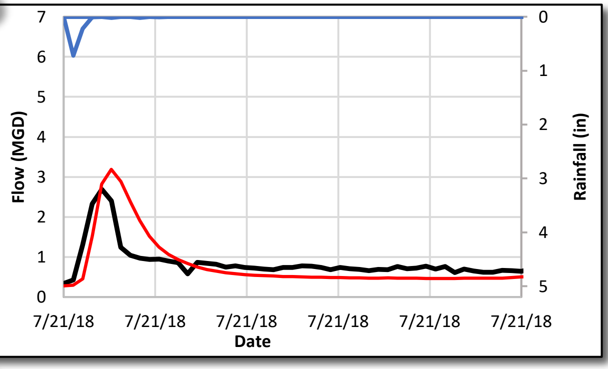

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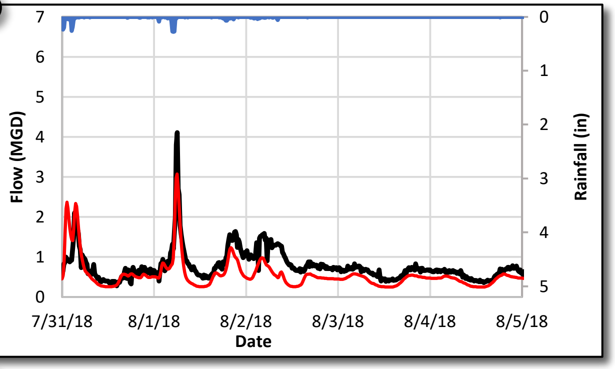

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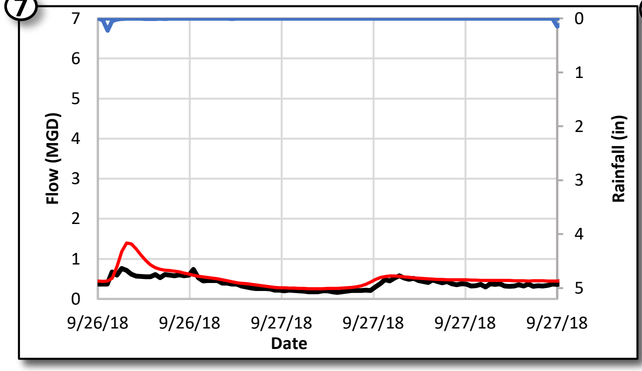

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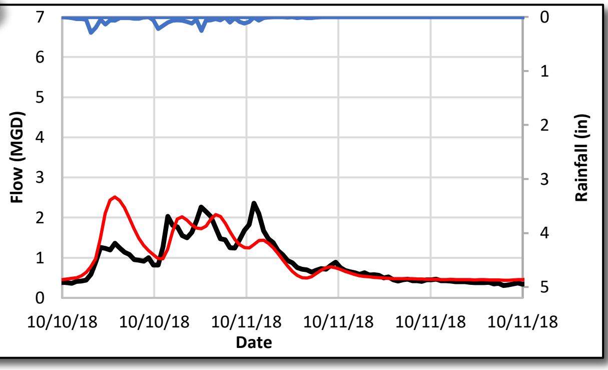

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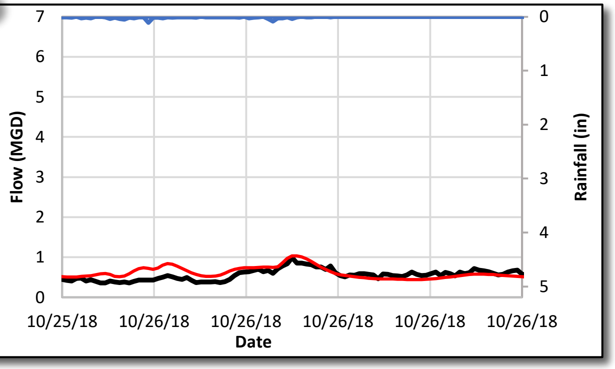


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK8

Sewershed:

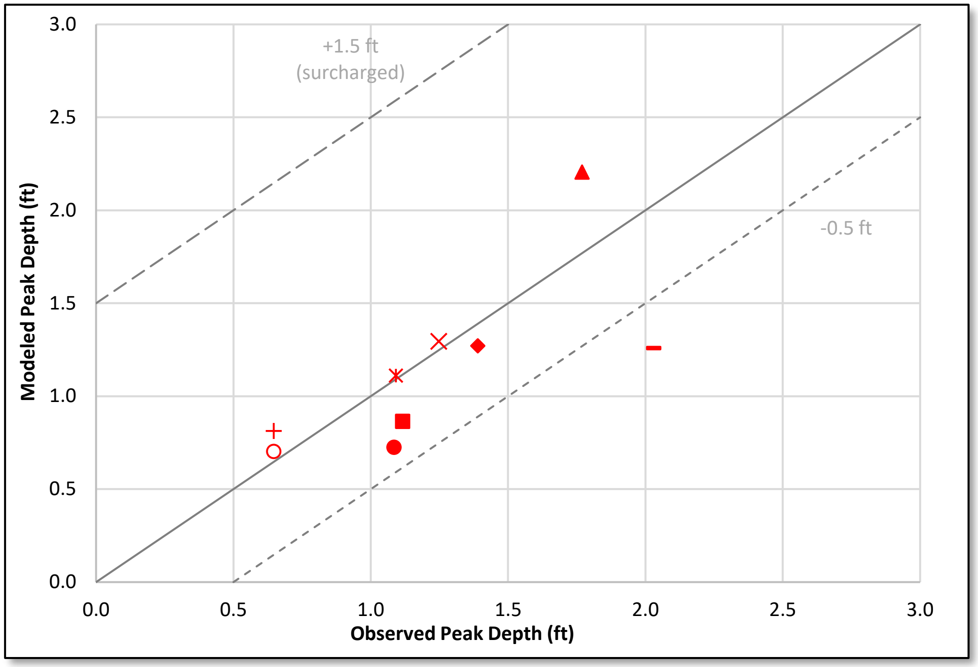
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



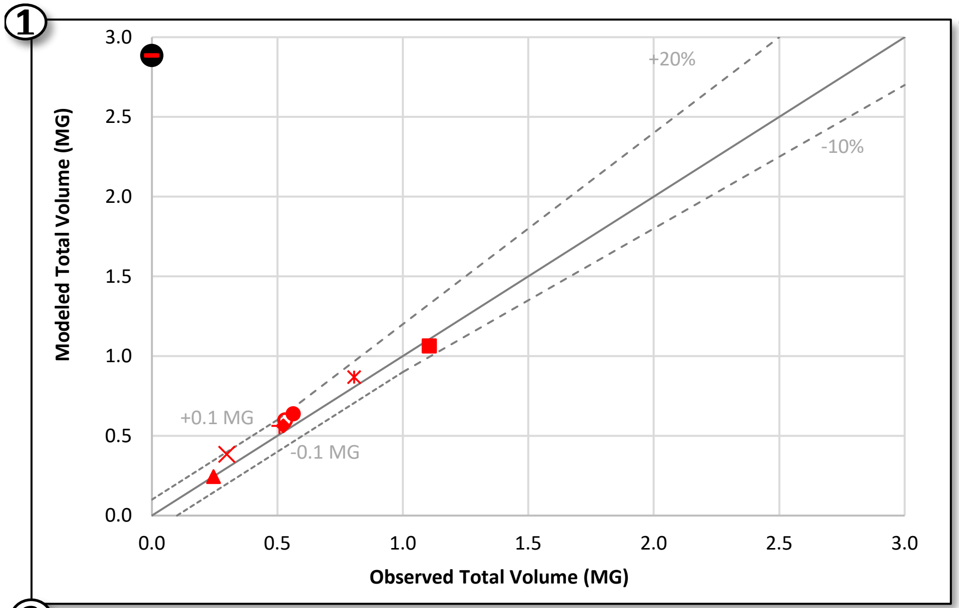
Flow Meter:

NFORK8

Events:

- ● 6/1/18
- ■ 6/27/18
- ◆ 7/6/18
- ▲ 7/16/18
- × 7/21/18
- – 7/31/18
- + 9/26/18
- ✳ 10/10/18
- ○ 10/25/18
- ● Data Quality Issues

①



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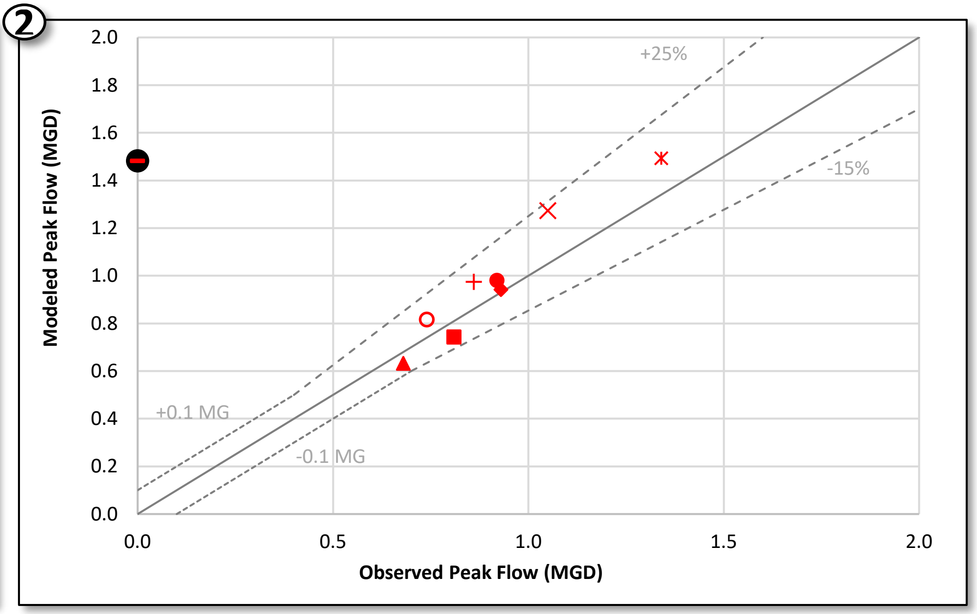

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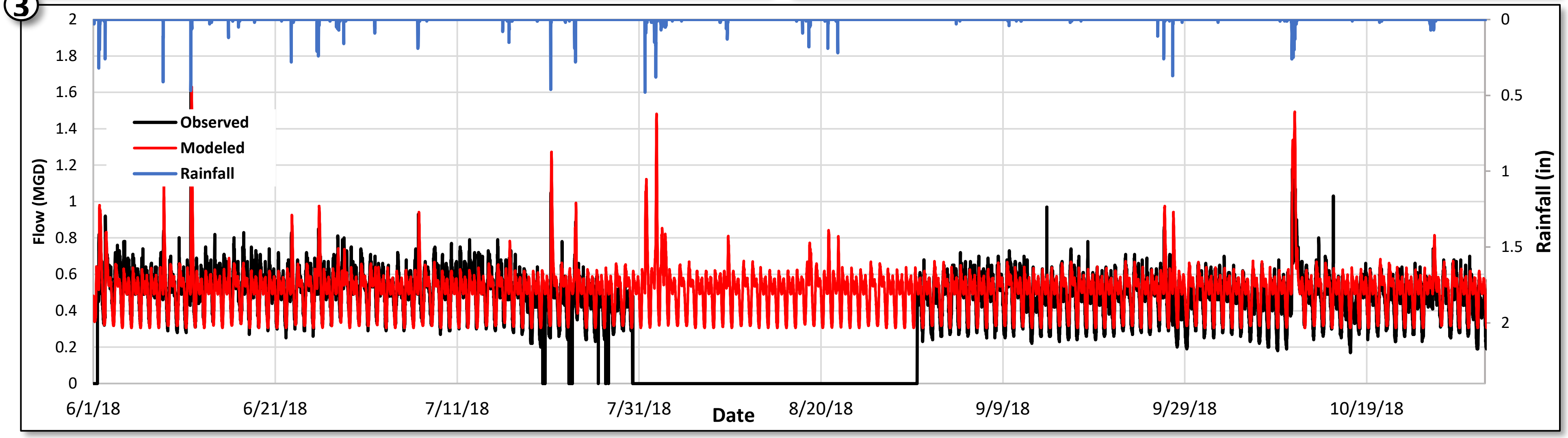


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK9

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

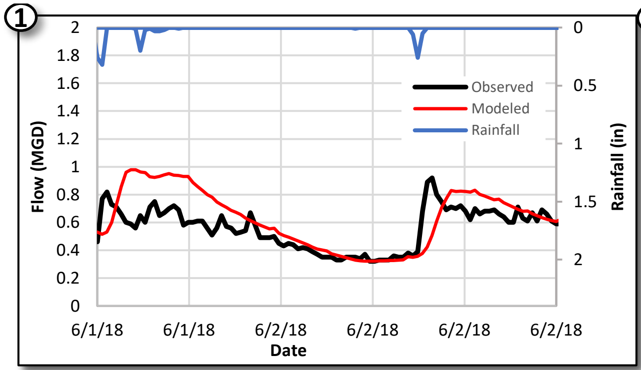
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✱ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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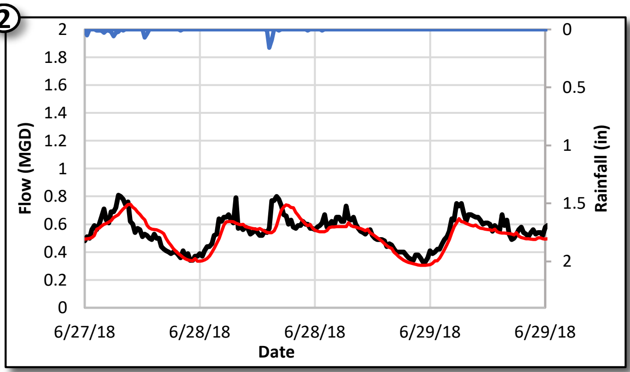

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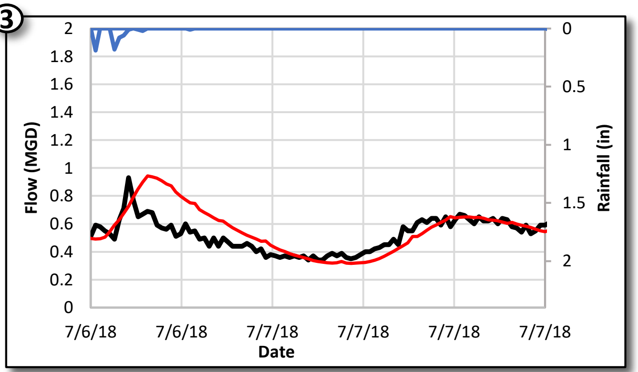

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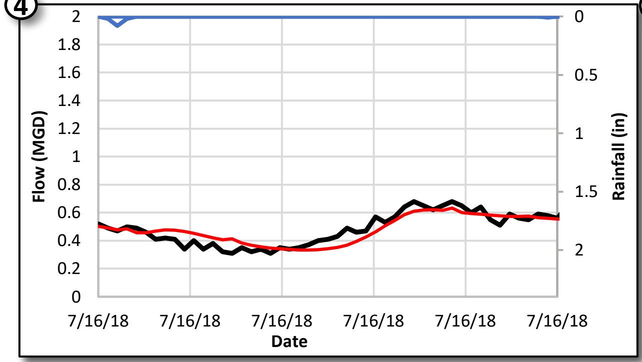

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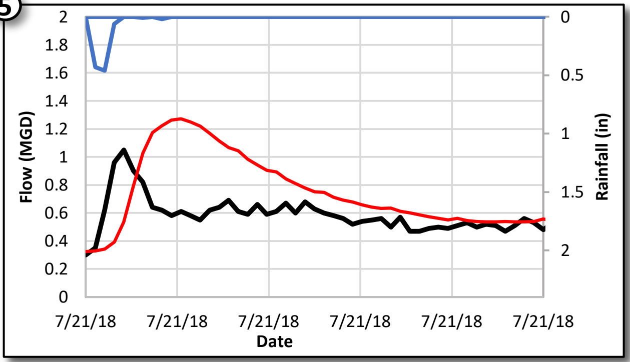

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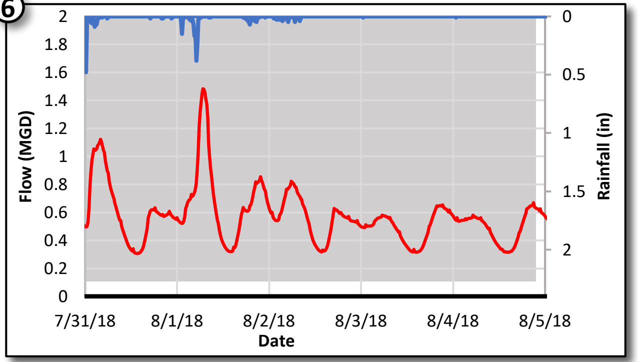

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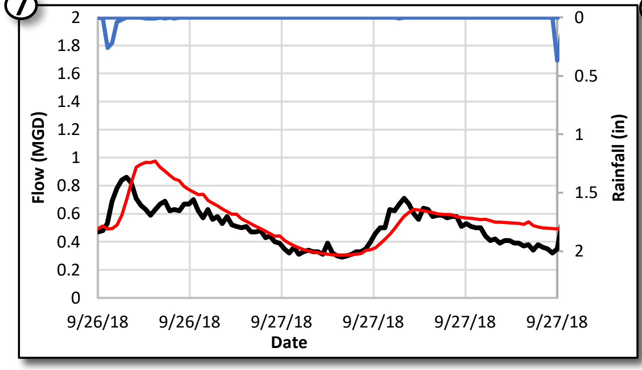

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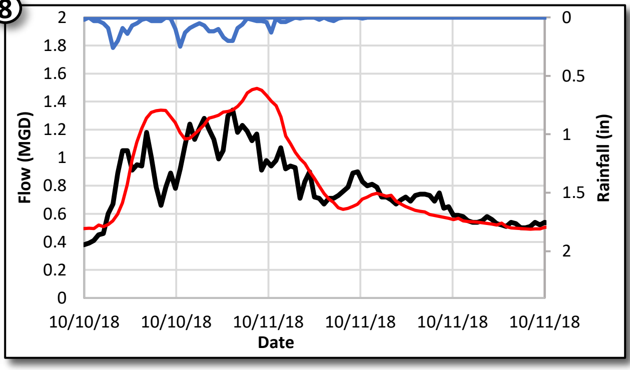

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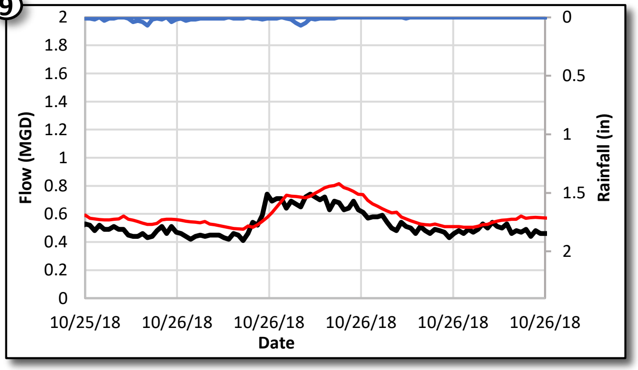


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK9

Sewershed:

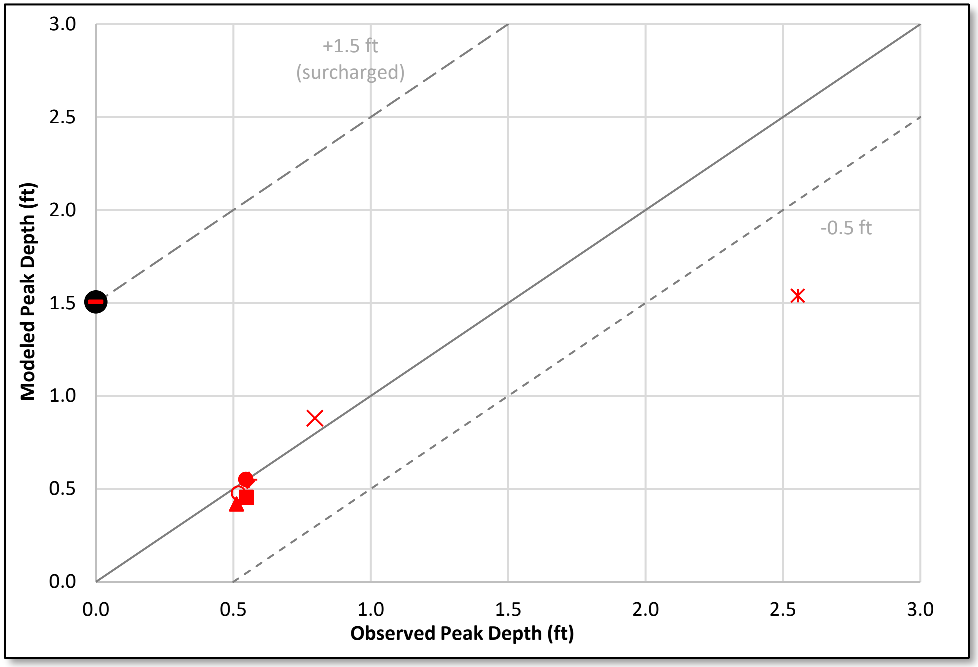
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



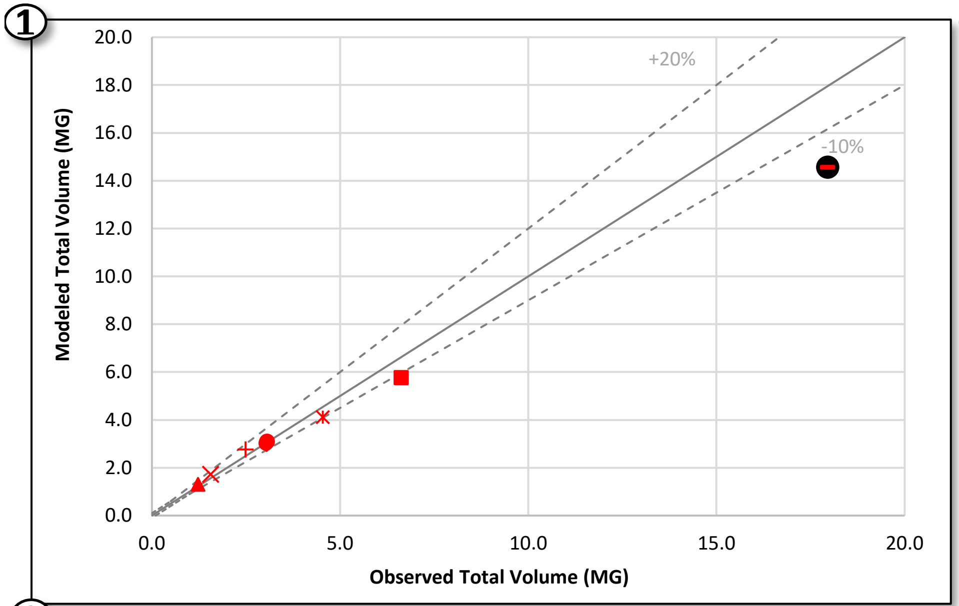
Flow Meter:

NFORK9

Events:

●	6/1/18	−	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	⁎	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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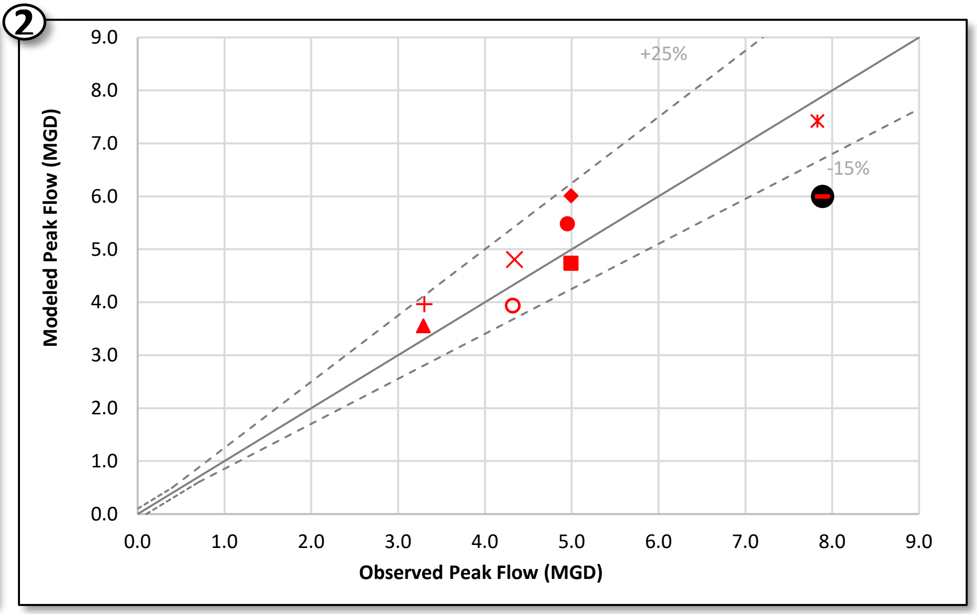

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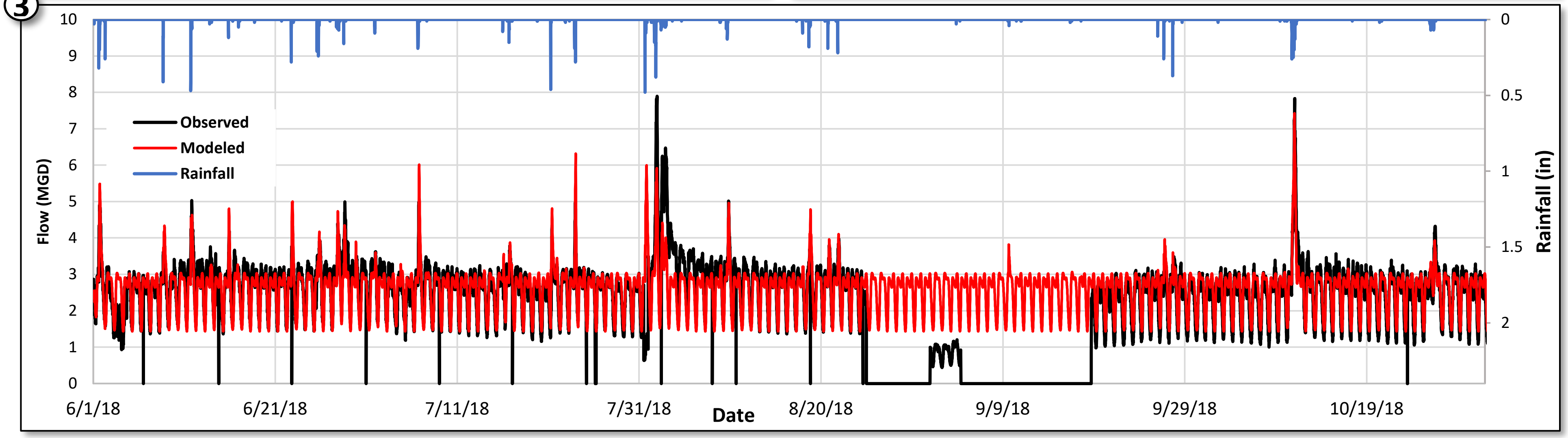


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK10

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

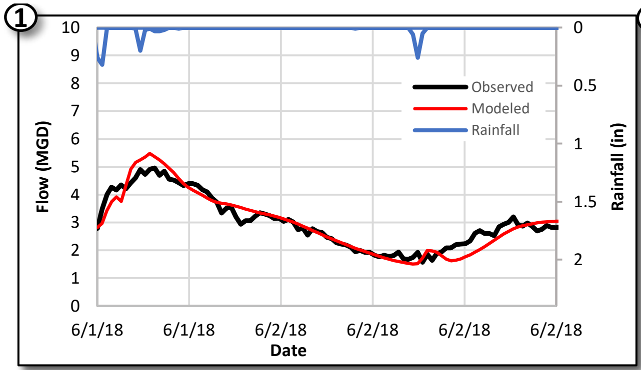
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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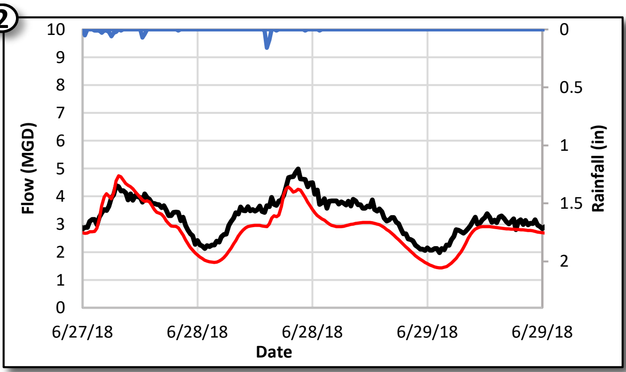

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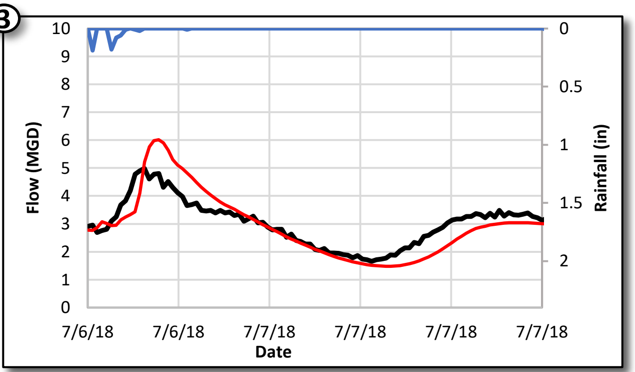

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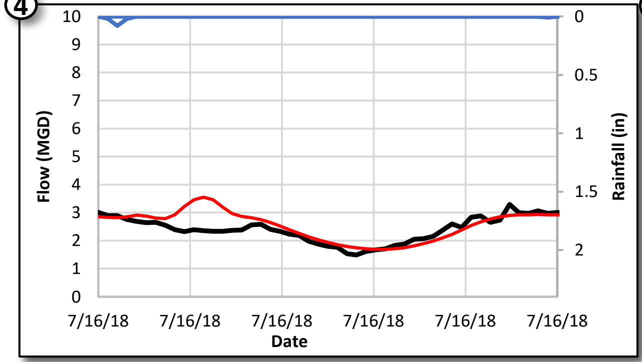

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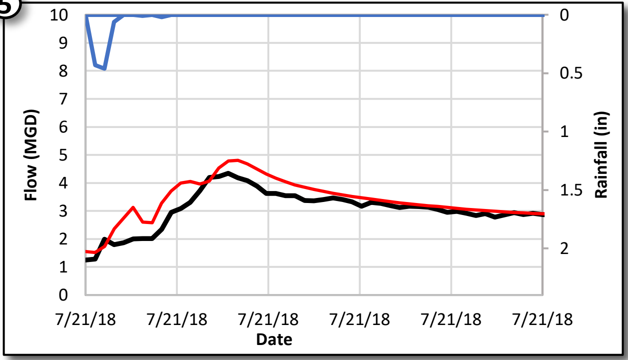

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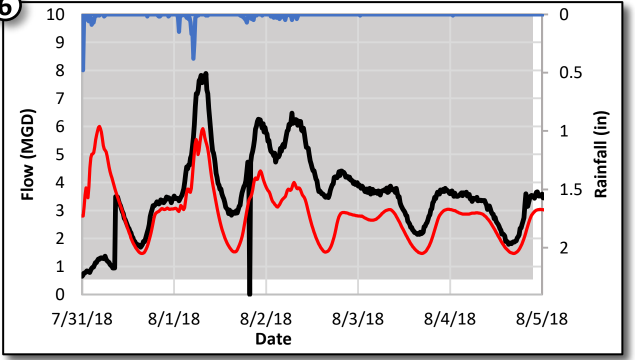

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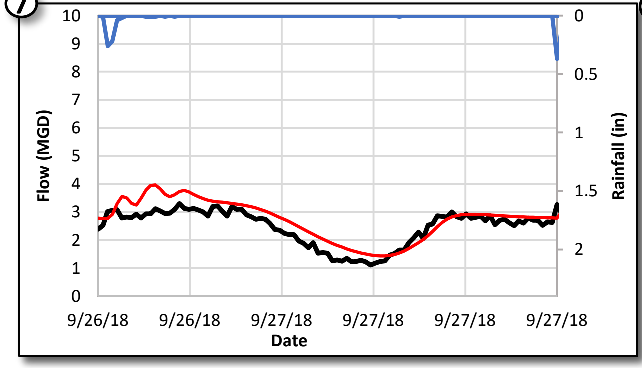

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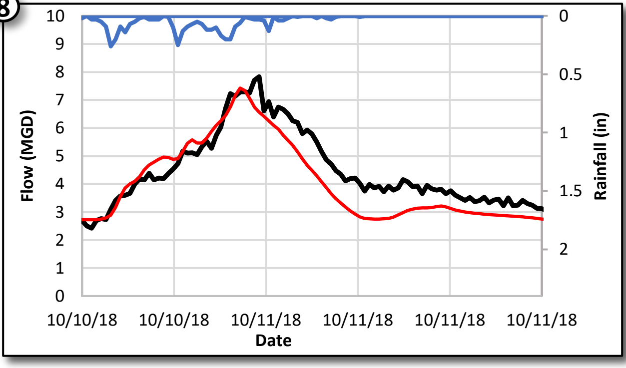

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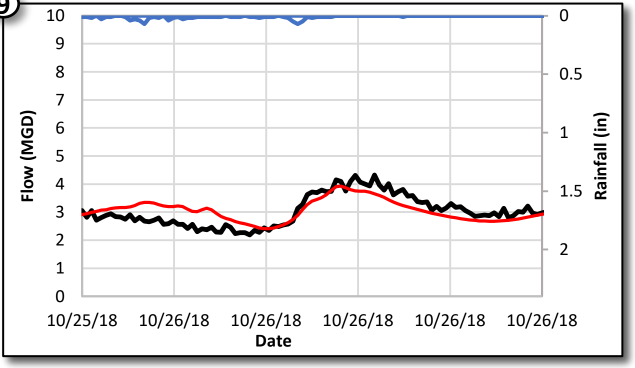


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK10

Sewershed:

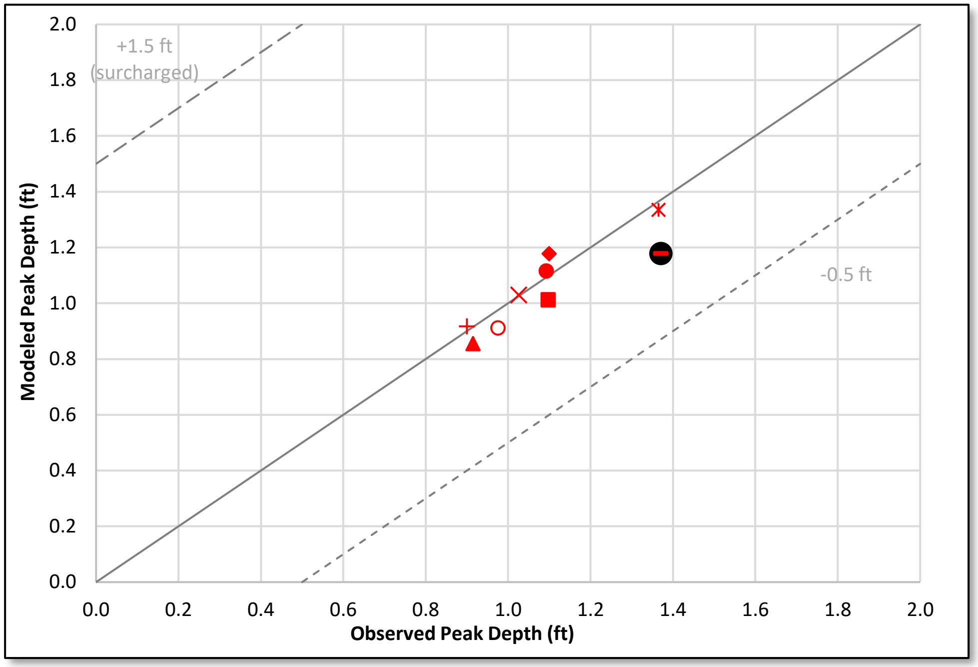
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



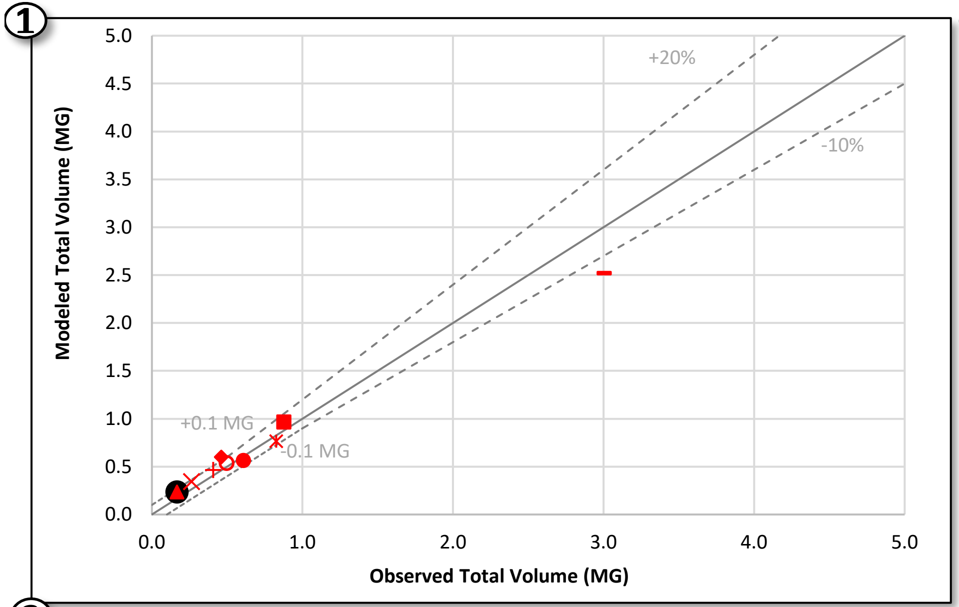
Flow Meter:

NFORK10

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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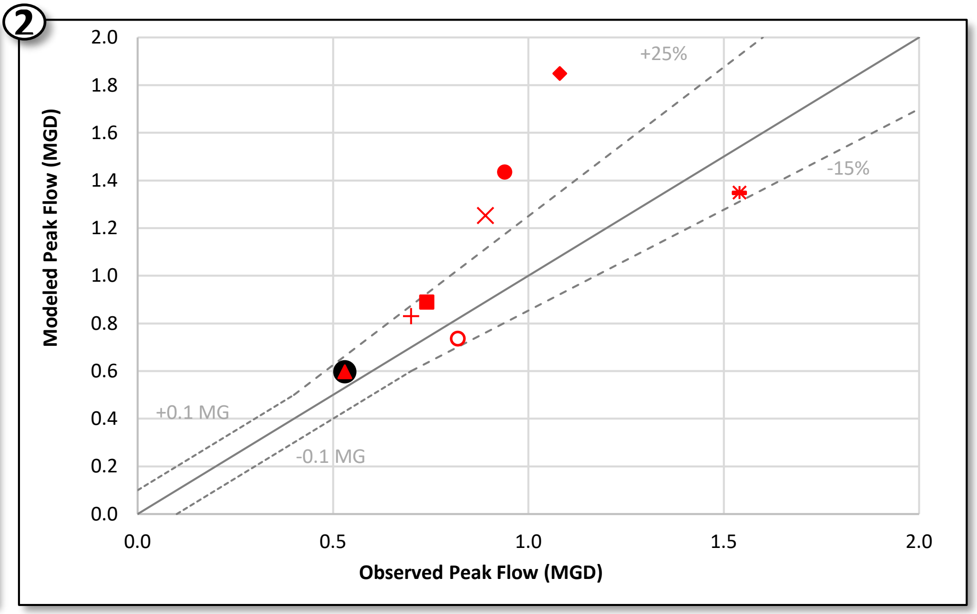

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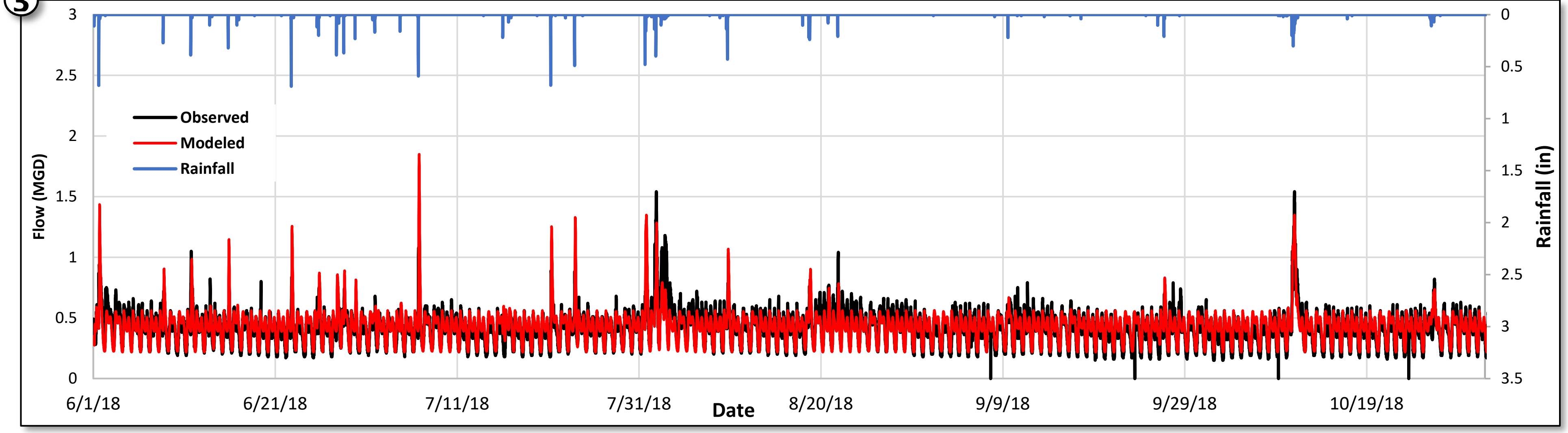


DeKalb Calibration Results

Wet Weather
Flow Summary

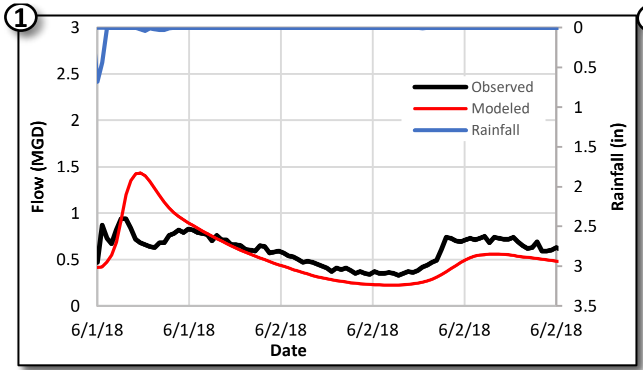
Flow Meter:
NFORK16
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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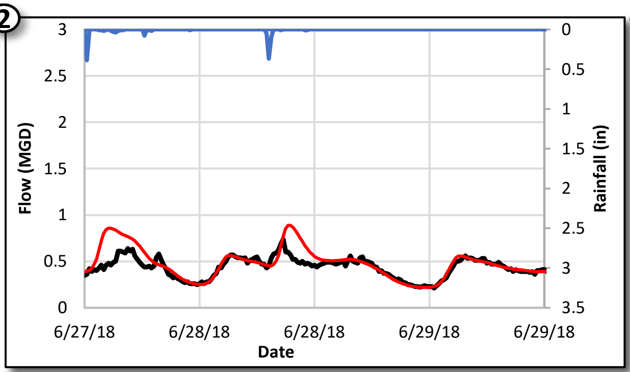

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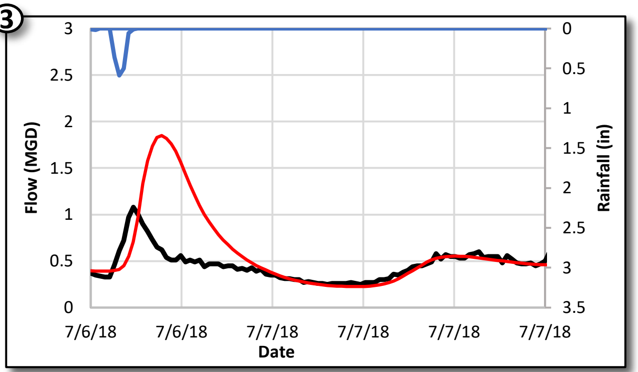

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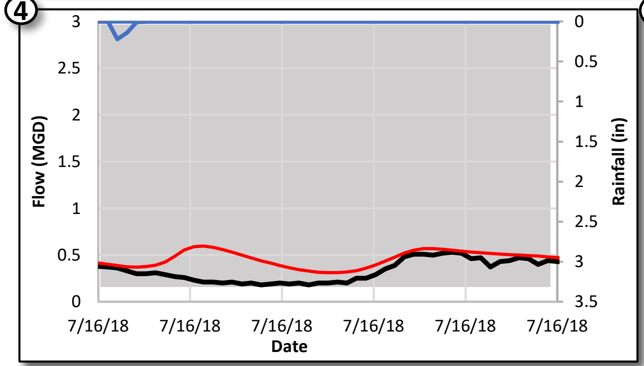

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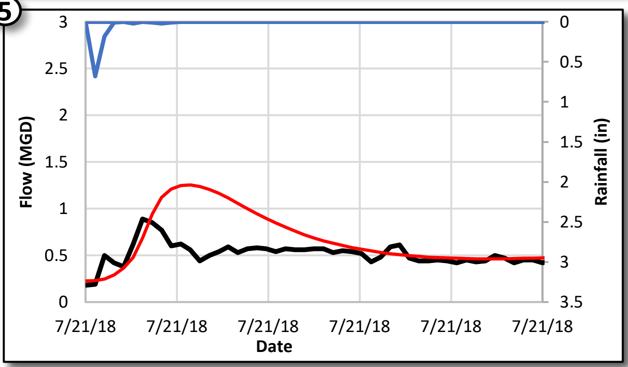

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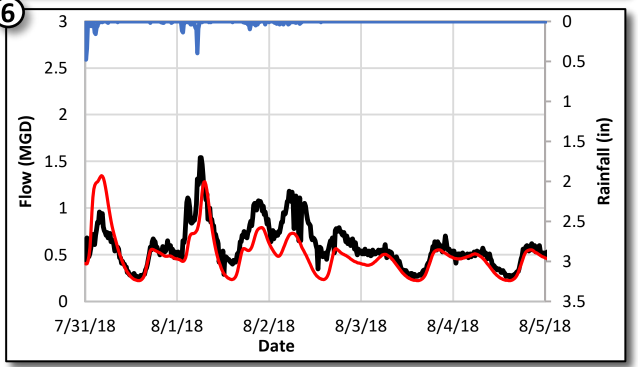

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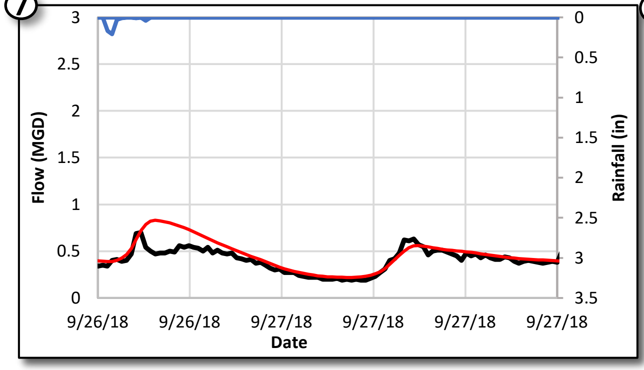

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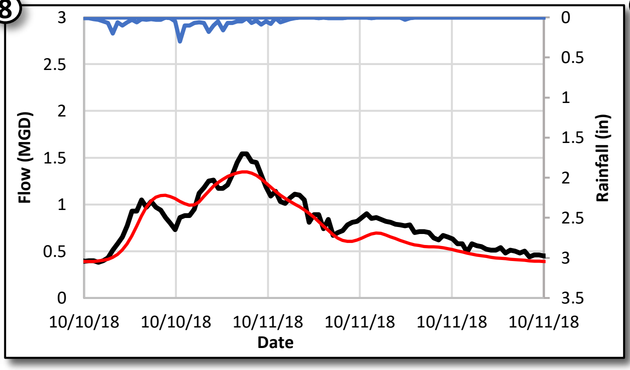

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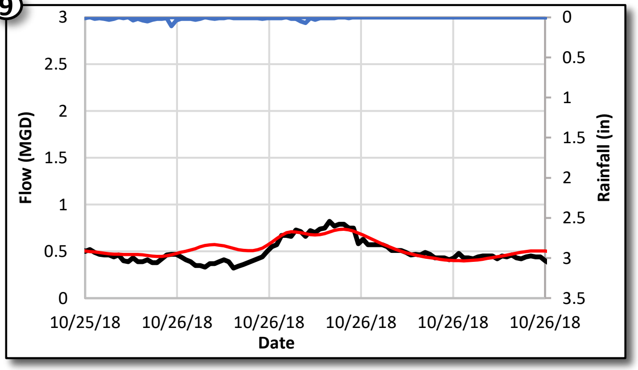


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK16

Sewershed:

North Fork Peachtree Creek

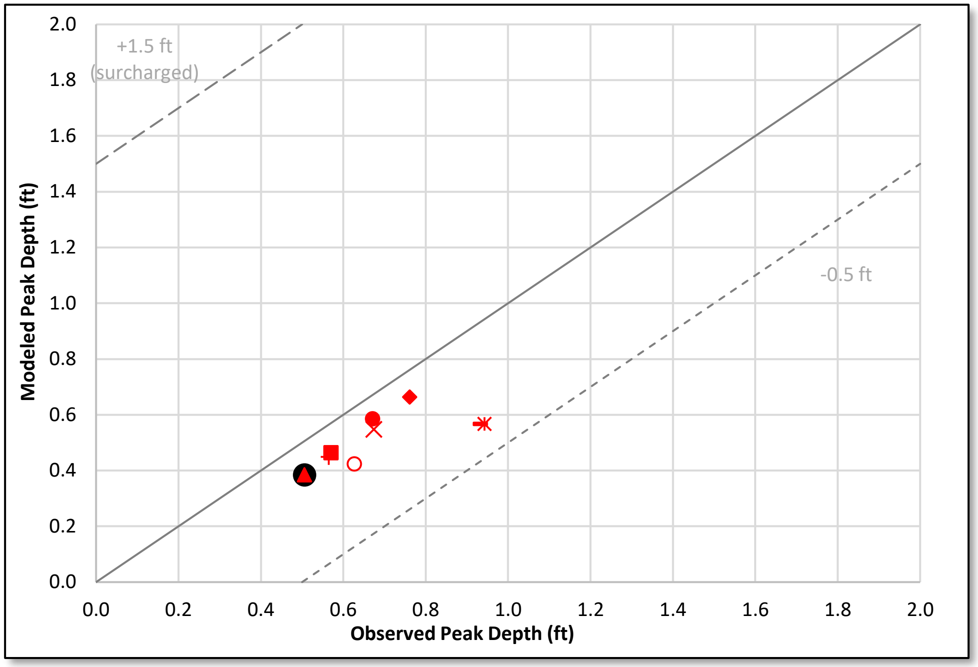
Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18

▨ Data Quality Issues



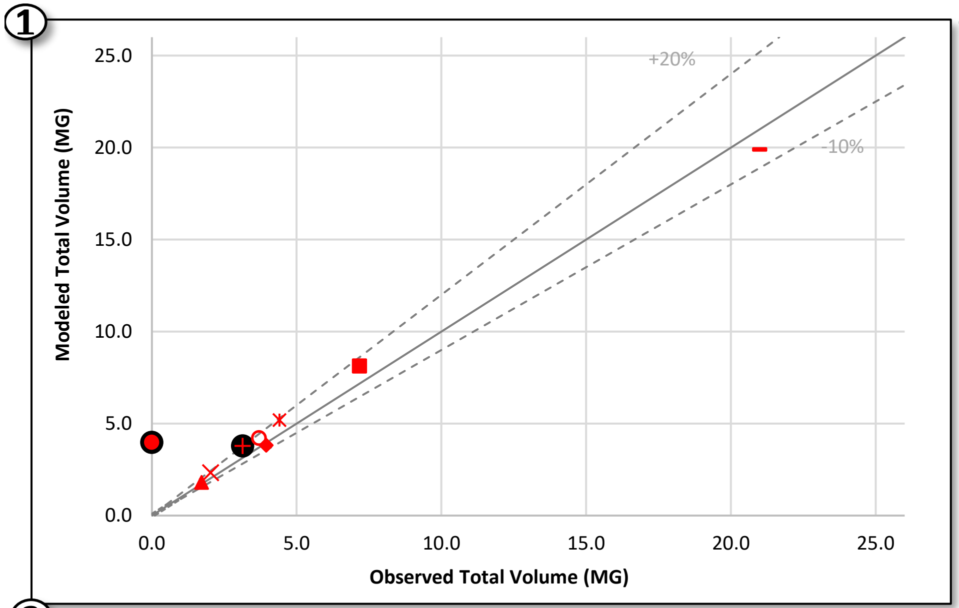
Flow Meter:

NFORK16

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	⁎	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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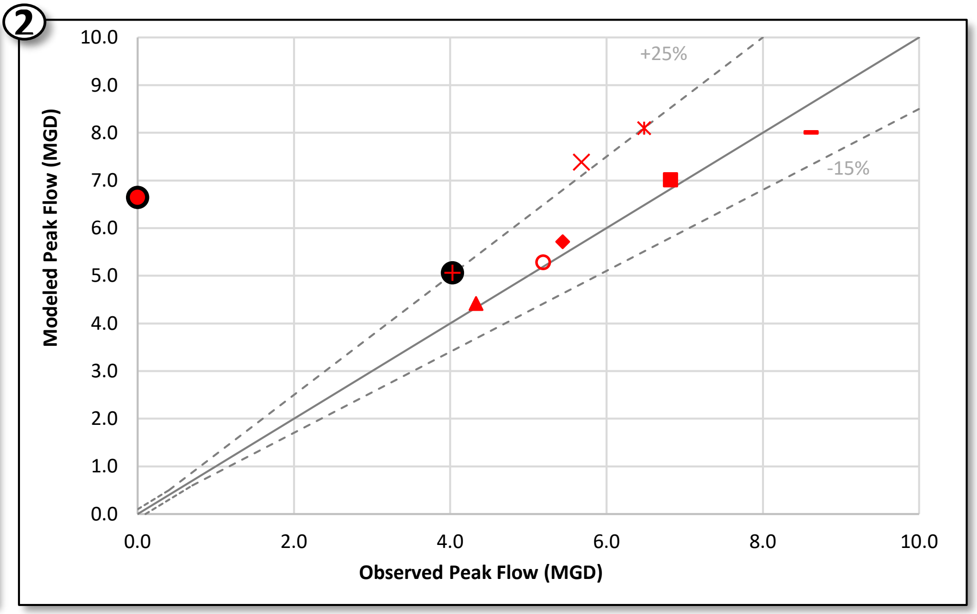

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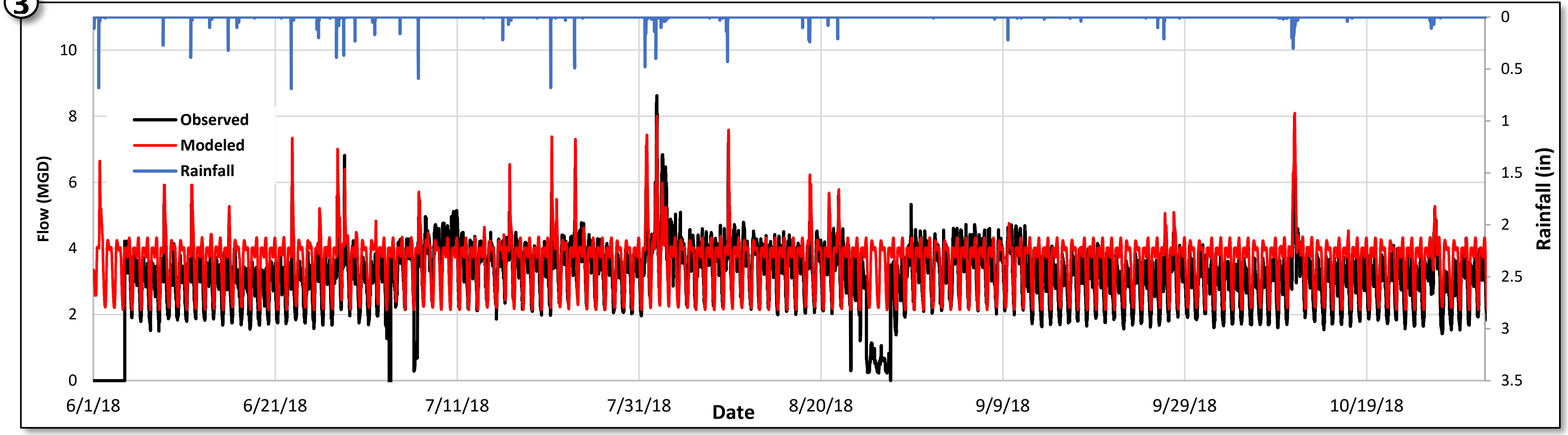


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK17

Sewershed:

North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

① Total Event Volume

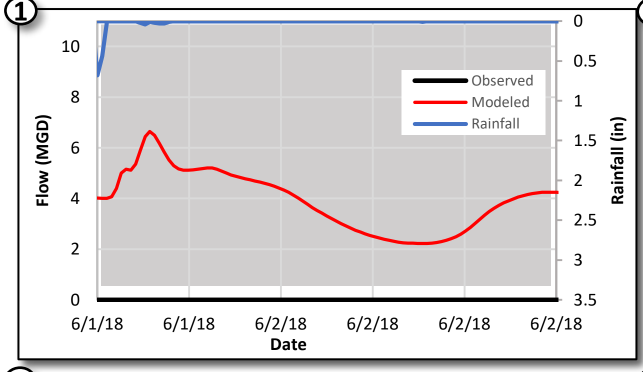
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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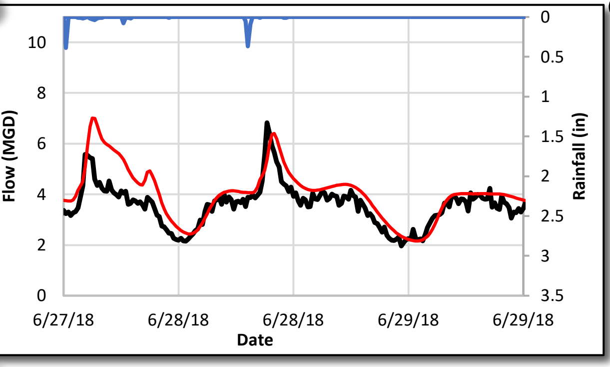

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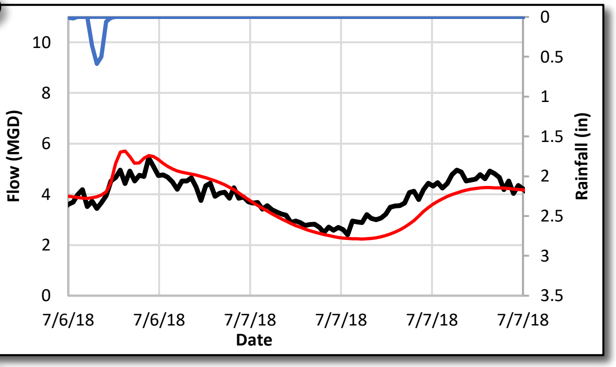

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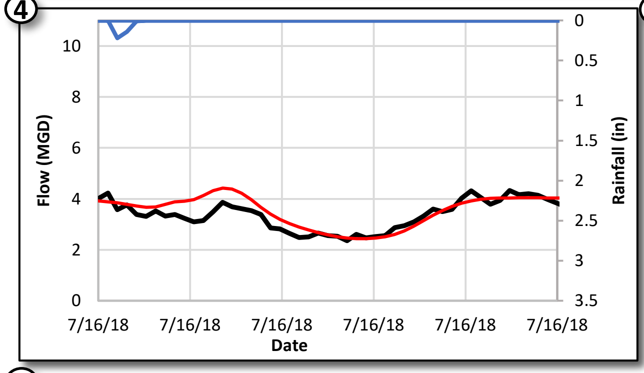

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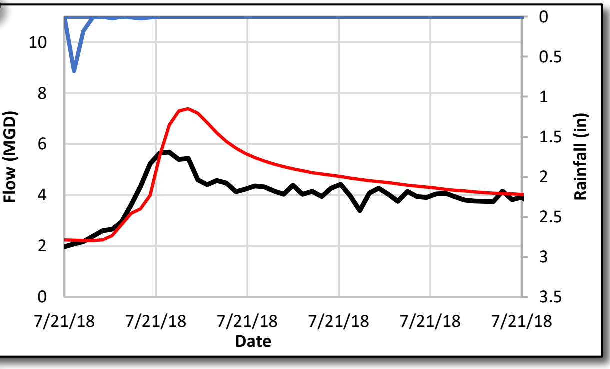

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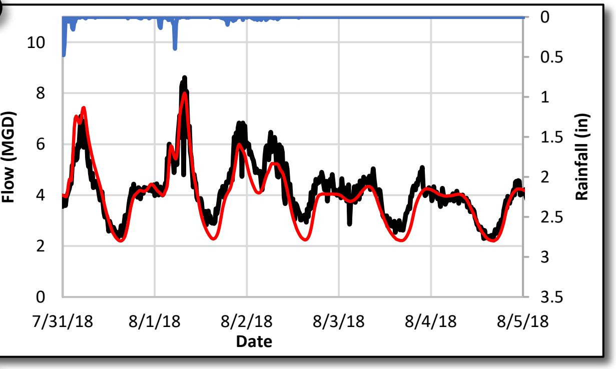

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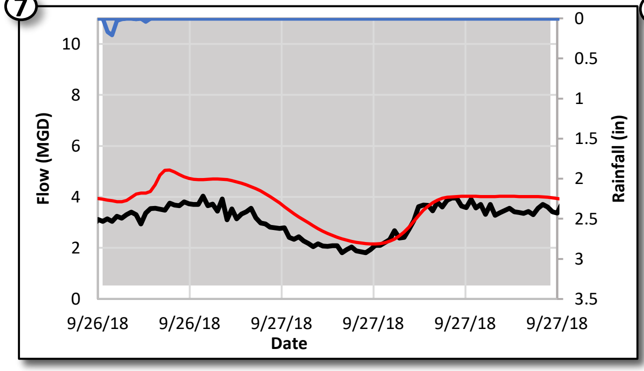

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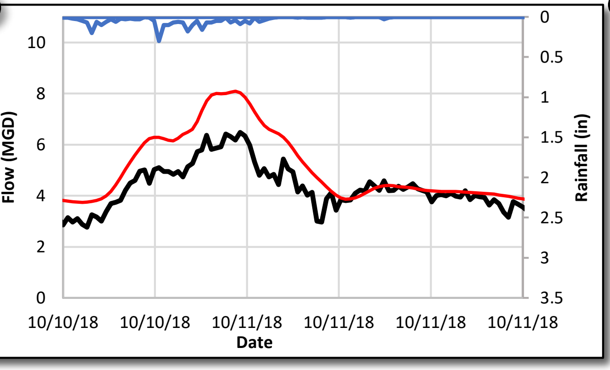

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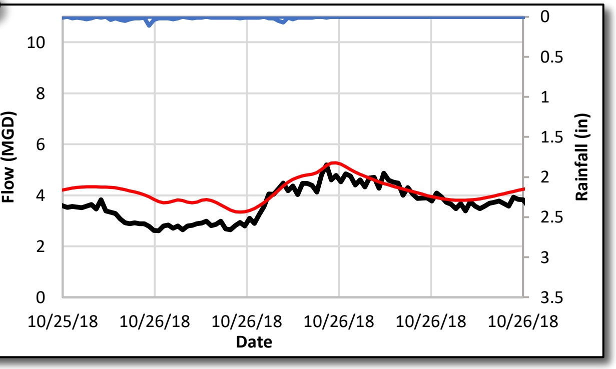


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK17

Sewershed:

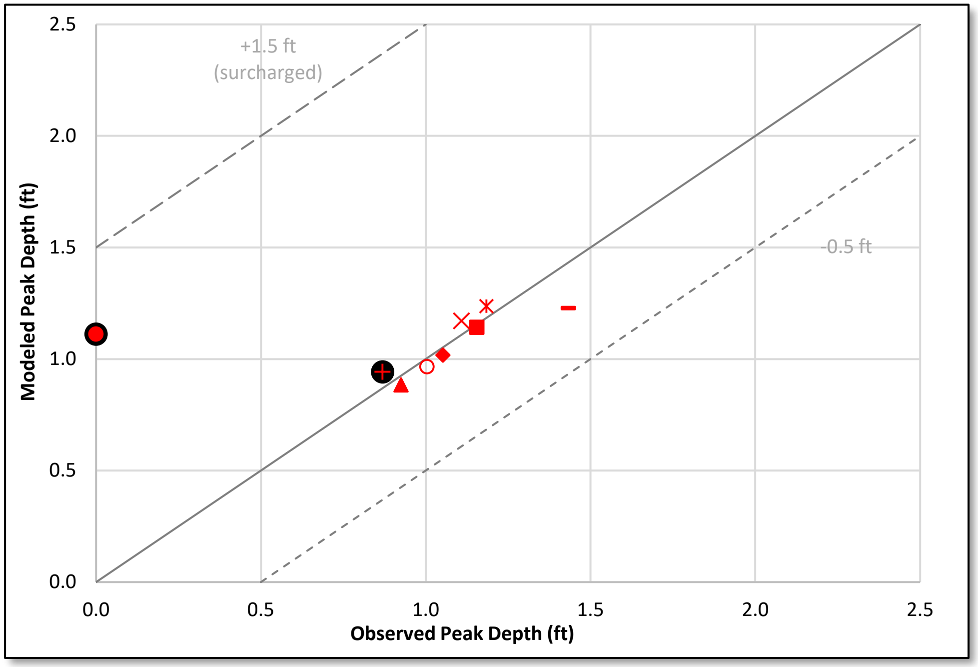
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues

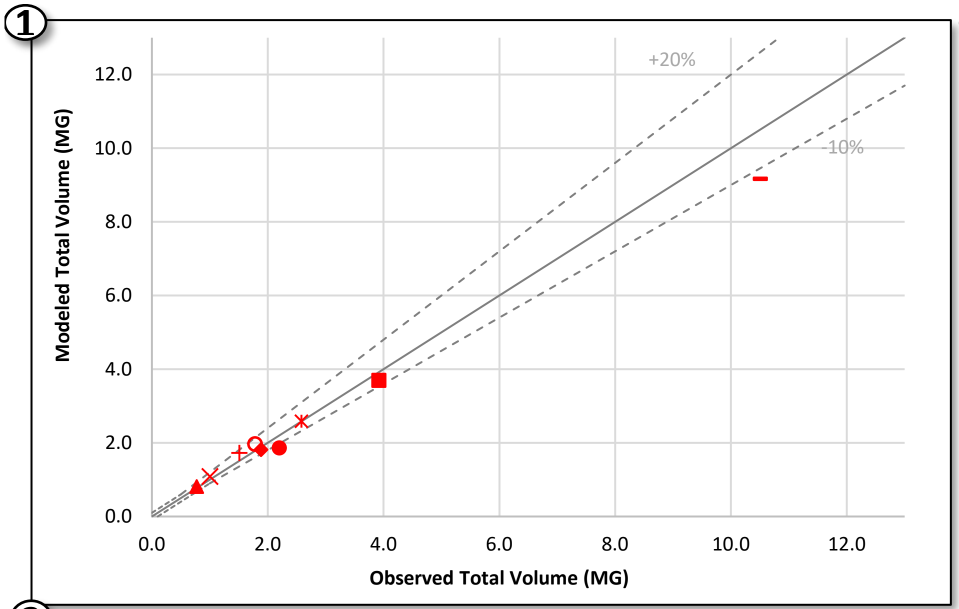


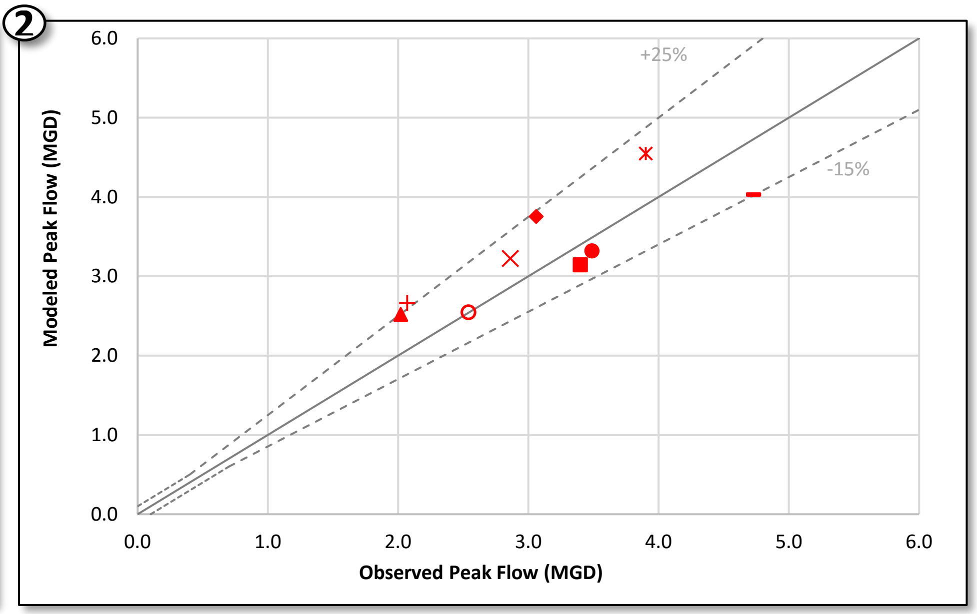
Flow Meter:

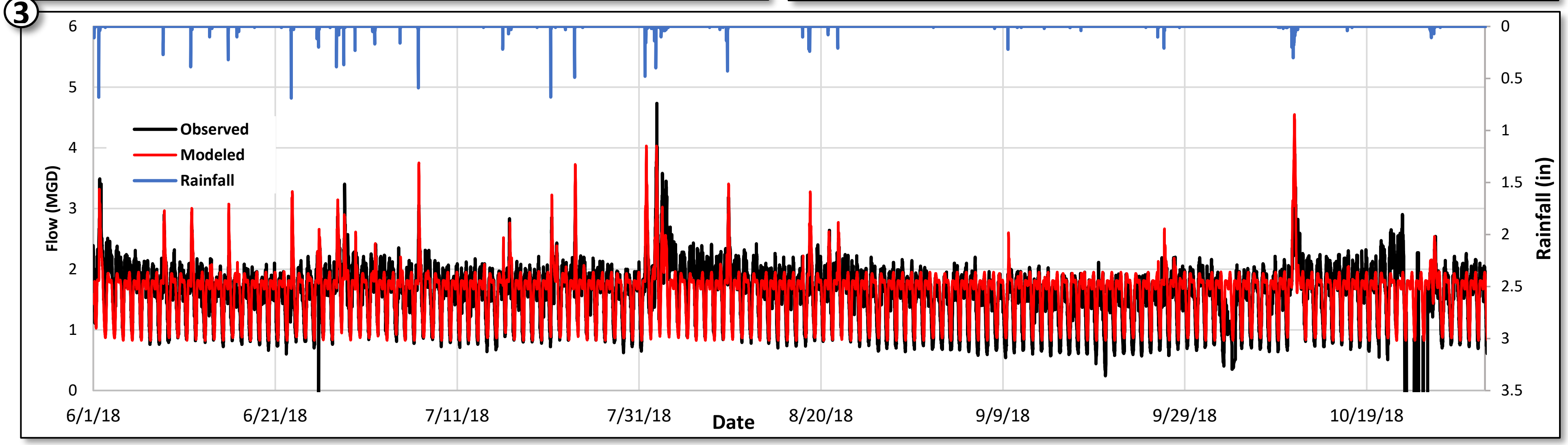
NFORK17

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues







DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK18

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

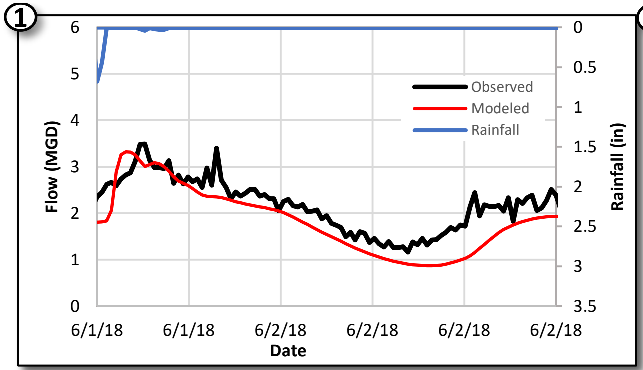
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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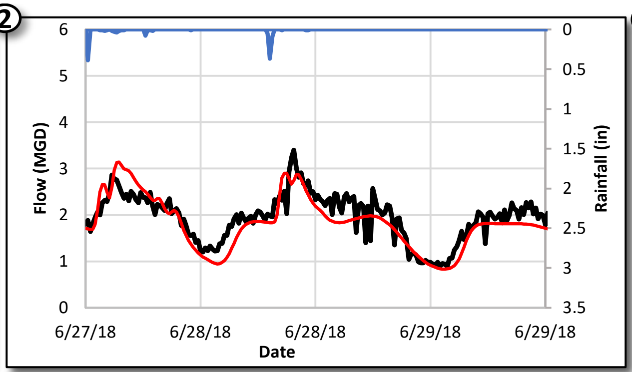

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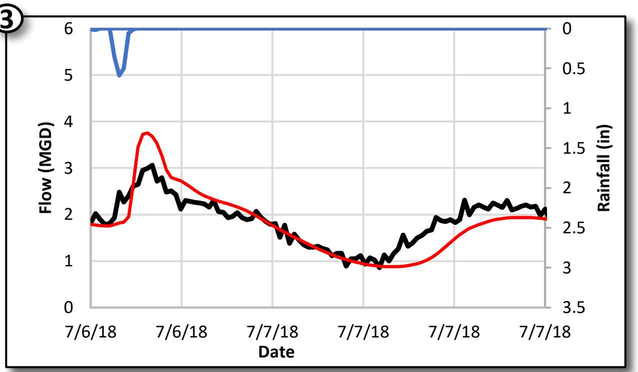

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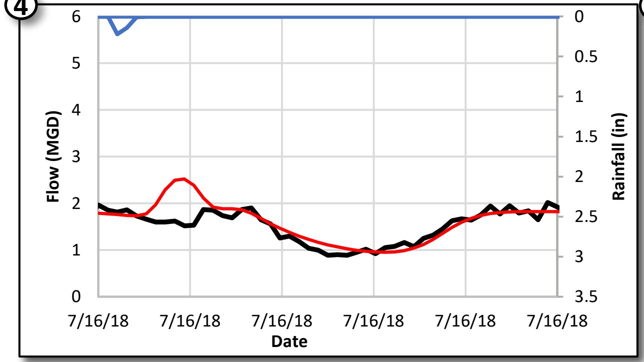

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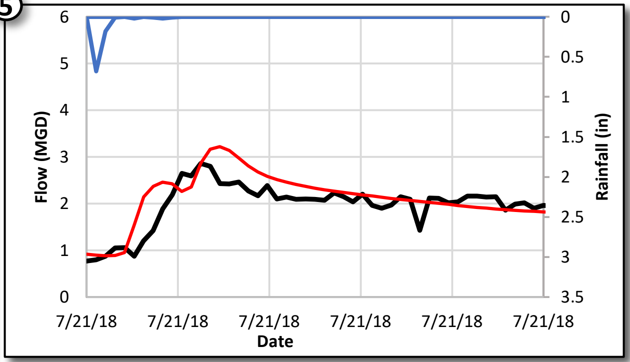

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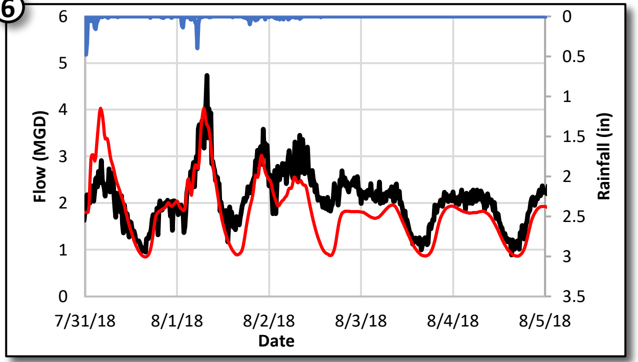

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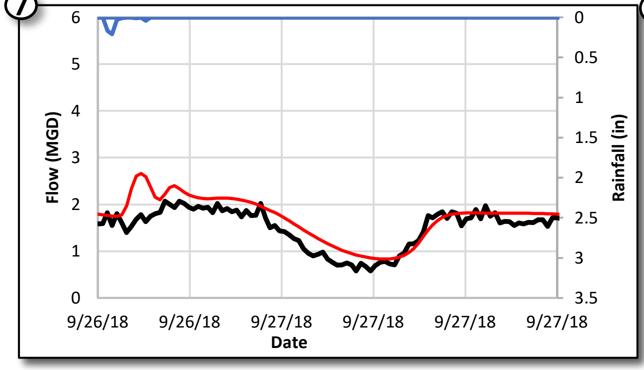

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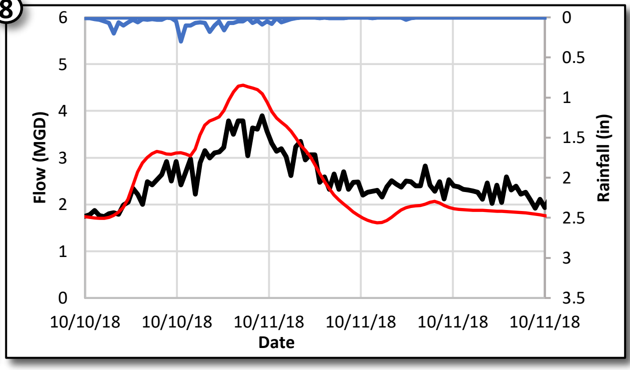

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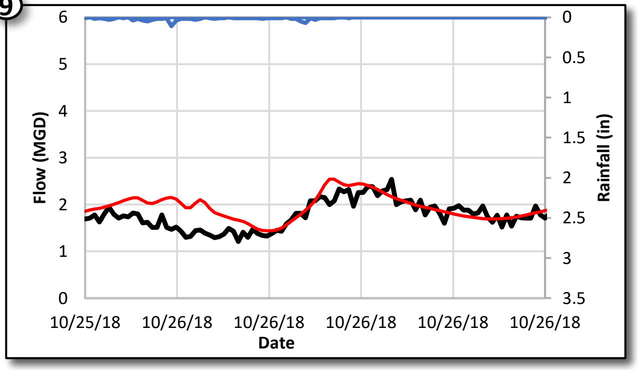


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK18

Sewershed:

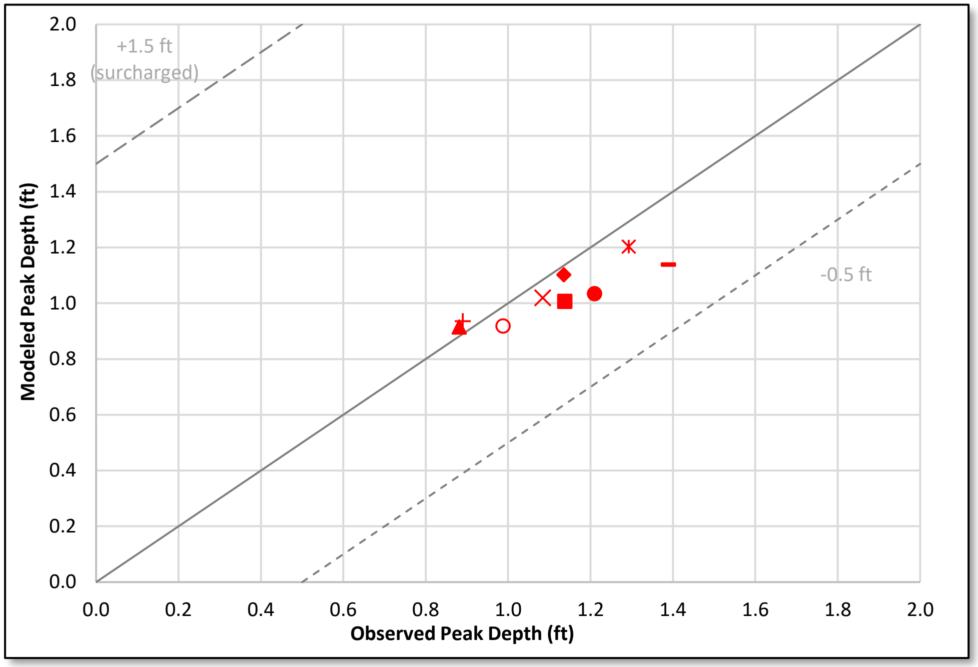
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



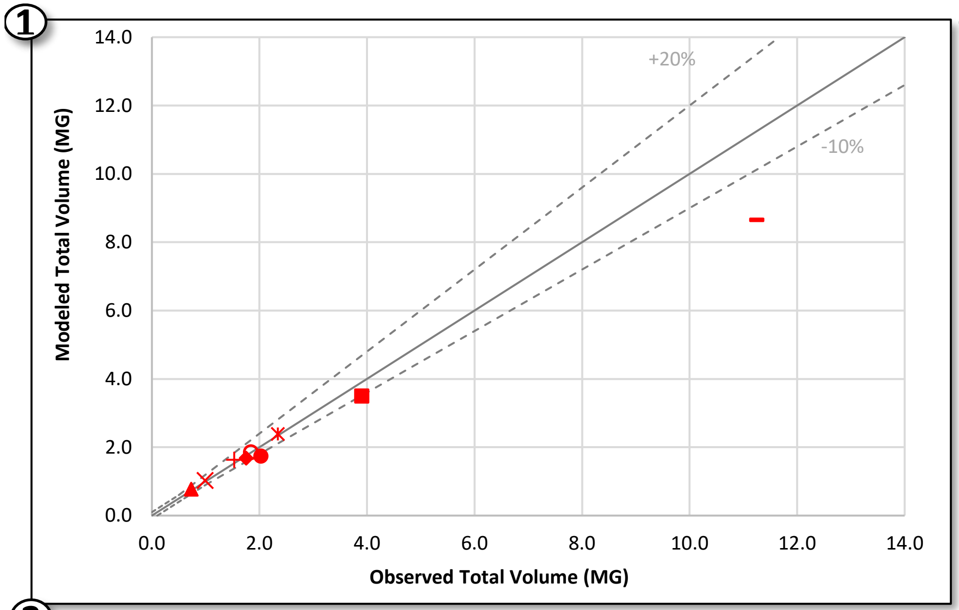
Flow Meter:

NFORK18

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
– 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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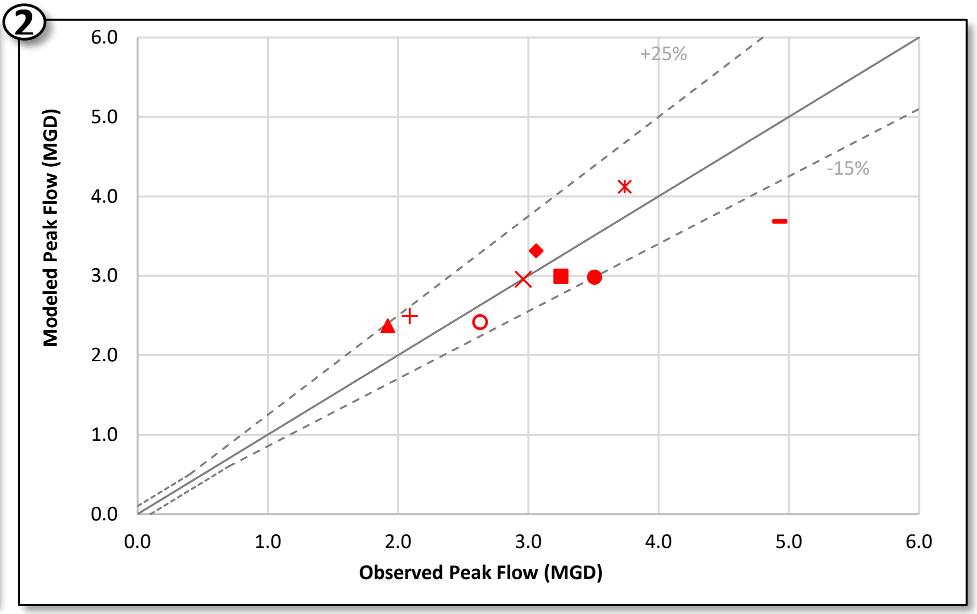

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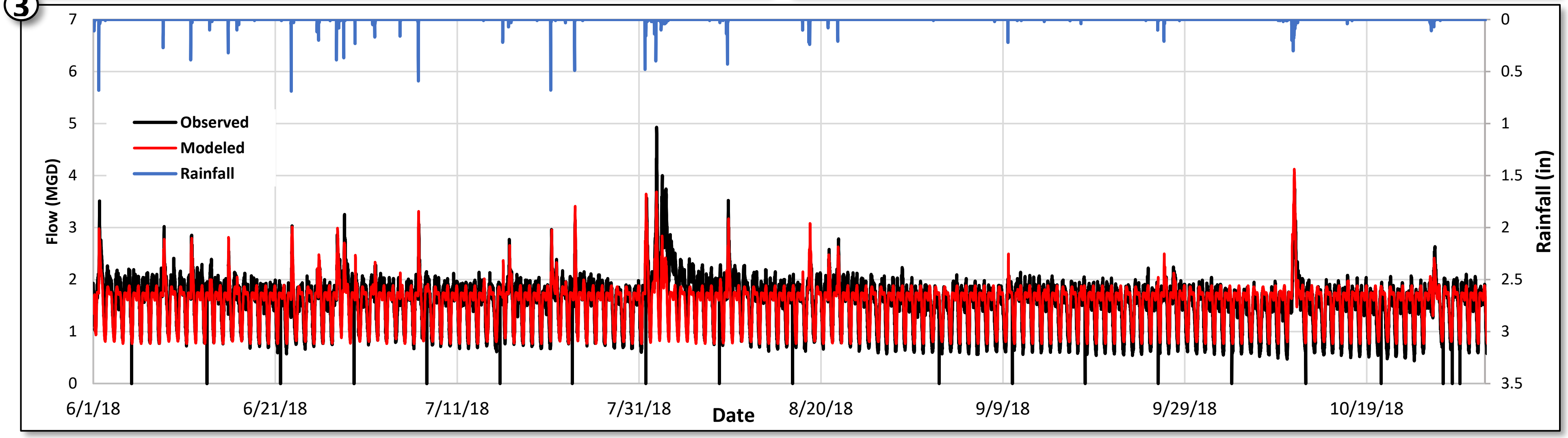


DeKalb Calibration Results

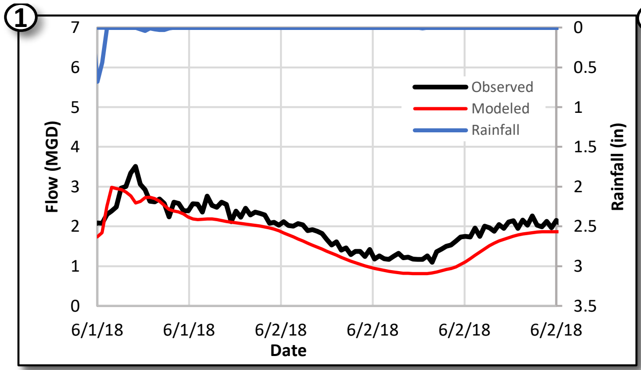
Wet Weather
Flow Summary

Flow Meter:
NFORK20
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:
● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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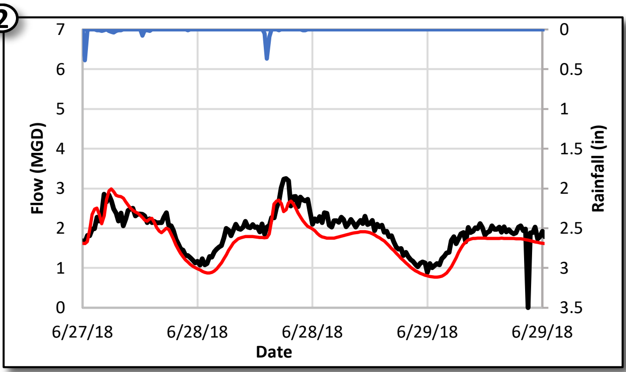

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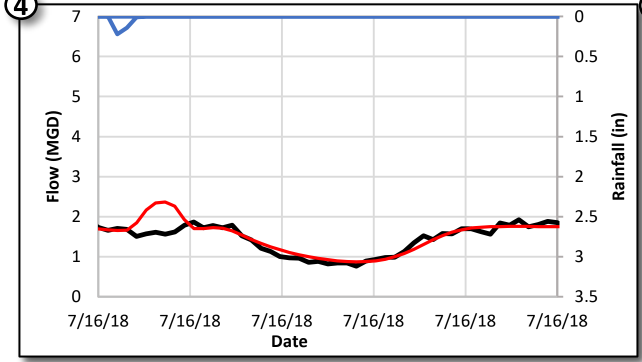

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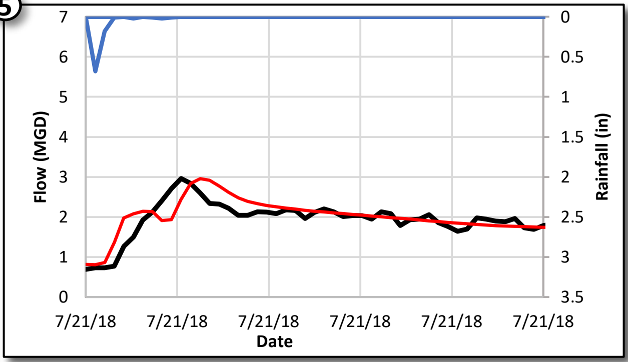

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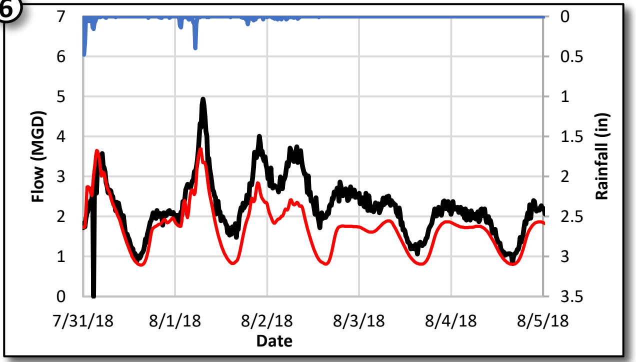

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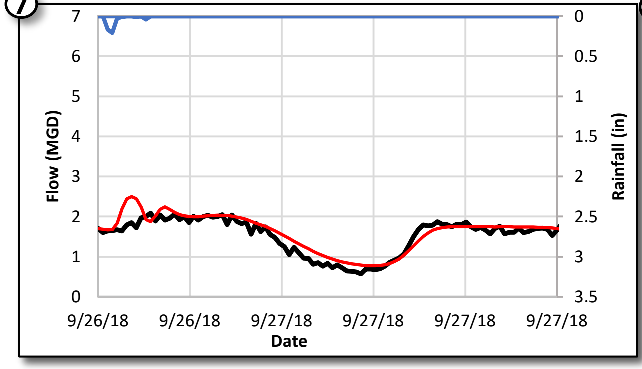

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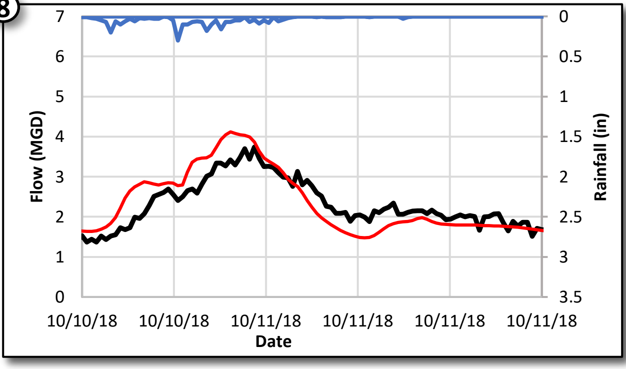

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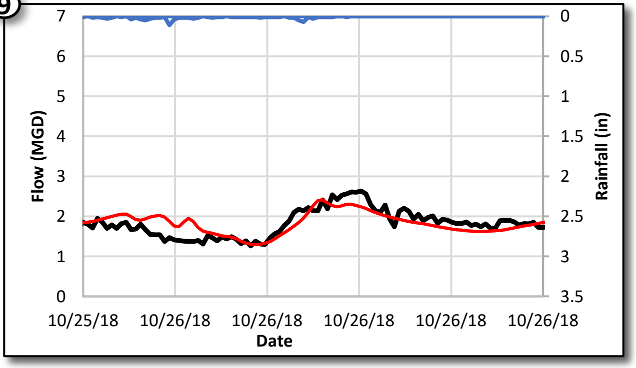


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK20

Sewershed:

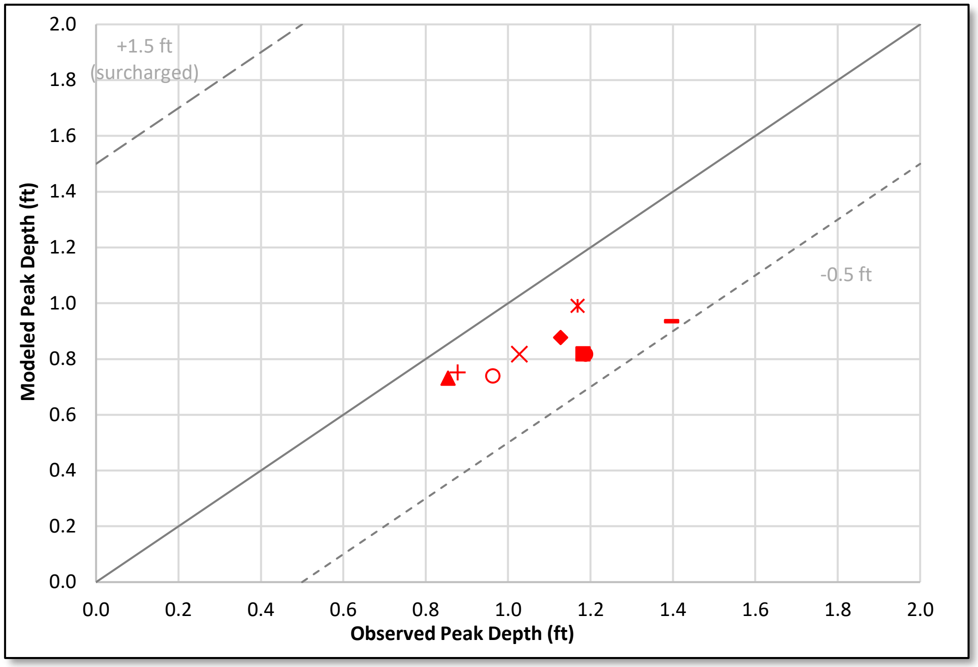
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



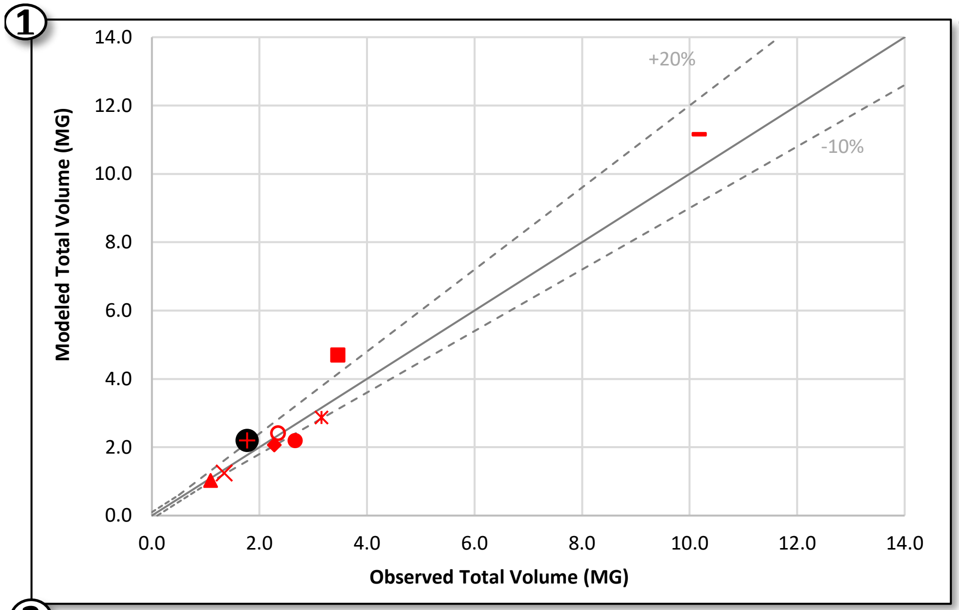
Flow Meter:

NFORK20

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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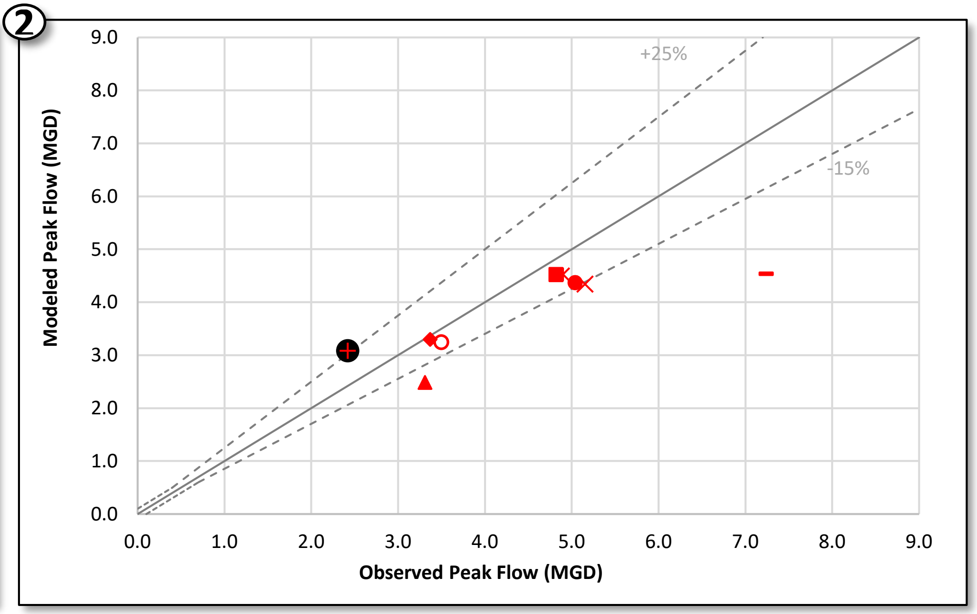

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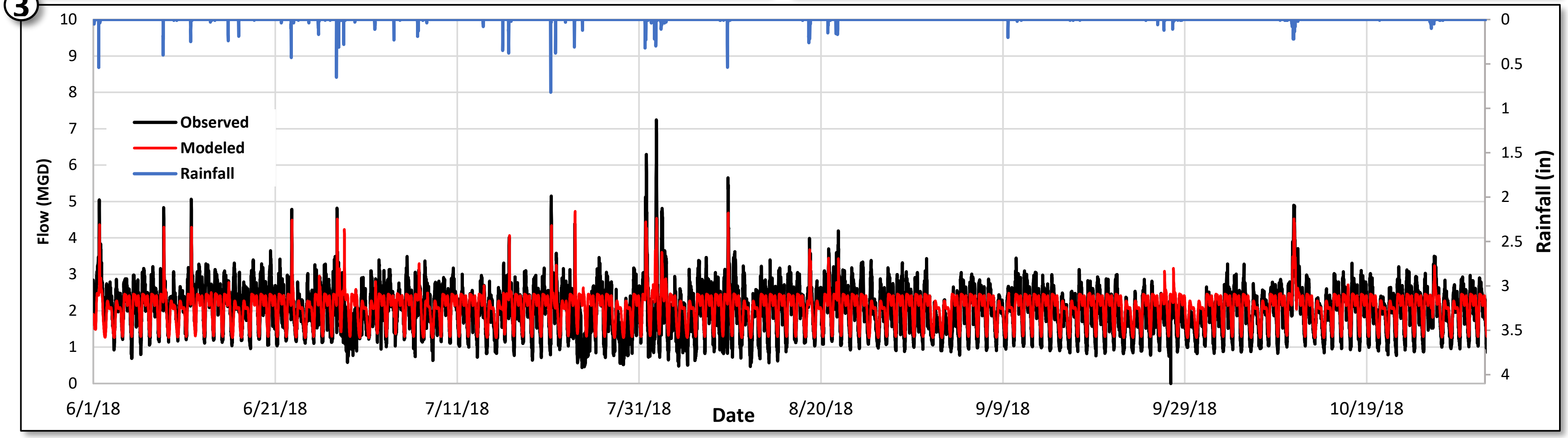


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK23

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

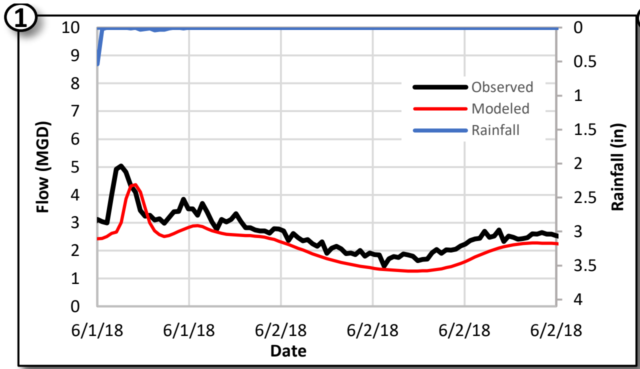
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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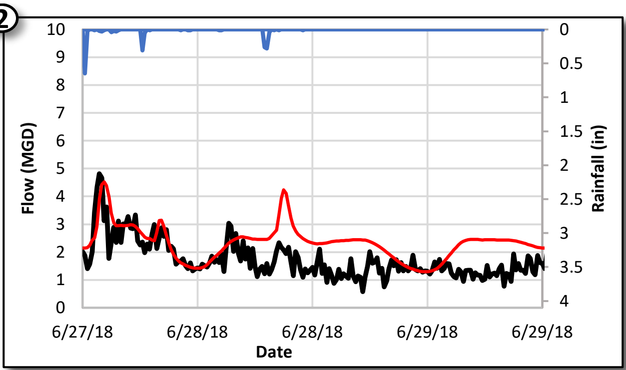
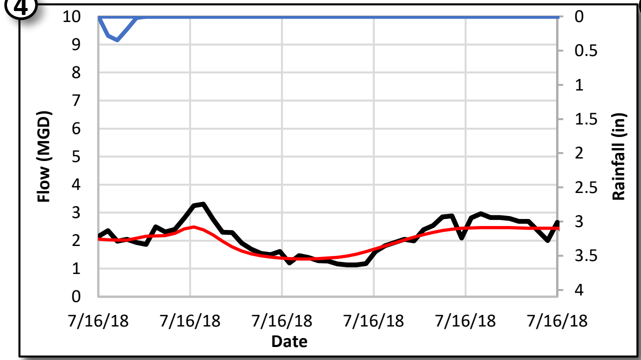


③

④



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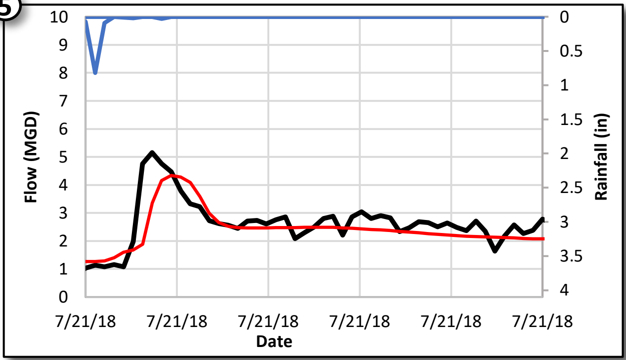

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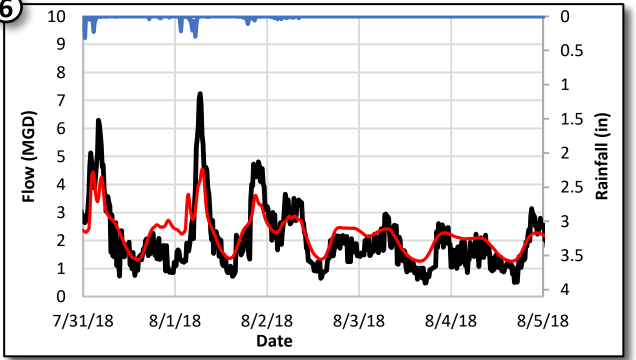

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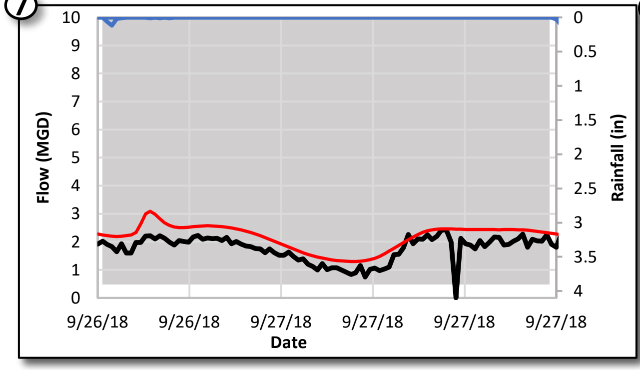

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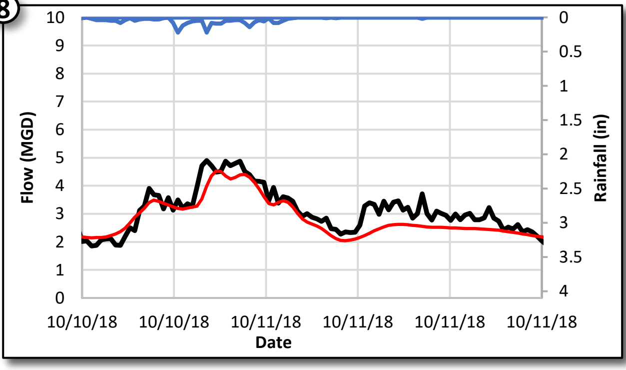

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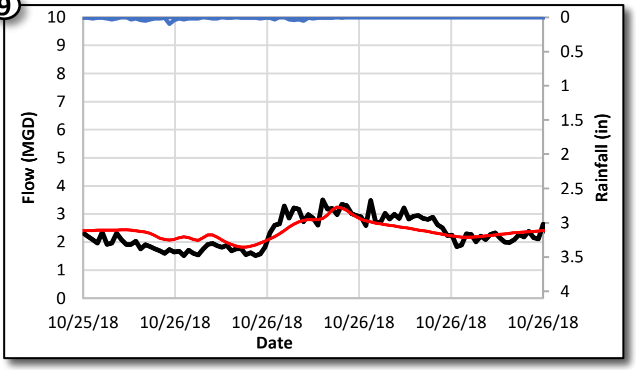


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK23

Sewershed:

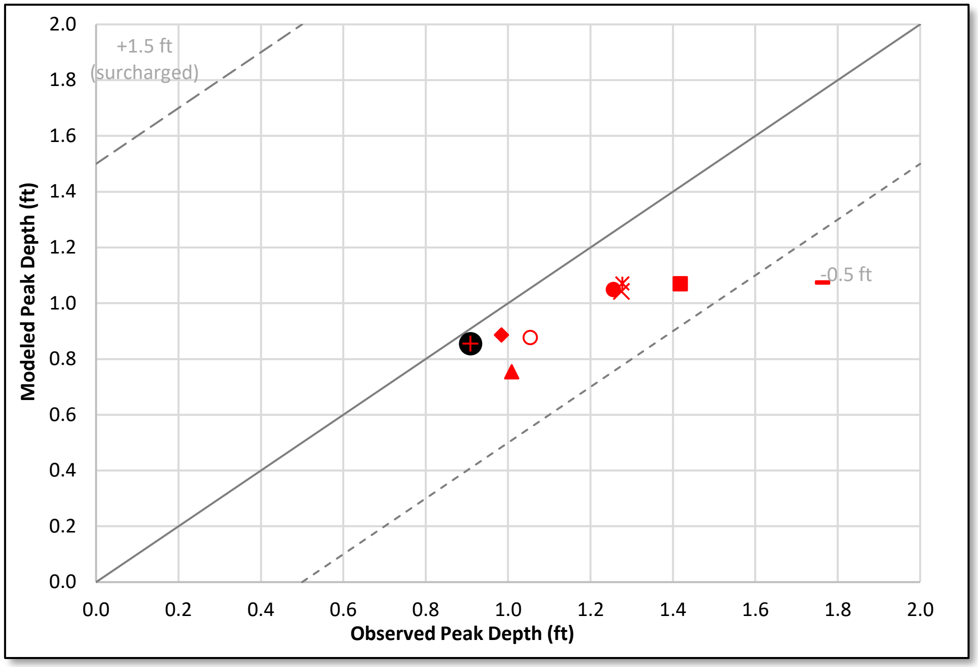
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



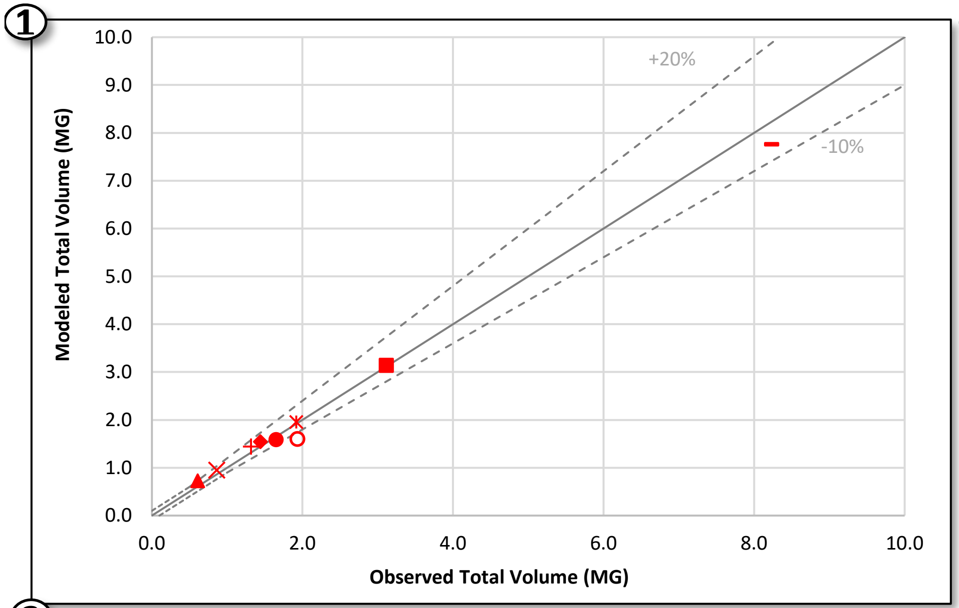
Flow Meter:

NFORK23

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
– 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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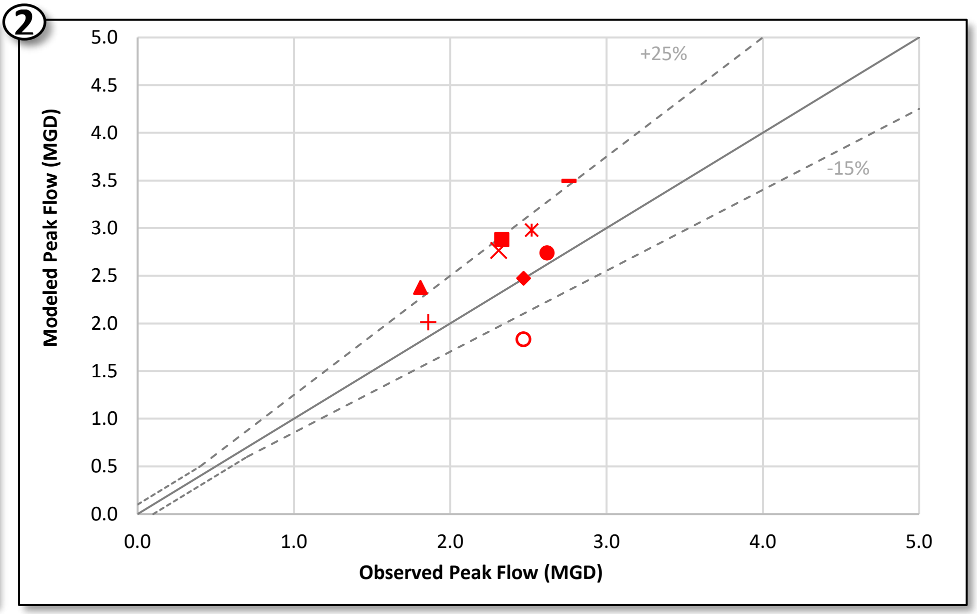

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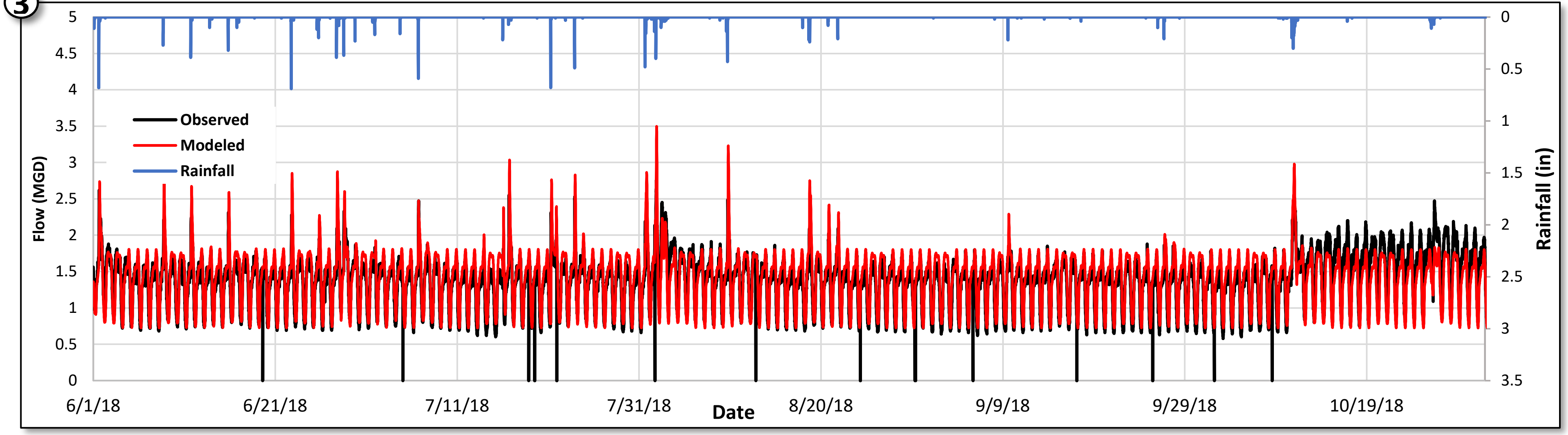


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK24

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

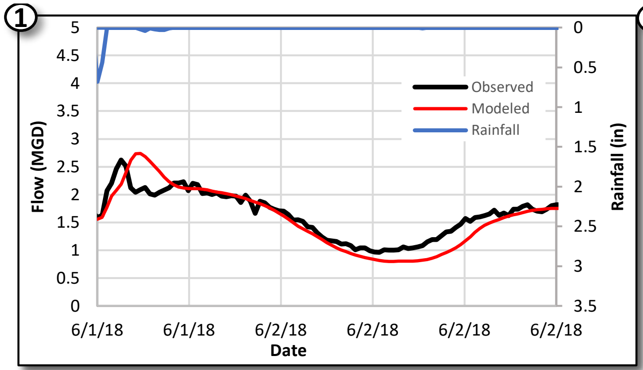
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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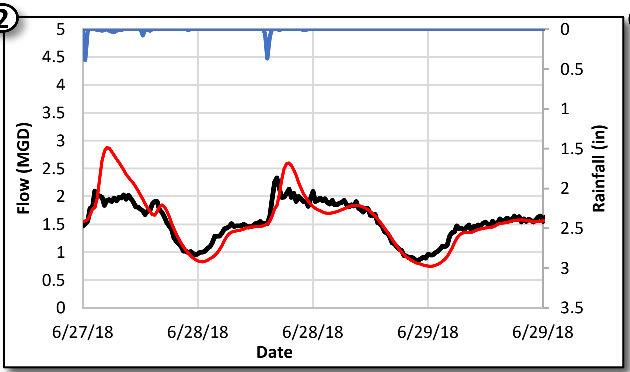

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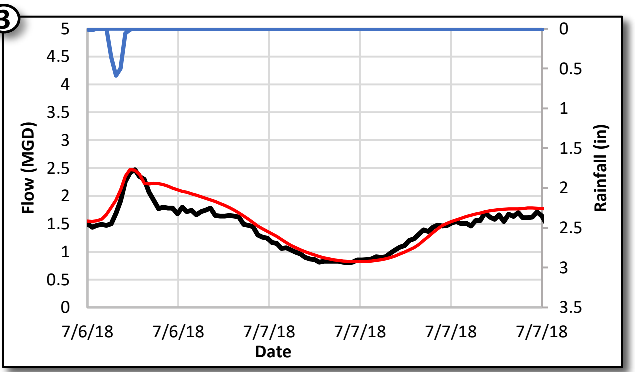

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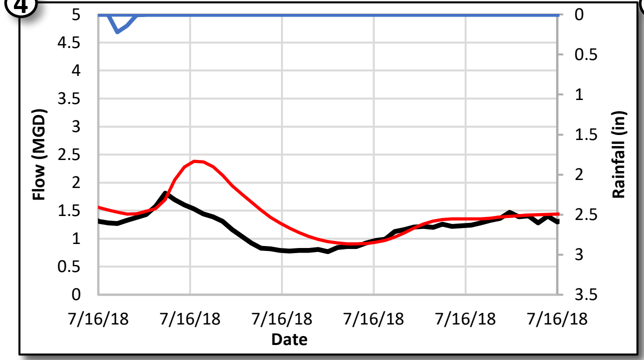

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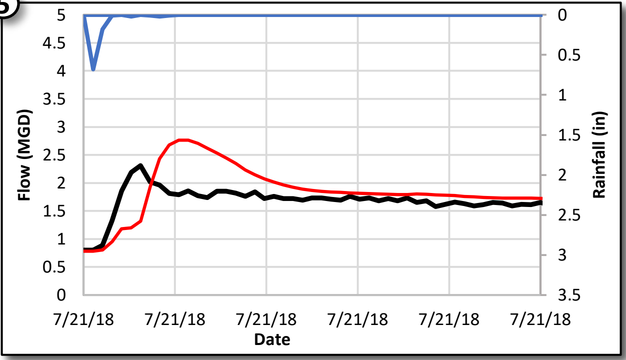

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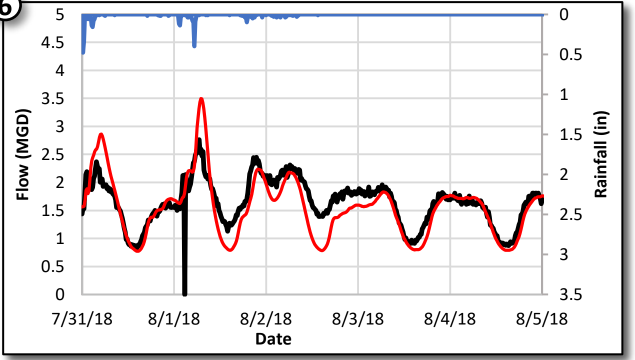

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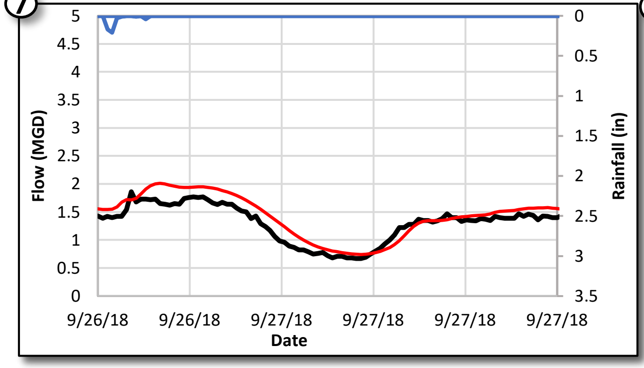

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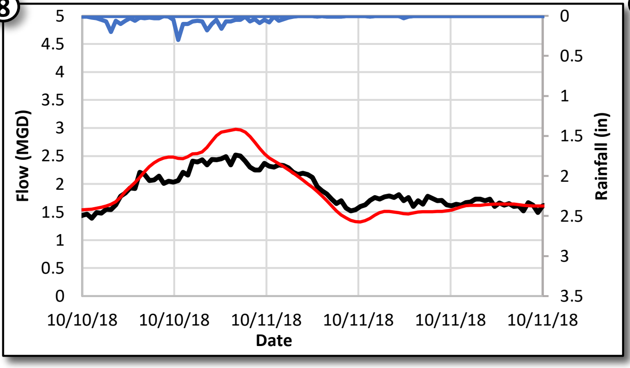

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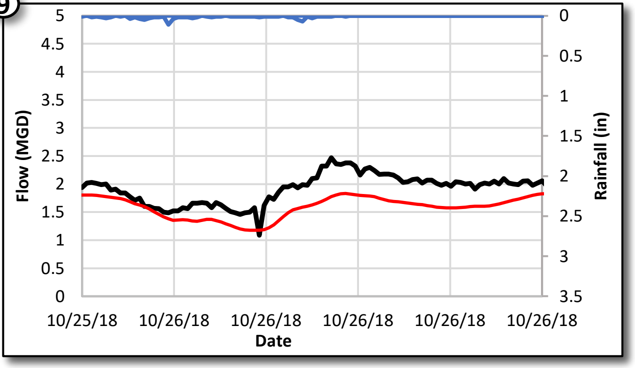


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK24

Sewershed:

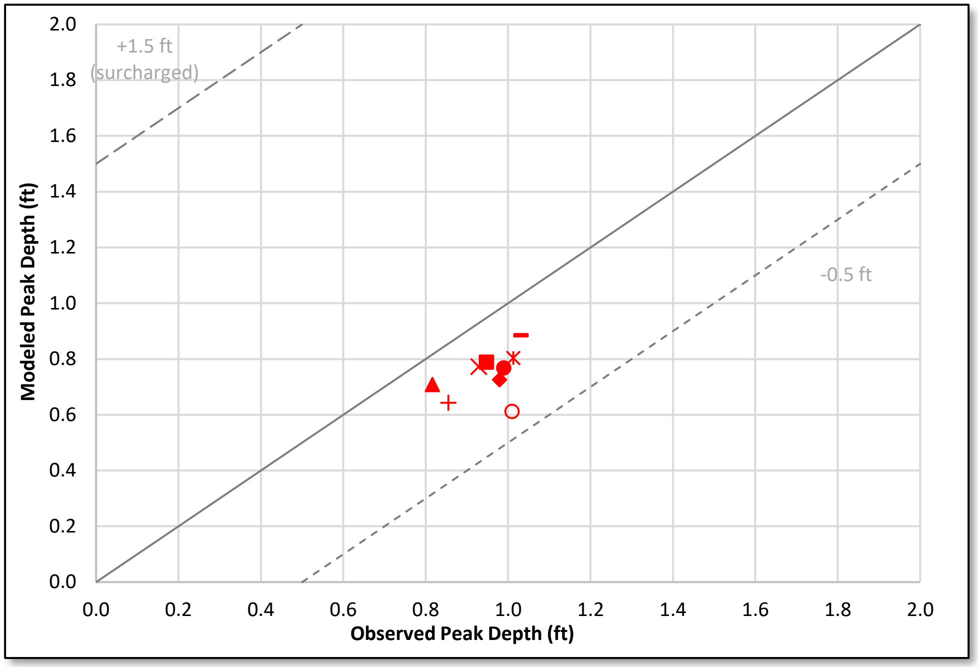
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



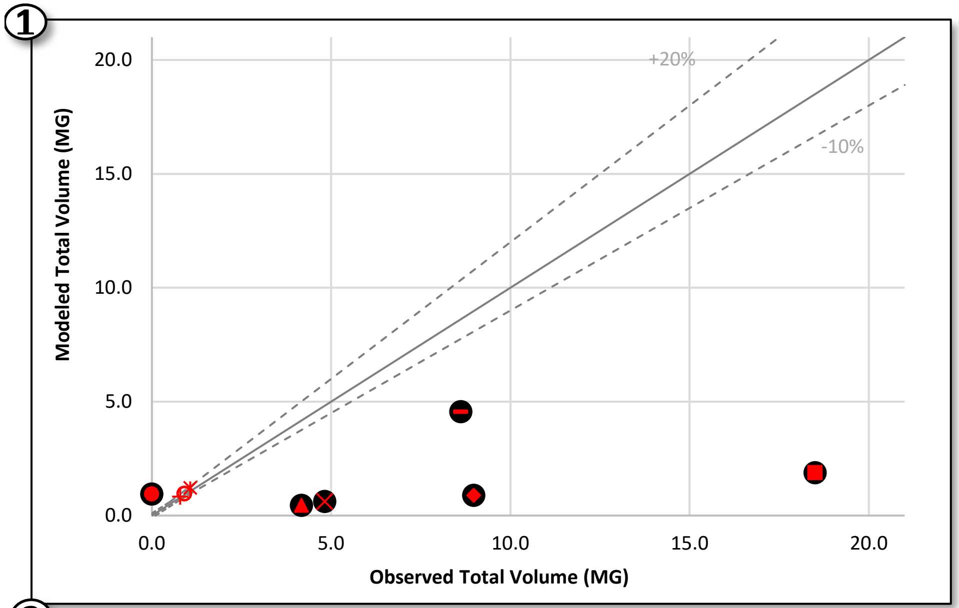
Flow Meter:

NFORK24

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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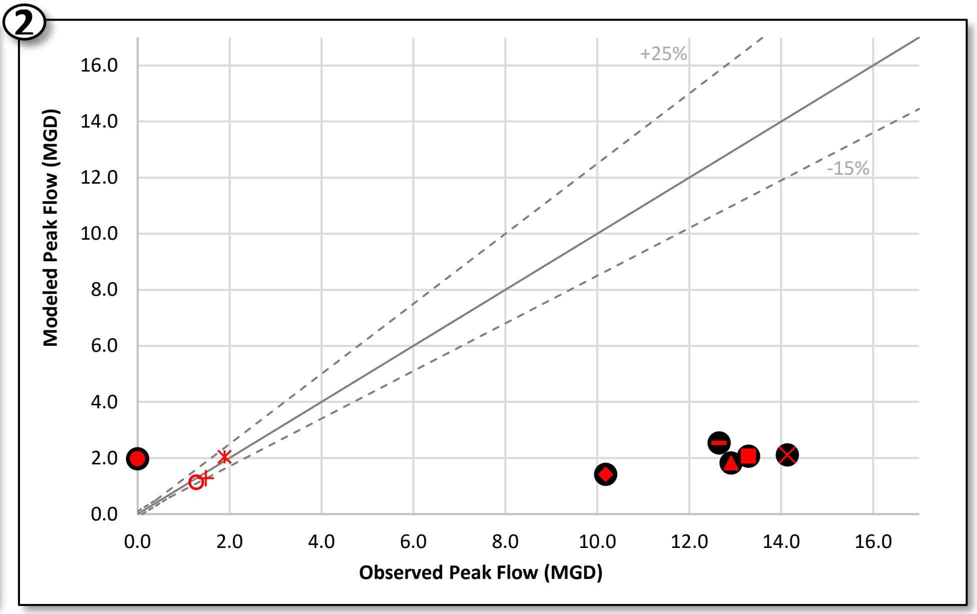

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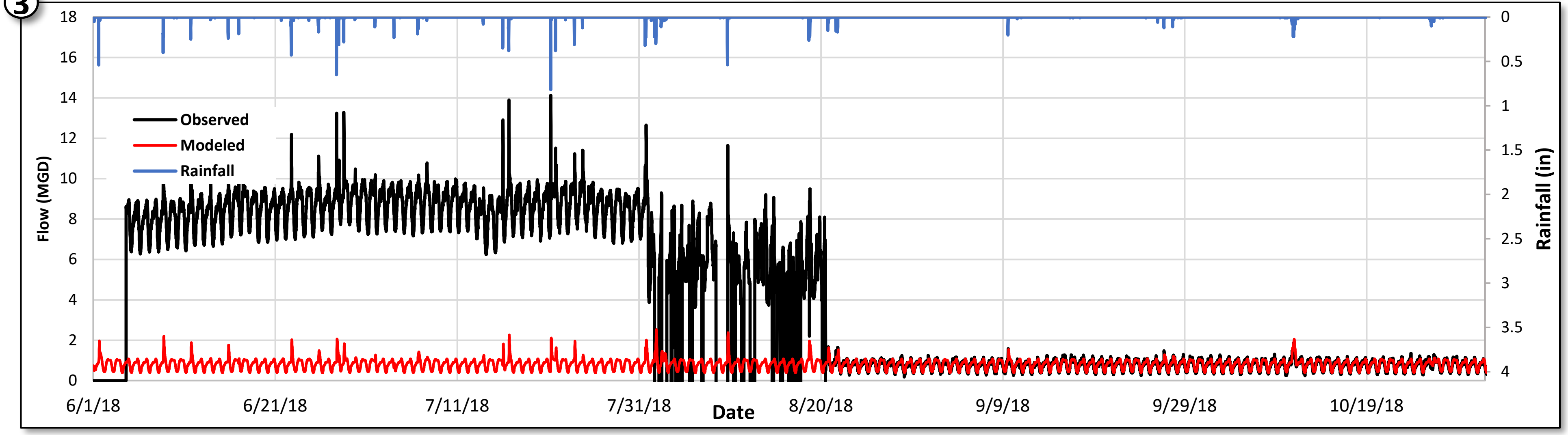


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:
NFORK26

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

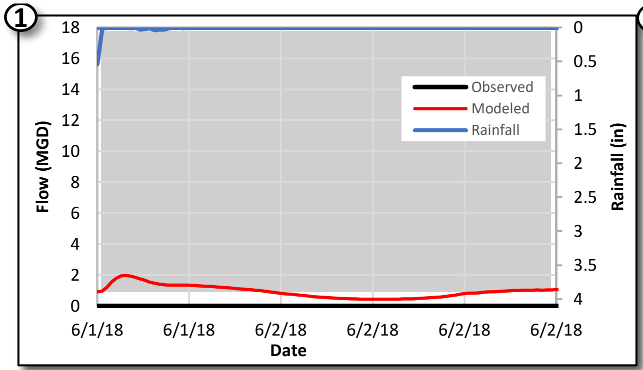
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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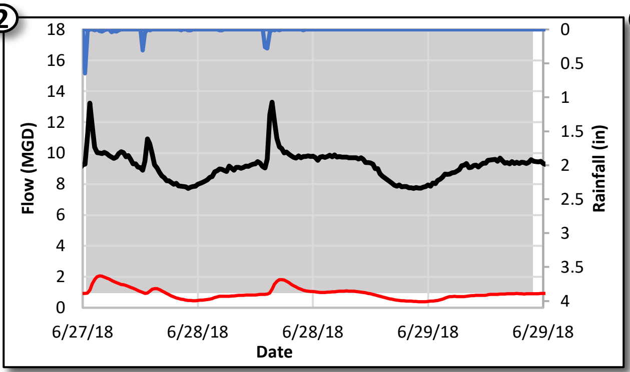

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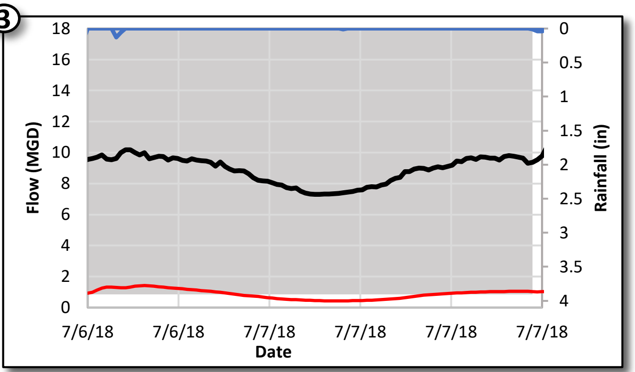

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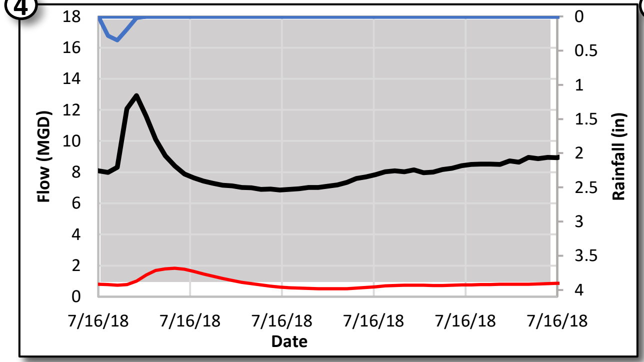

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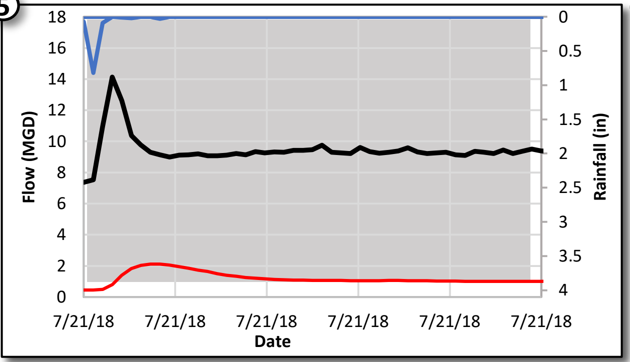

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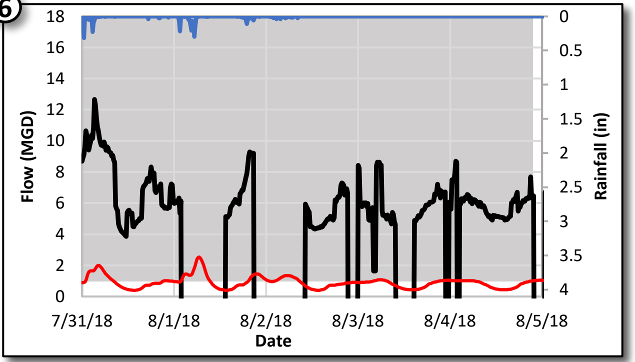

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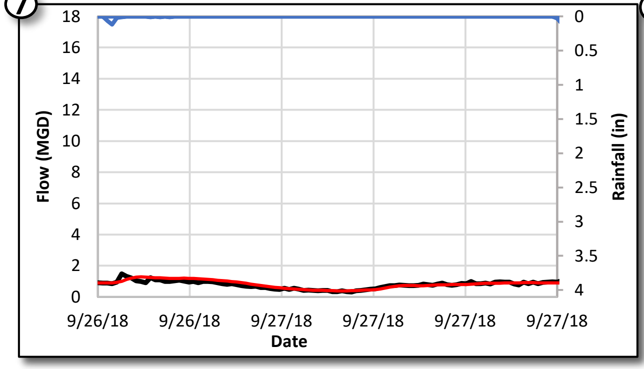

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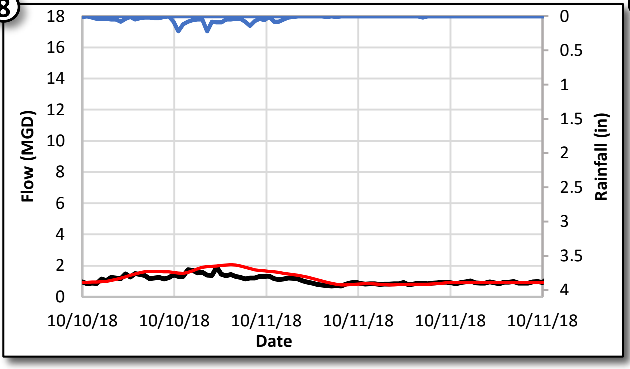

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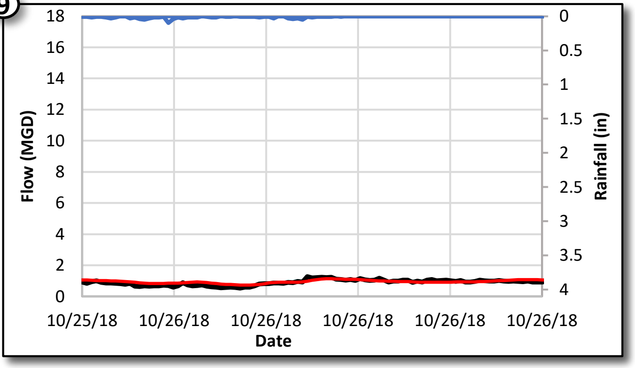


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK26

Sewershed:

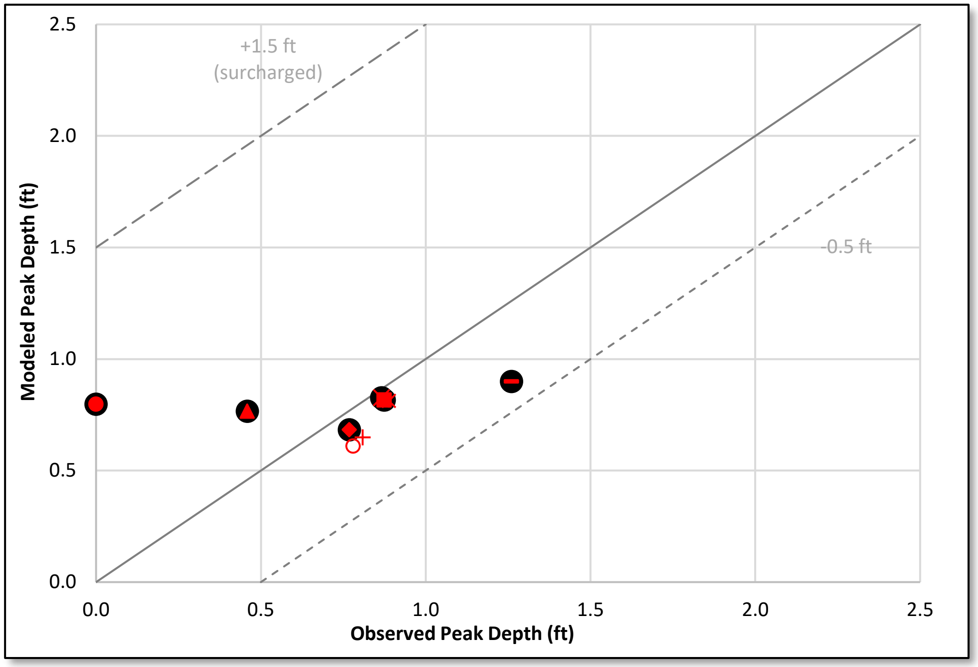
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



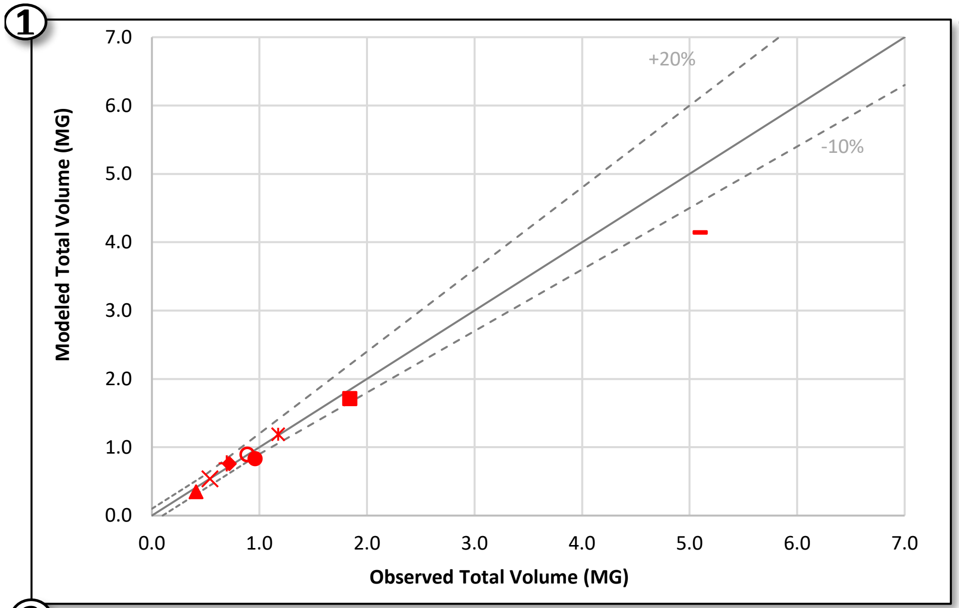
Flow Meter:

NFORK26

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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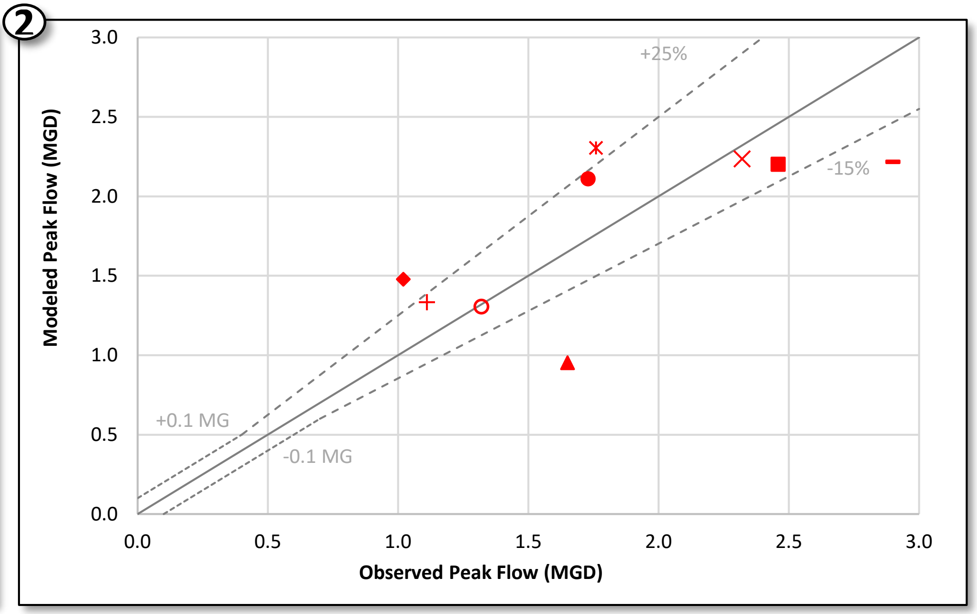

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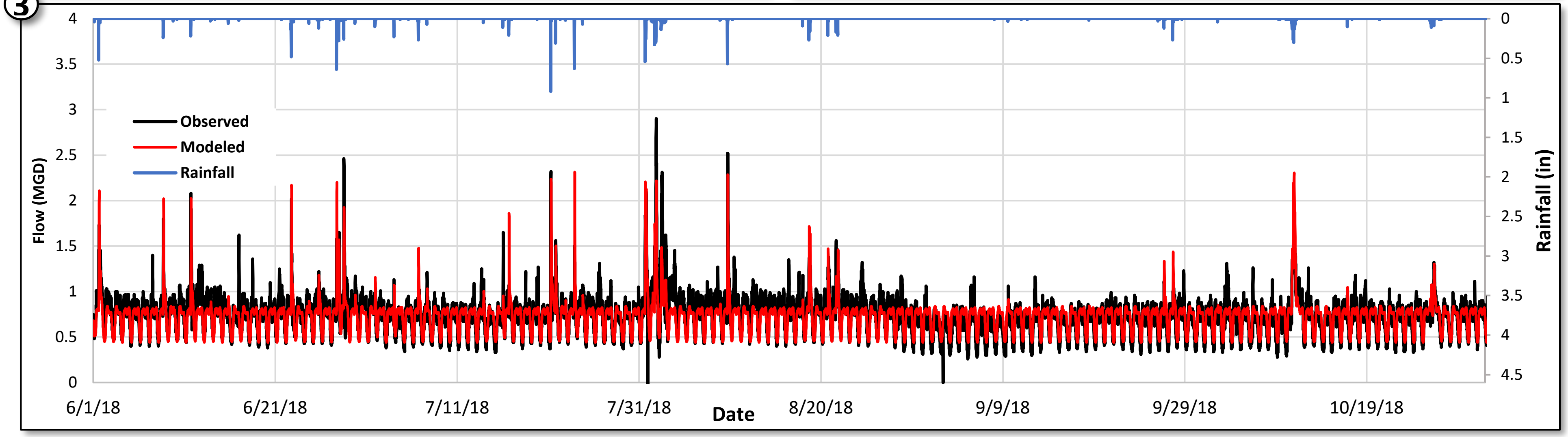


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK28

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

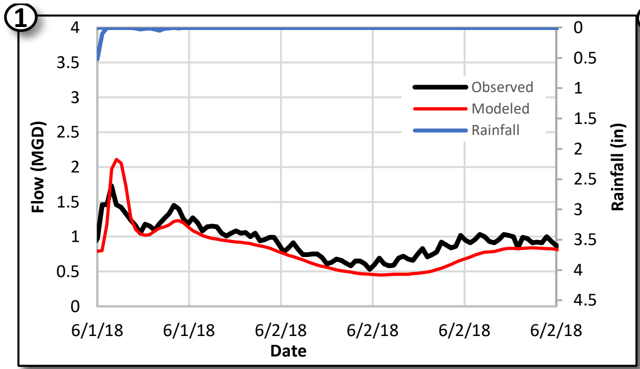
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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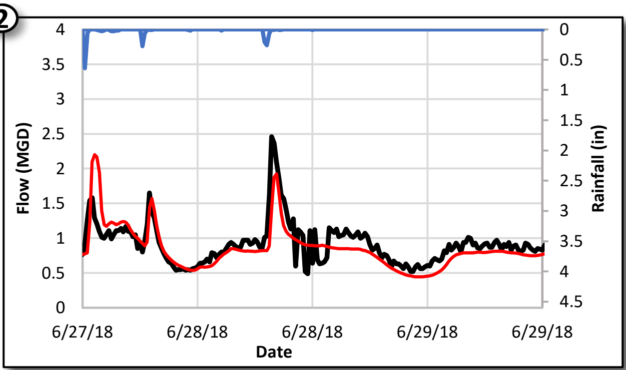

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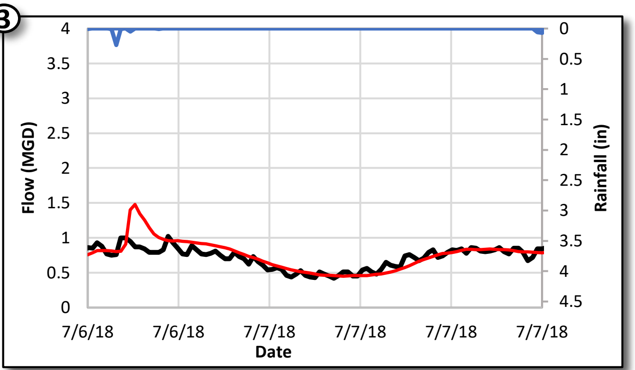

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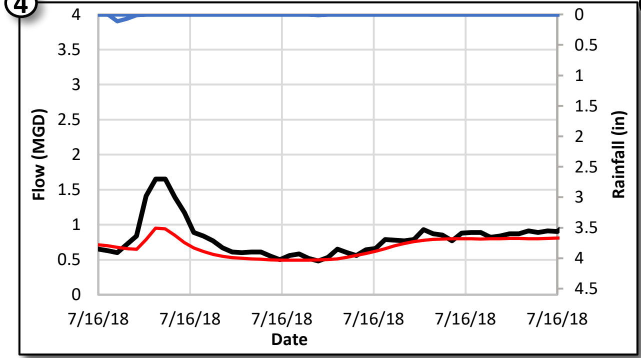

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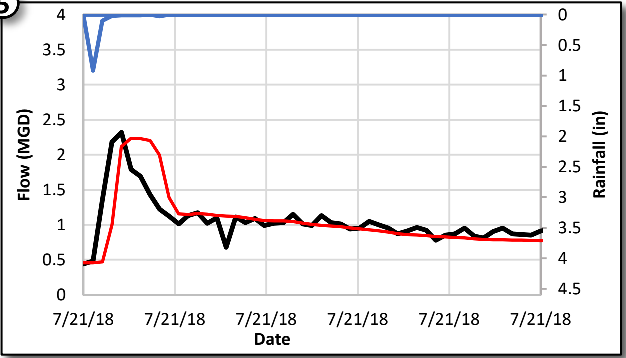

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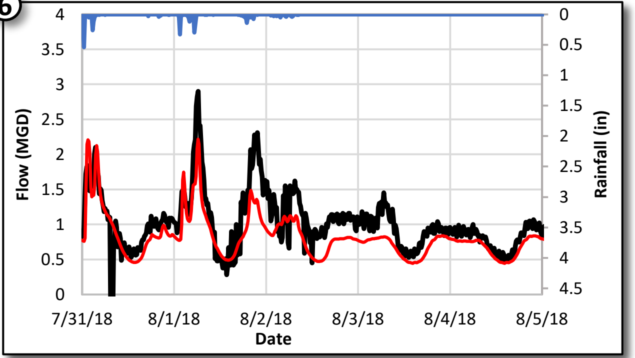

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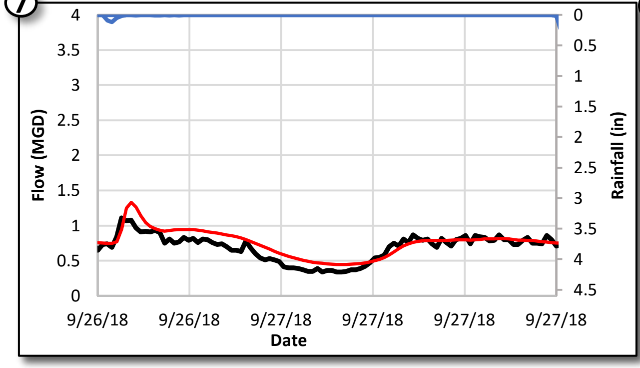

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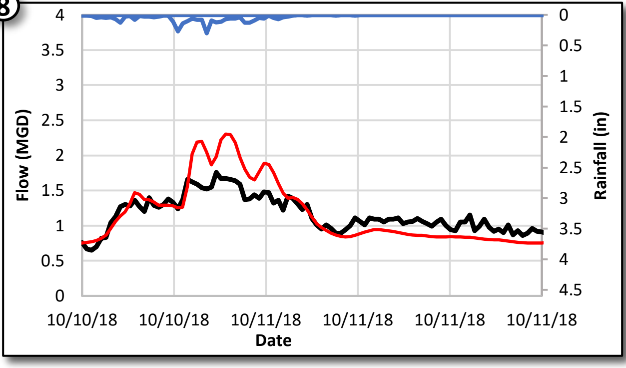

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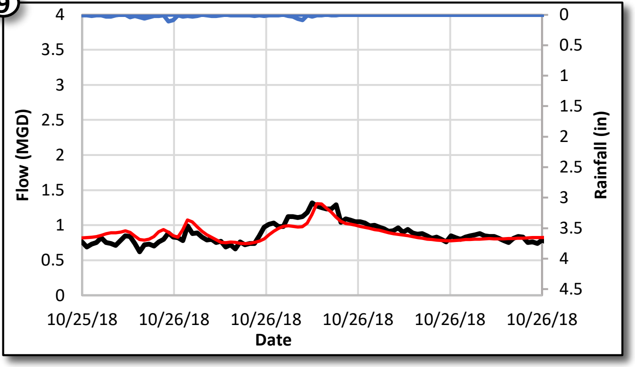


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK28

Sewershed:

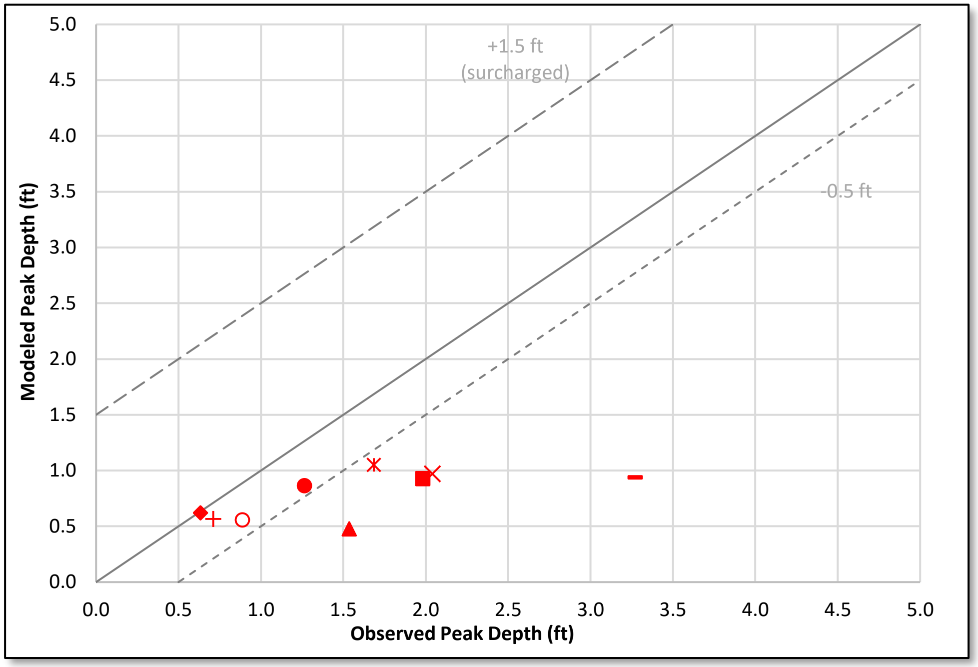
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



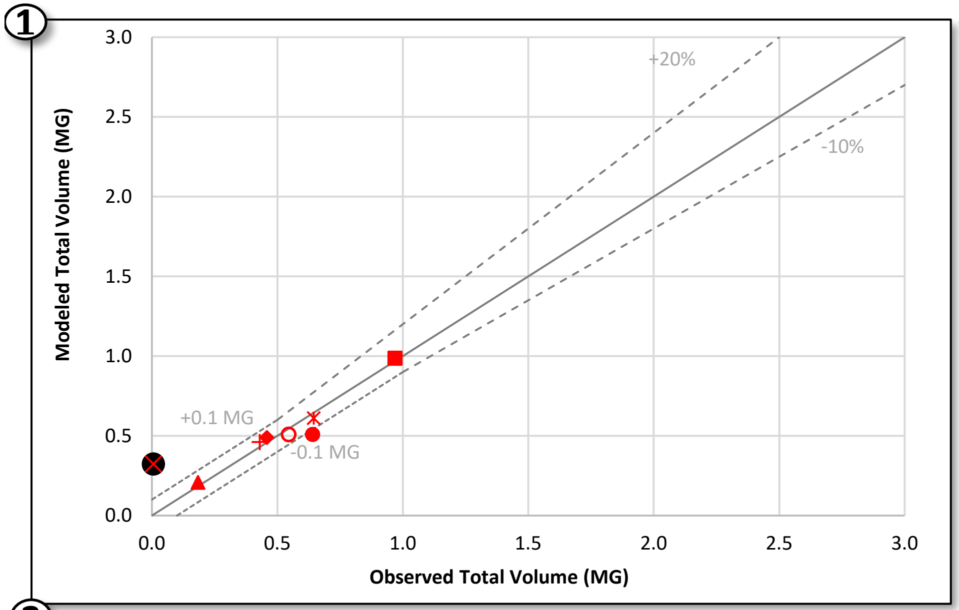
Flow Meter:

NFORK28

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
– 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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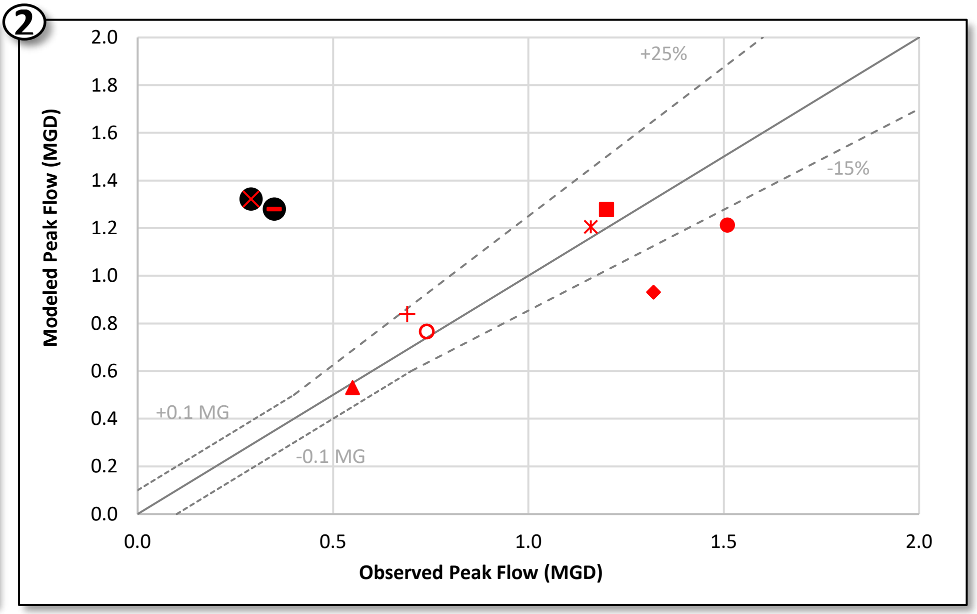

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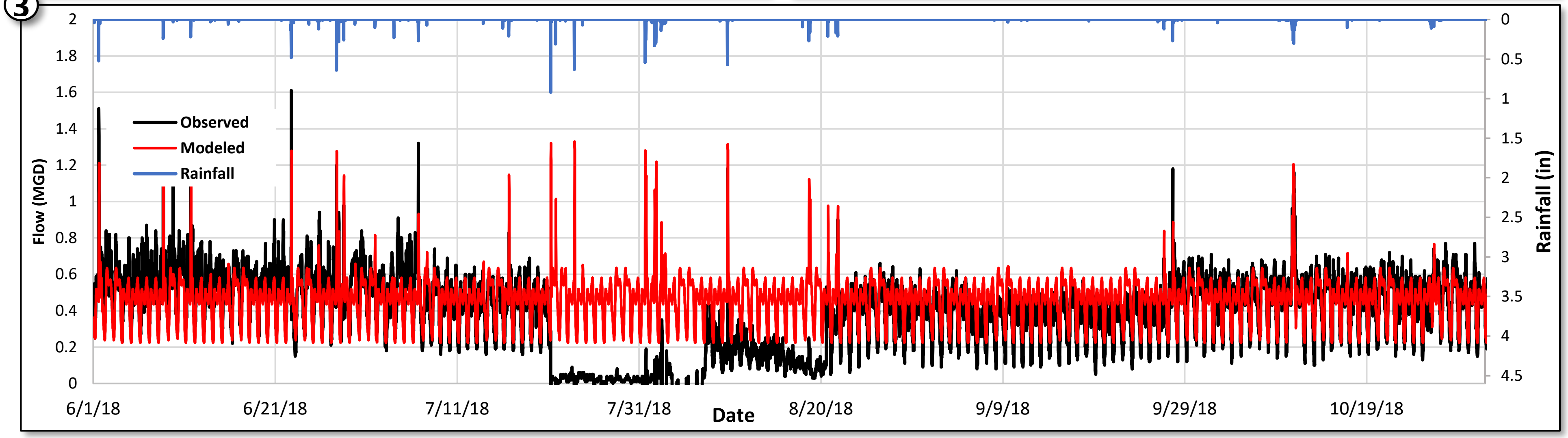


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:
NFORK29

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

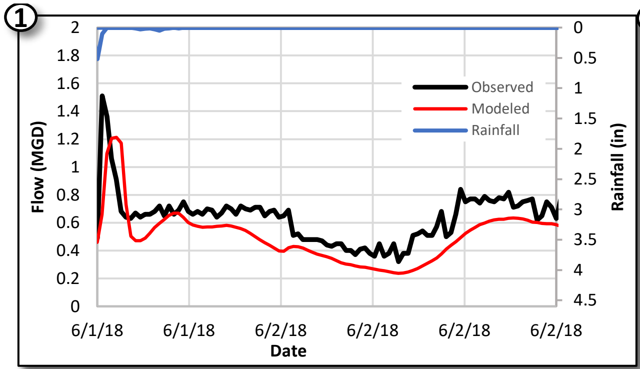
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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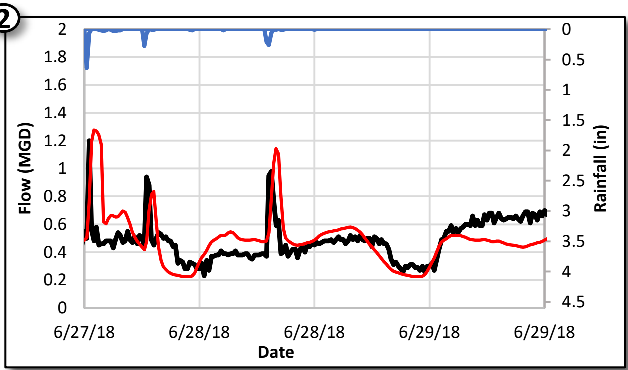

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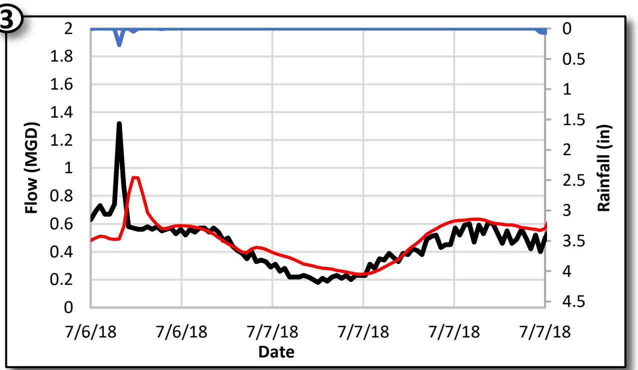

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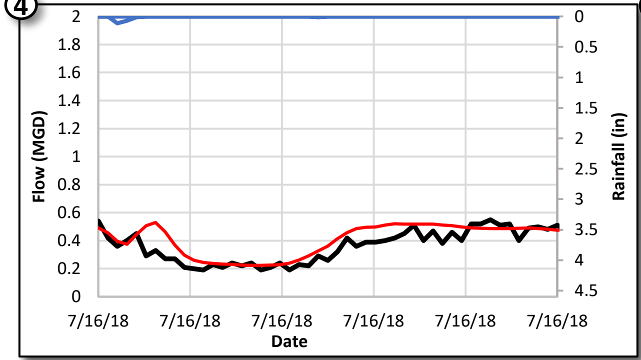

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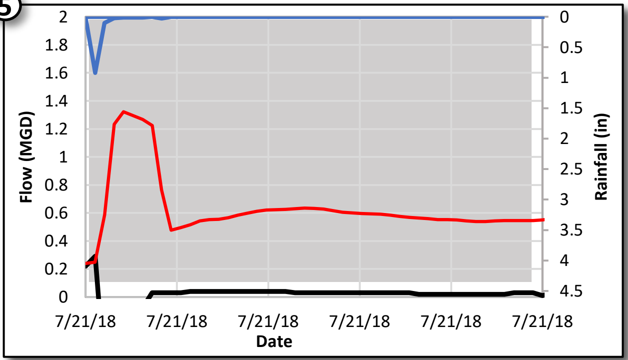

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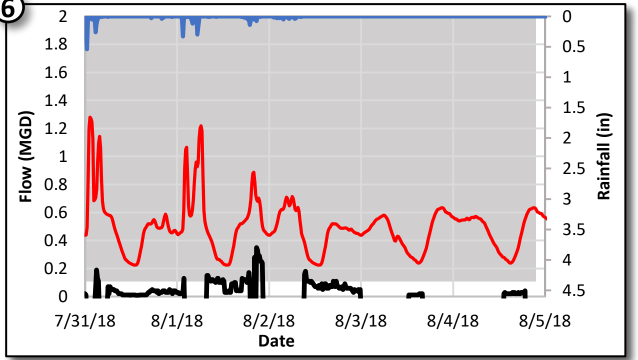

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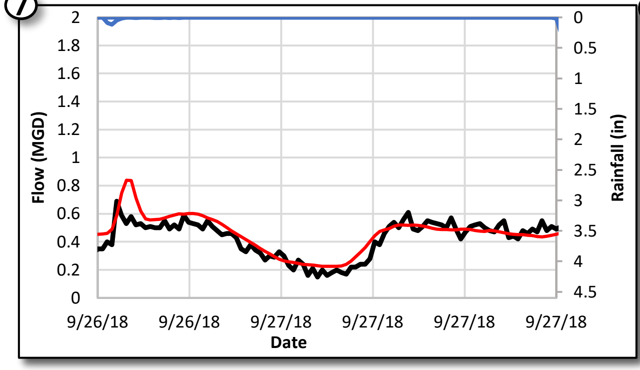

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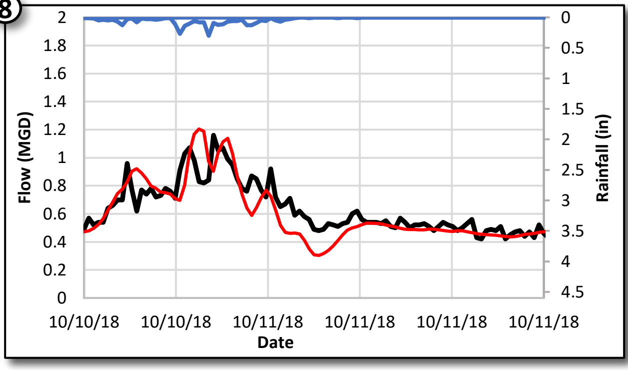

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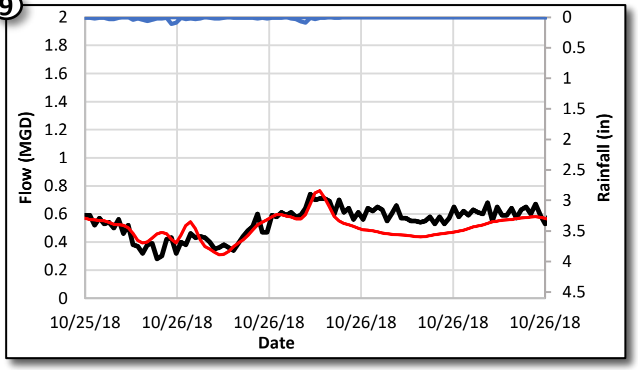


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK29

Sewershed:

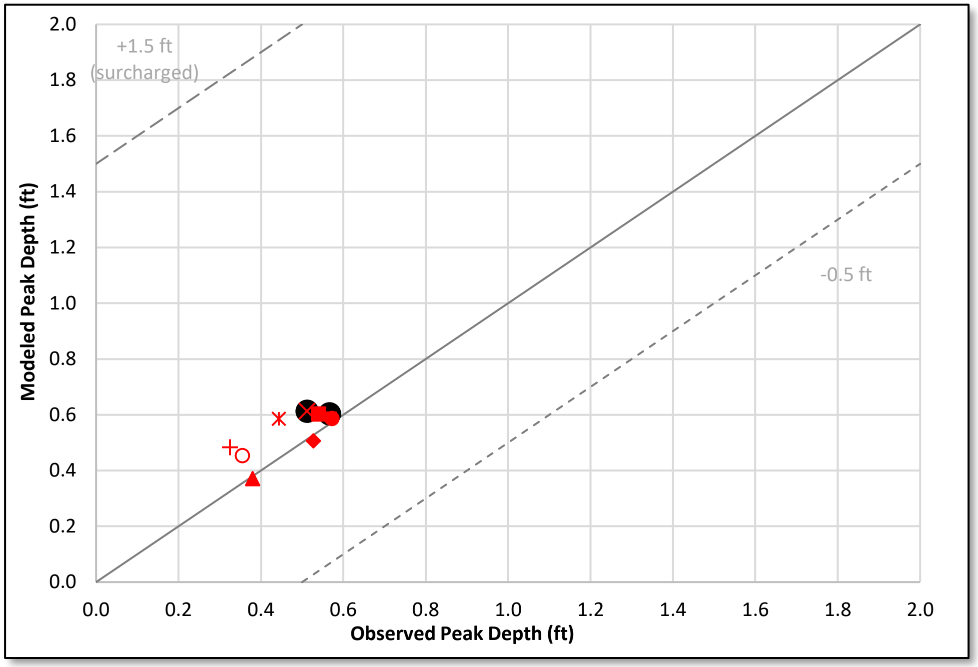
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



Flow Meter:

NFORK29

Events:

● 6/1/18

■ 6/27/18

◆ 7/6/18

▲ 7/16/18

× 7/21/18

– 7/31/18

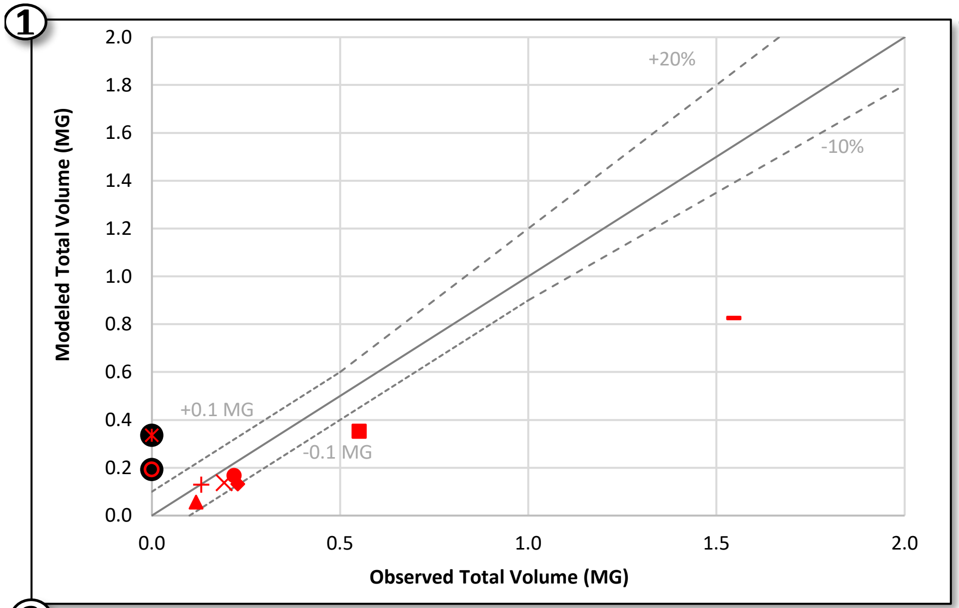
+ 9/26/18

✱ 10/10/18

○ 10/25/18

● Data Quality Issues

①



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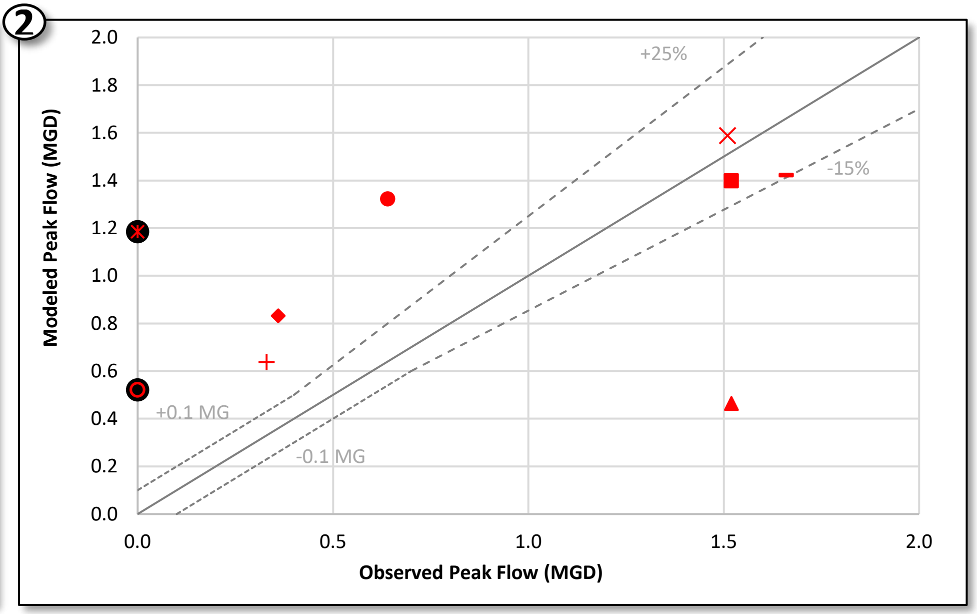

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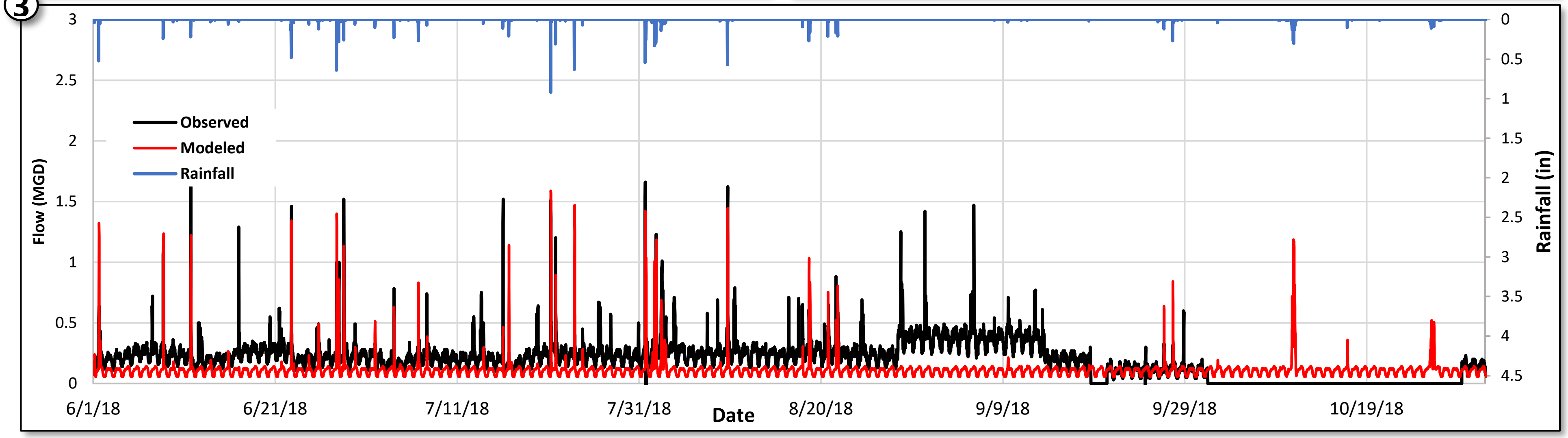


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK30

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

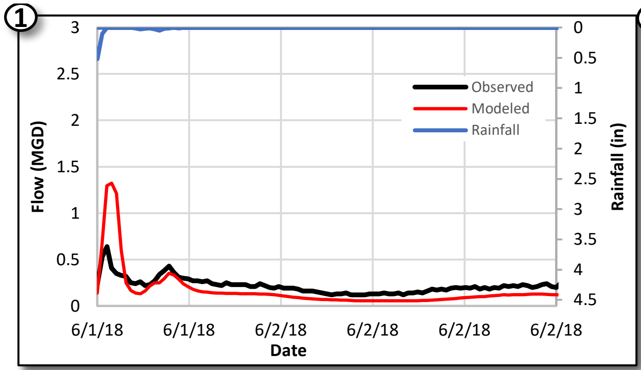
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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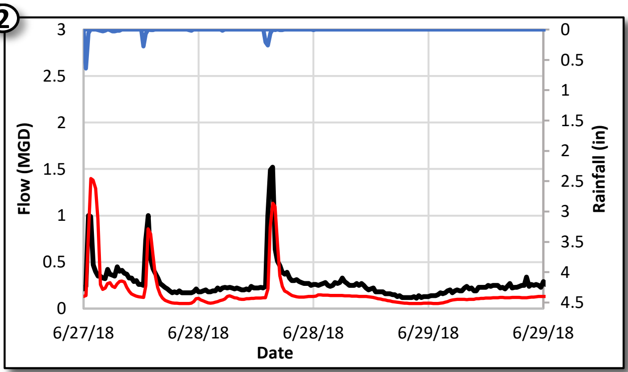

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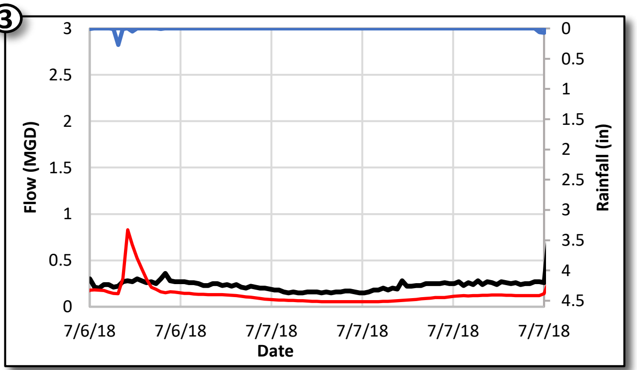

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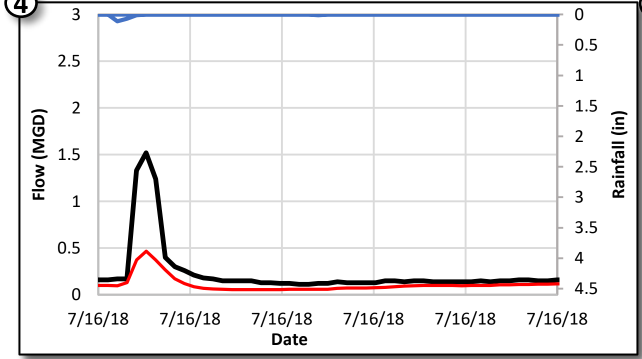

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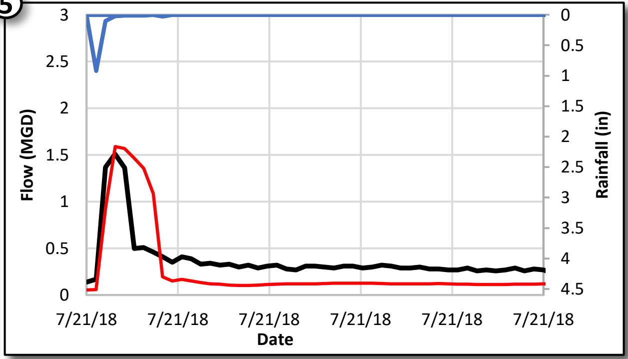

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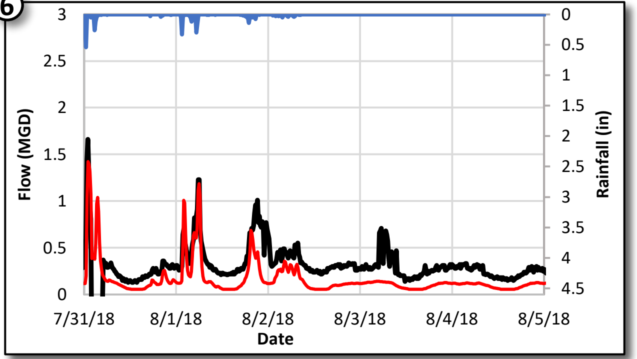

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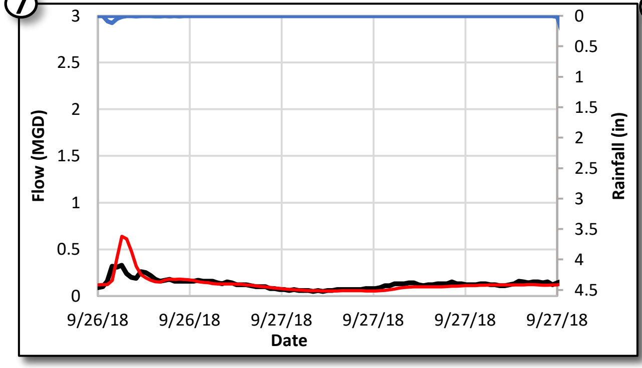

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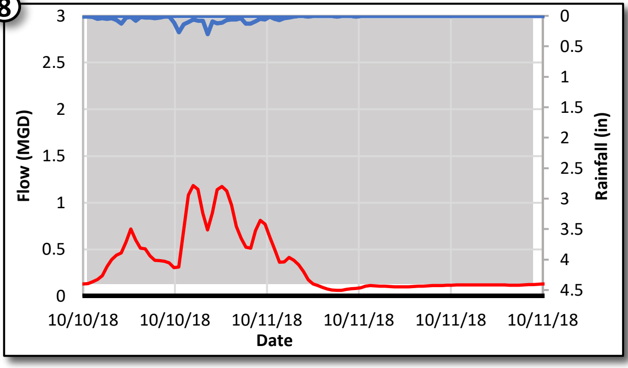

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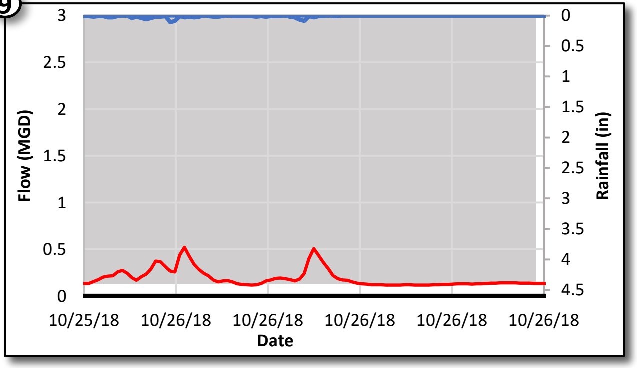


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK30

Sewershed:

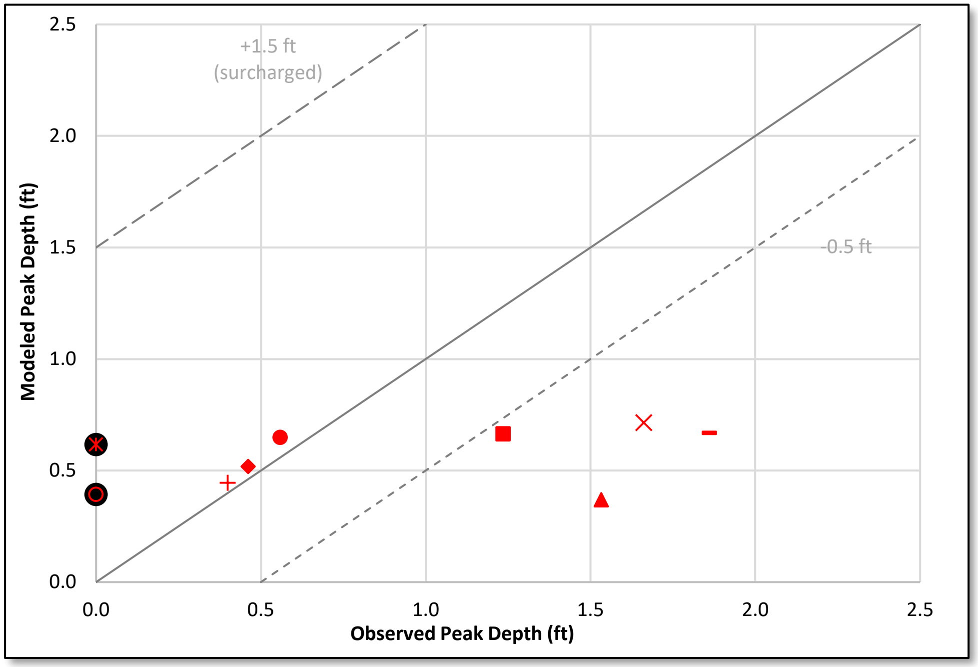
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



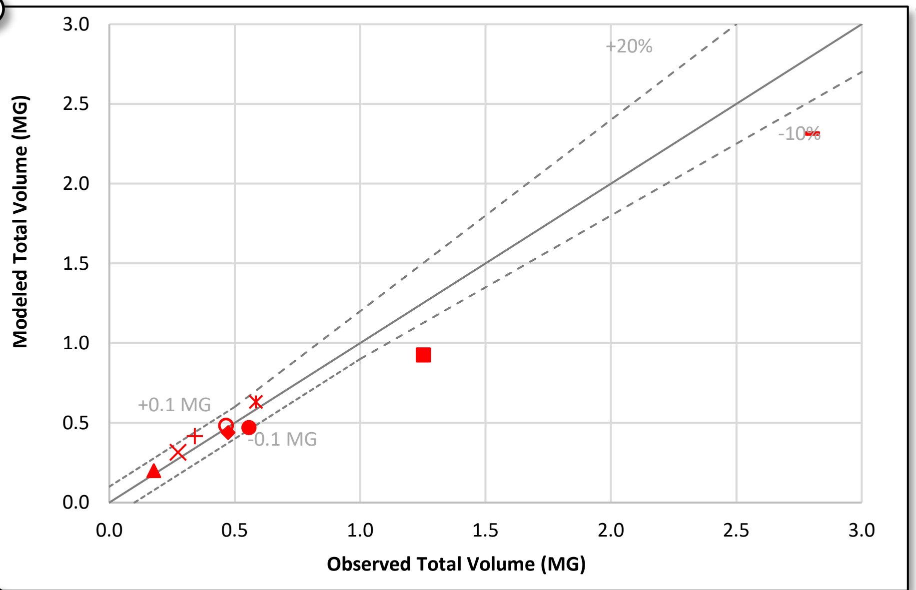
Flow Meter:

NFORK30

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✱ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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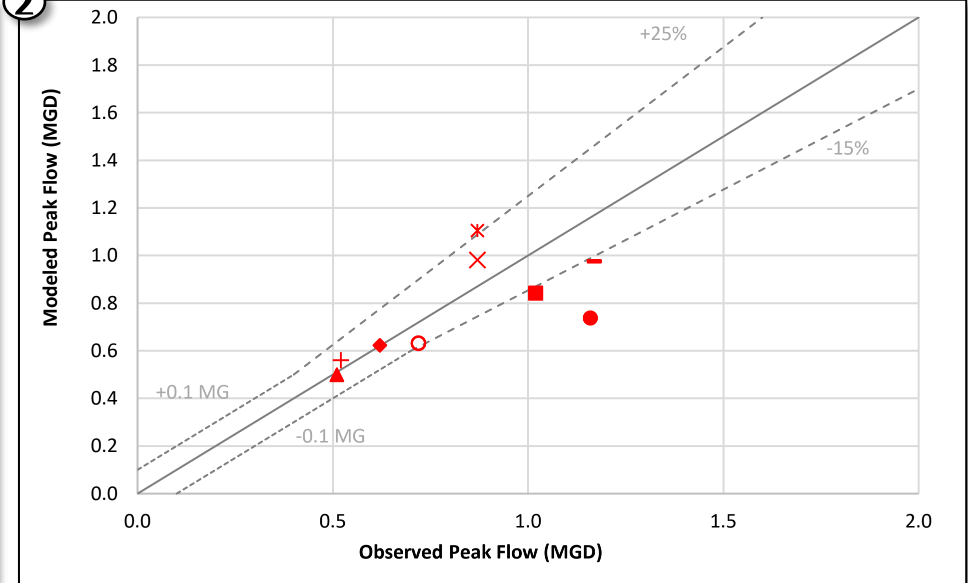

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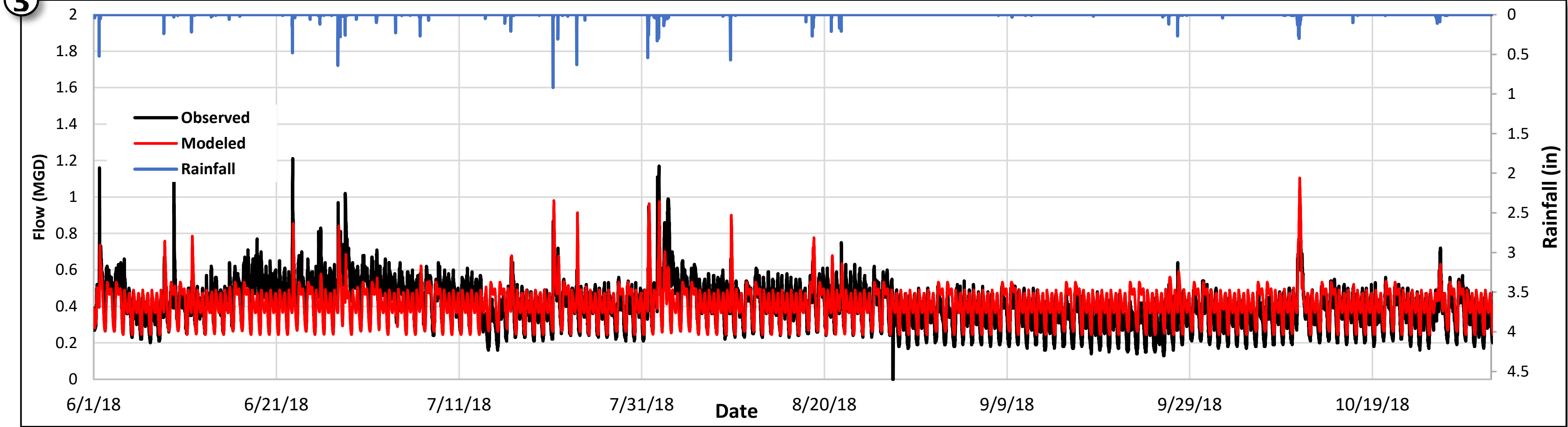


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:
NFORK32
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume

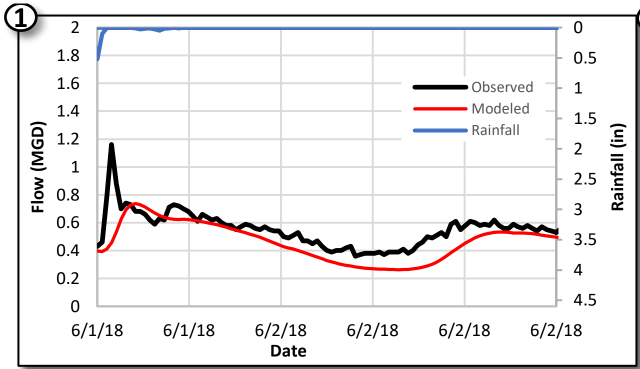
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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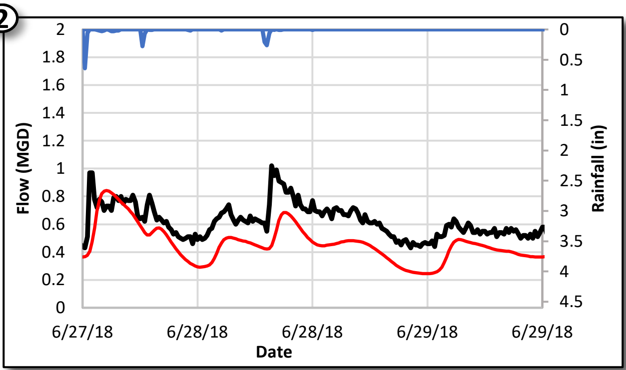

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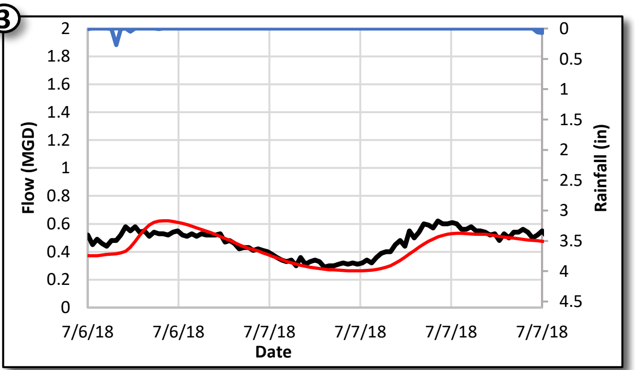

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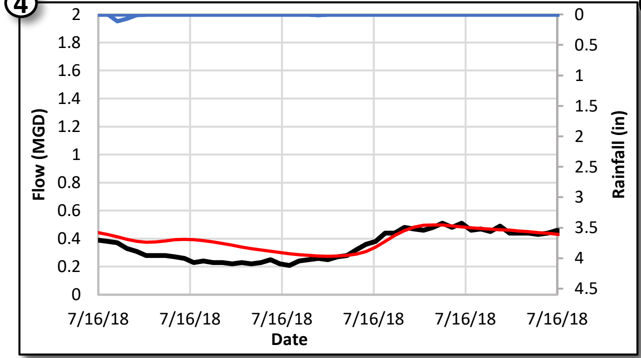

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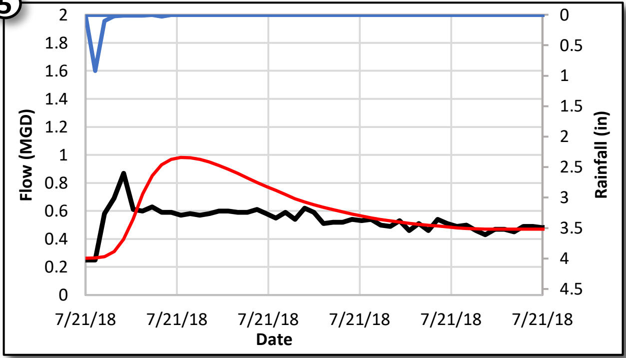

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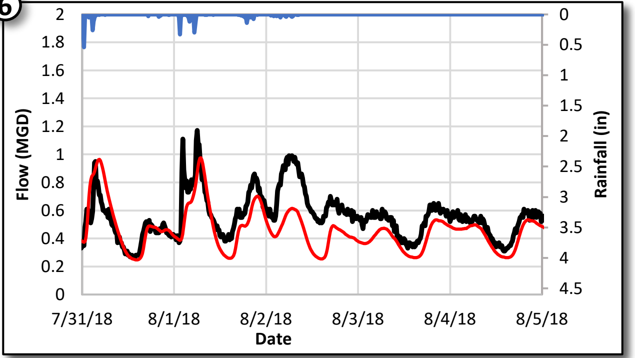

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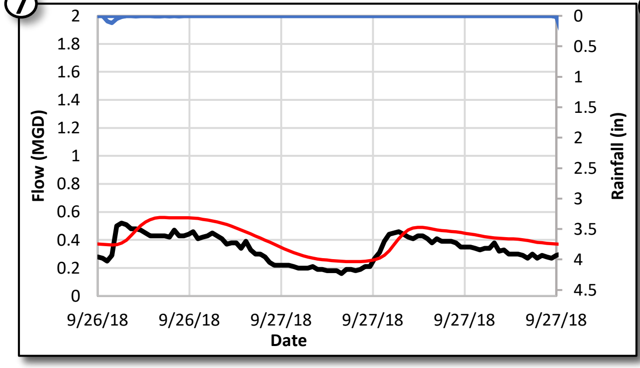

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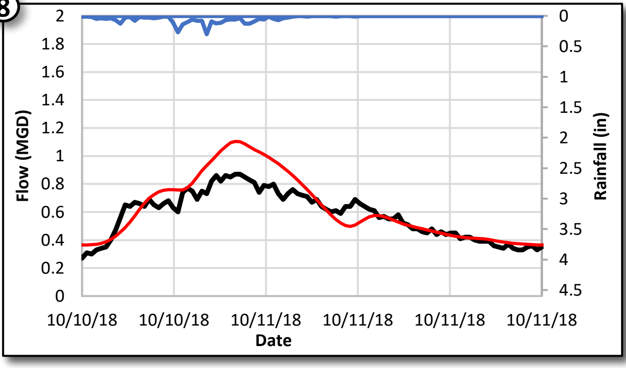

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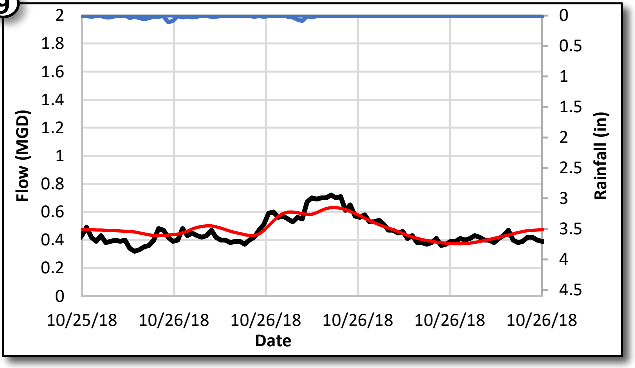


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

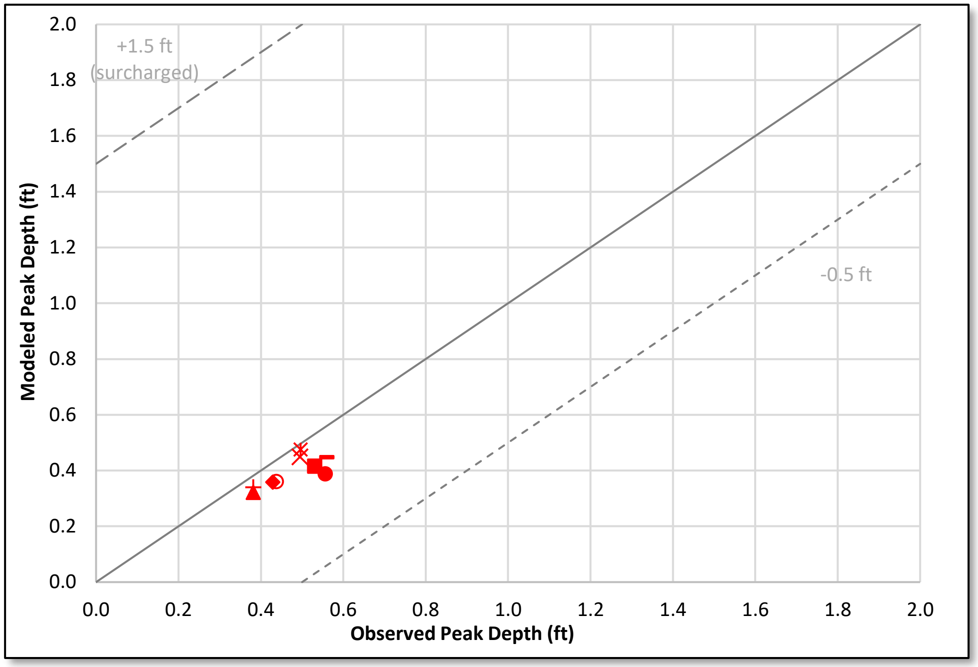
NFORK32

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



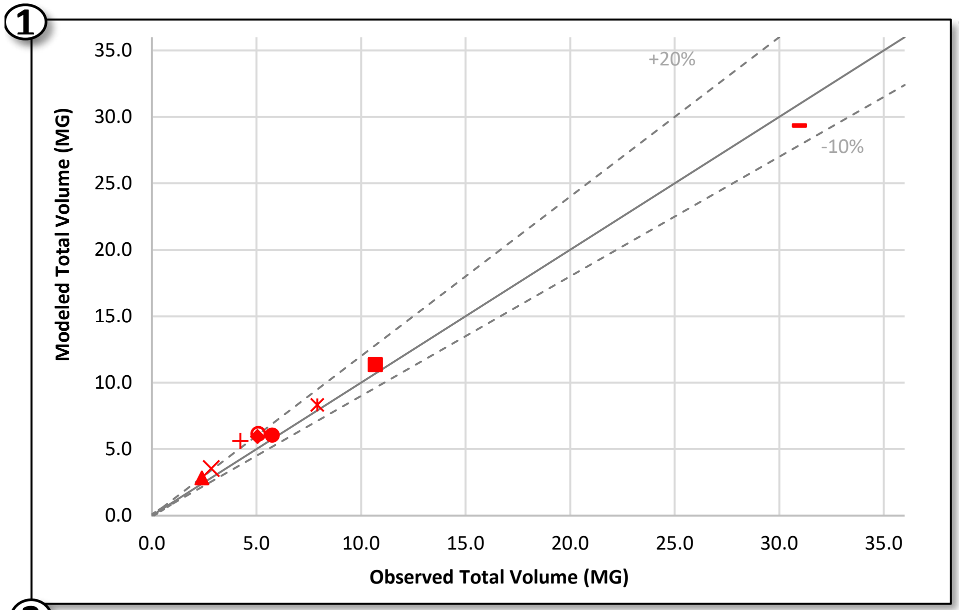
Flow Meter:

NFORK32

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	⬤	Data Quality Issues

①



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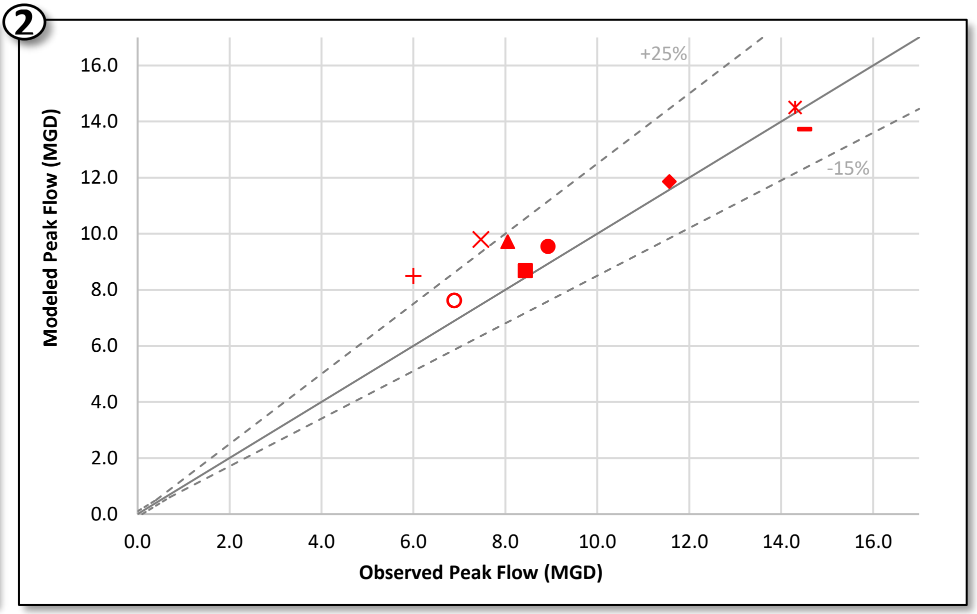

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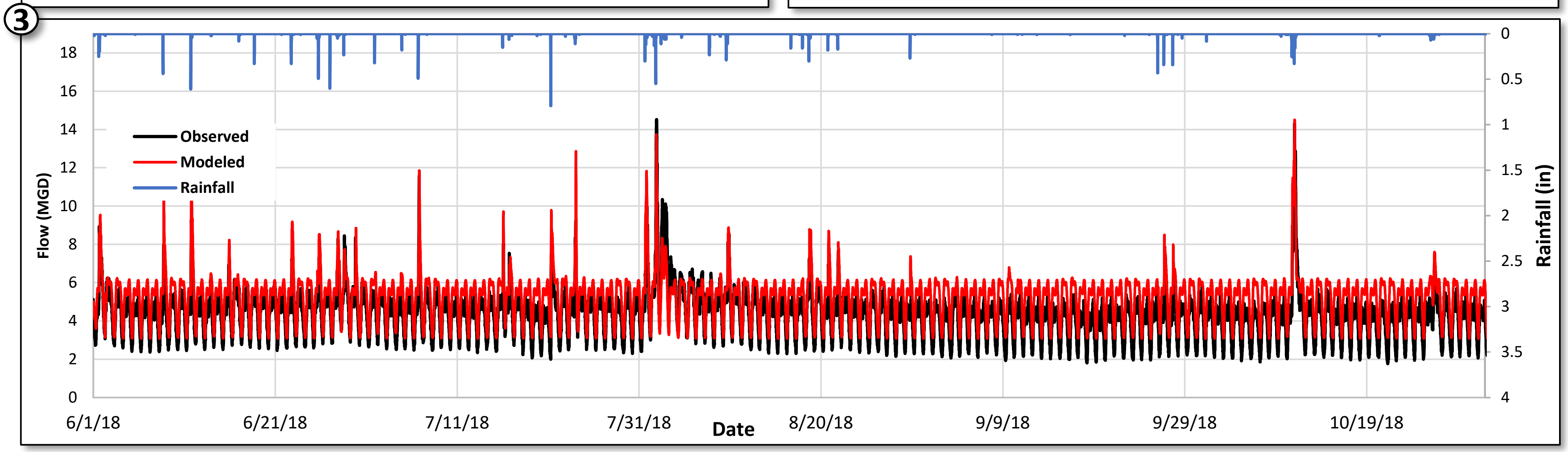


DeKalb Calibration Results

Wet Weather
Flow Summary

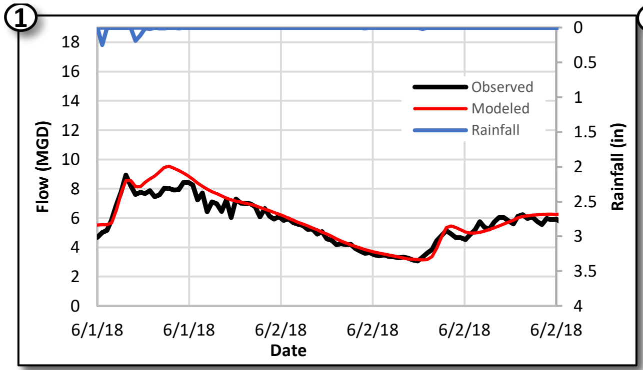
Flow Meter:
NFORK36
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	−	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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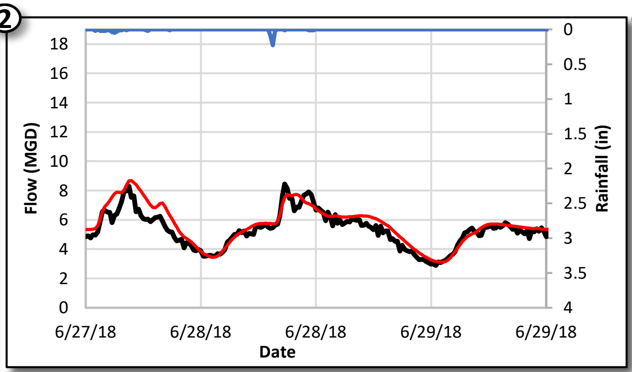

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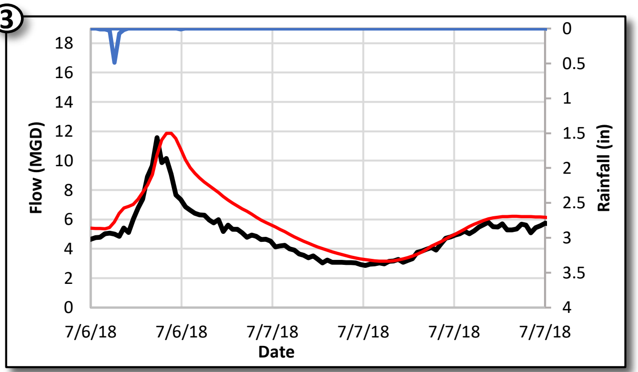

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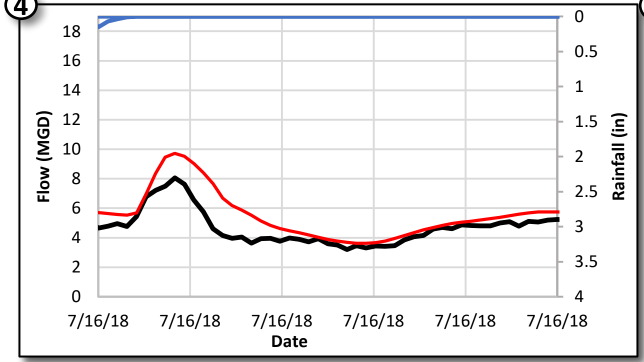

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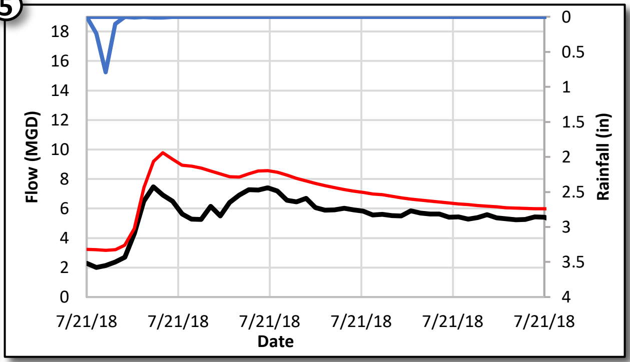

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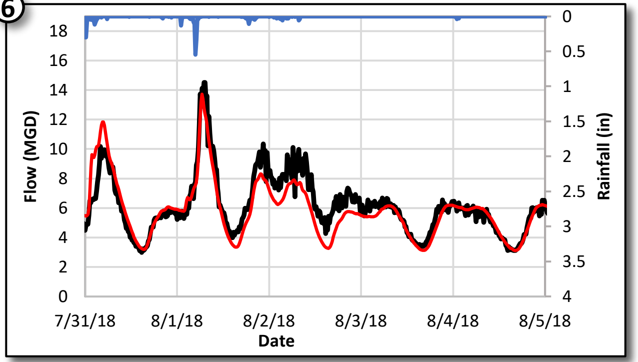

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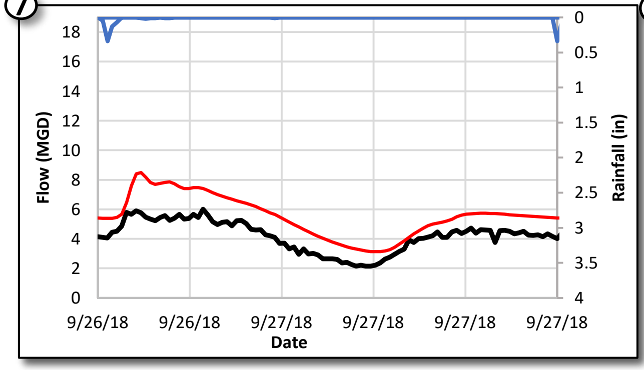

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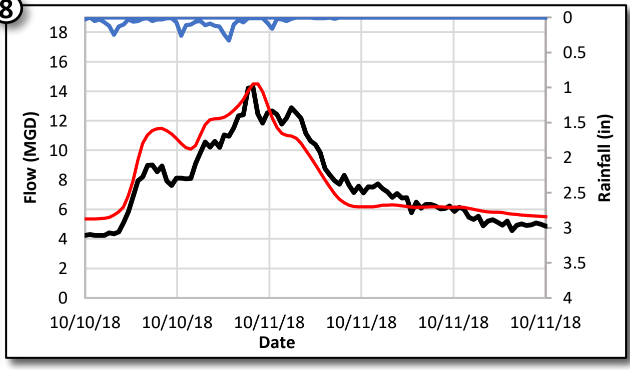

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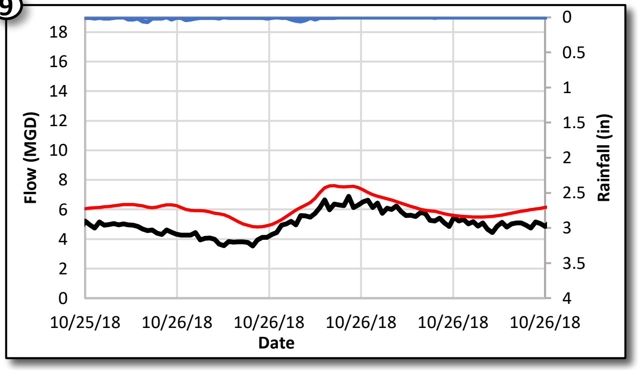


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK36

Sewershed:

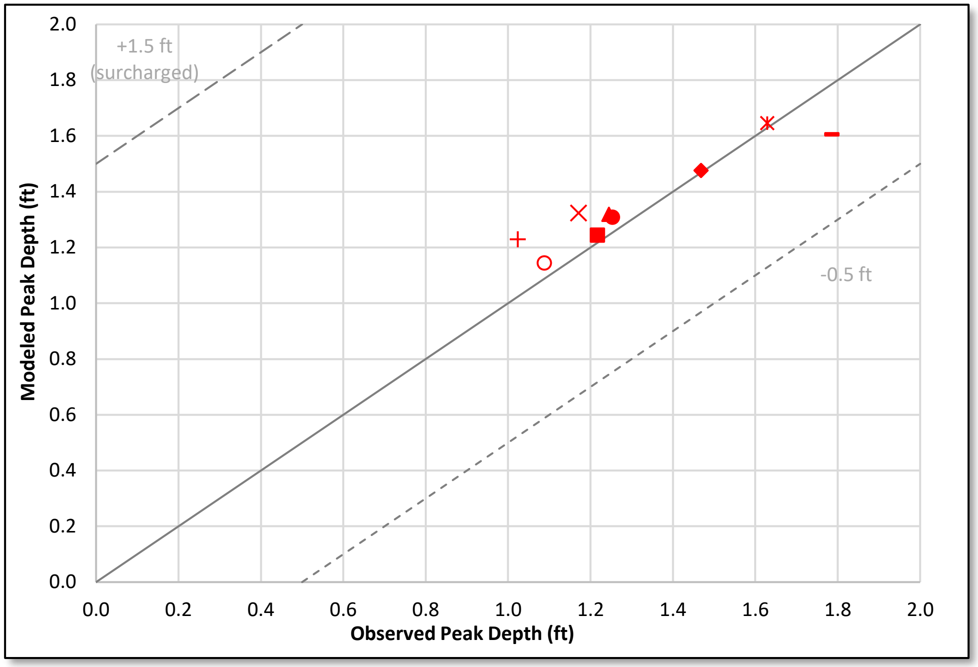
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



Flow Meter:

NFORK36

Events:

● 6/1/18

■ 6/27/18

◆ 7/6/18

▲ 7/16/18

× 7/21/18

– 7/31/18

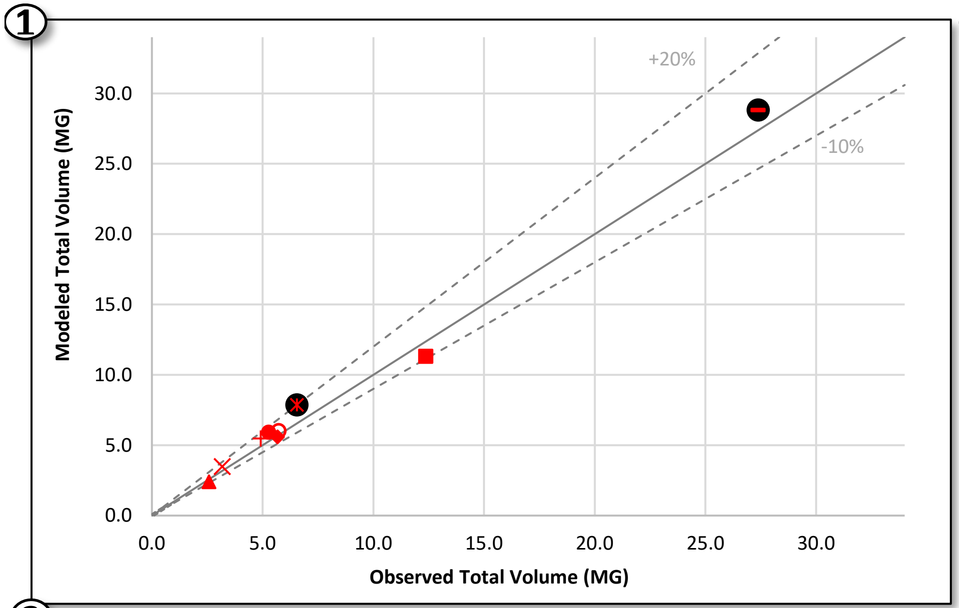
+ 9/26/18

✳ 10/10/18

○ 10/25/18

● Data Quality Issues

①



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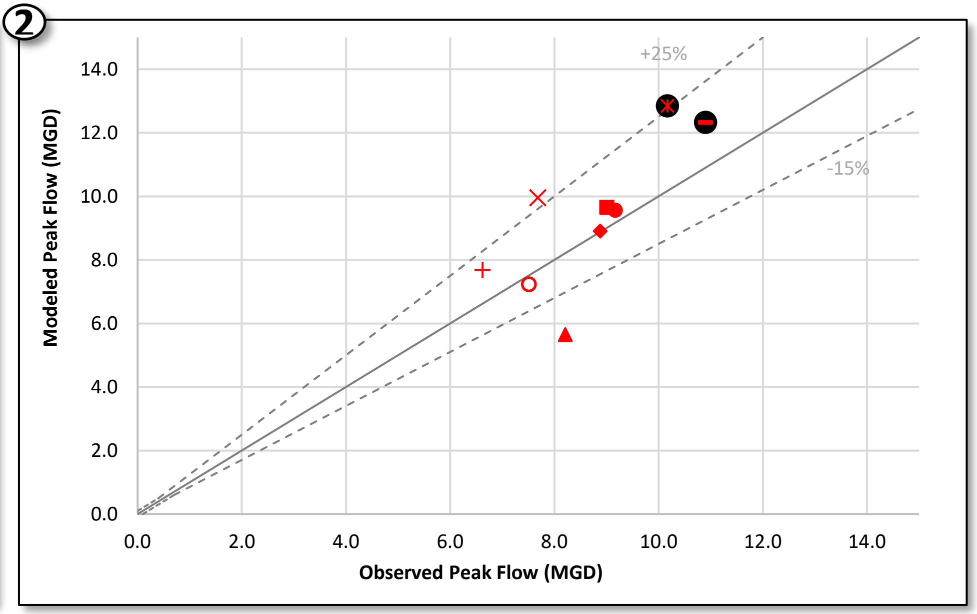

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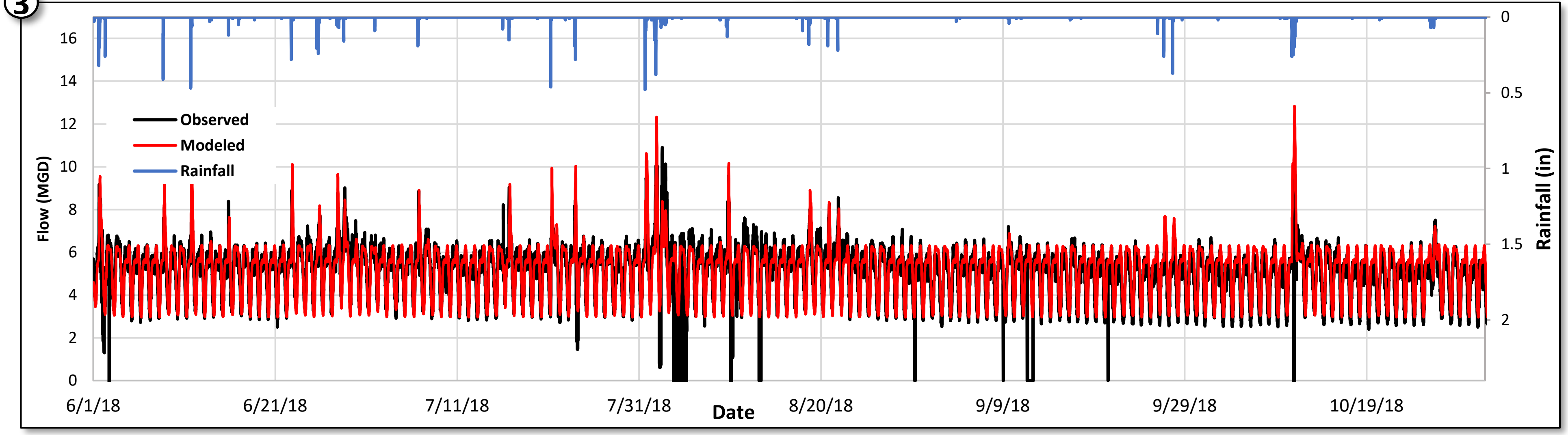


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:
NFORK37

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

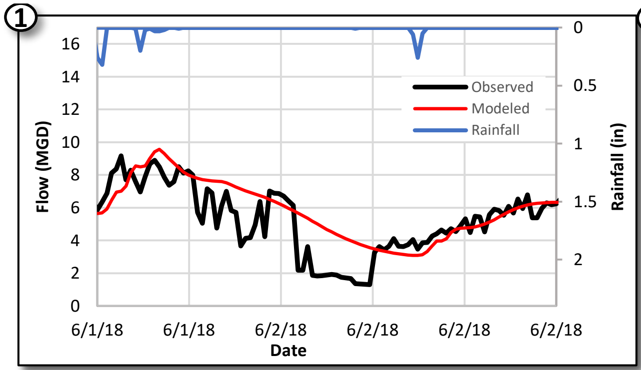
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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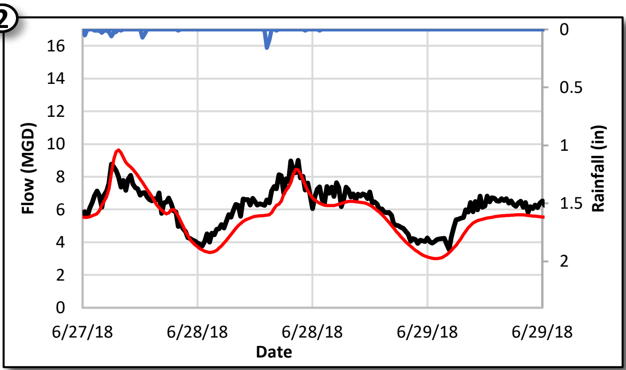

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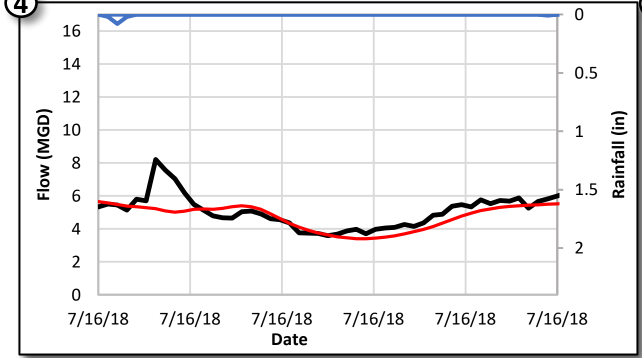

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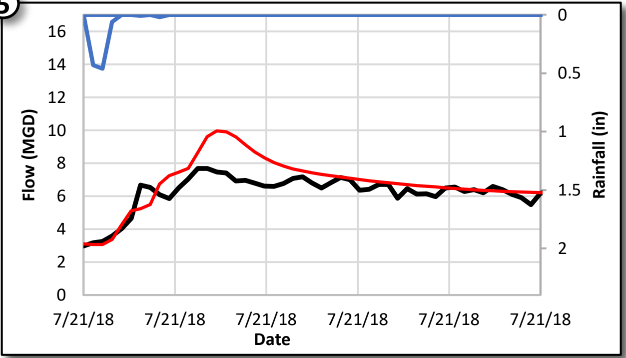

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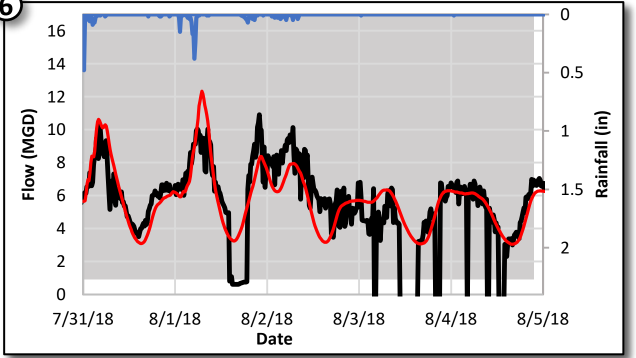

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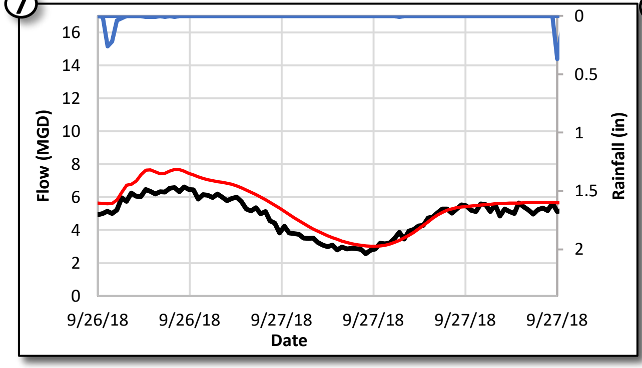

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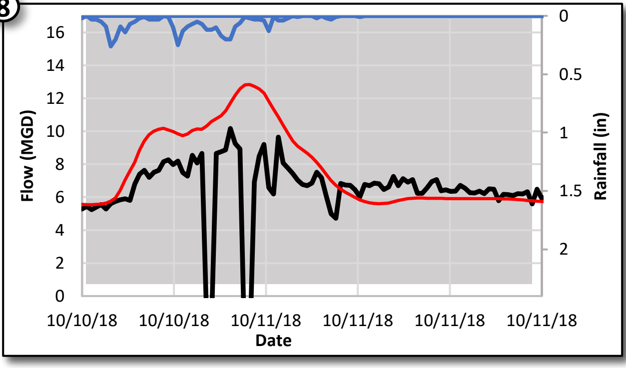

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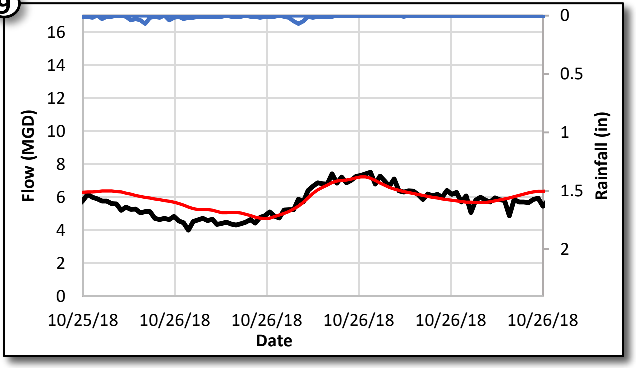


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK37

Sewershed:

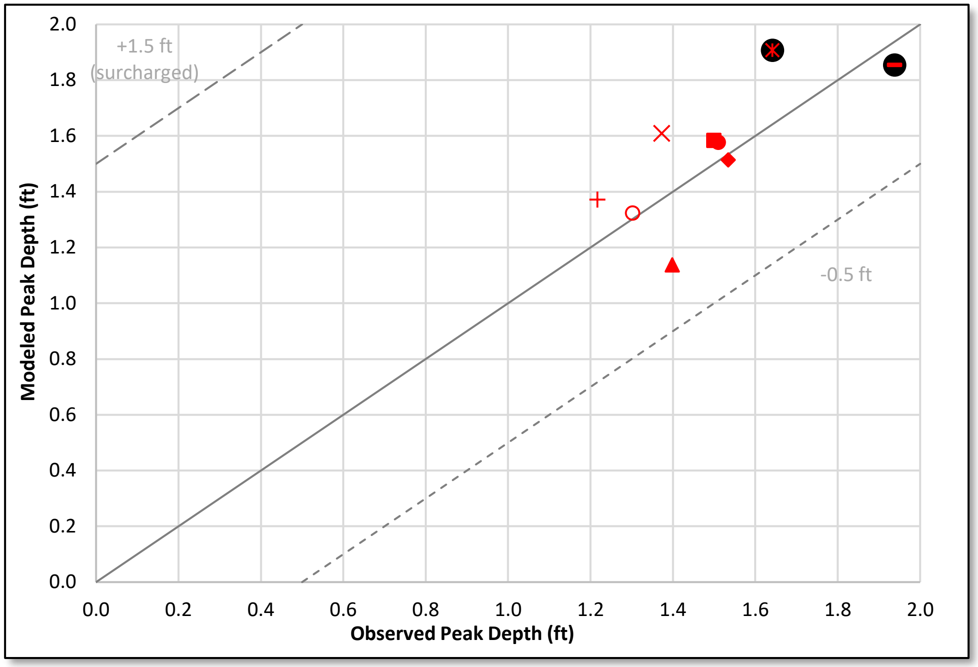
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



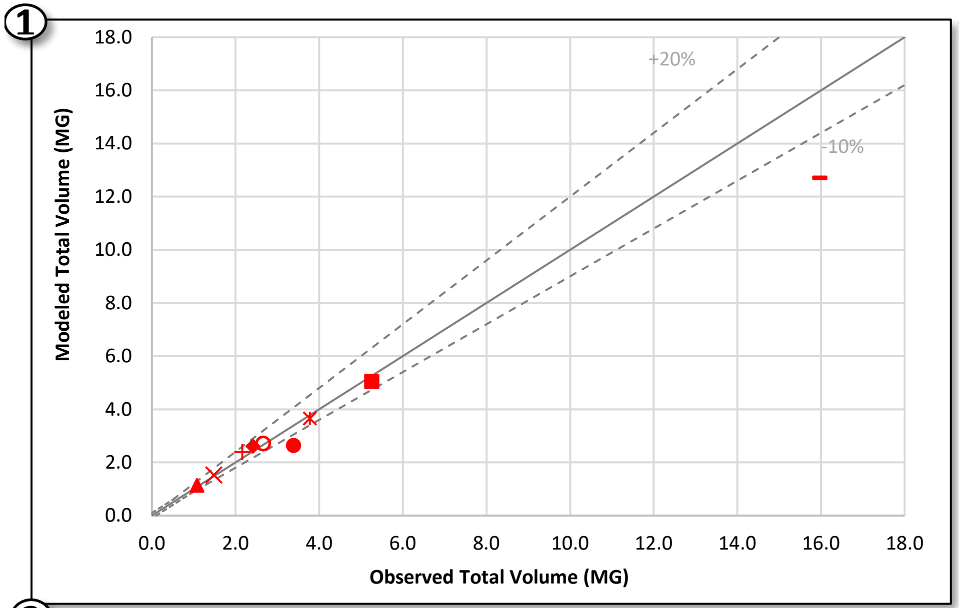
Flow Meter:

NFORK37

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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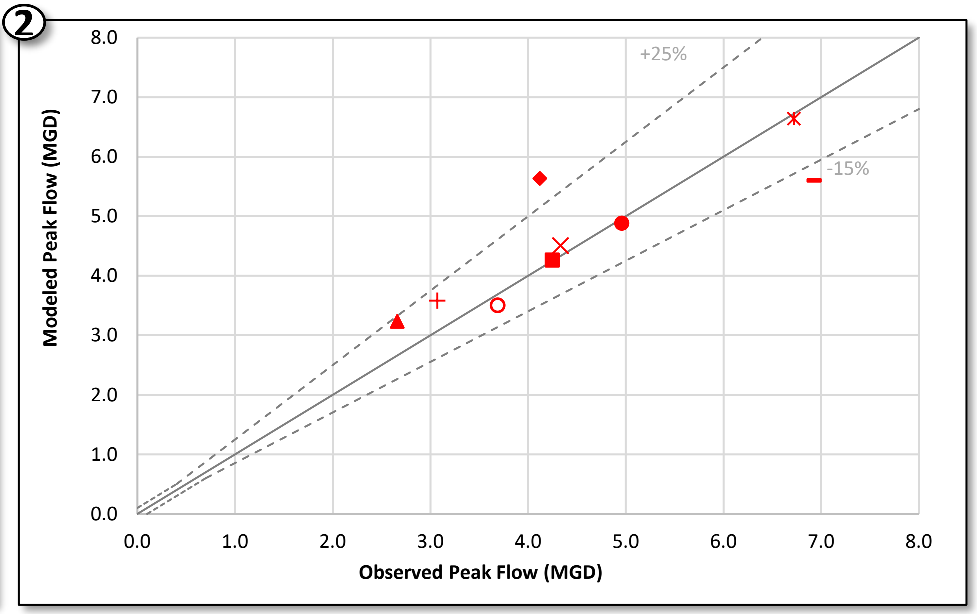

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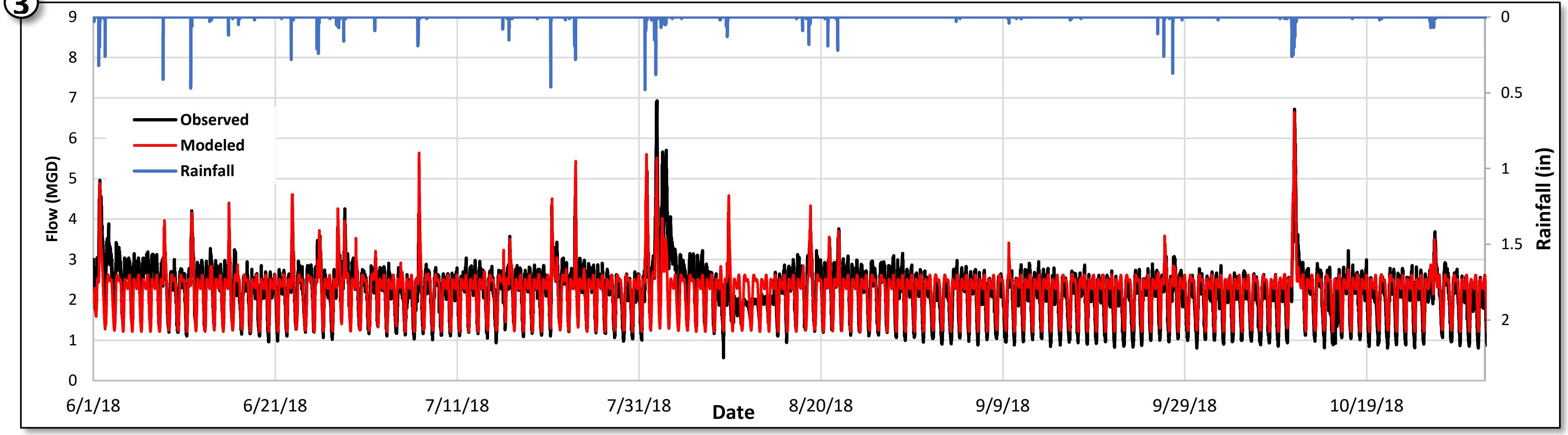


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK38

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

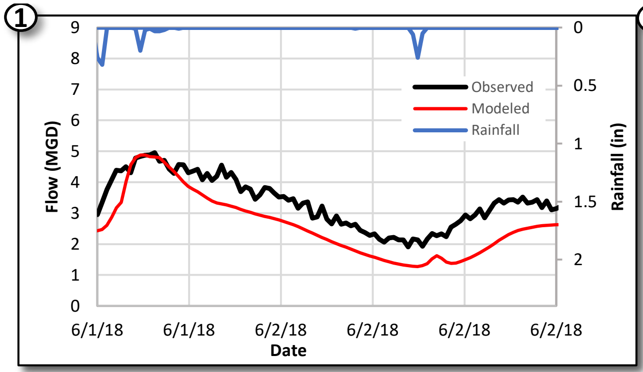
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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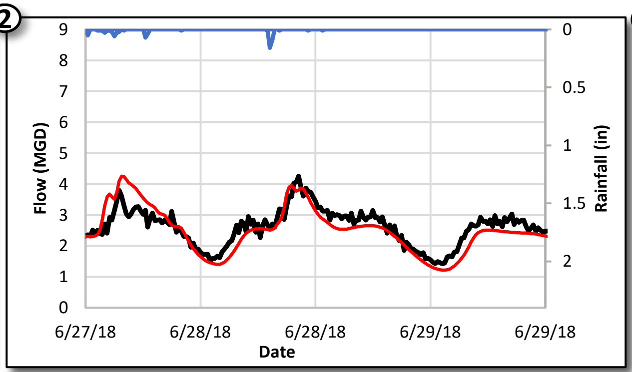

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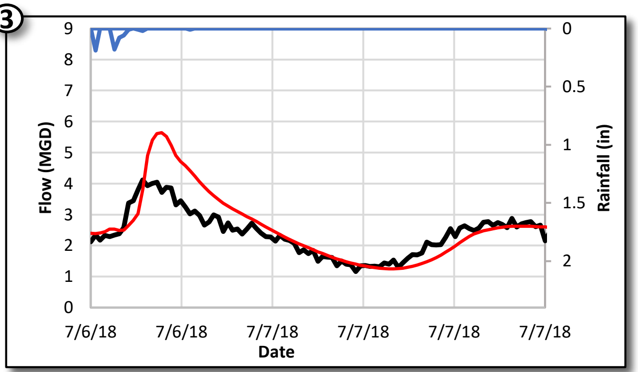

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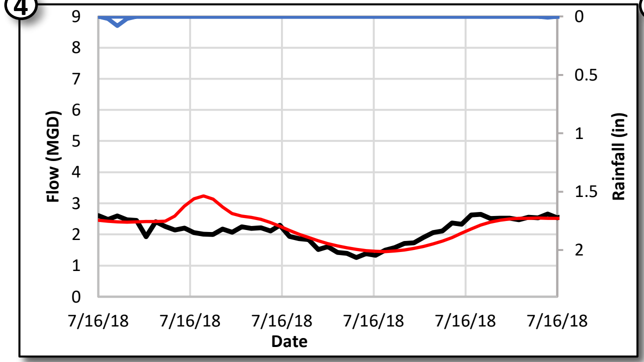

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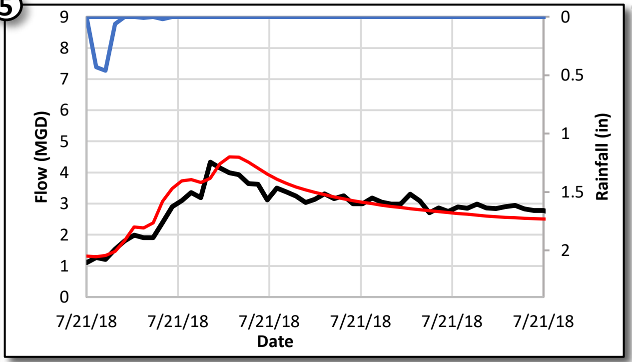

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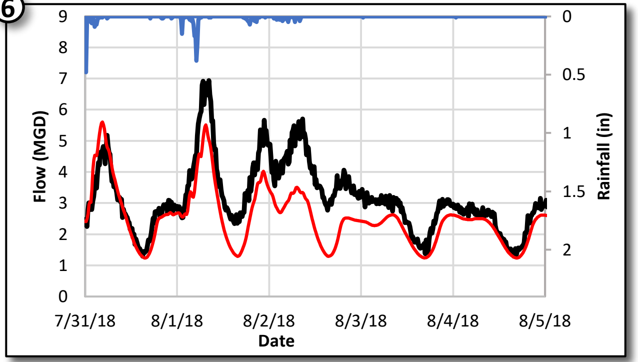

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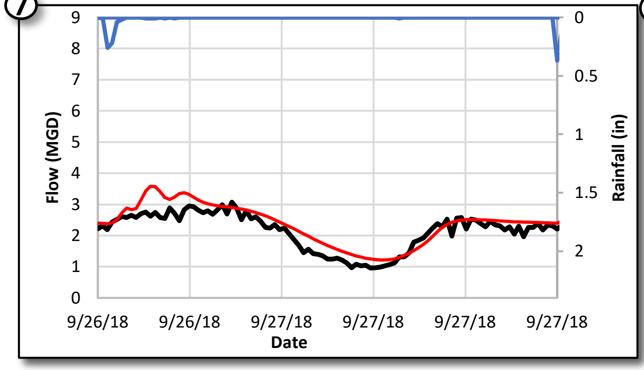

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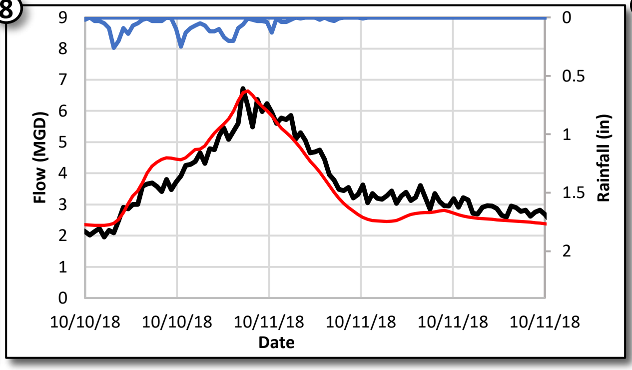

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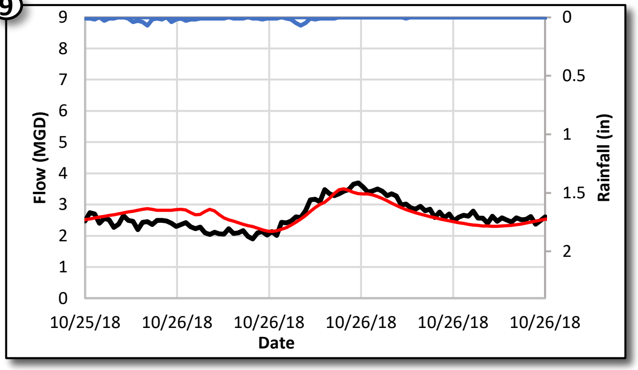


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

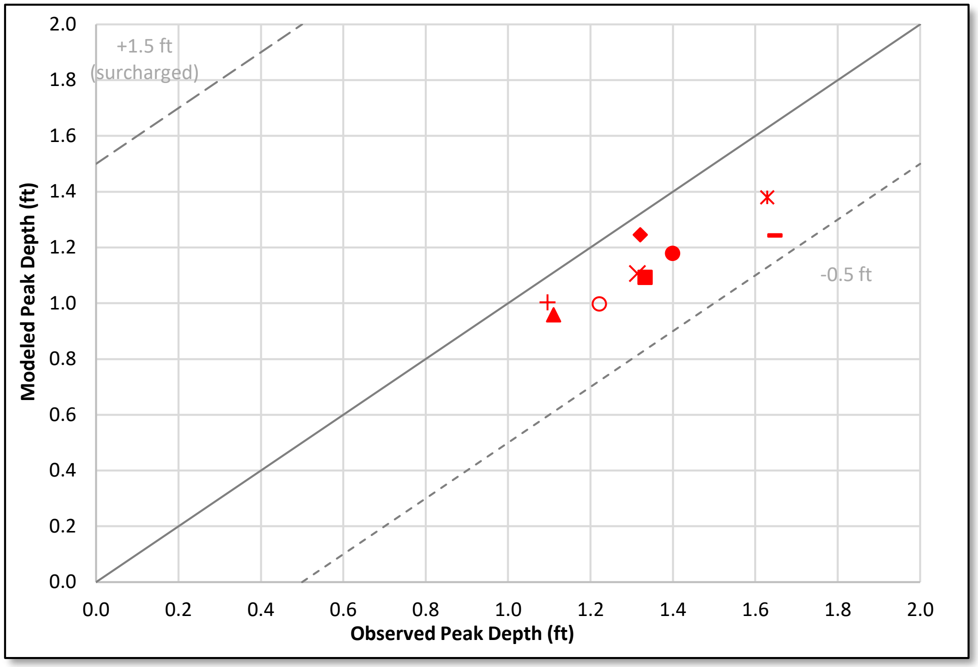
NFORK38

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



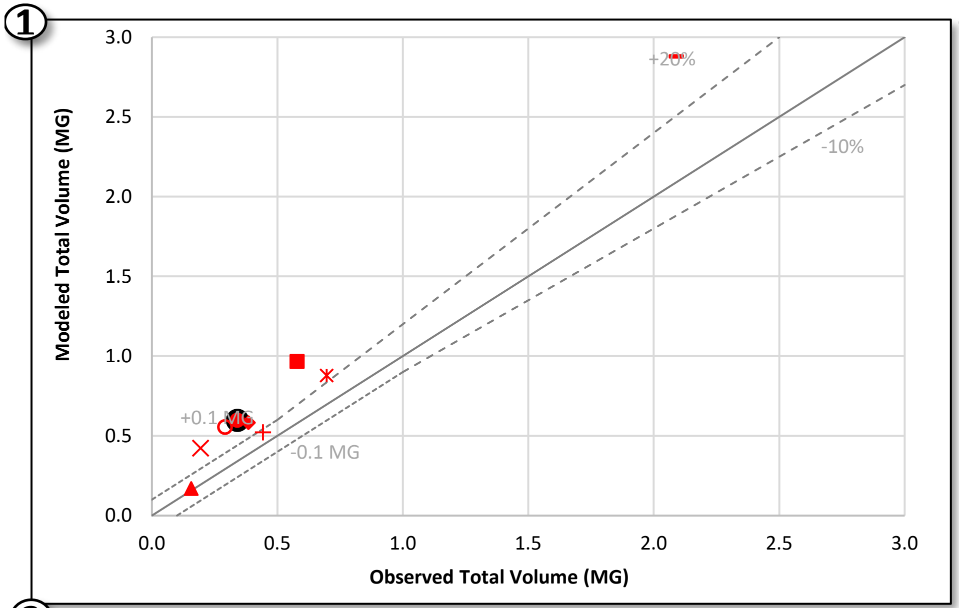
Flow Meter:

NFORK38

Events:

- ● 6/1/18
- ■ 6/27/18
- ◆ 7/6/18
- ▲ 7/16/18
- × 7/21/18
- − 7/31/18
- \+ 9/26/18
- ✳ 10/10/18
- ○ 10/25/18
- ● Data Quality Issues

①



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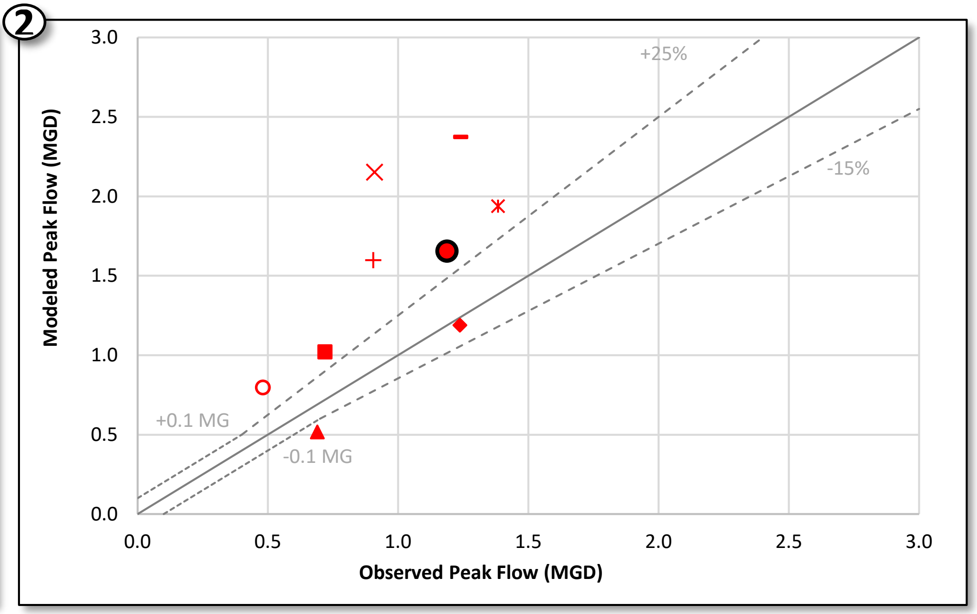

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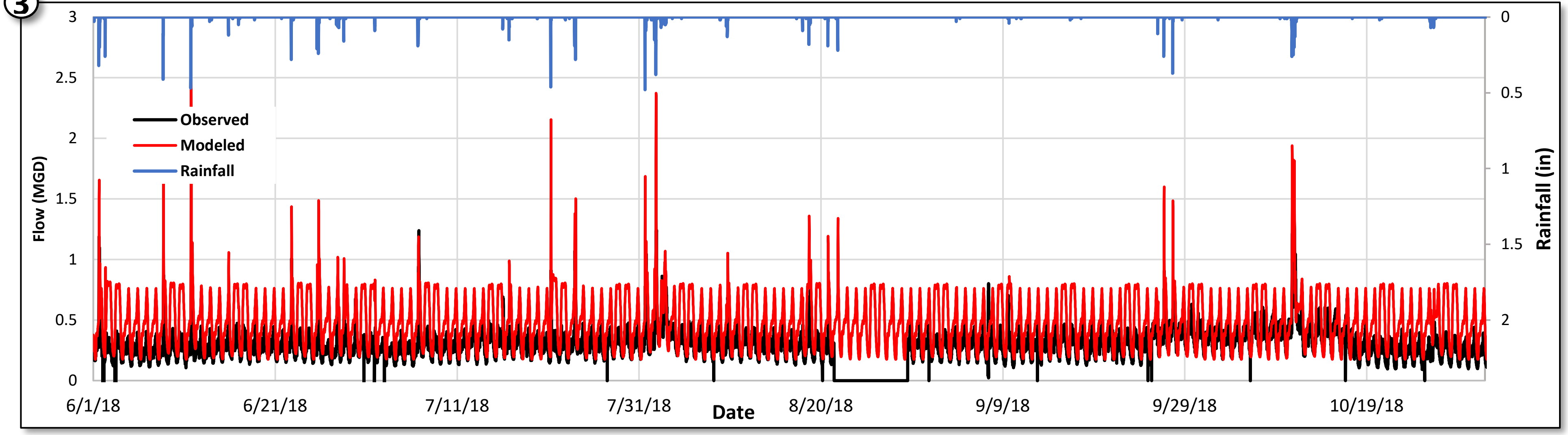


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK39

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

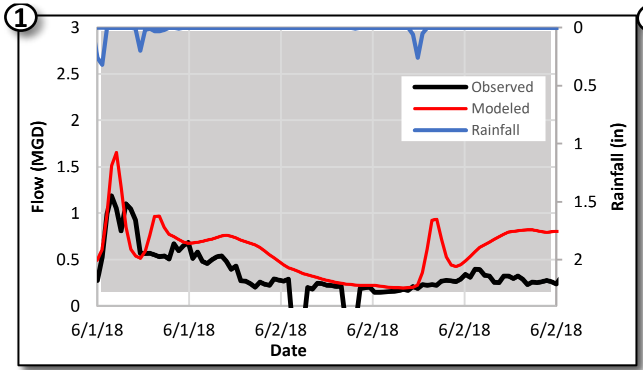
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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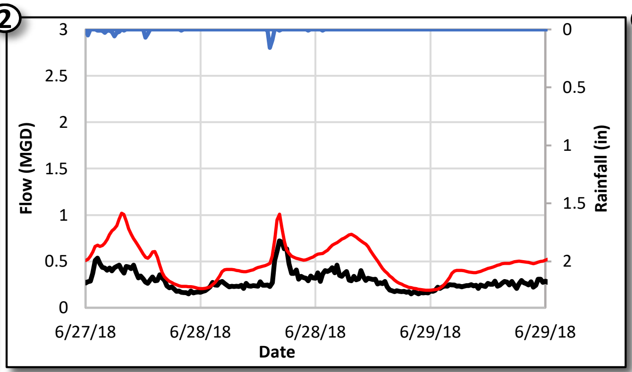

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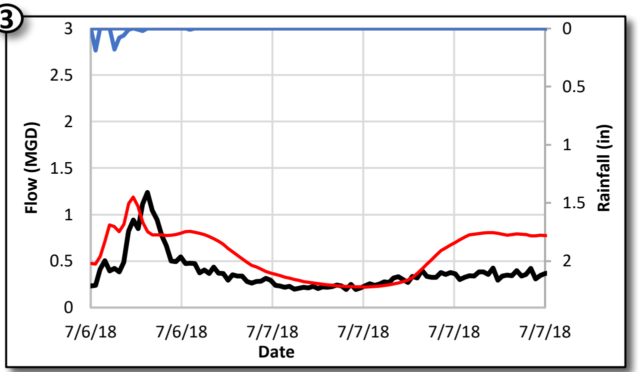

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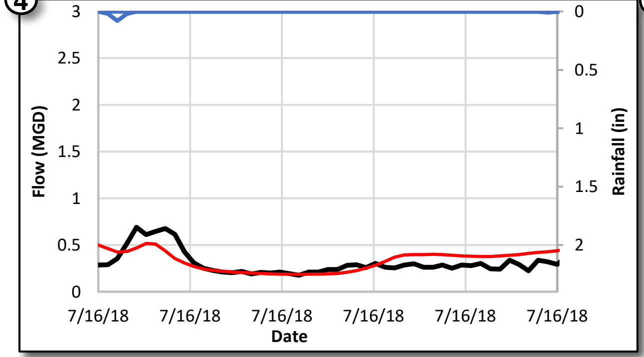

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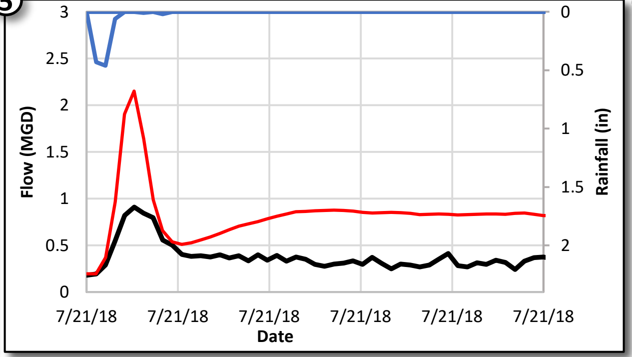

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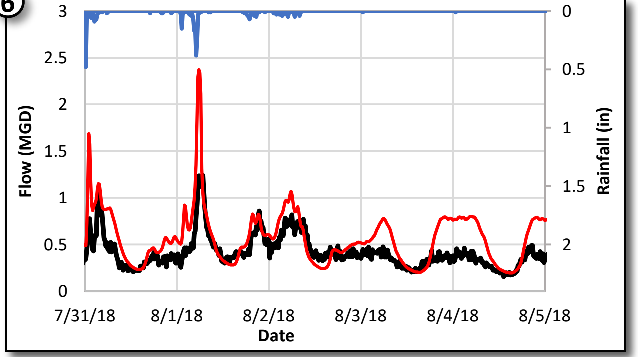

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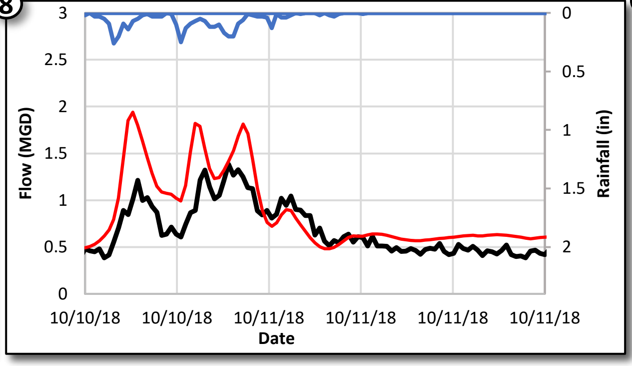
⑧



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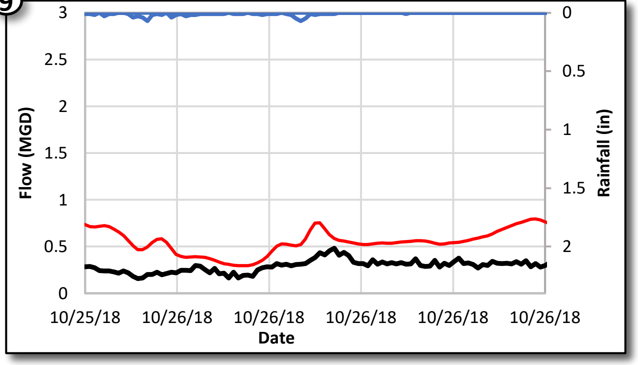


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK39

Sewershed:

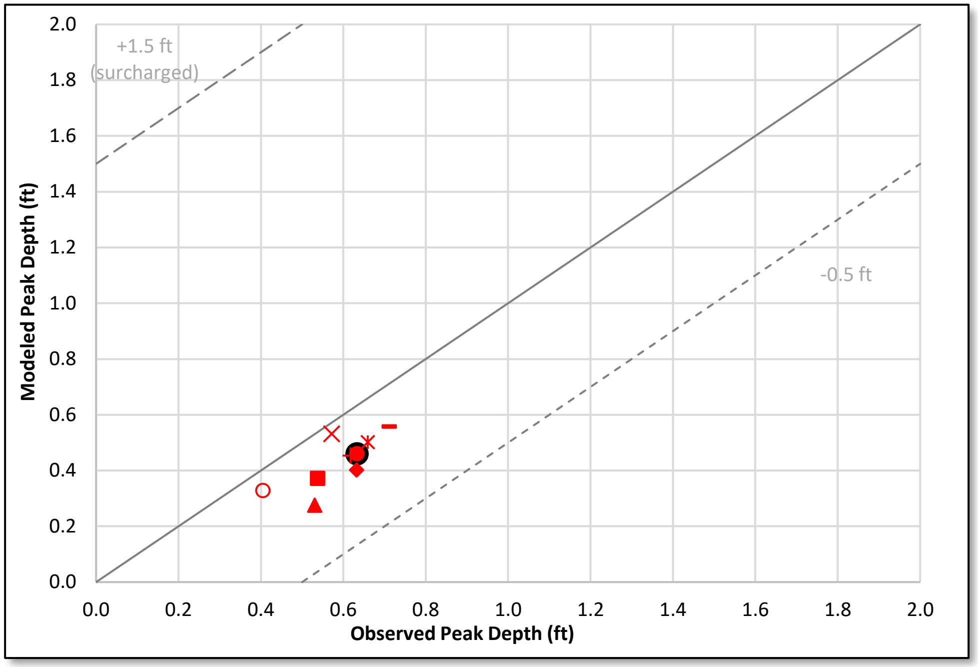
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues

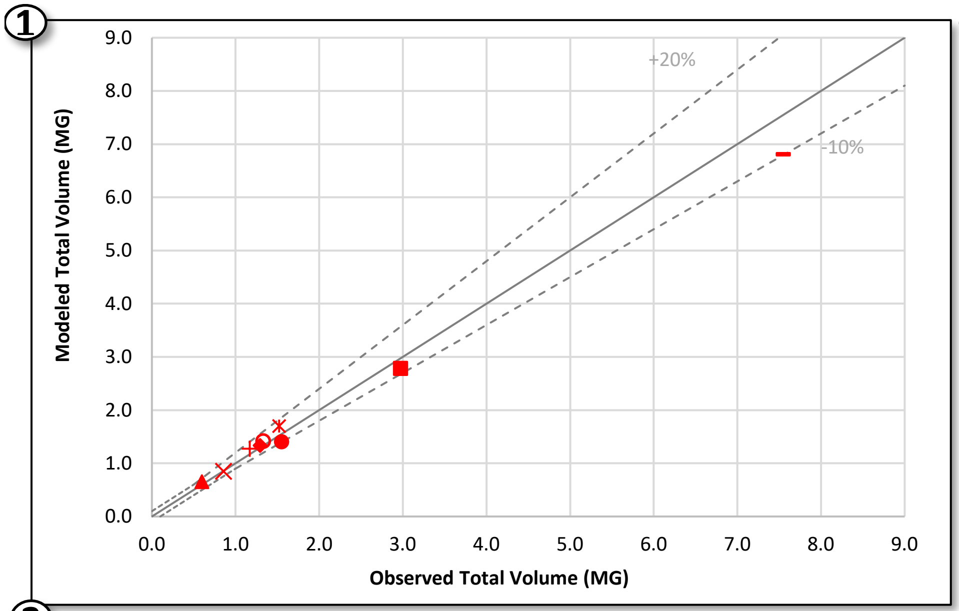


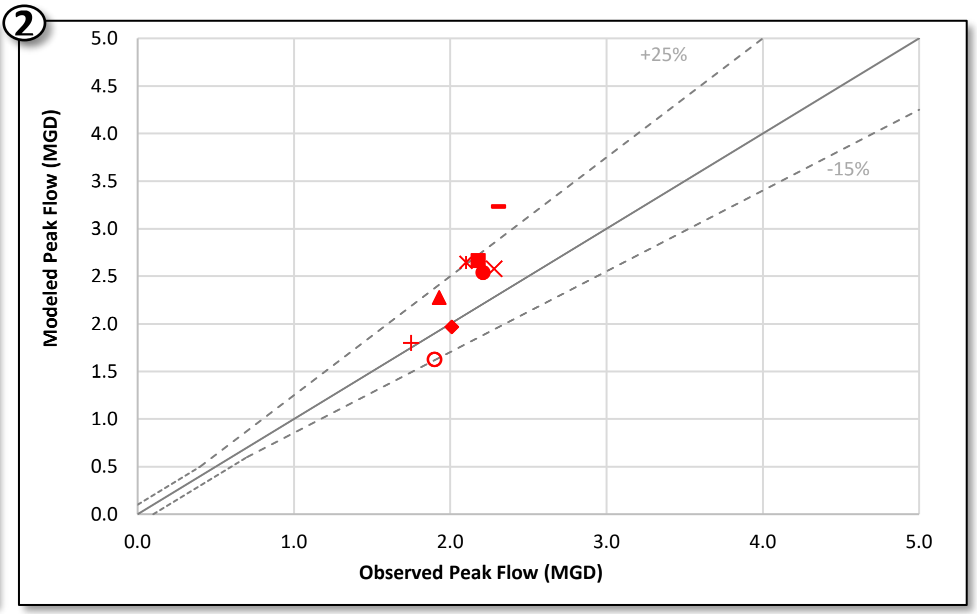
Flow Meter:

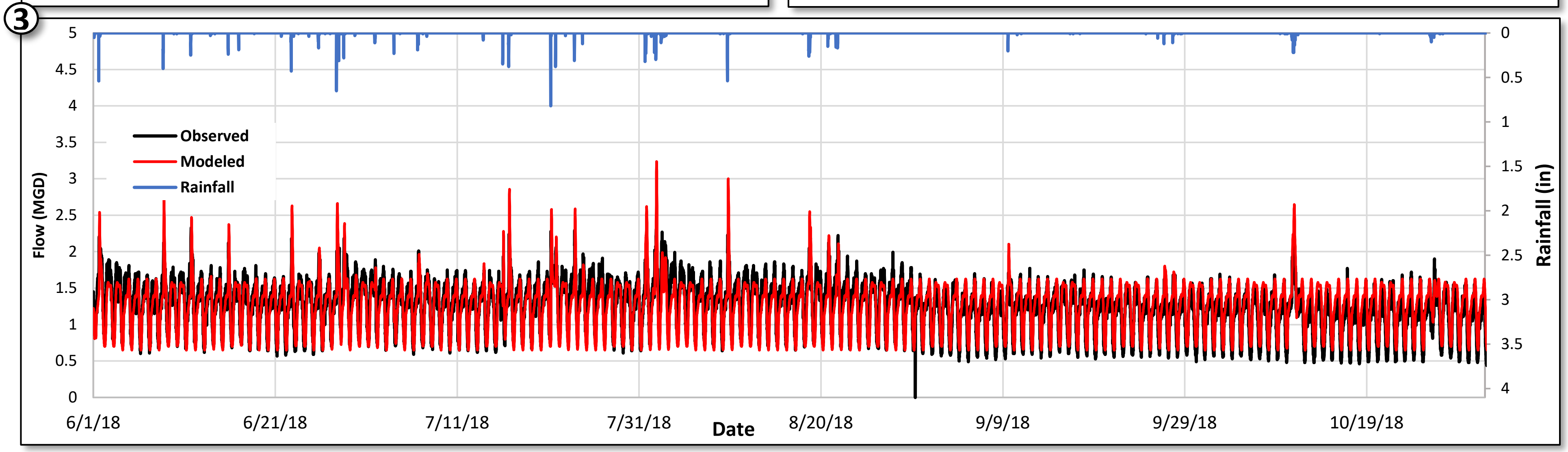
NFORK39

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues







DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK40

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

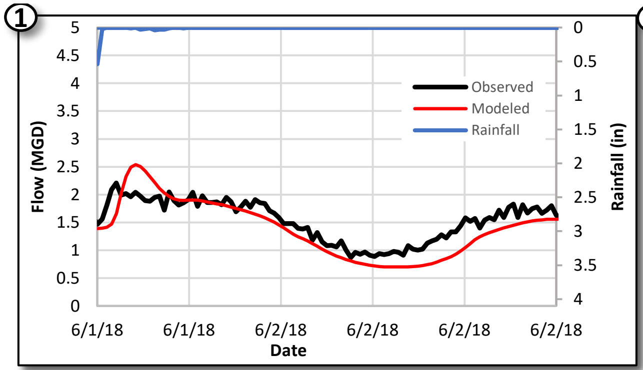
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	−	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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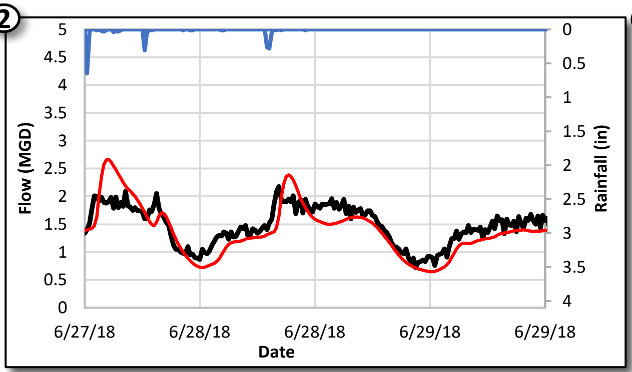

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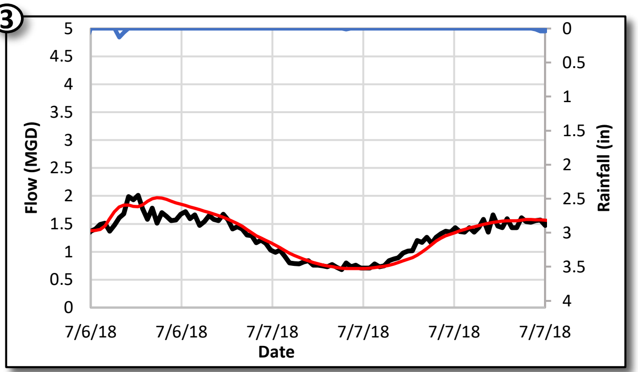

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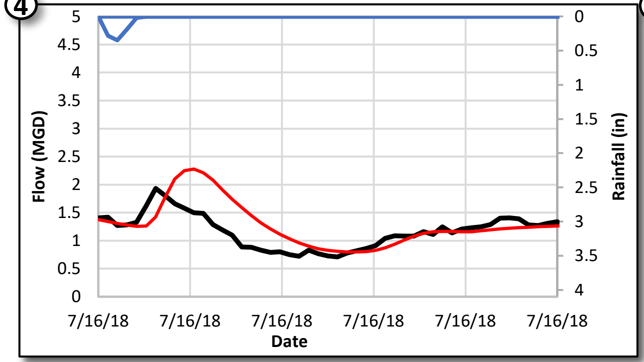

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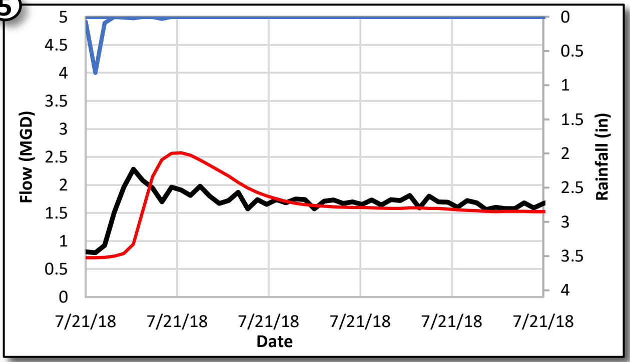

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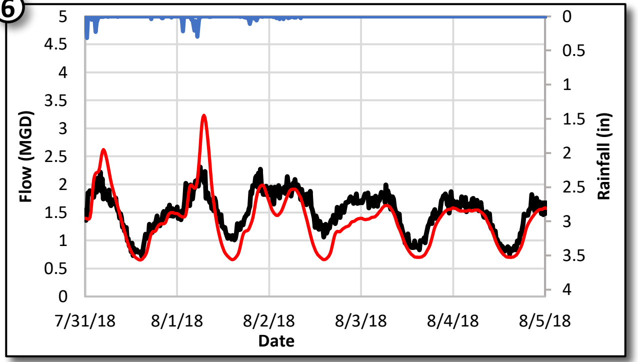

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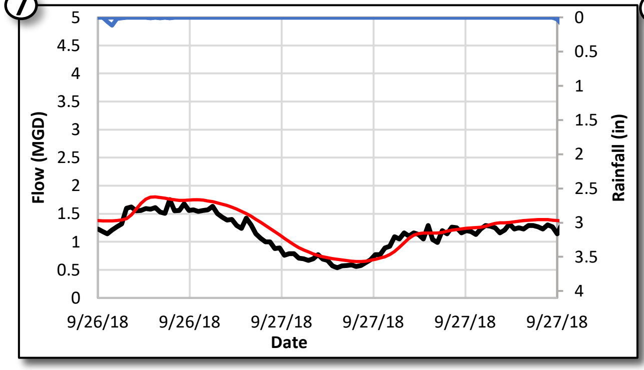

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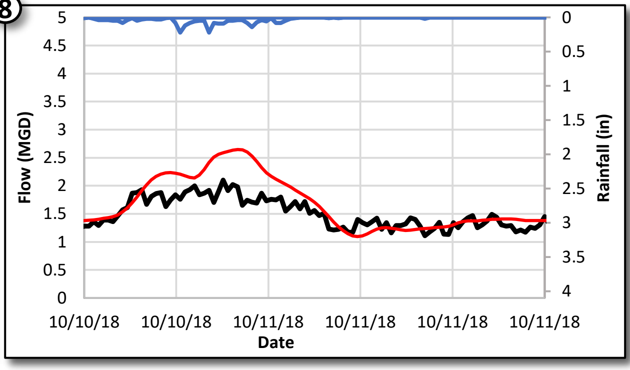

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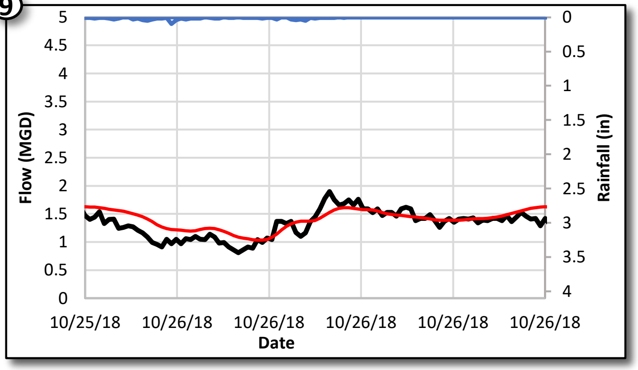


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK40

Sewershed:

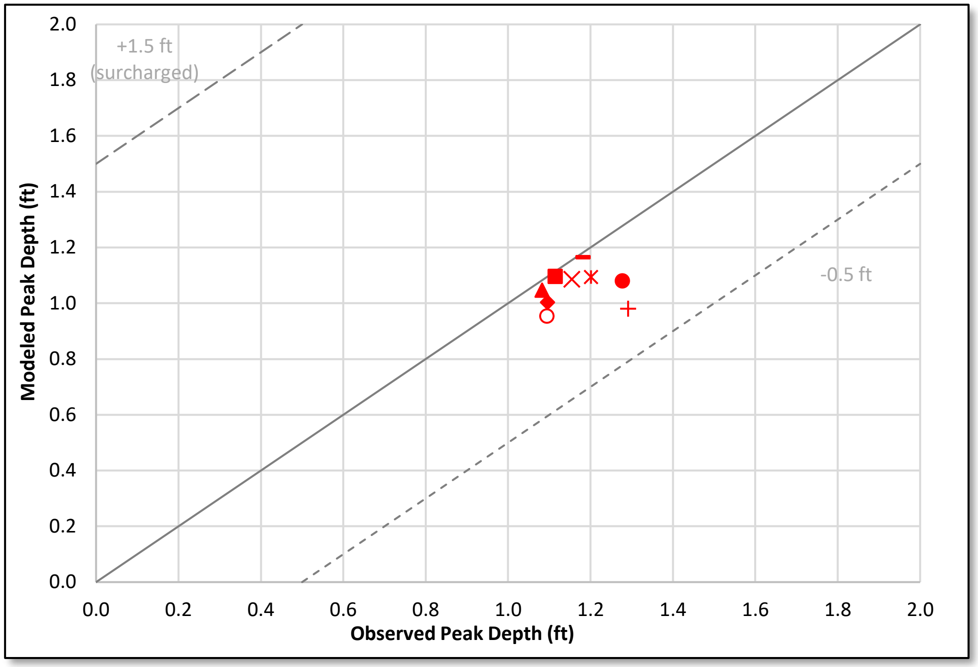
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



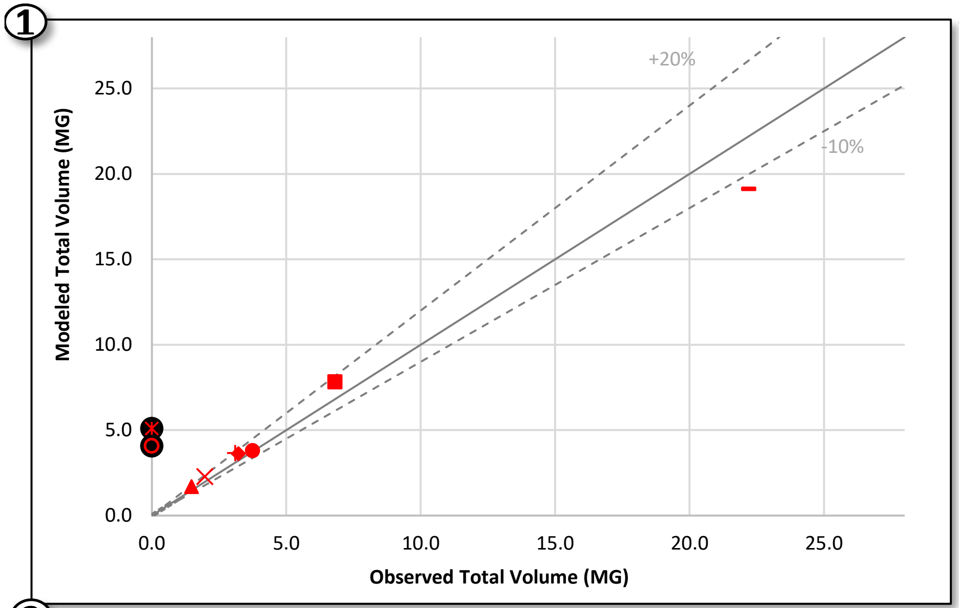
Flow Meter:

NFORK40

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
– 7/31/18
+ 9/26/18
⁎ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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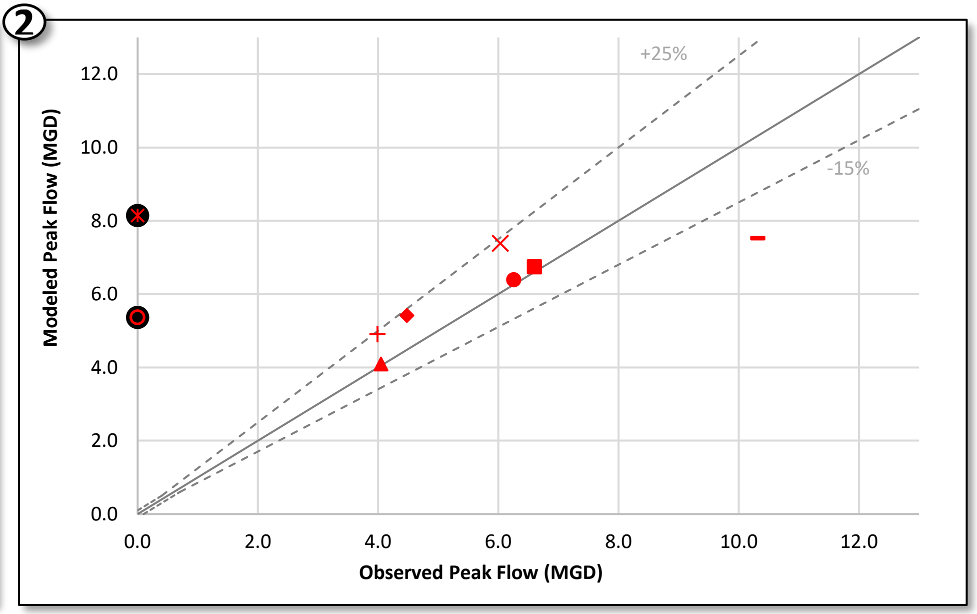

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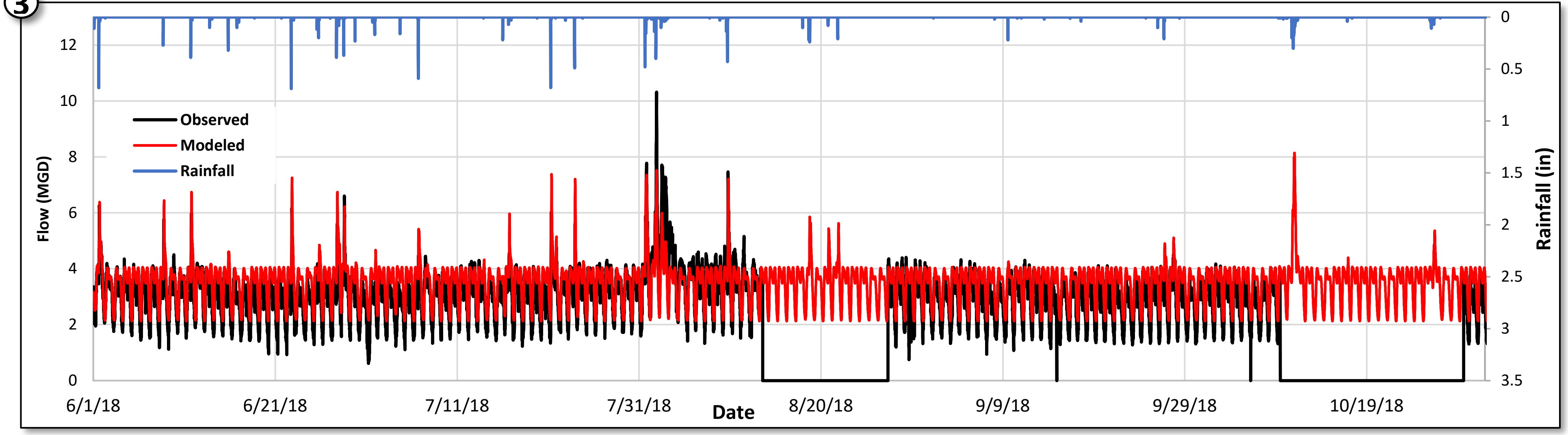


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK43

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

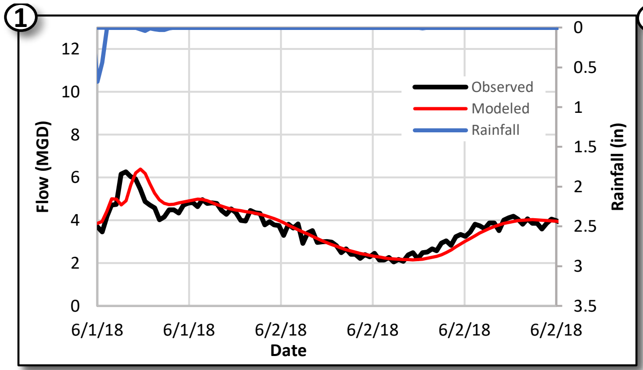
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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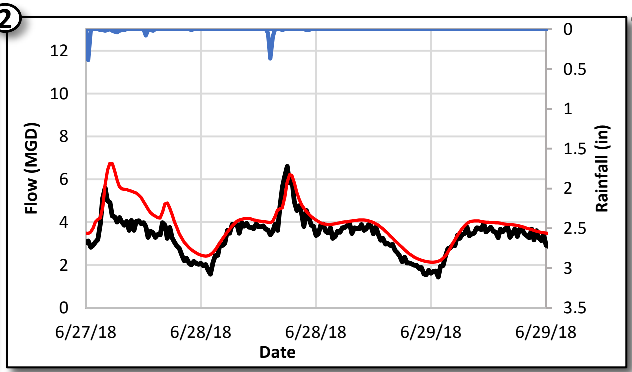

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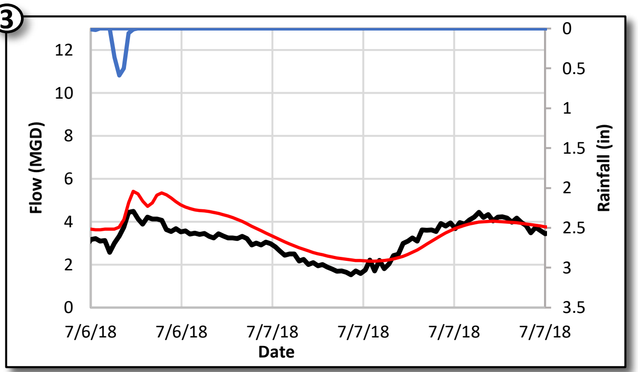

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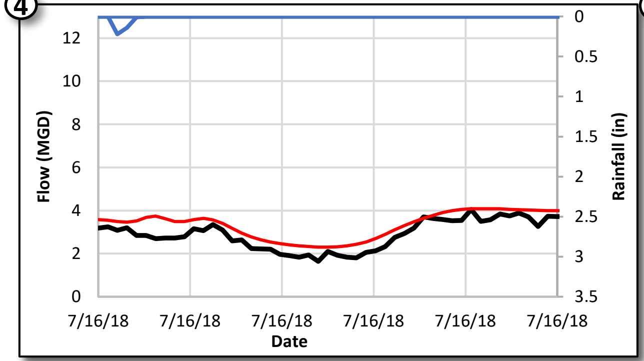

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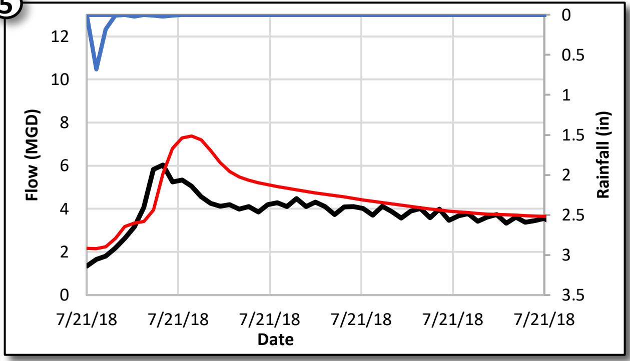

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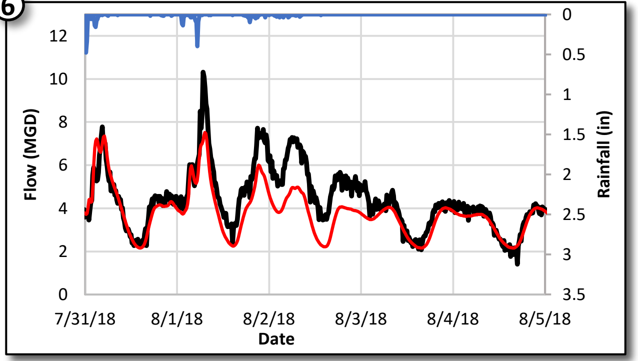

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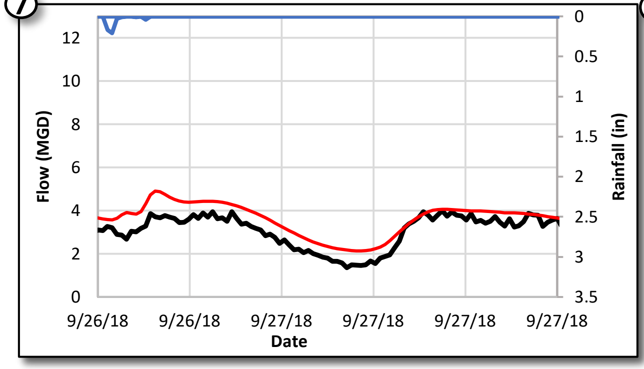

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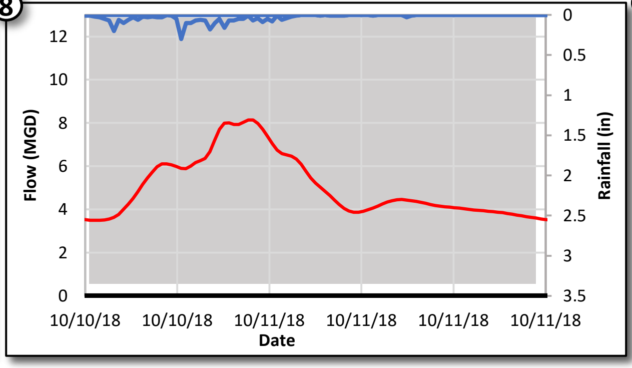

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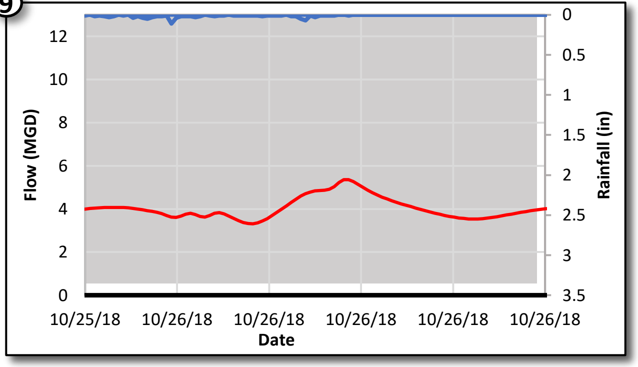


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK43

Sewershed:

North Fork Peachtree Creek

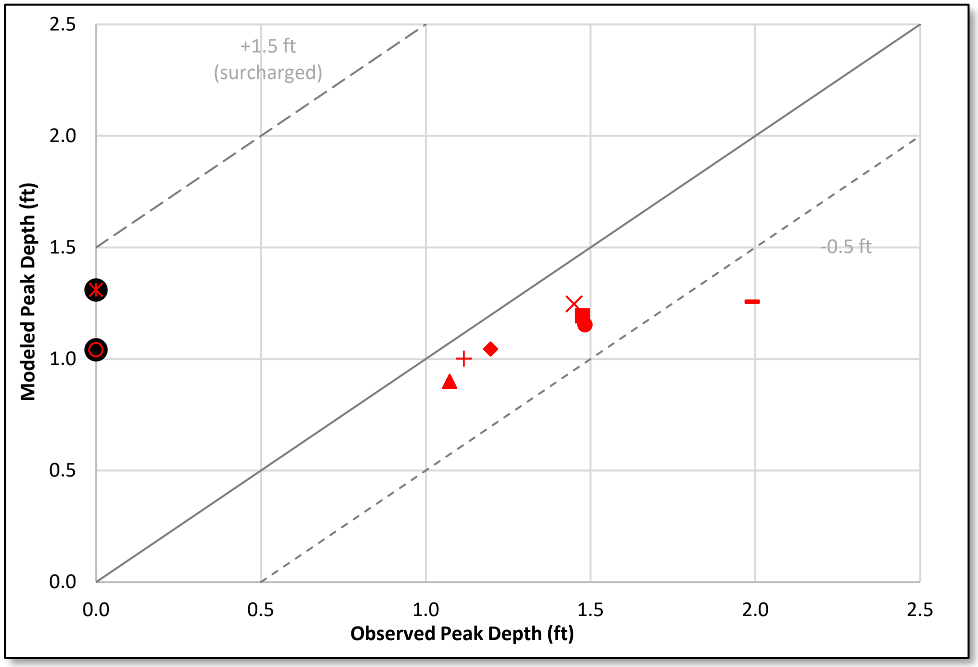
Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18

▨ Data Quality Issues



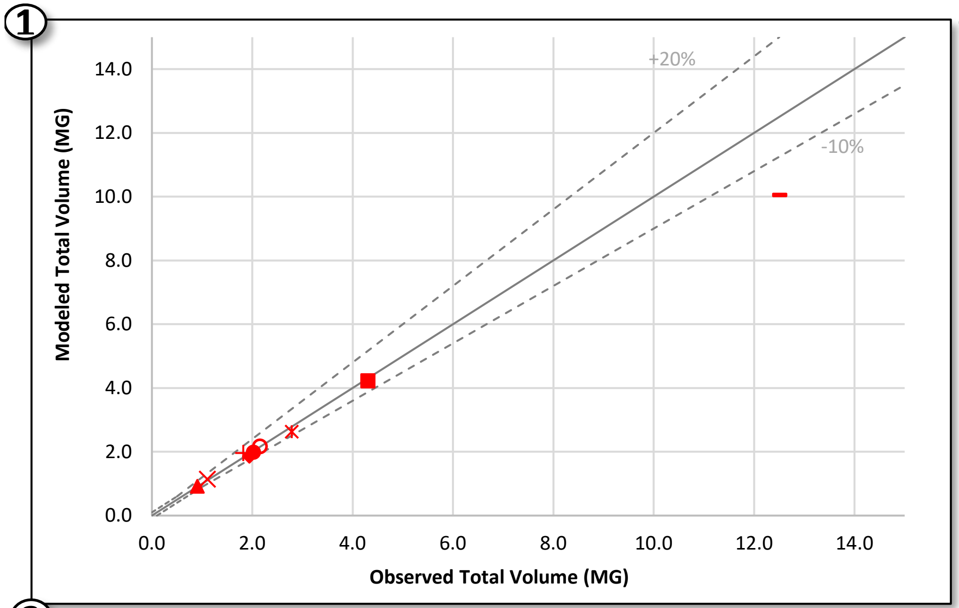
Flow Meter:

NFORK43

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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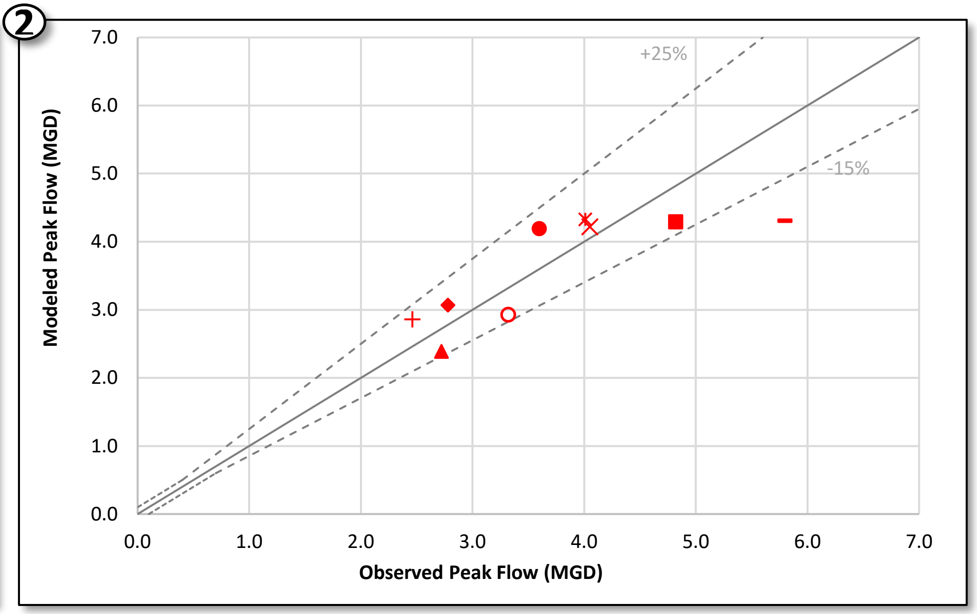

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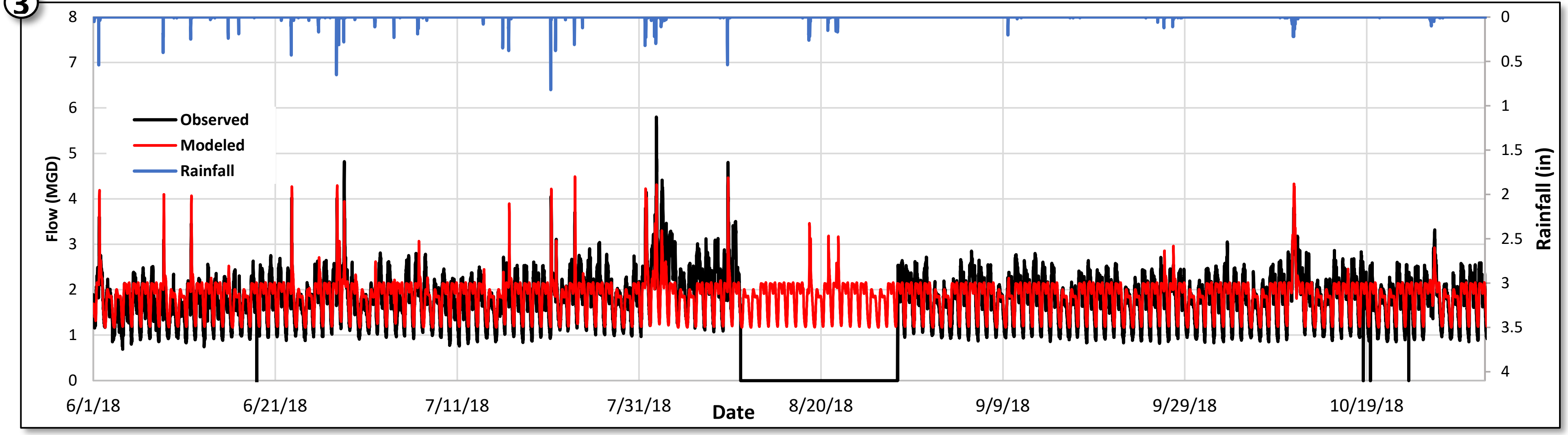


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK47

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

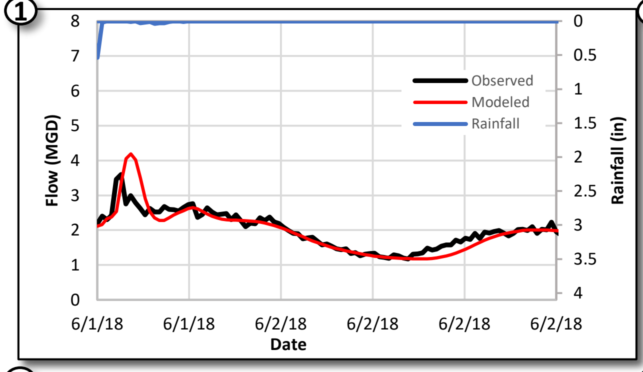
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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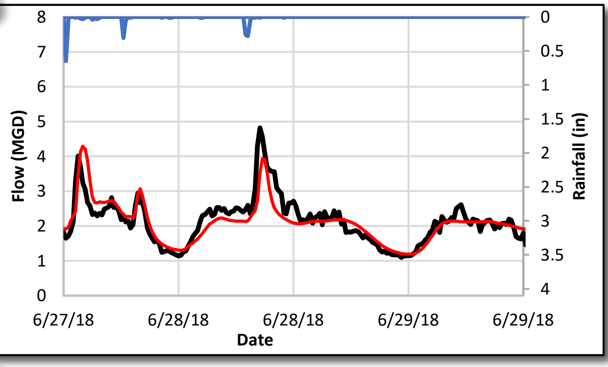

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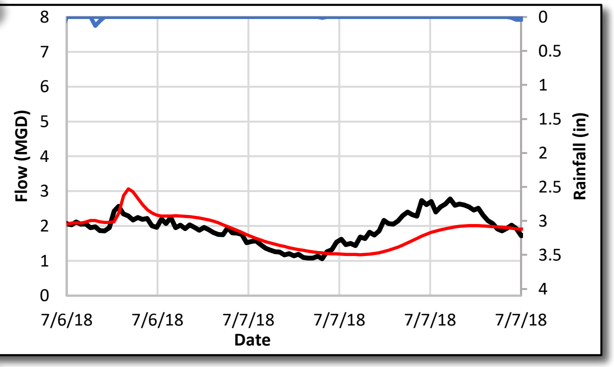

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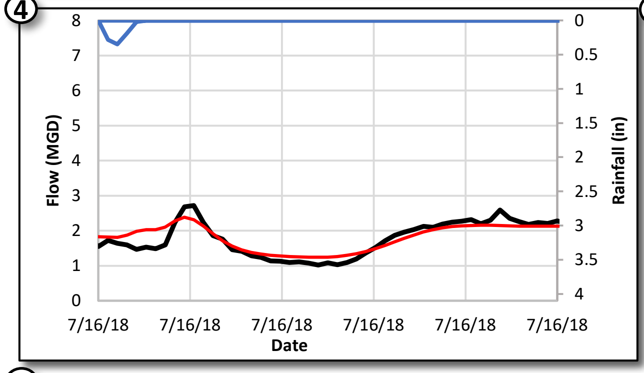

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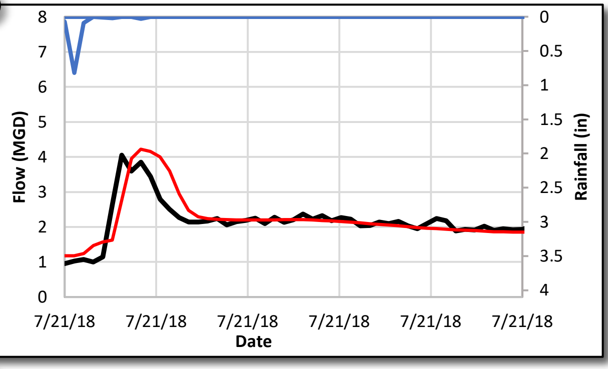

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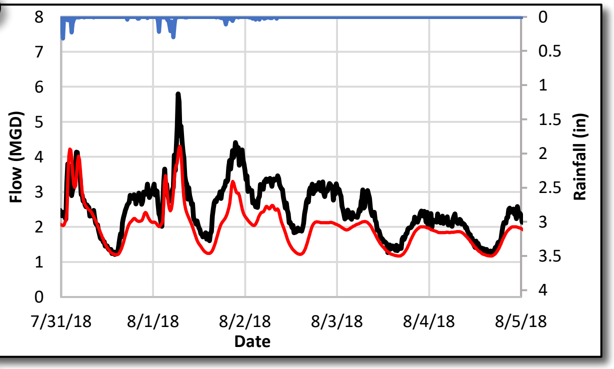

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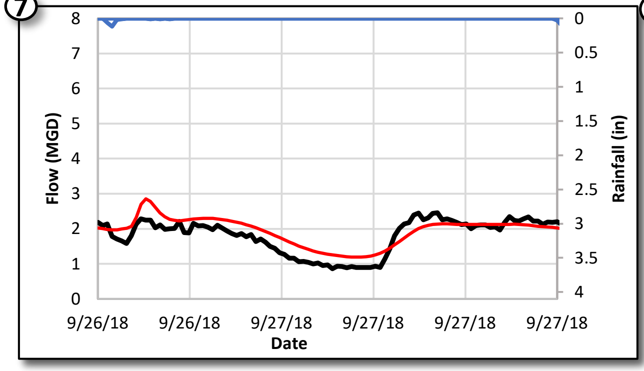

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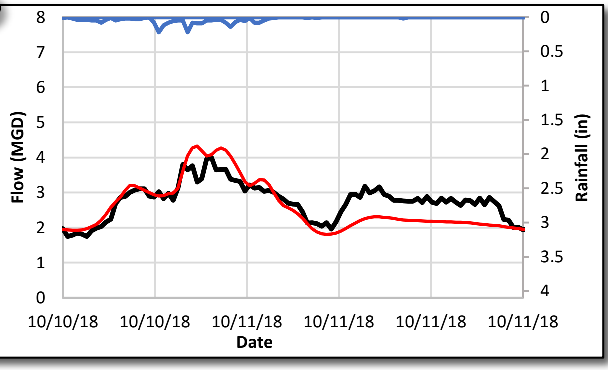

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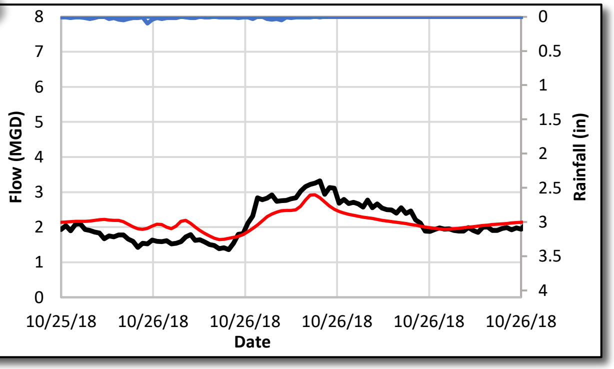


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK47

Sewershed:

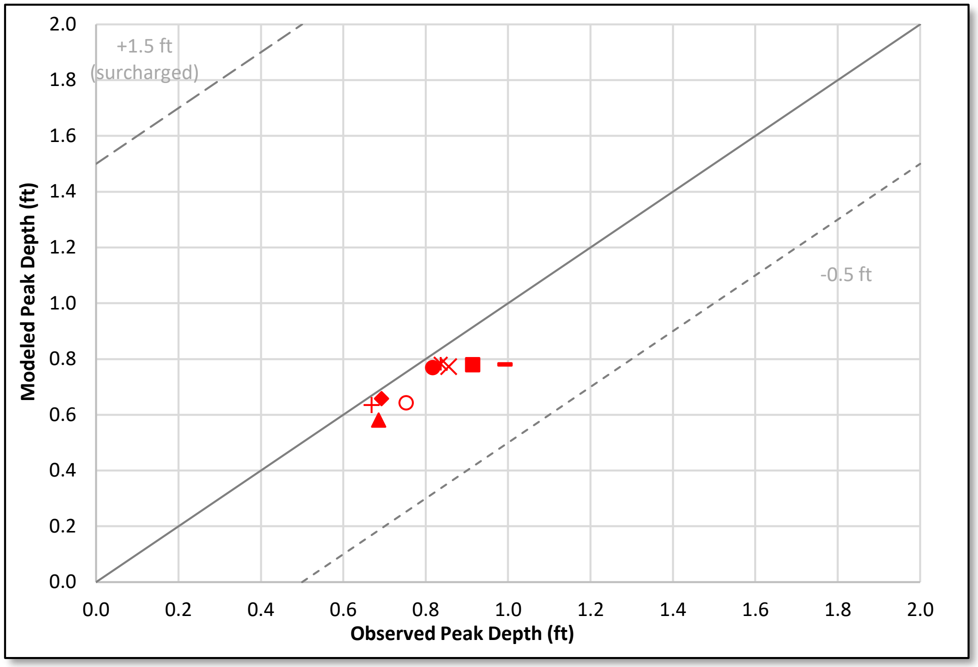
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



Flow Meter:

NFORK47

Events:

● 6/1/18

■ 6/27/18

◆ 7/6/18

▲ 7/16/18

× 7/21/18

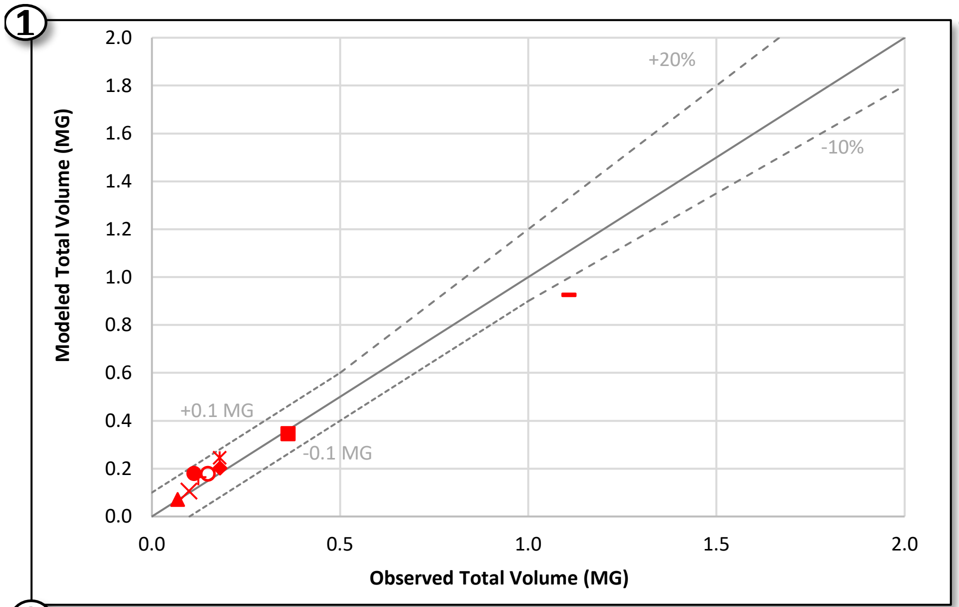
— 7/31/18

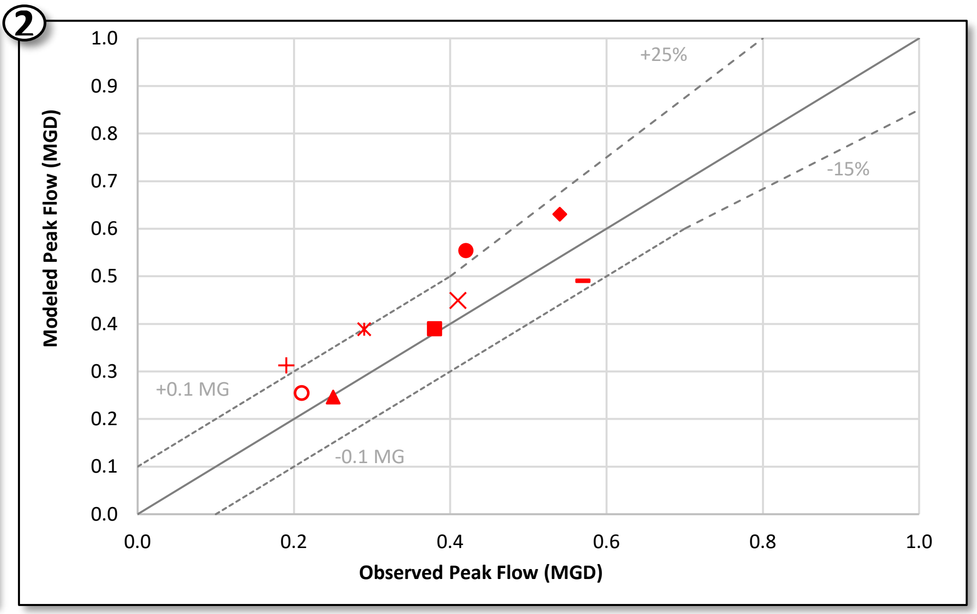
+ 9/26/18

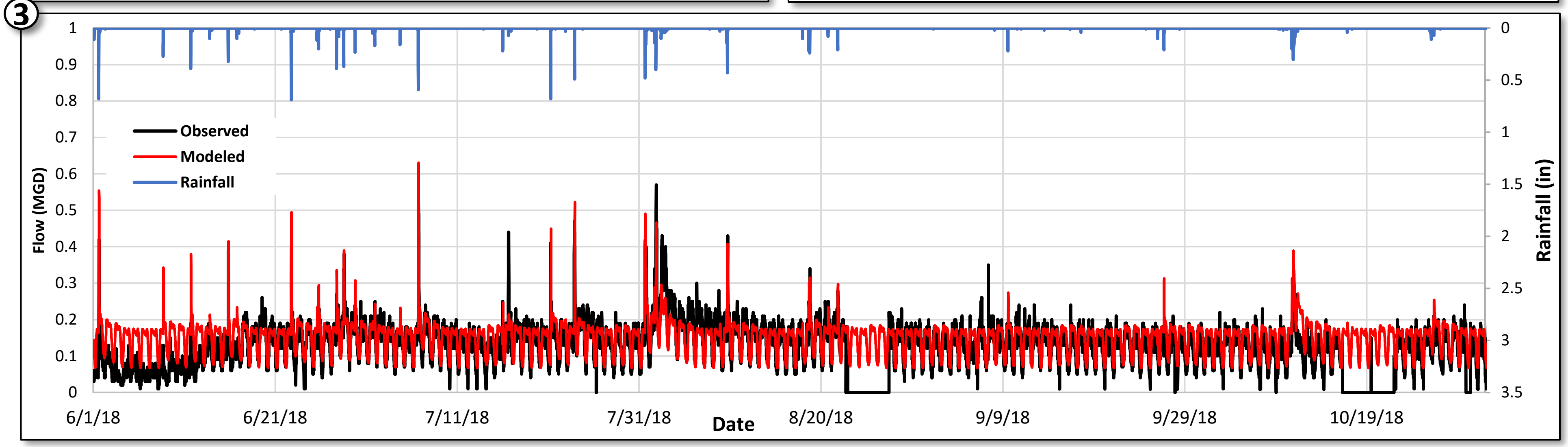
✱ 10/10/18

○ 10/25/18

● Data Quality Issues







DeKalb Calibration Results

Wet Weather
Flow Summary

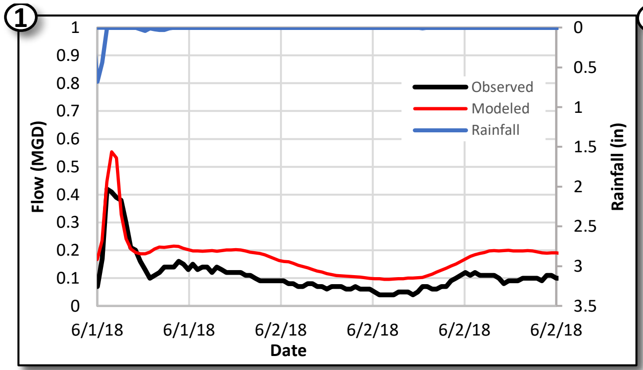
Flow Meter:
NFORK48
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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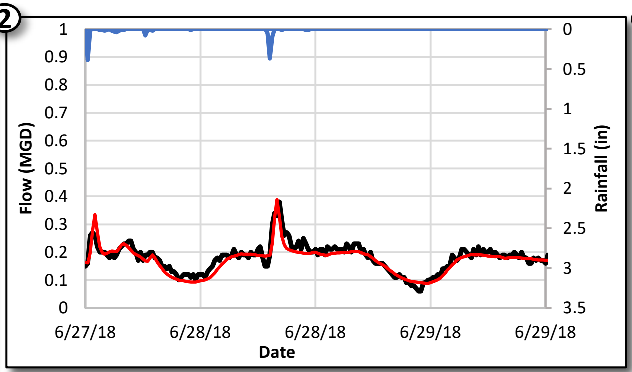

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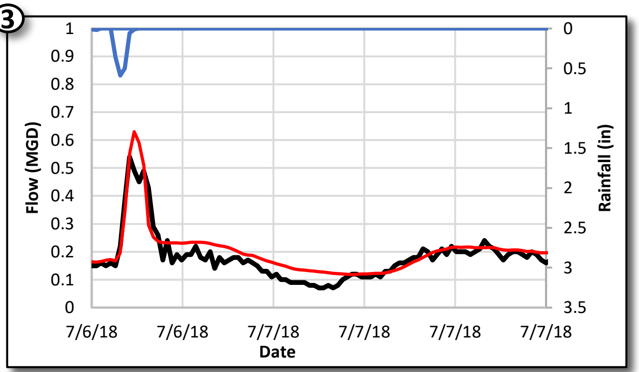

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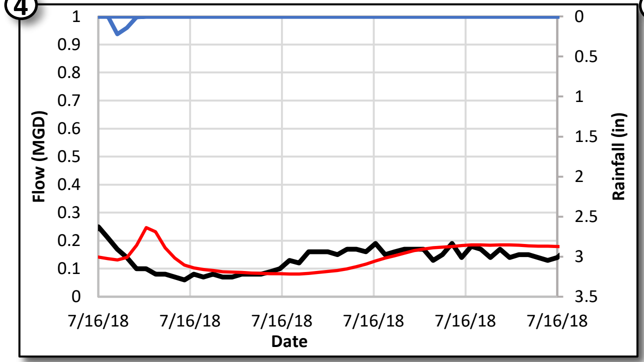

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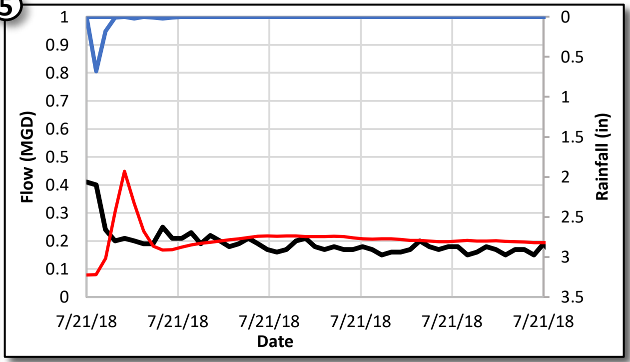

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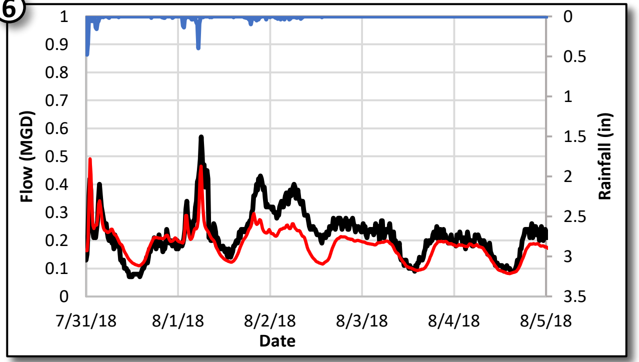

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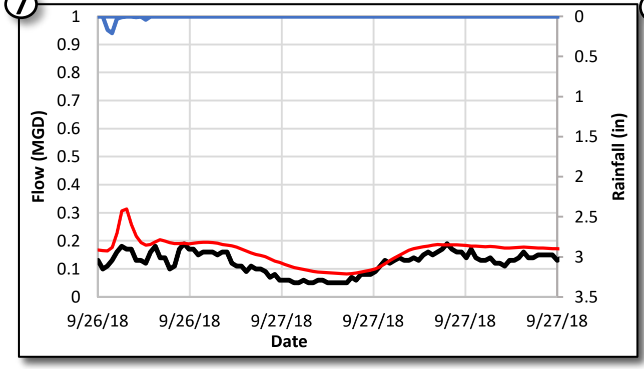

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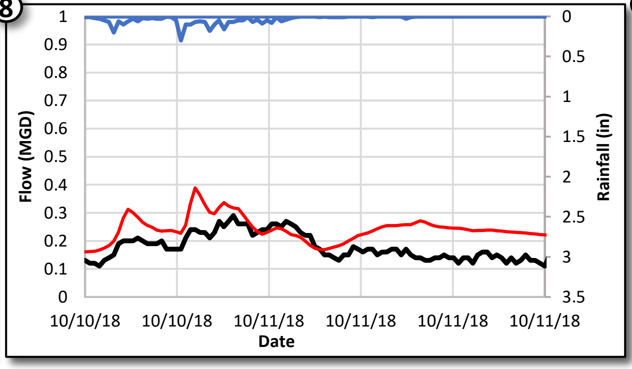

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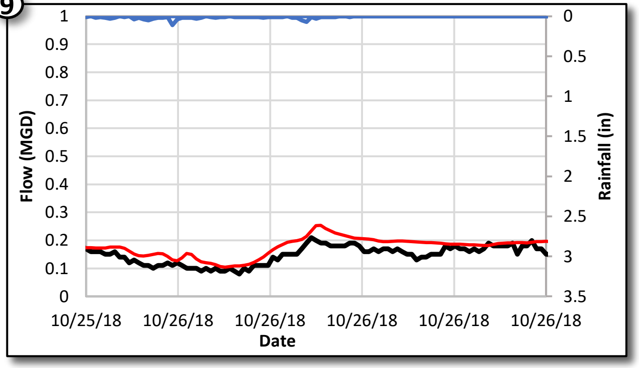


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK48

Sewershed:

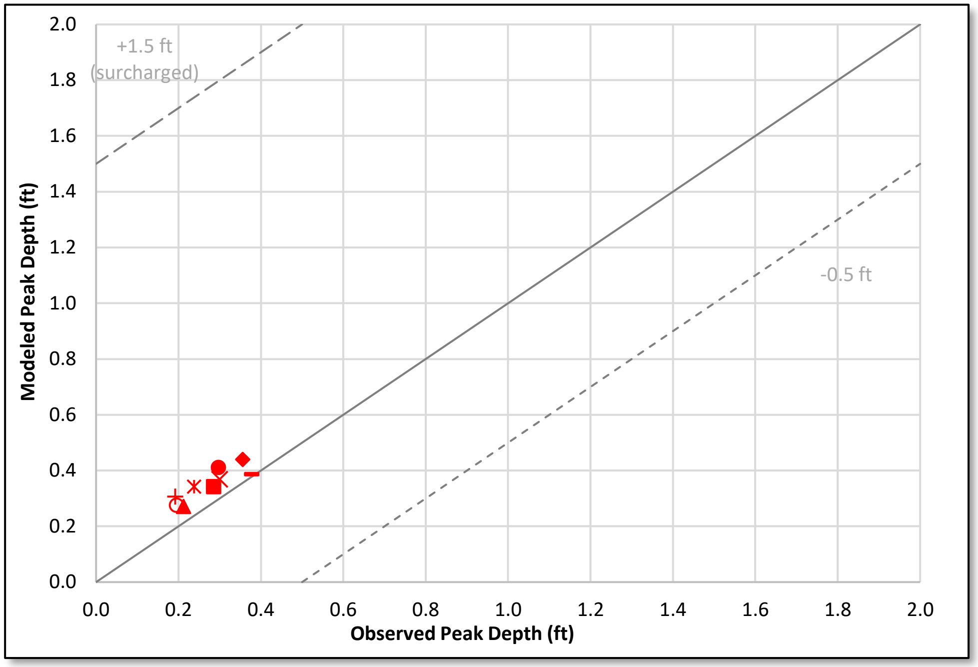
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



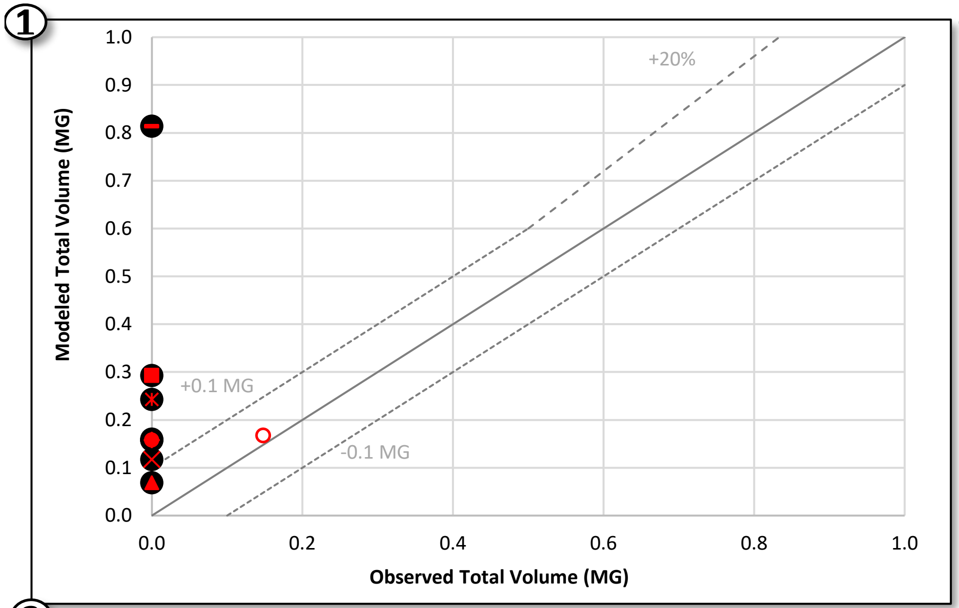
Flow Meter:

NFORK48

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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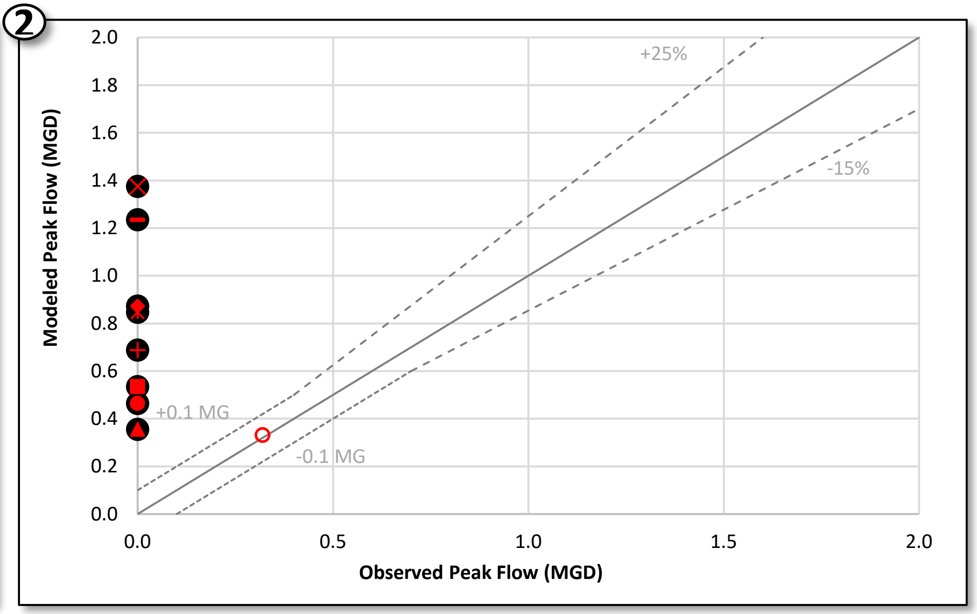

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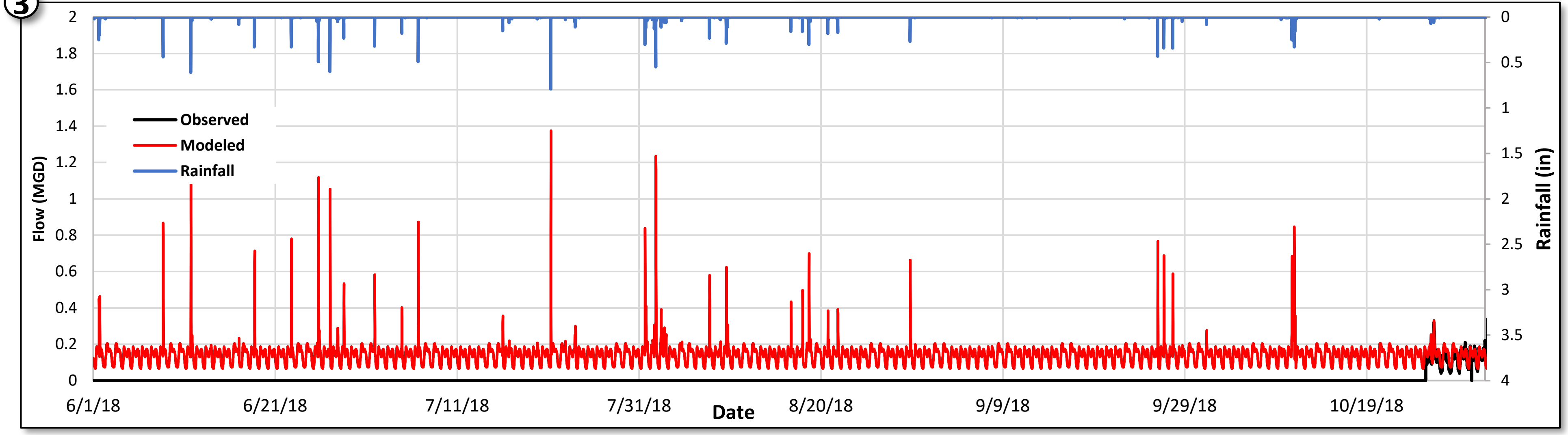


DeKalb Calibration Results

Wet Weather
Flow Summary

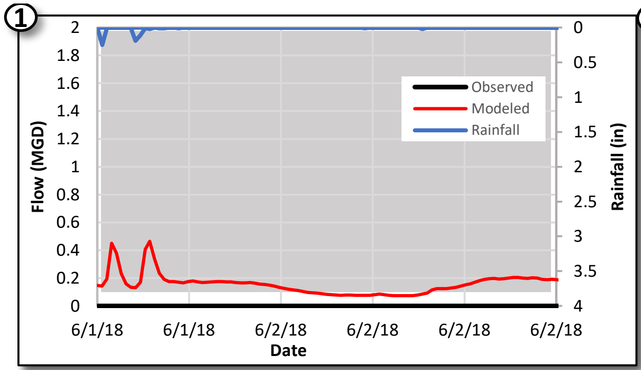
Flow Meter:
NFORK49_2
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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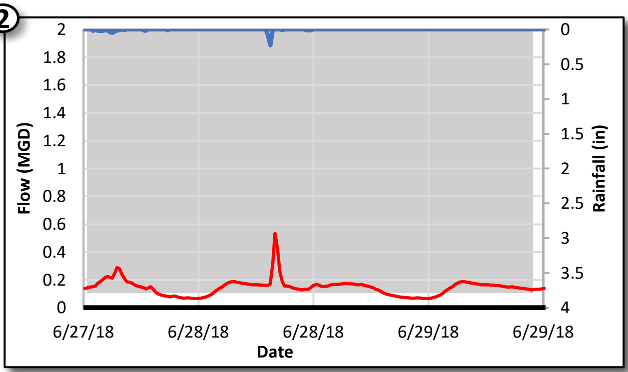

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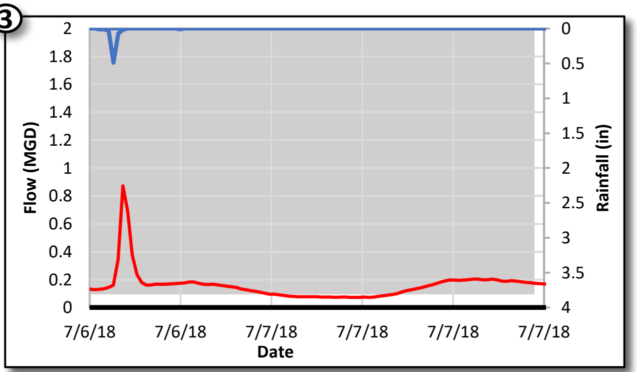

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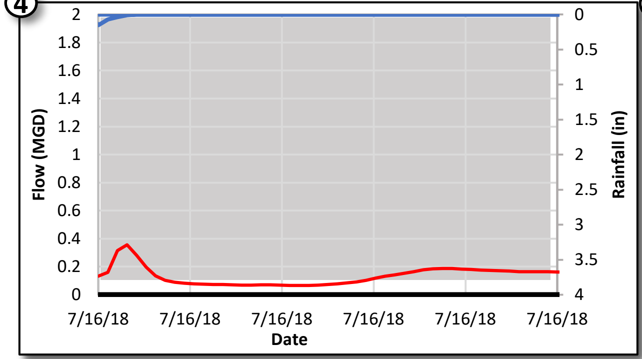

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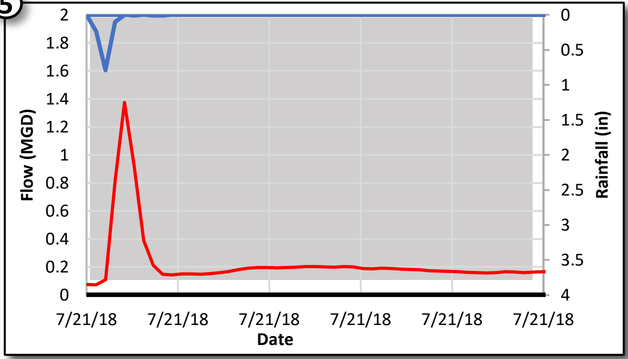

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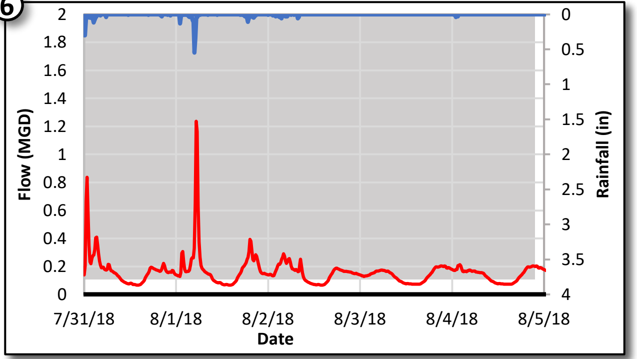

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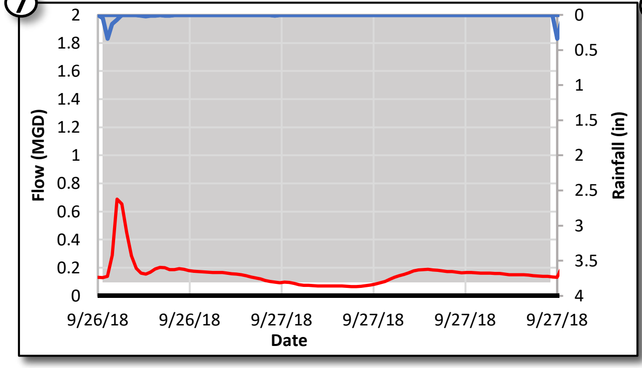

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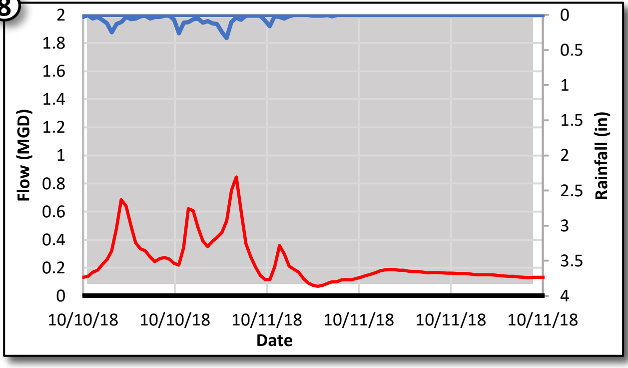

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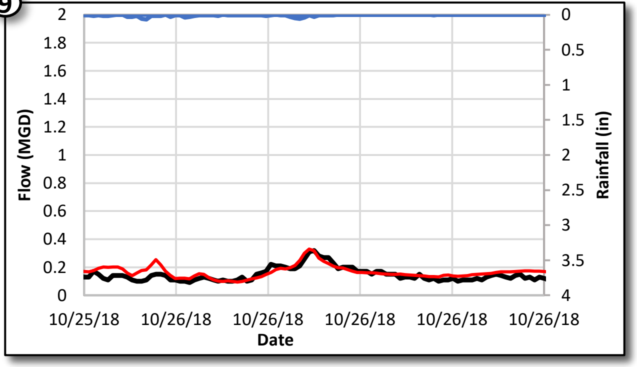


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK49_2

Sewershed:

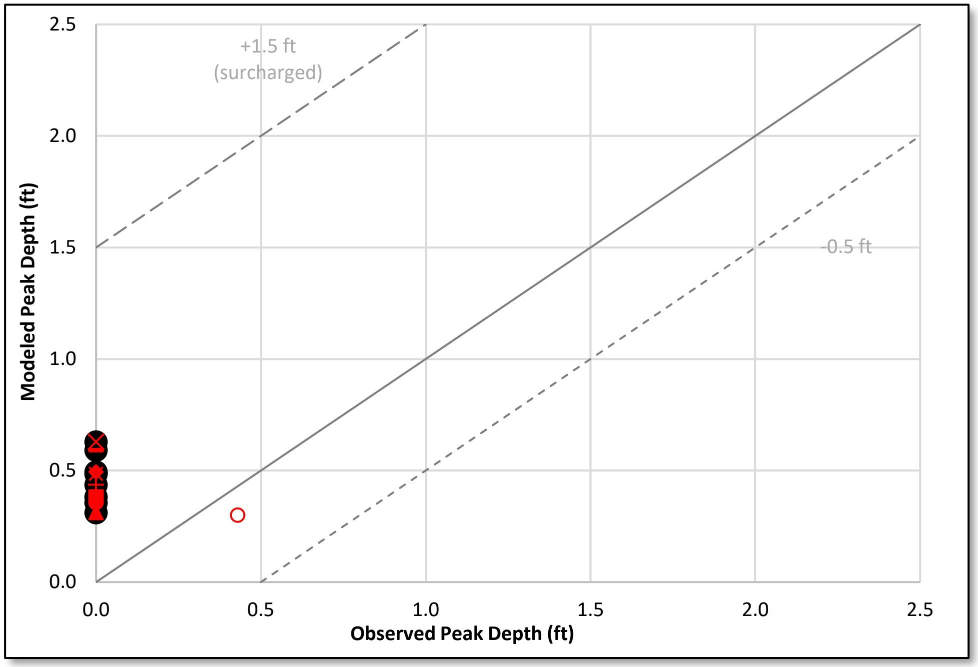
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



Flow Meter:

NFORK49_2

Events:

● 6/1/18

■ 6/27/18

◆ 7/6/18

▲ 7/16/18

× 7/21/18

— 7/31/18

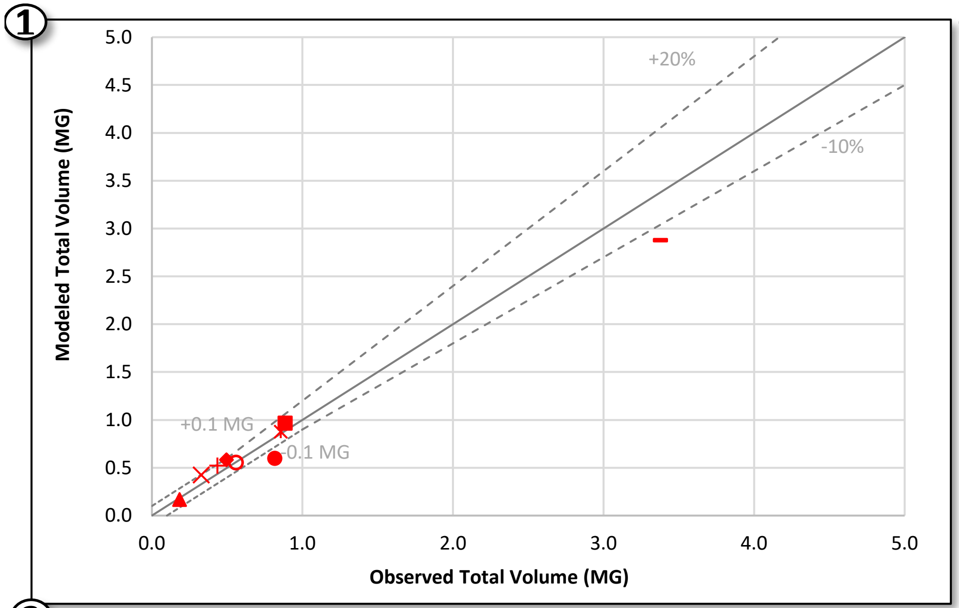
+ 9/26/18

∗ 10/10/18

○ 10/25/18

● Data Quality Issues

①



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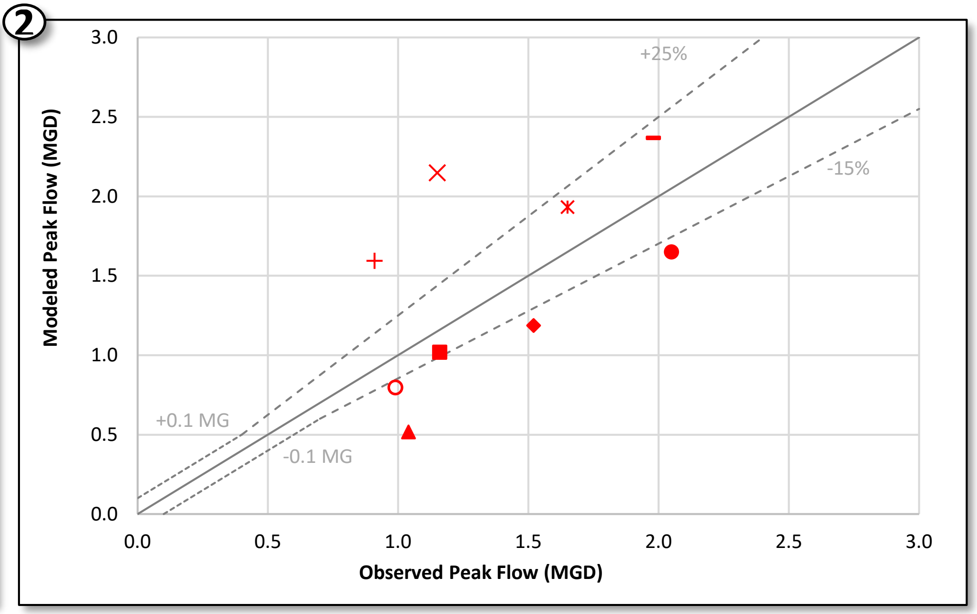

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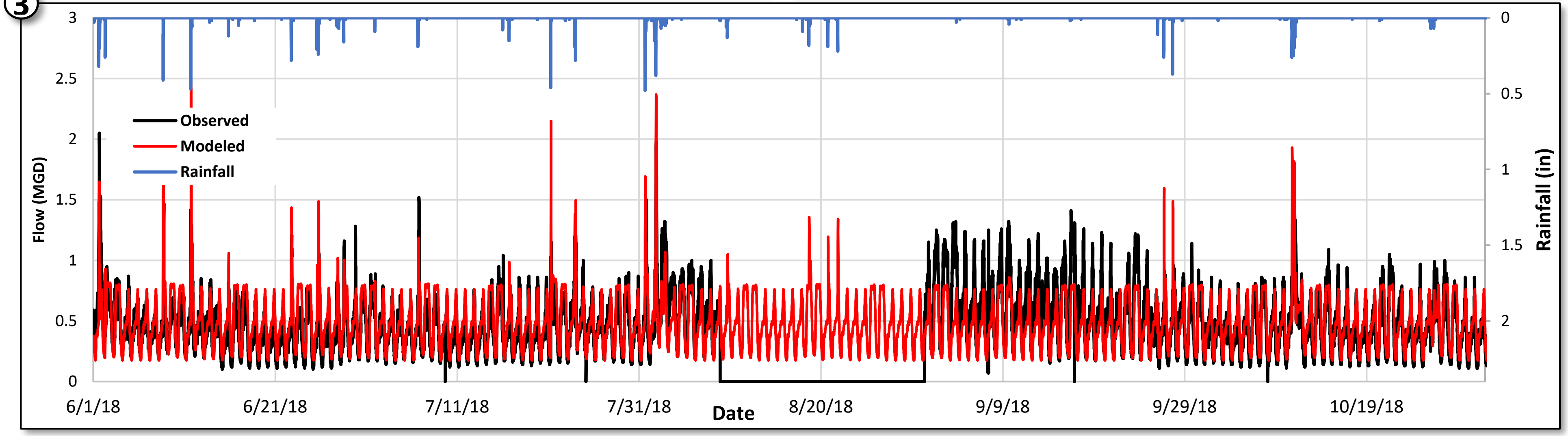


DeKalb Calibration Results

Wet Weather
Flow Summary

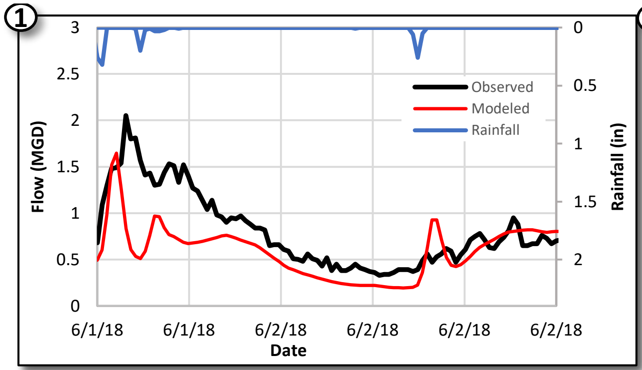
Flow Meter:
NFORK50
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	⬤	Data Quality Issues

①



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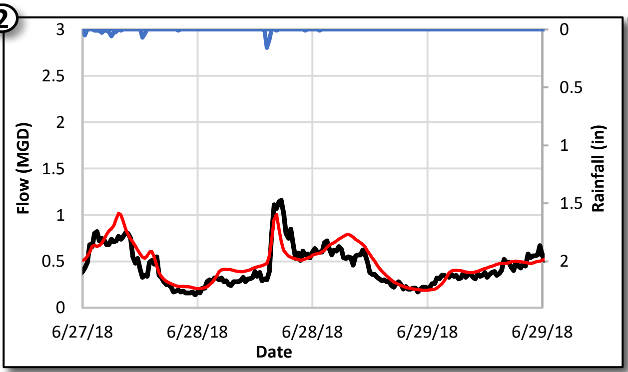

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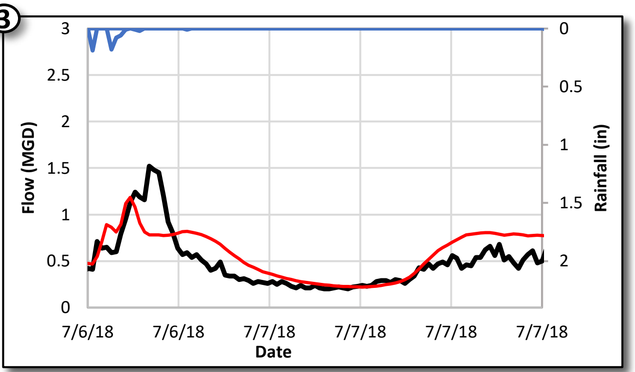

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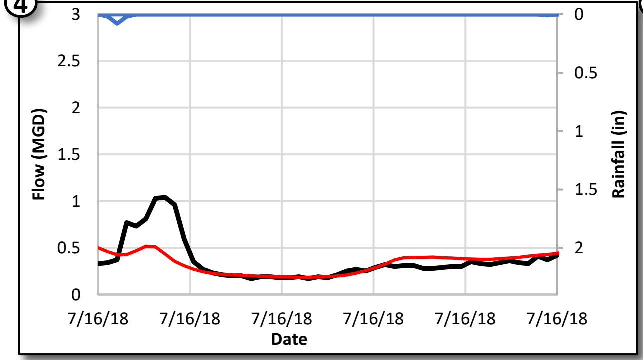

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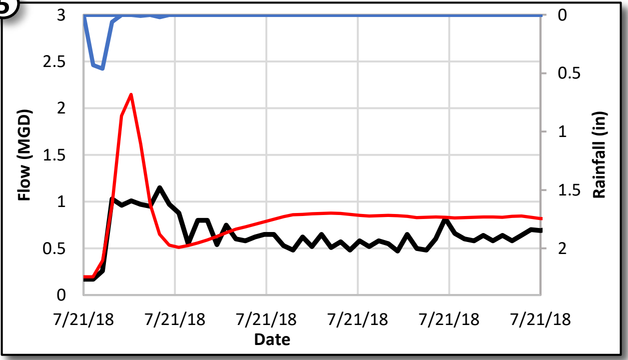

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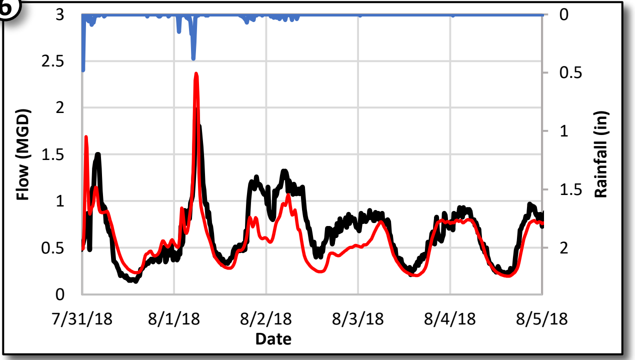

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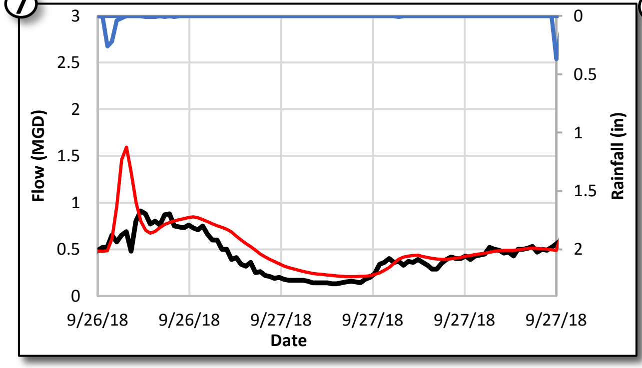

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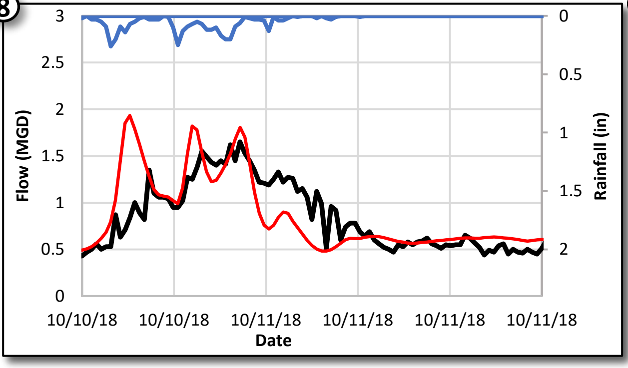

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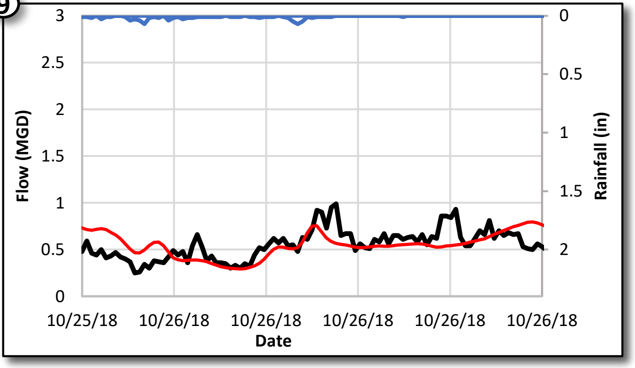


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK50

Sewershed:

North Fork Peachtree Creek

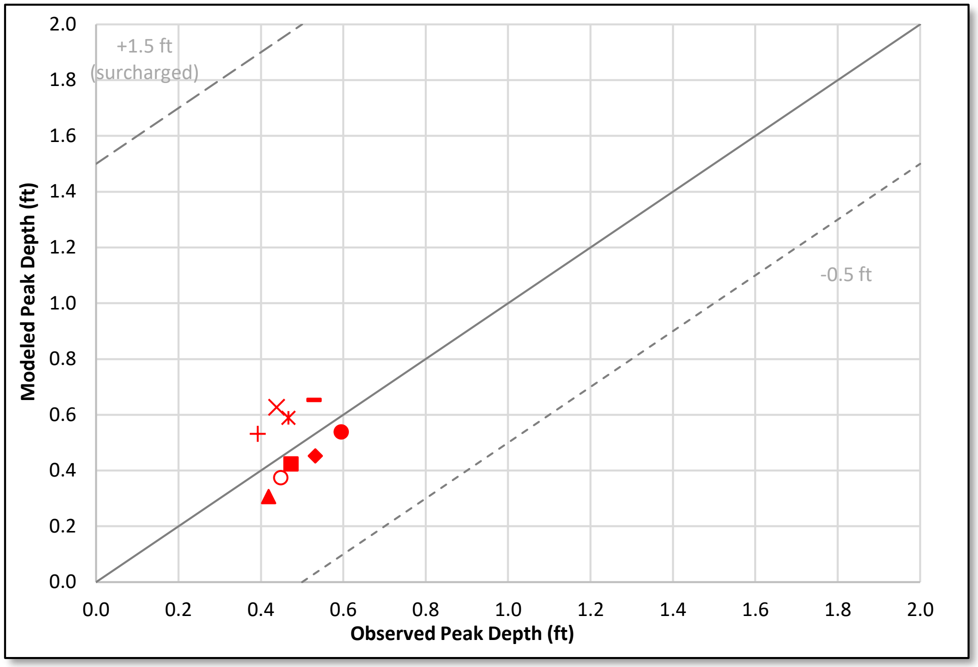
Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18

▨ Data Quality Issues

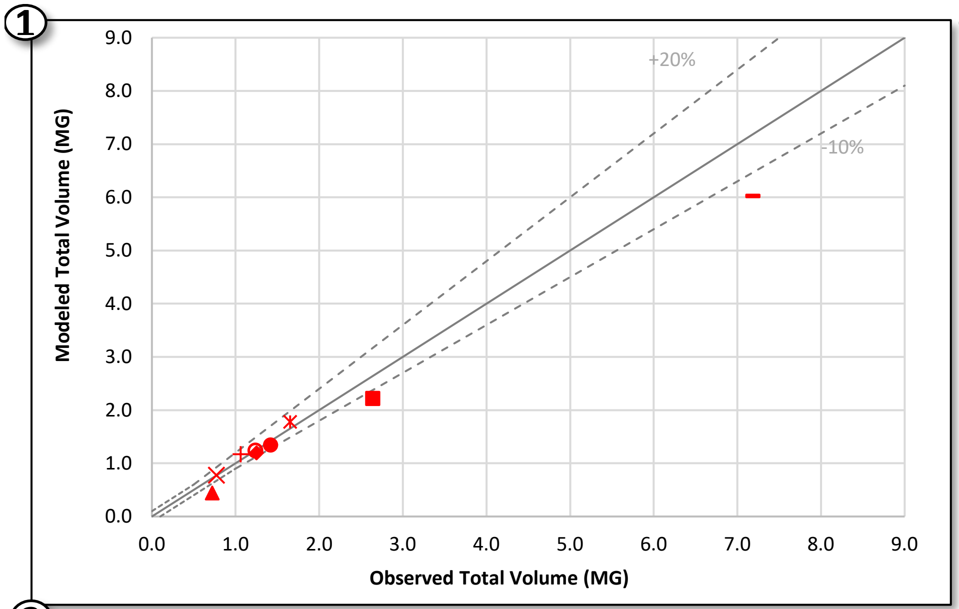


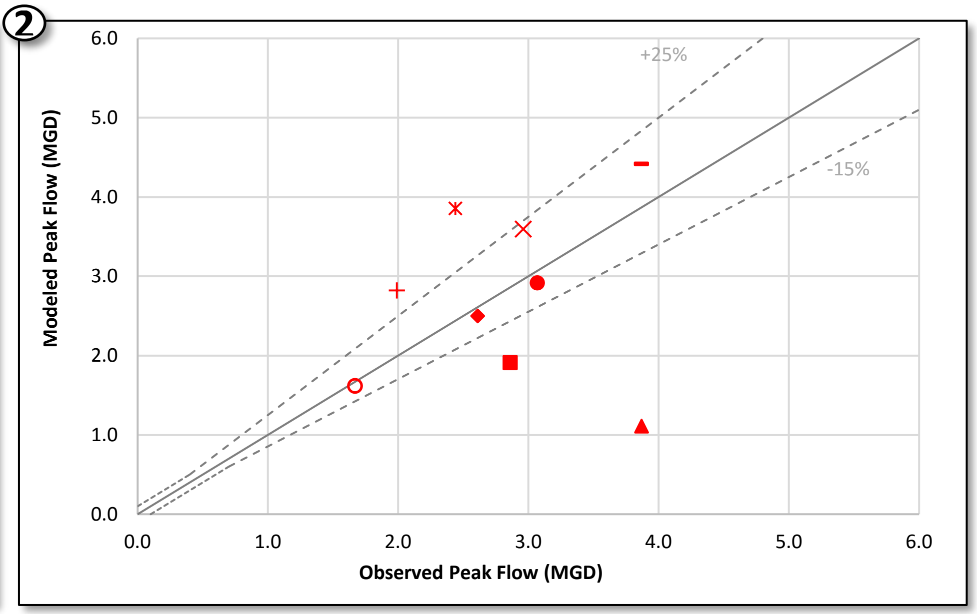
Flow Meter:

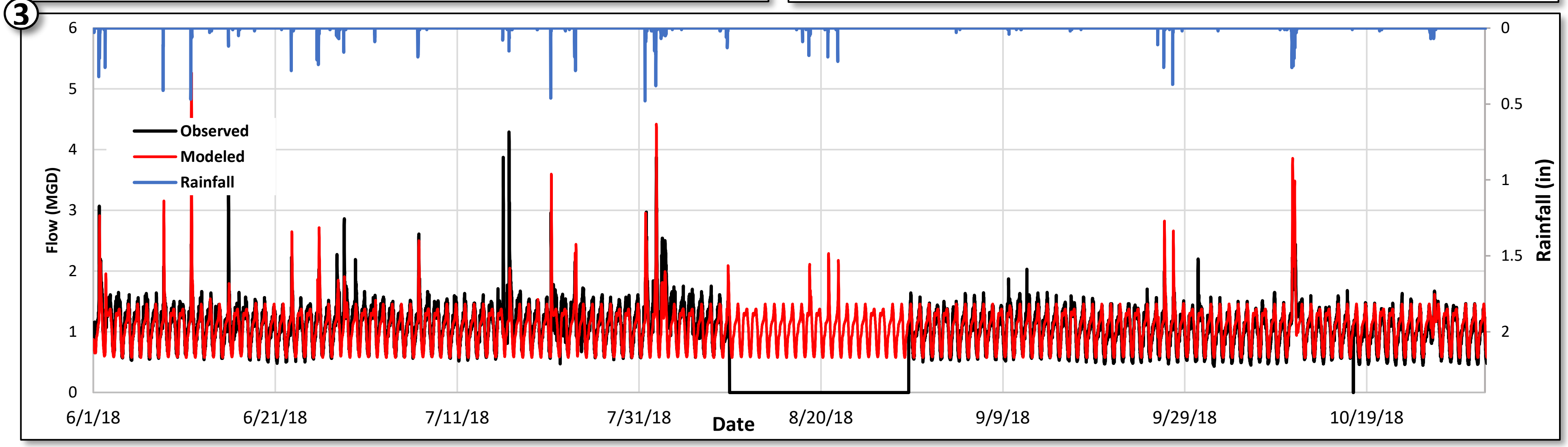
NFORK50

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues







DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK51

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

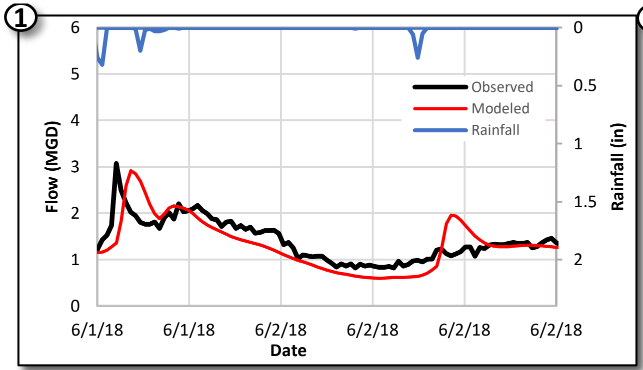
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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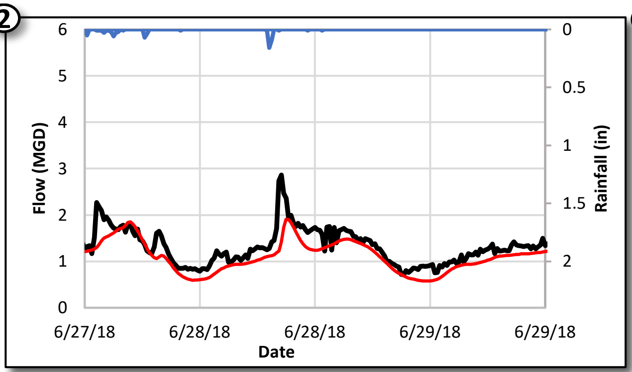

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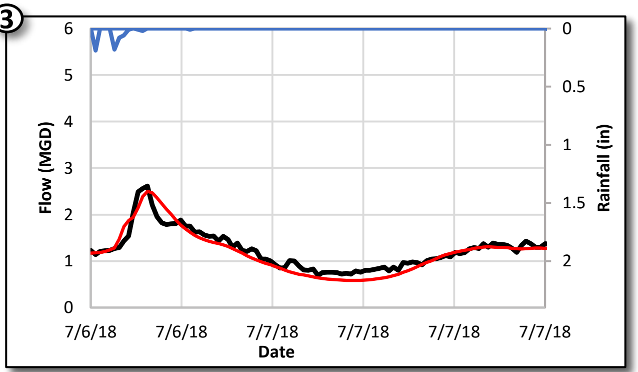

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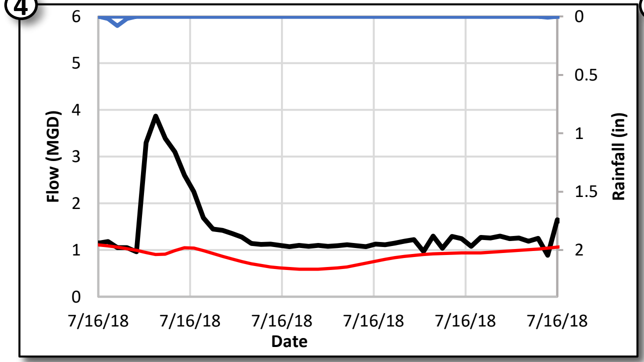

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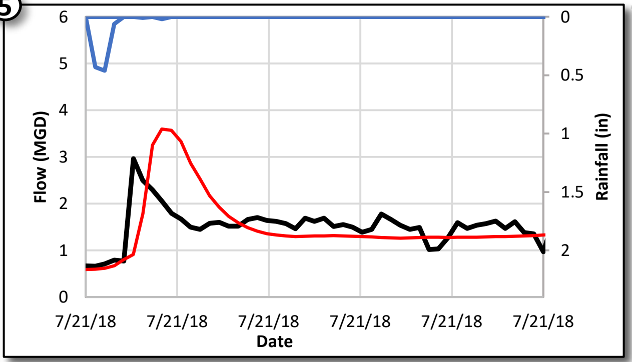

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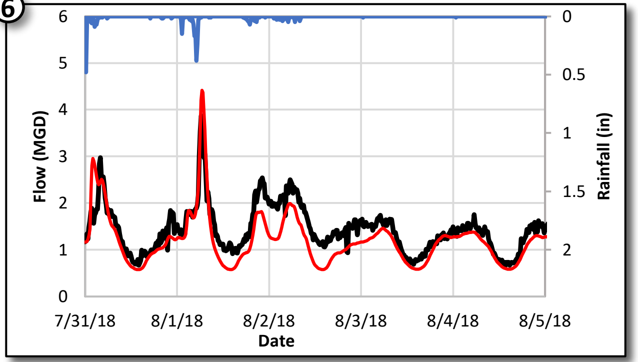

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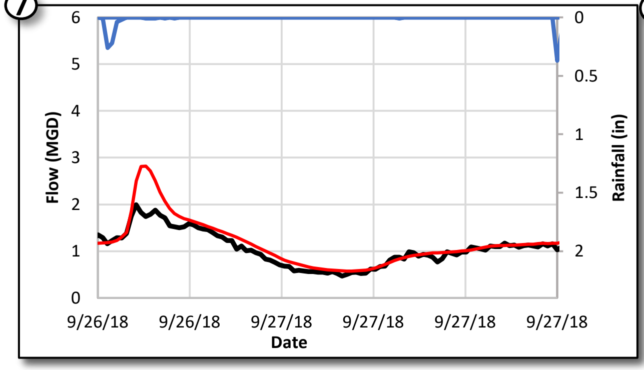

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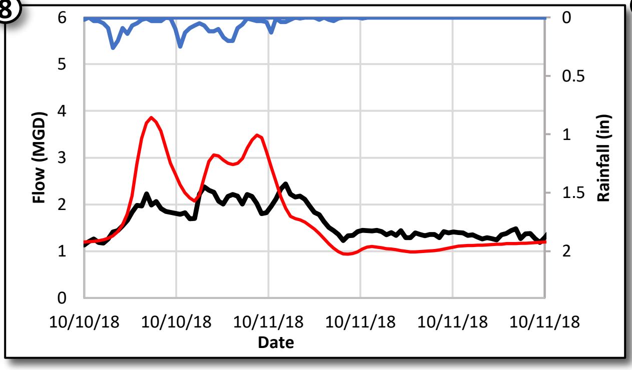

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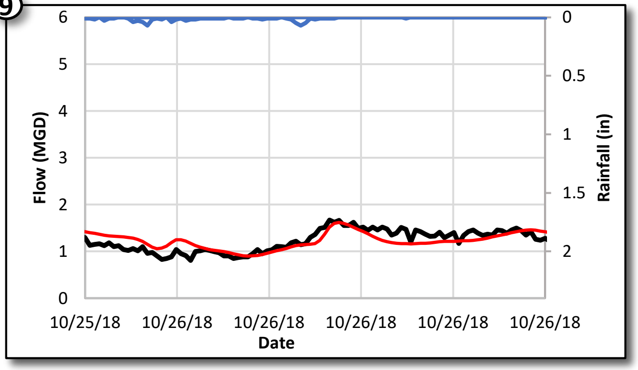


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK51

Sewershed:

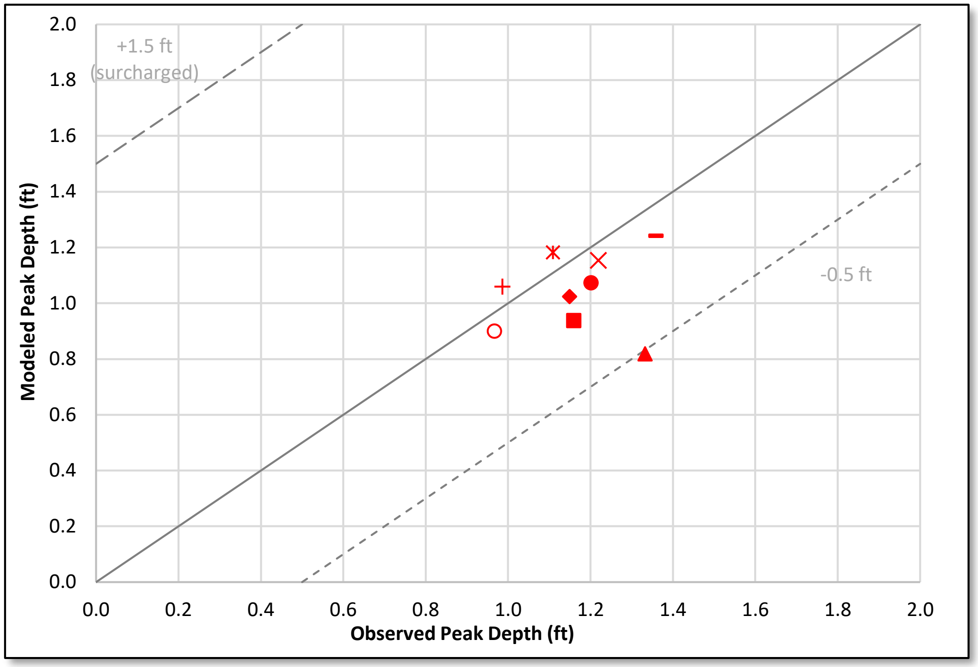
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



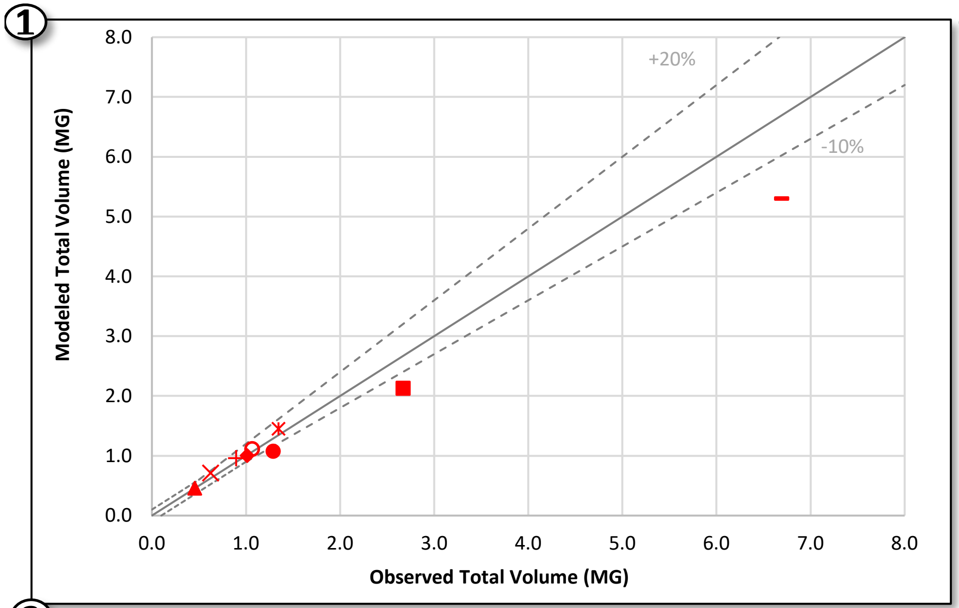
Flow Meter:

NFORK51

Events:

●	6/1/18	–	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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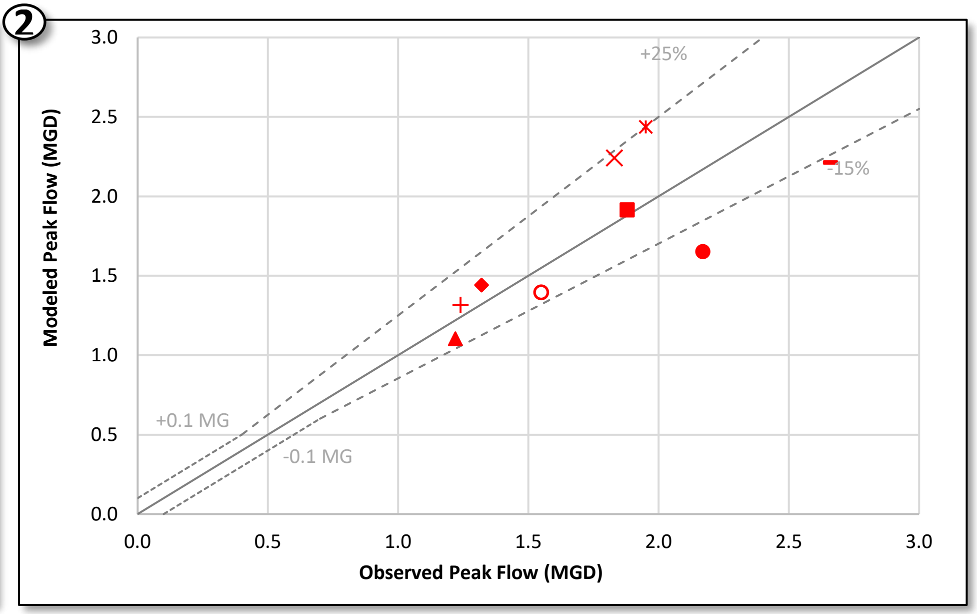

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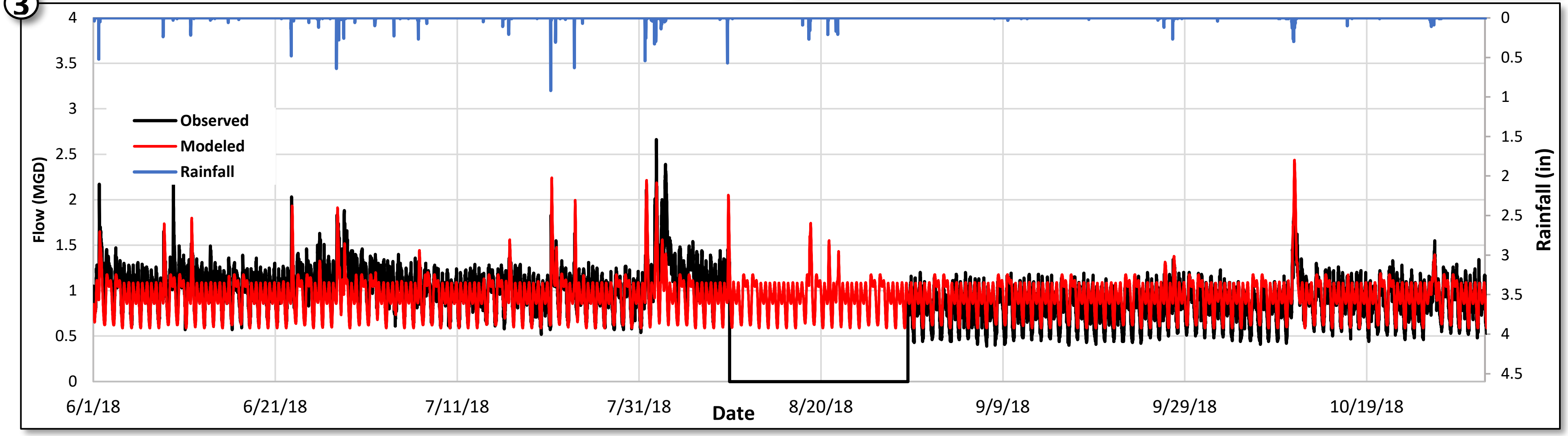


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK52

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

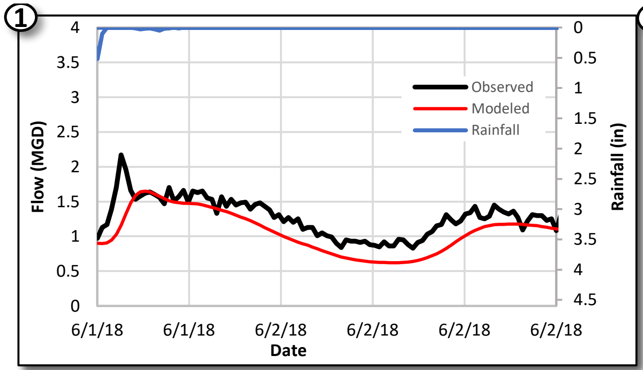
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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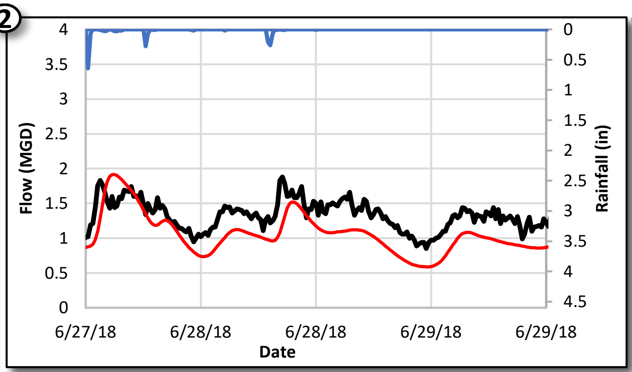

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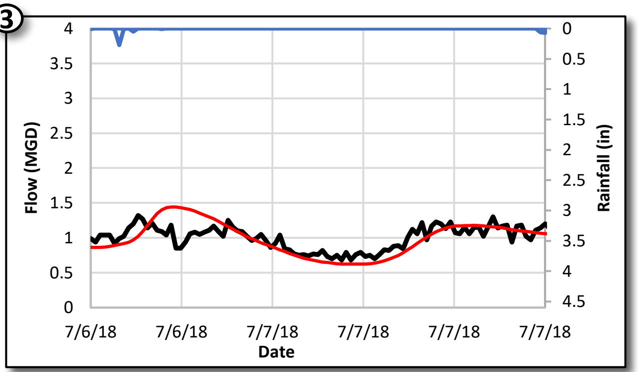

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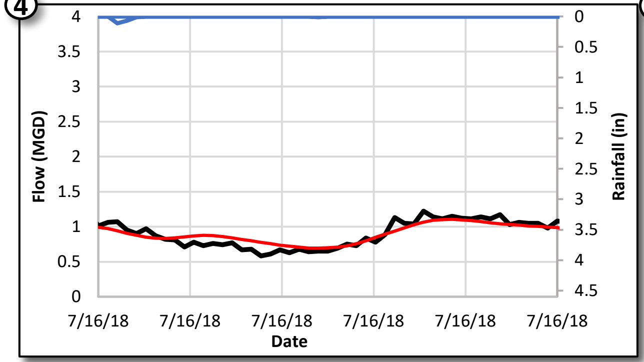

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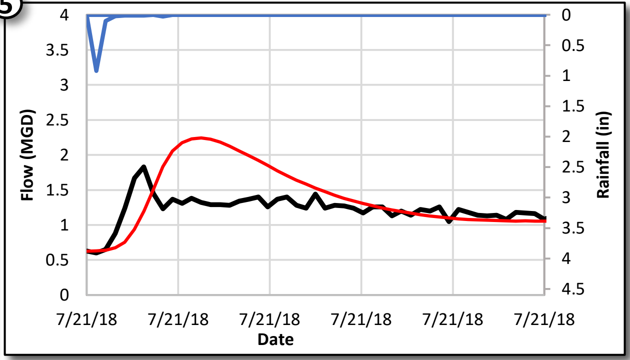

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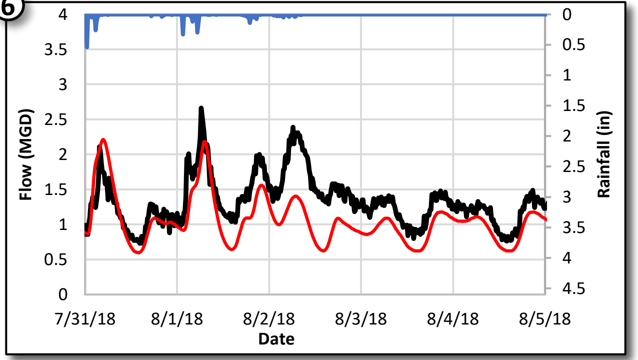

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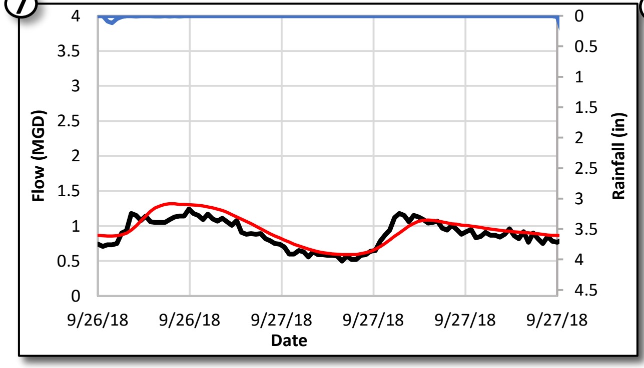

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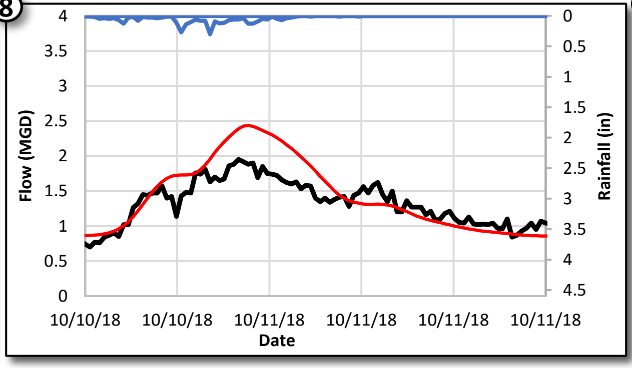

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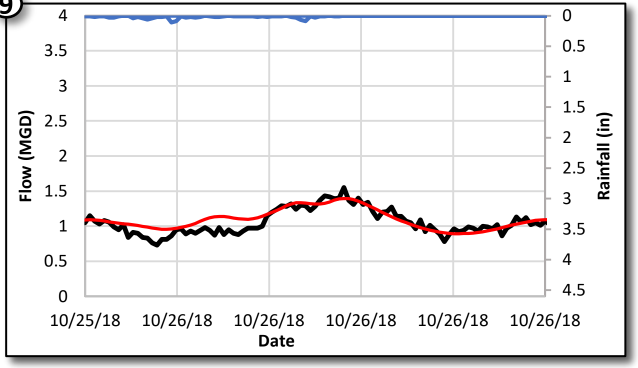


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK52

Sewershed:

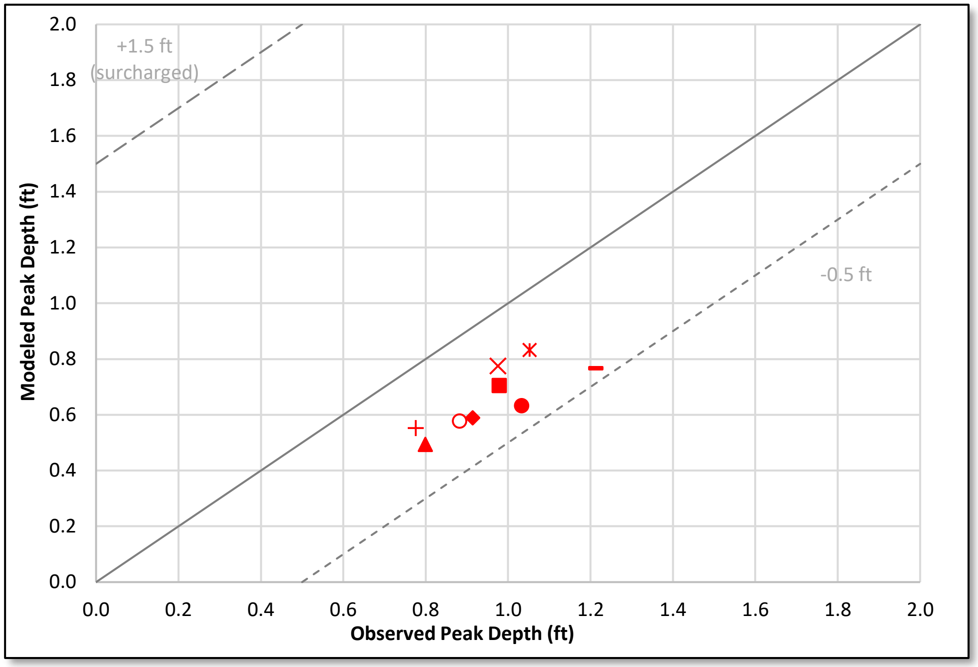
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



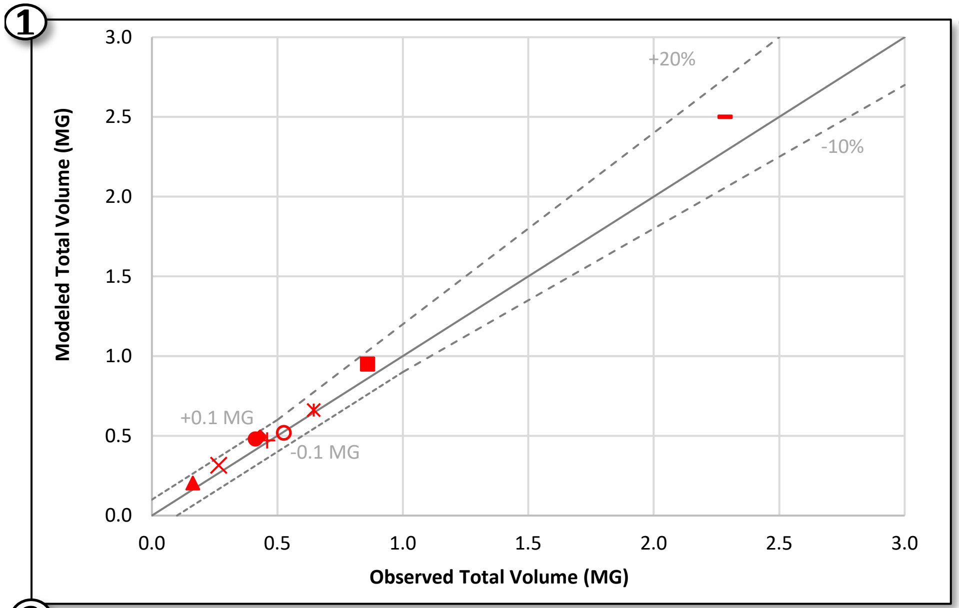
Flow Meter:

NFORK52

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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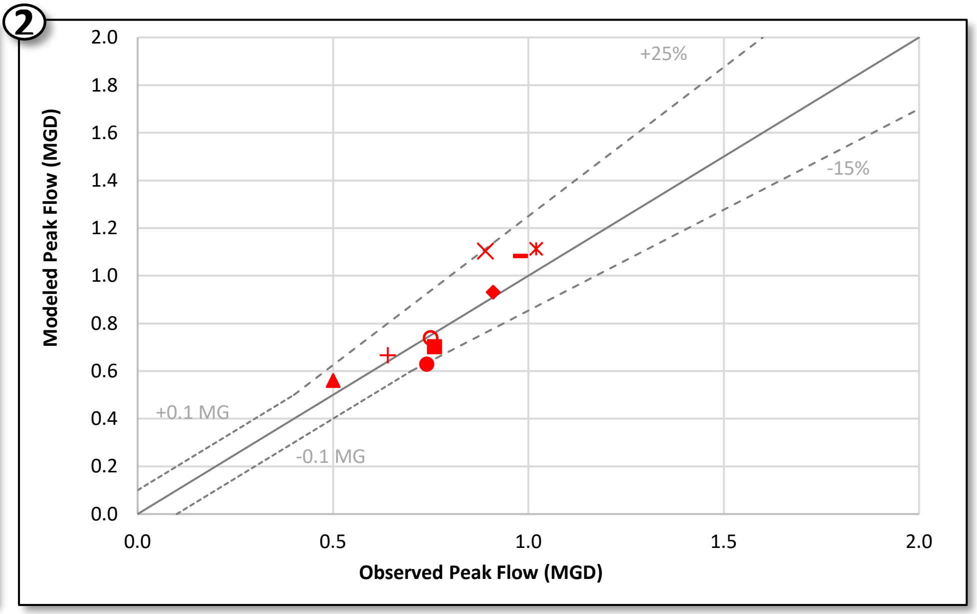

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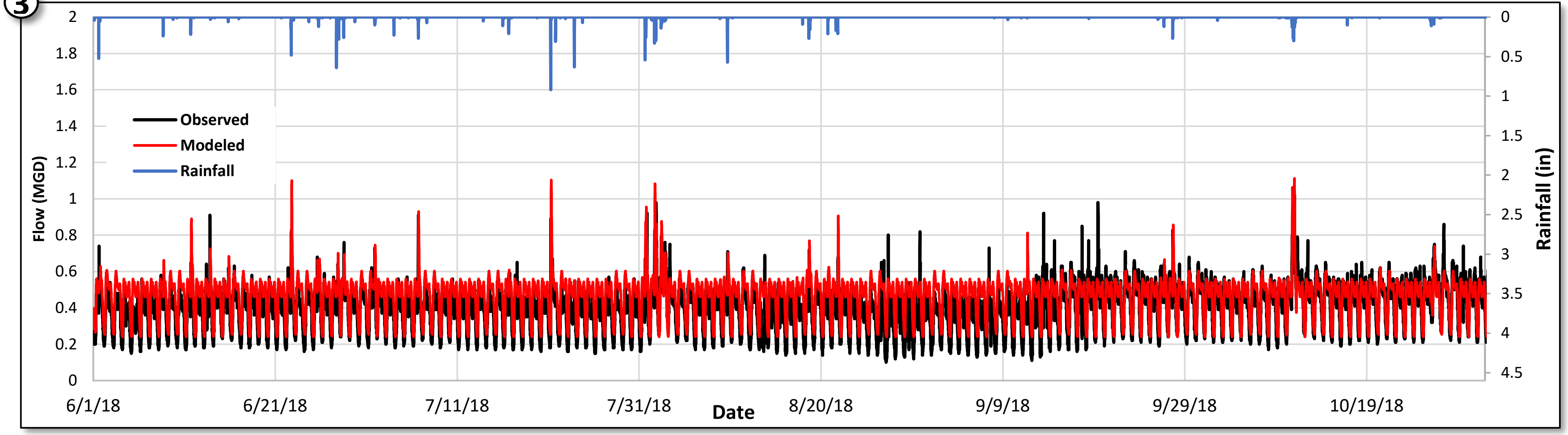


DeKalb Calibration Results

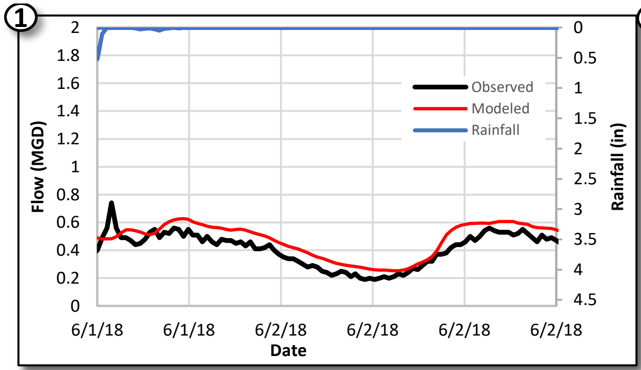
Wet Weather
Flow Summary

Flow Meter:
NFORK53
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①


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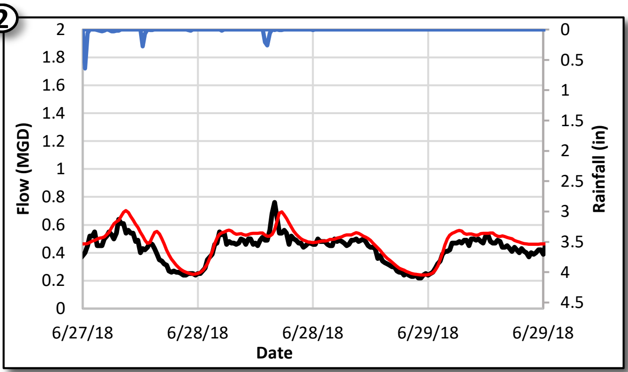

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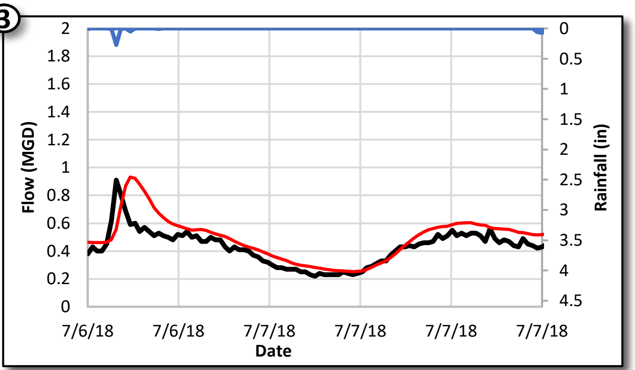

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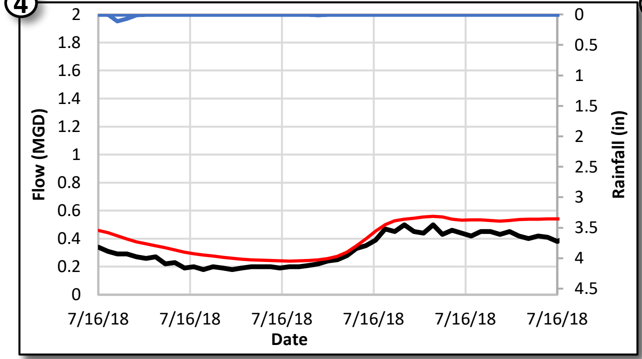

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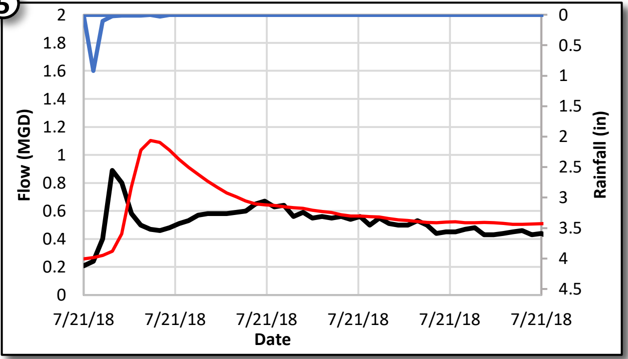

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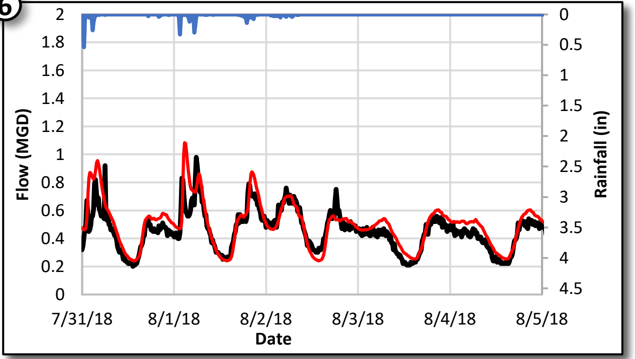

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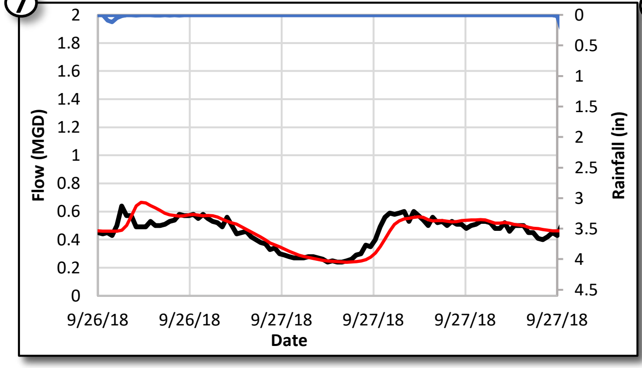

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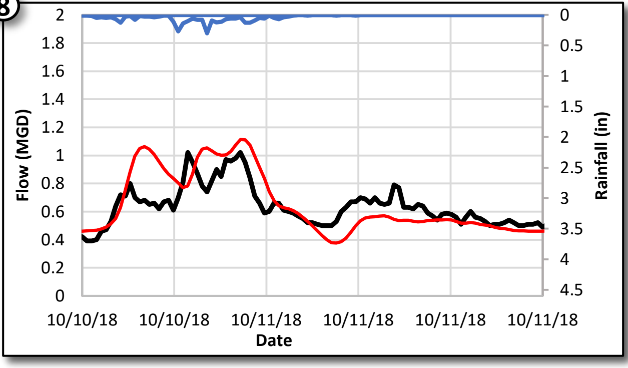

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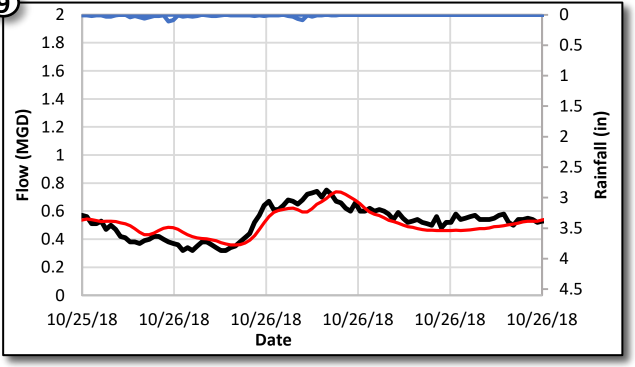


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK53

Sewershed:

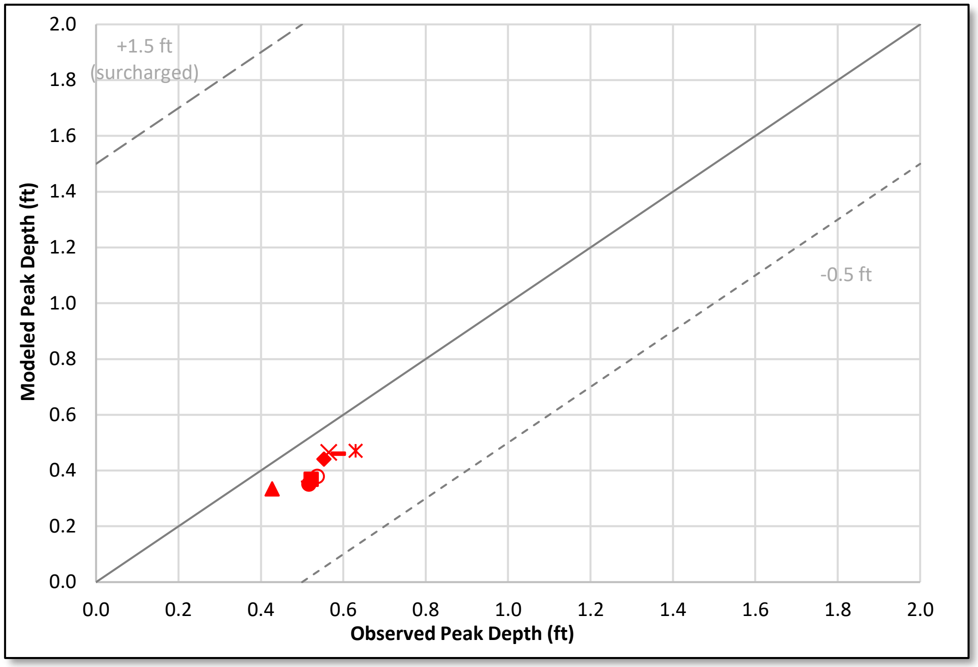
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



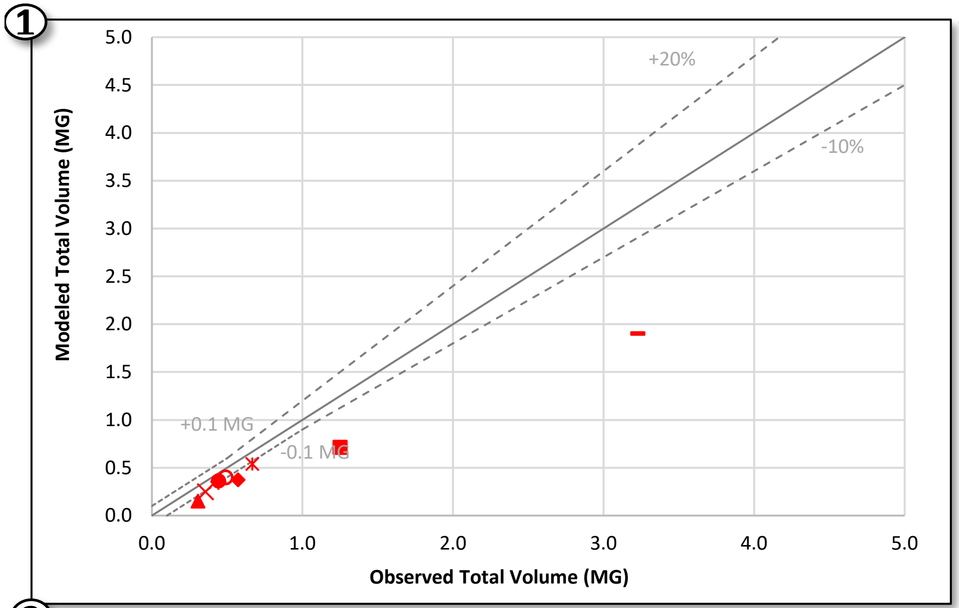
Flow Meter:

NFORK53

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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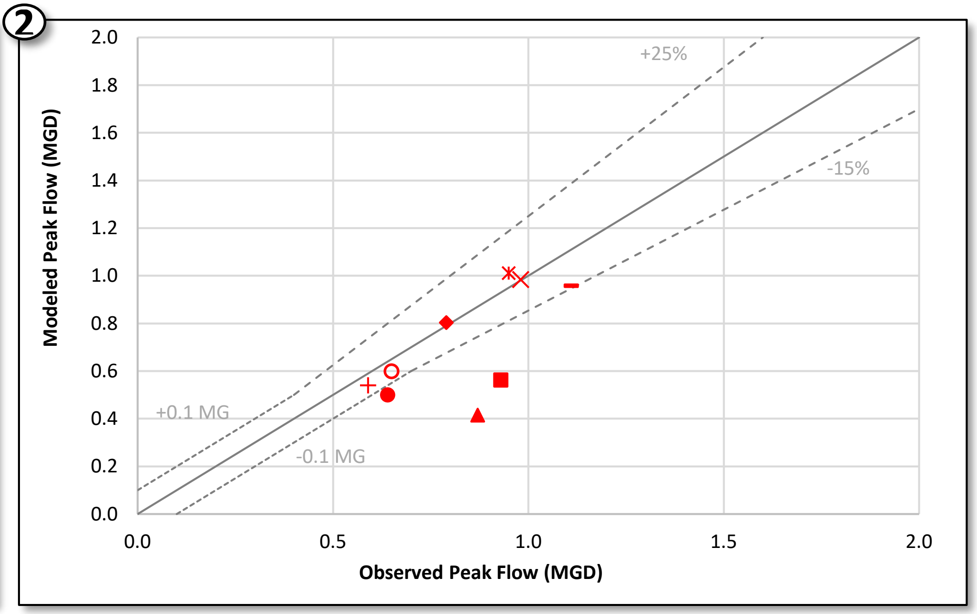

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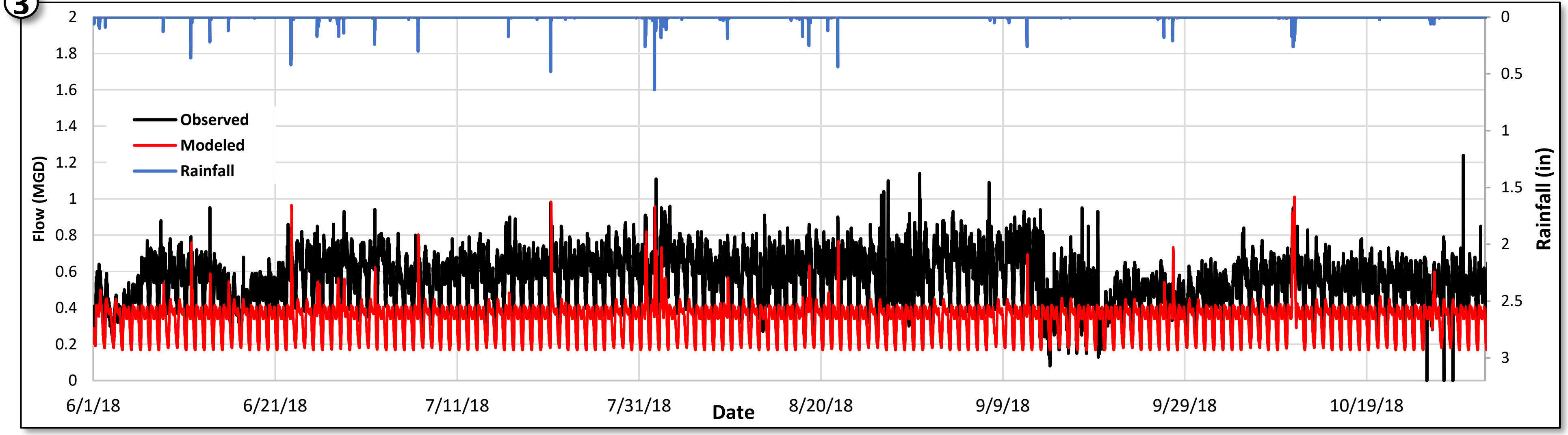


DeKalb Calibration Results

Wet Weather Flow Summary

Flow Meter:

NFORK54

Sewershed:

North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

① Total Event Volume

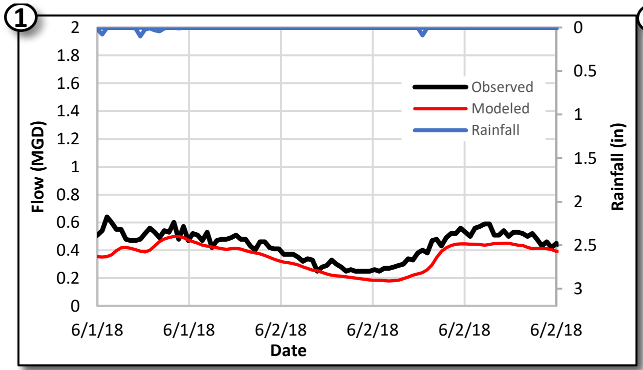
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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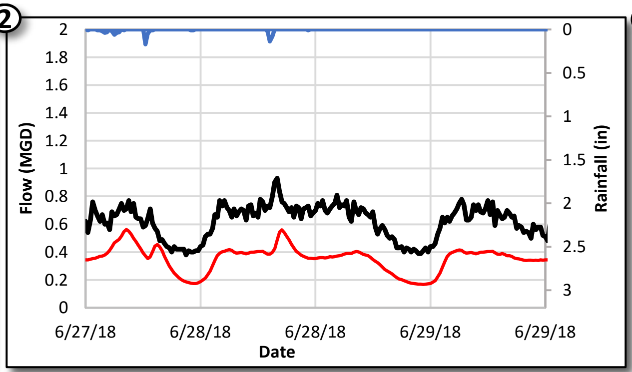

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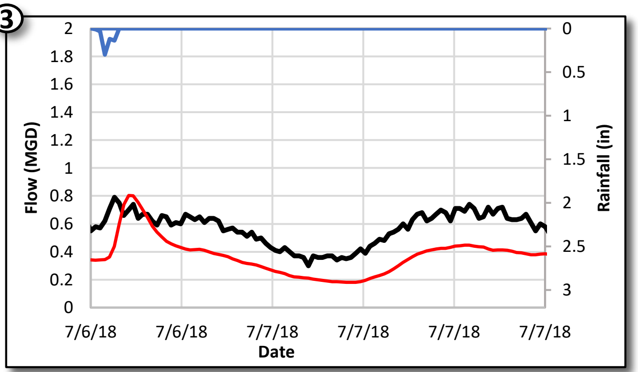

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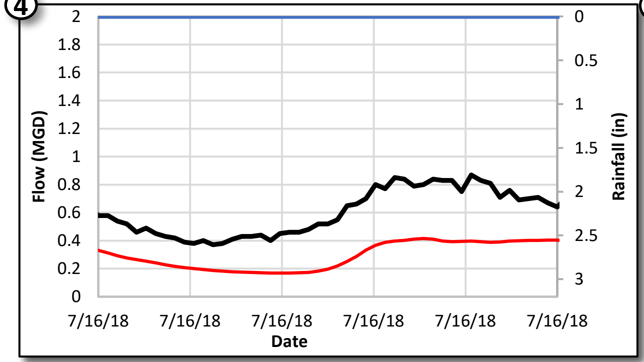

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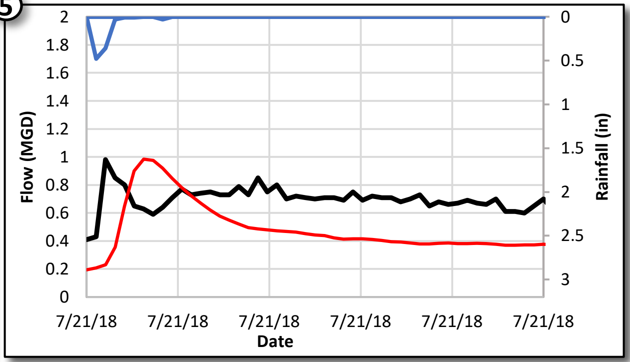

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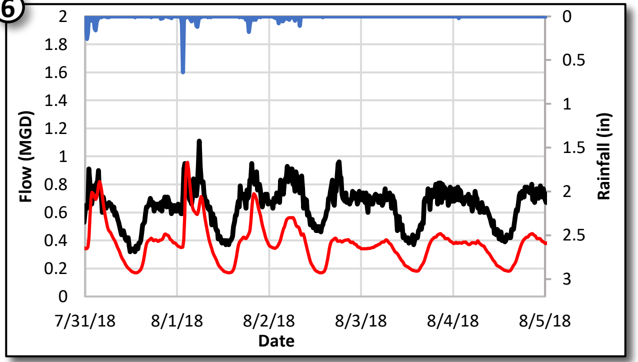

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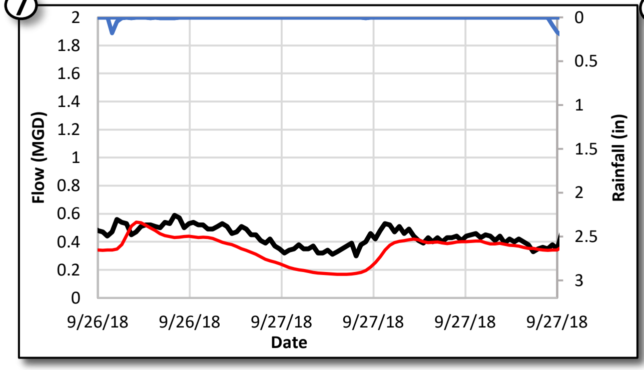

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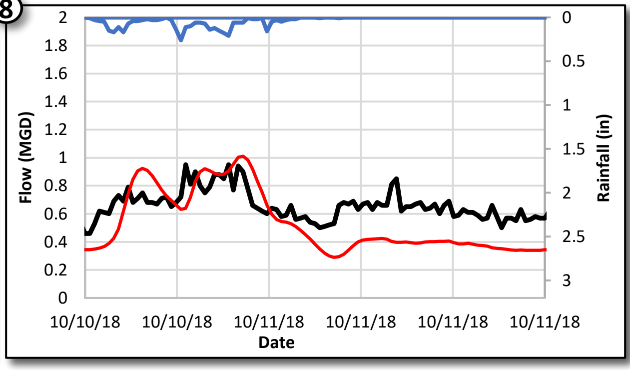

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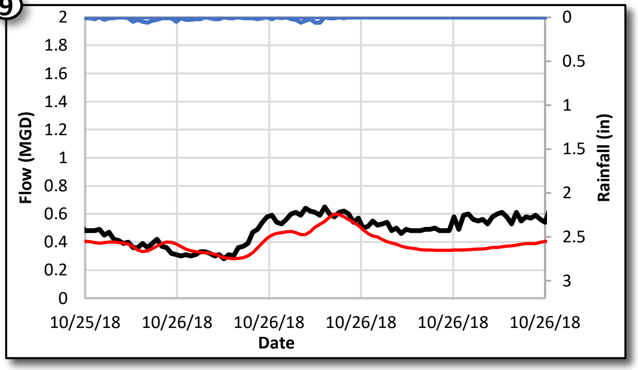


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK54

Sewershed:

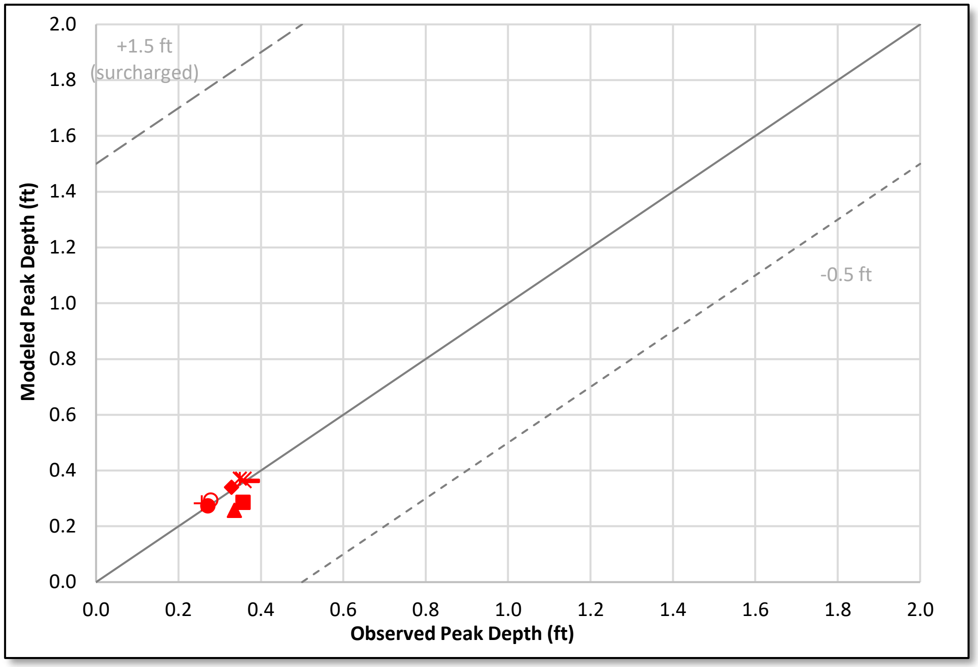
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



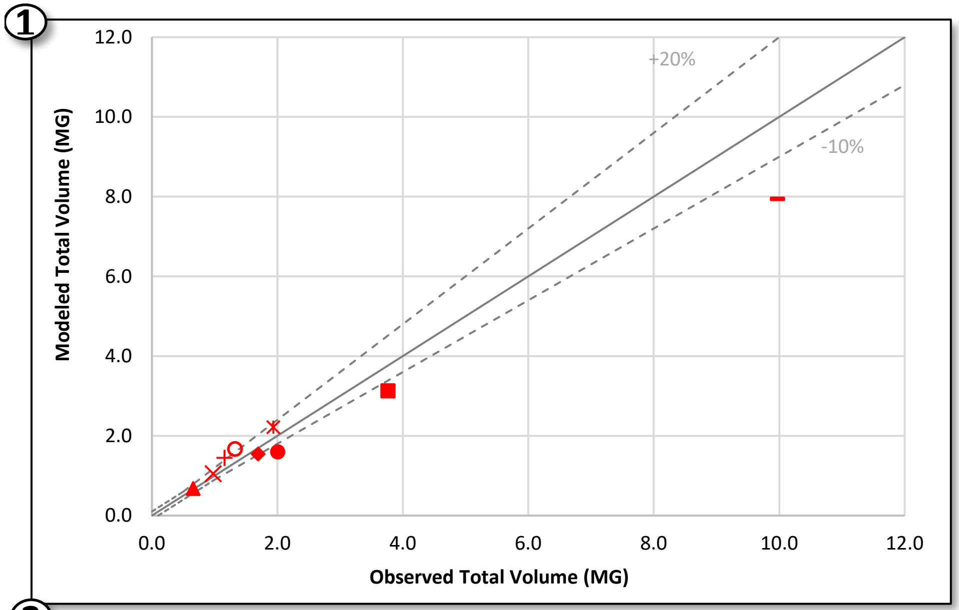
Flow Meter:

NFORK54

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	⁎	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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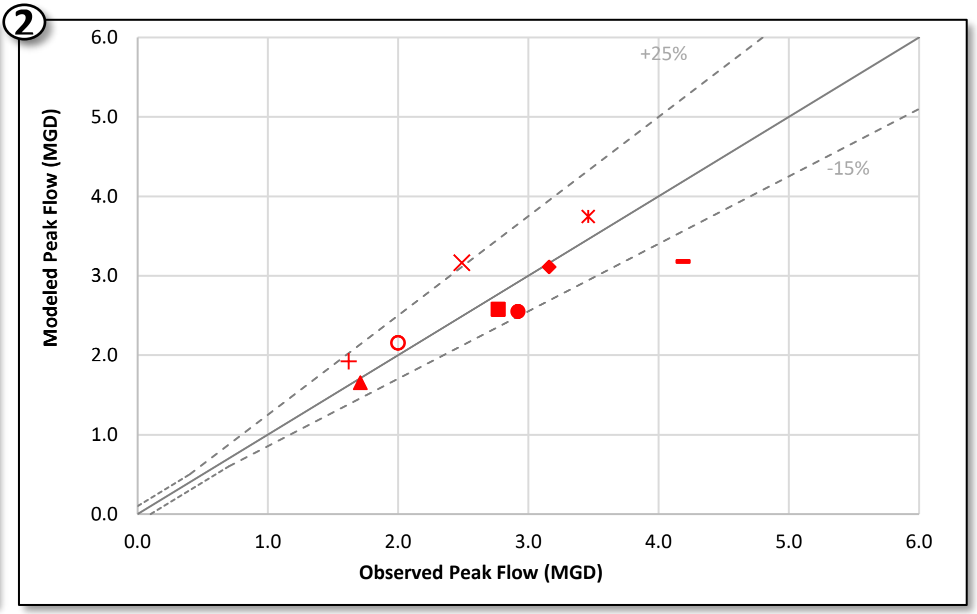

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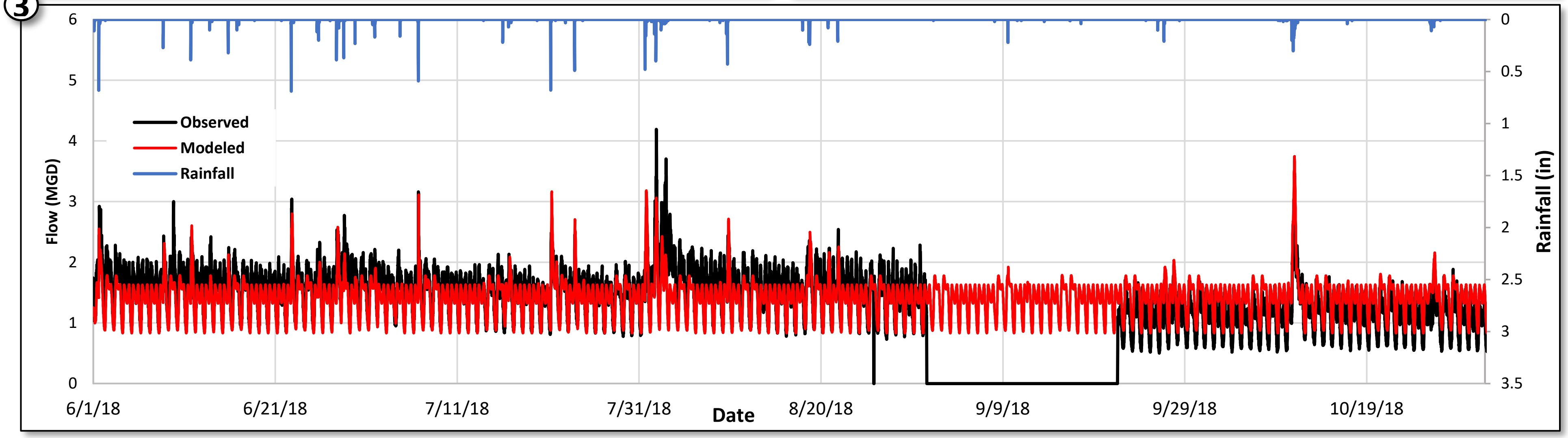


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK55

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

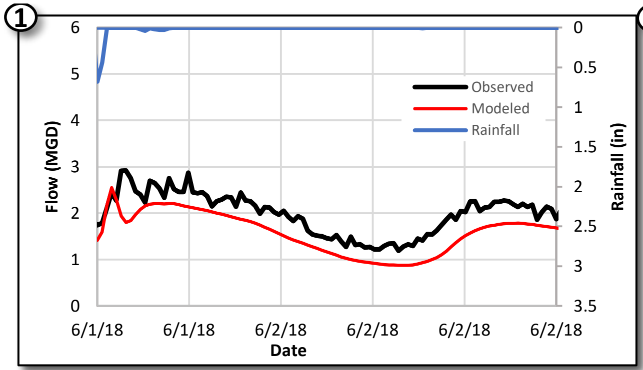
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
— 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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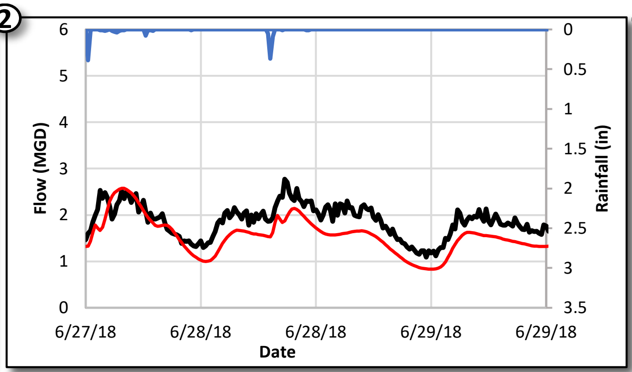

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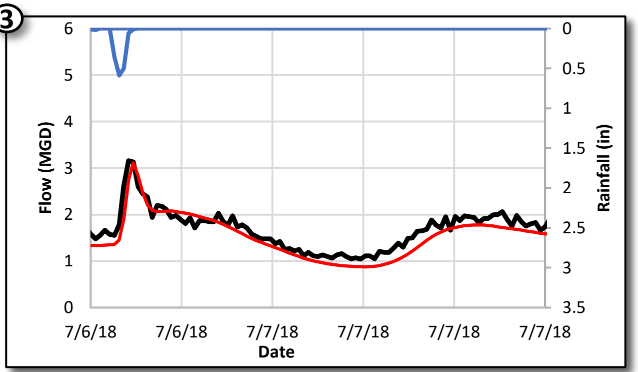

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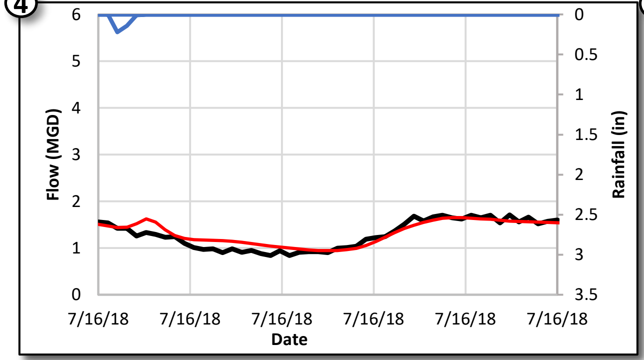

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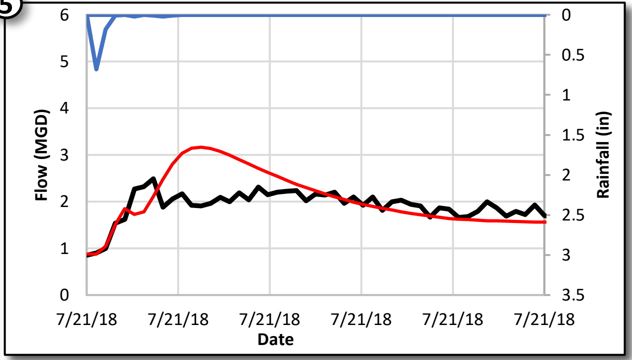

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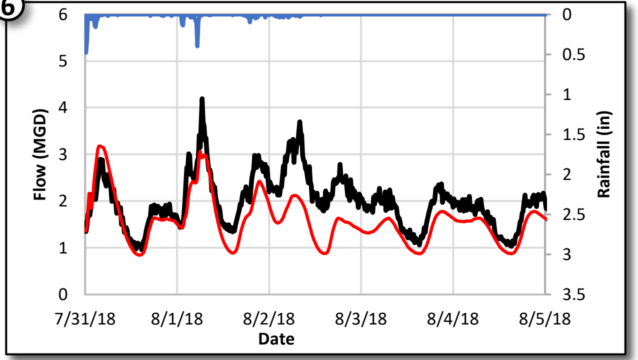

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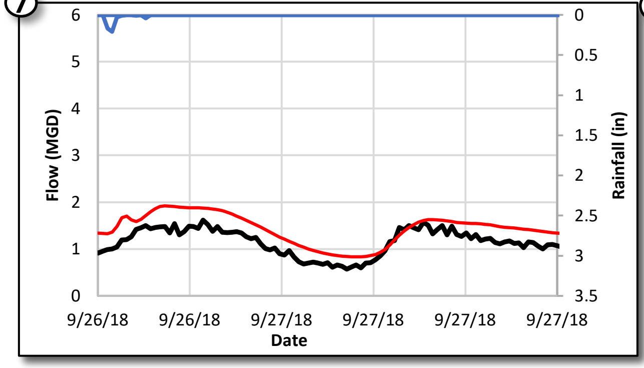

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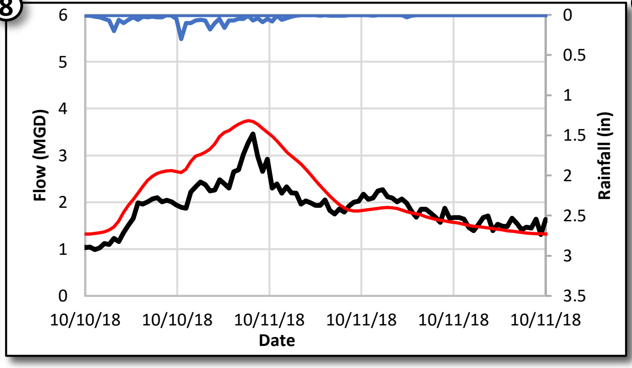

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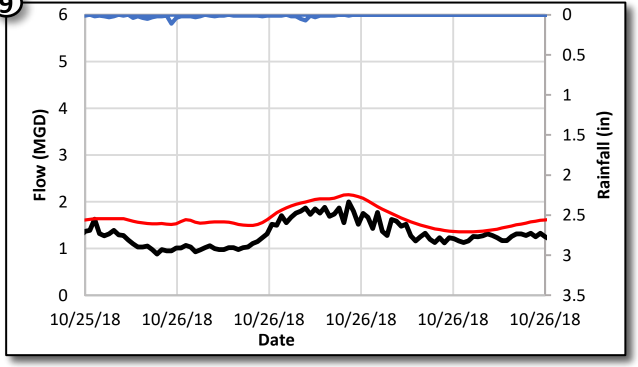


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK55

Sewershed:

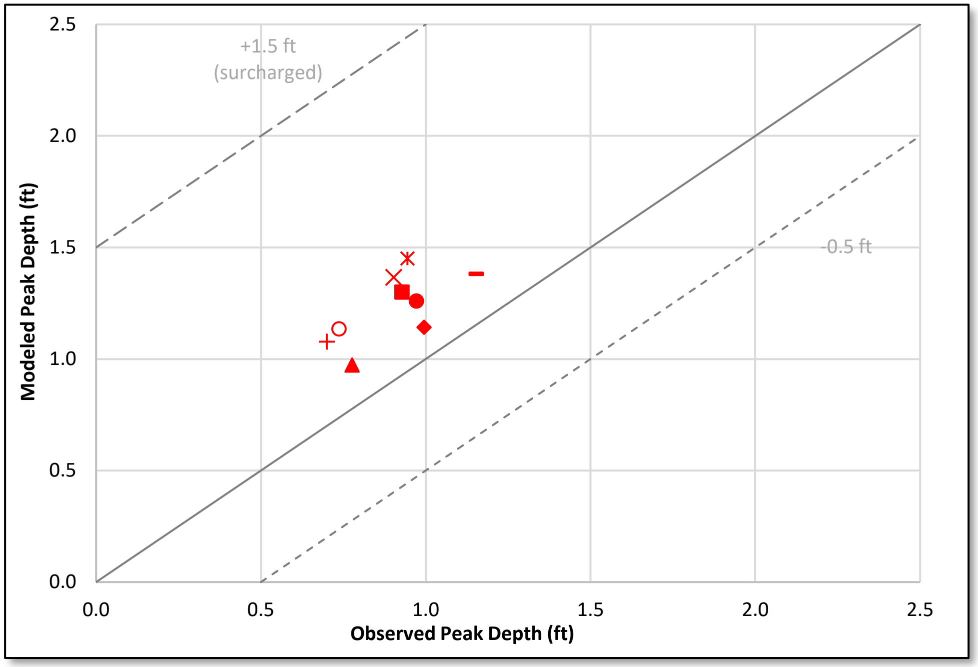
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues

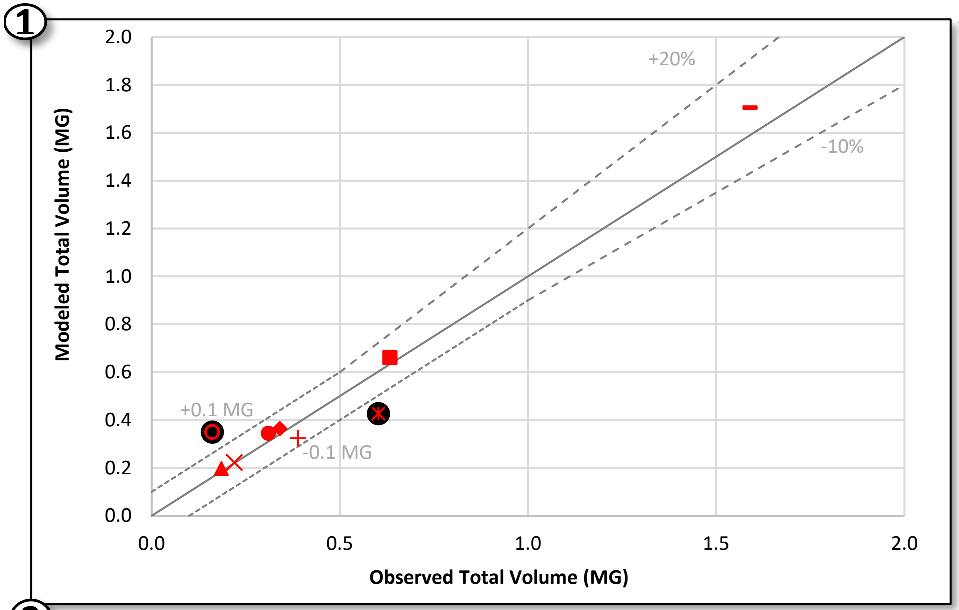


Flow Meter:

NFORK55

Events:

- ● 6/1/18
- ■ 6/27/18
- ◆ 7/6/18
- ▲ 7/16/18
- × 7/21/18
- – 7/31/18
- + 9/26/18
- ✳ 10/10/18
- ○ 10/25/18
- ● Data Quality Issues

①


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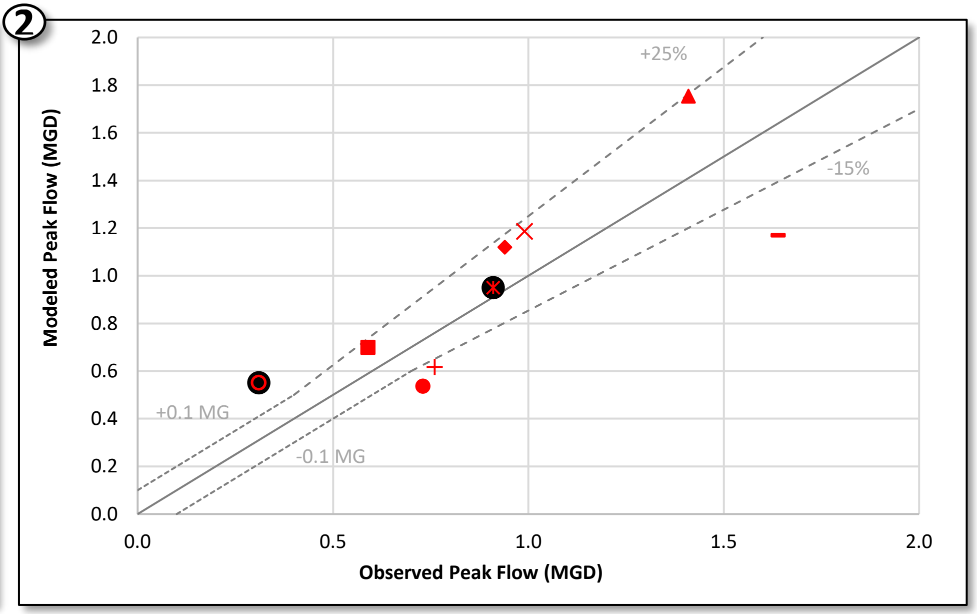

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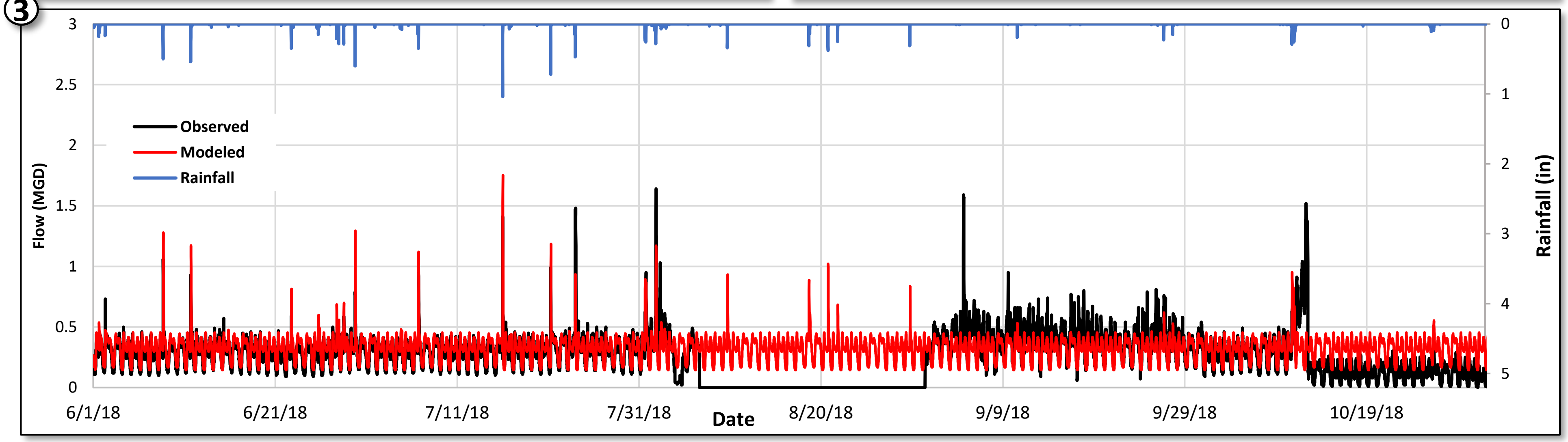


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

NFORK56

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

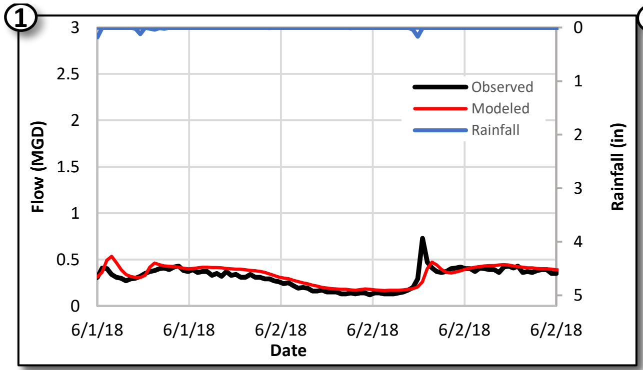
② Peak Event Flow

③ Time Series

Events:

● 6/1/18
■ 6/27/18
◆ 7/6/18
▲ 7/16/18
× 7/21/18
− 7/31/18
+ 9/26/18
✳ 10/10/18
○ 10/25/18
● Data Quality Issues

①



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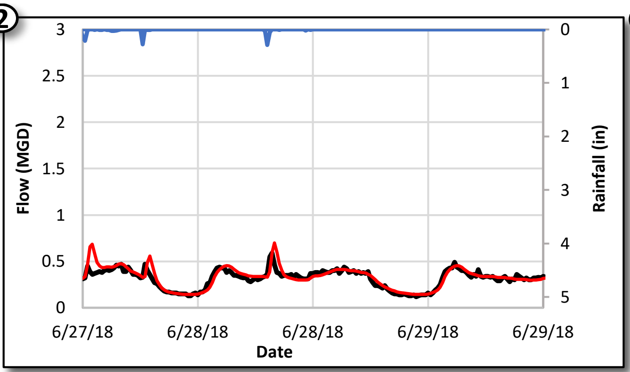

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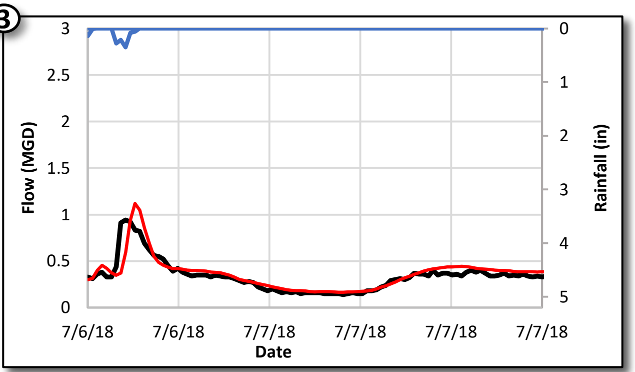

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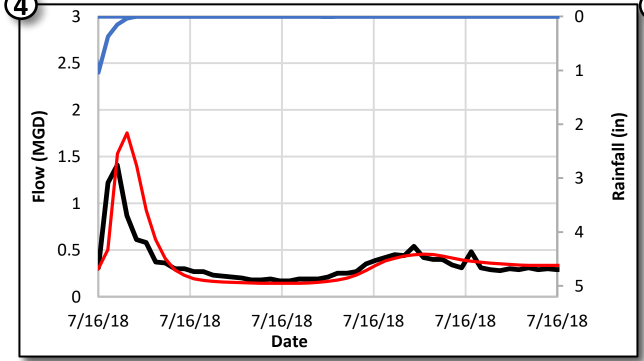

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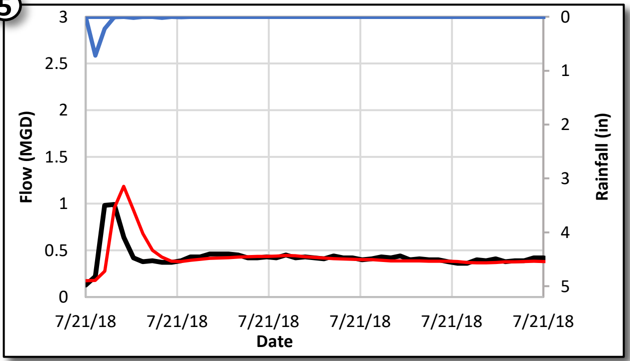

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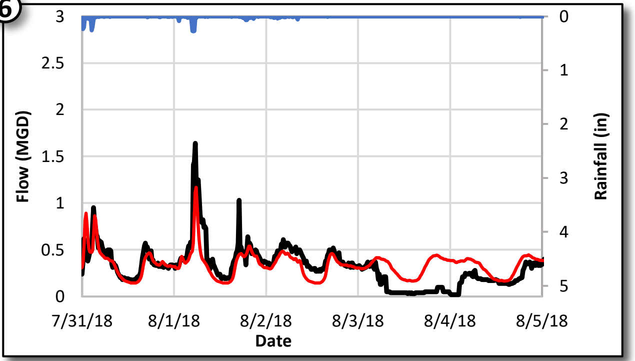

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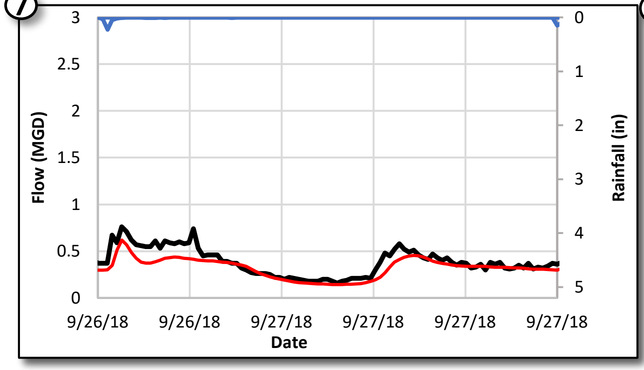

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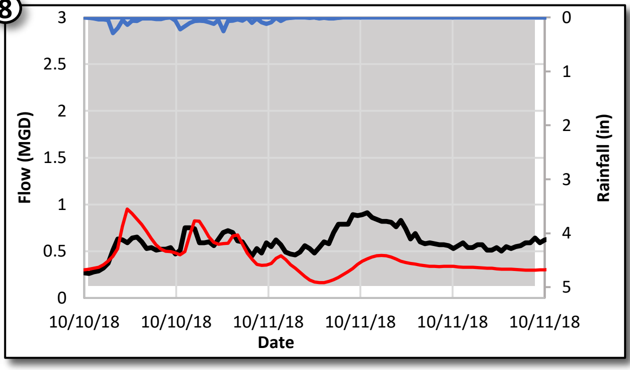

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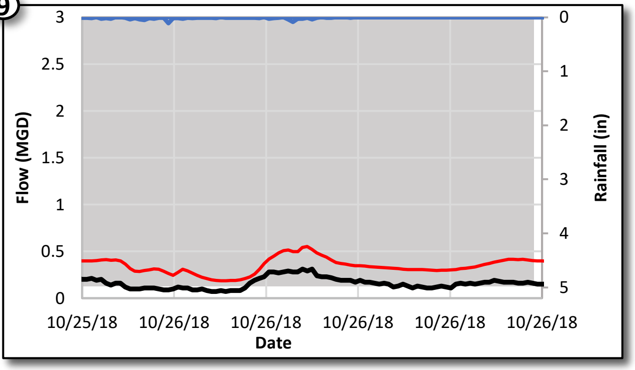


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

NFORK56

Sewershed:

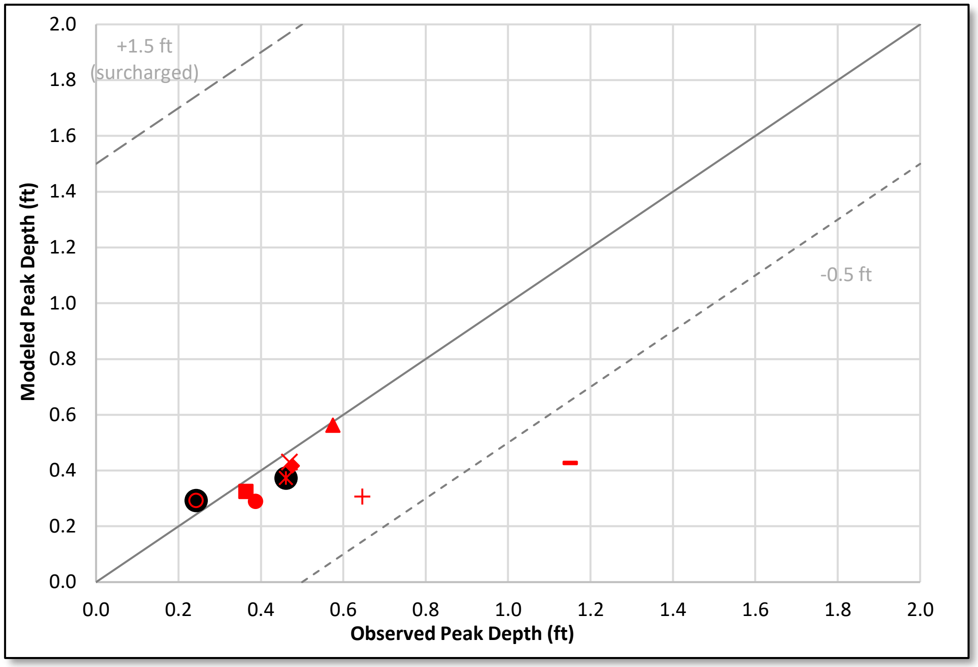
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

①	6/1/18	⑤	7/21/18	⑨	10/25/18
②	6/27/18	⑥	7/31/18	▨	Data Quality Issues
③	7/6/18	⑦	9/26/18		
④	7/16/18	⑧	10/10/18		



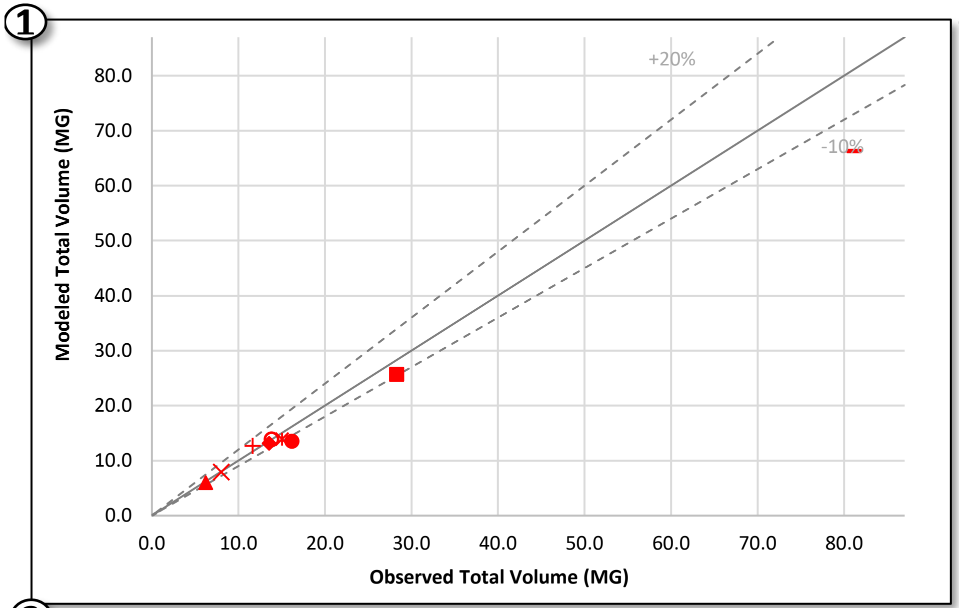
Flow Meter:

NFORK56

Events:

- ● 6/1/18
- ■ 6/27/18
- ◆ 7/6/18
- ▲ 7/16/18
- × 7/21/18
- − 7/31/18
- + 9/26/18
- ✱ 10/10/18
- ○ 10/25/18
- ● Data Quality Issues

①



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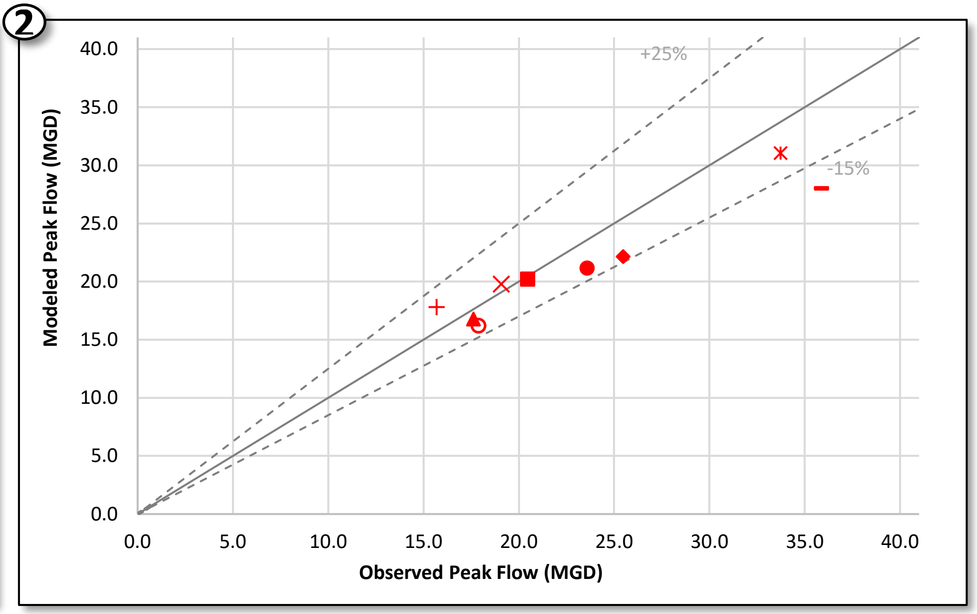

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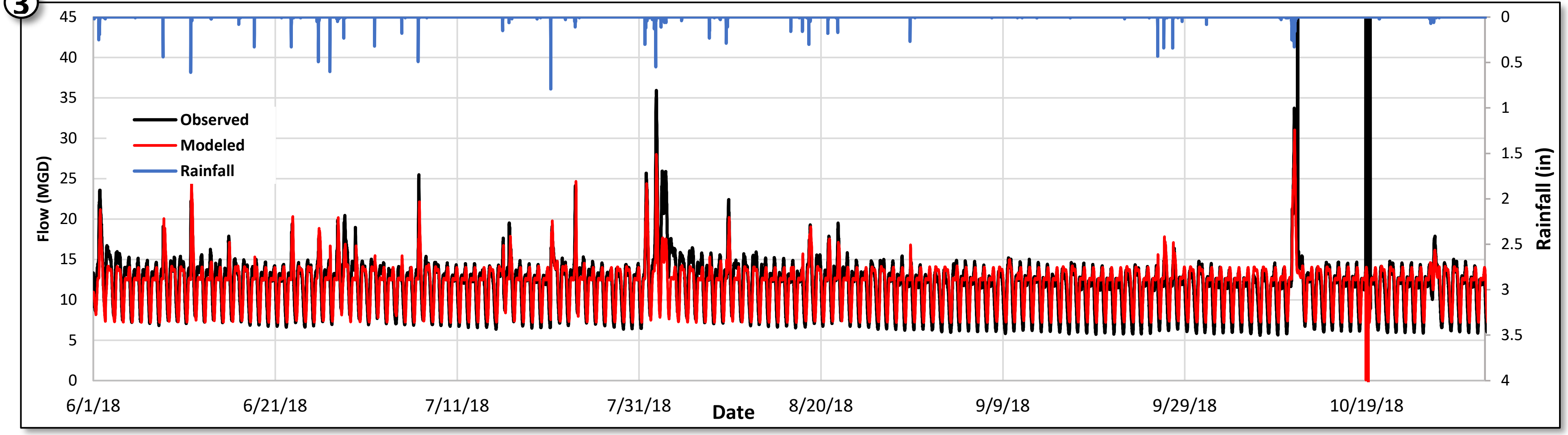


DeKalb Calibration Results

Wet Weather
Flow Summary

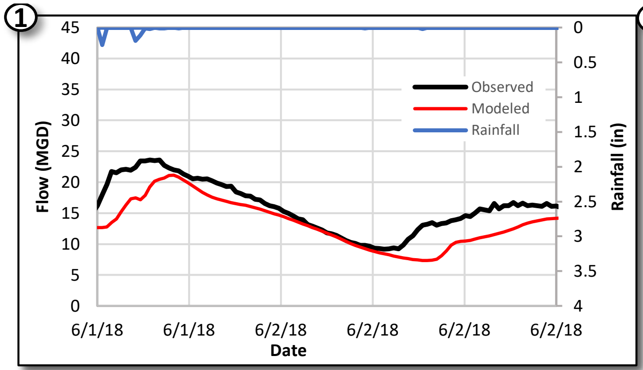
Flow Meter:
DK2
Sewershed:
North Fork Peachtree Creek
Sewer Basin:
Intergovernmental

① Total Event Volume
② Peak Event Flow
③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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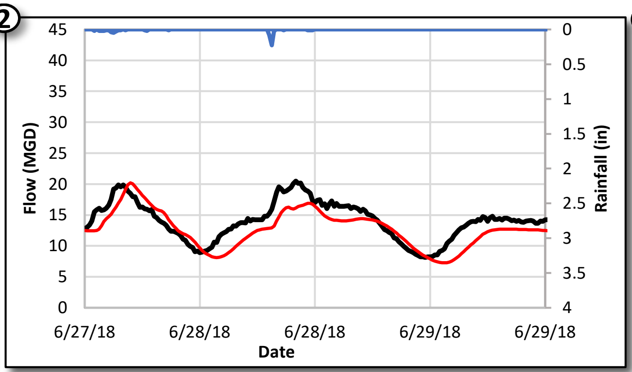

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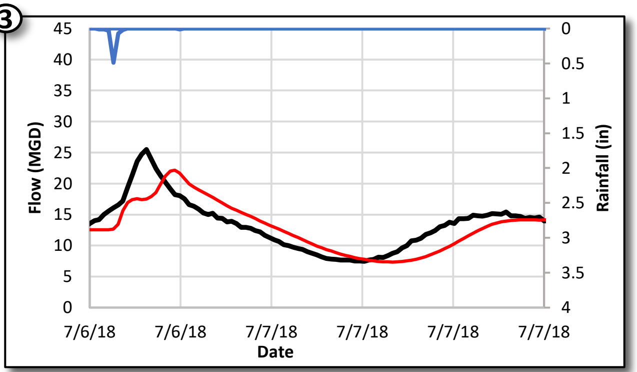

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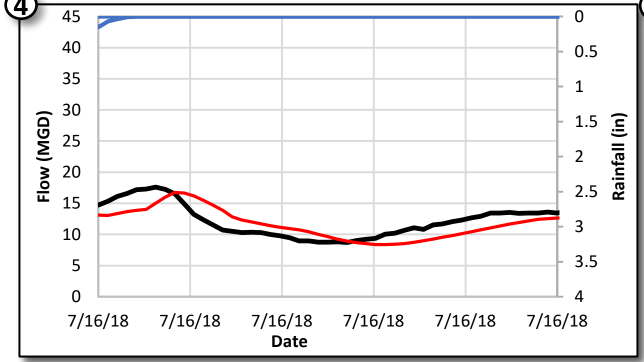

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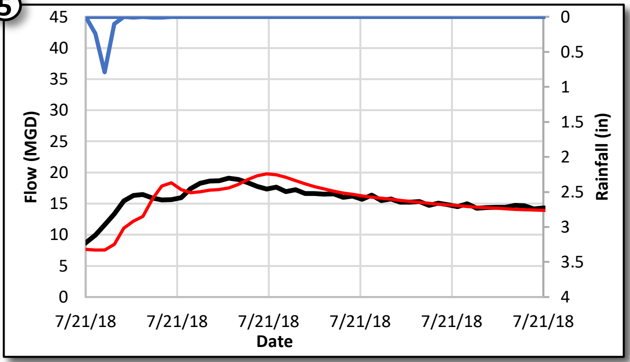

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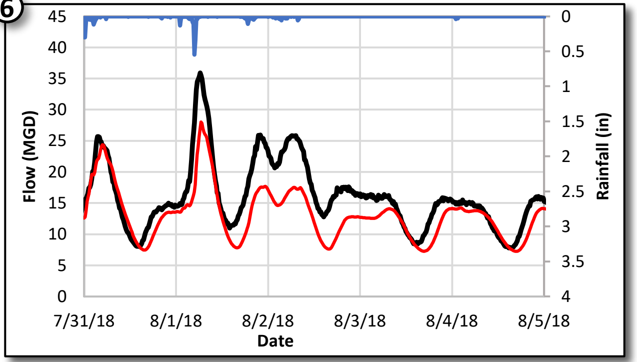

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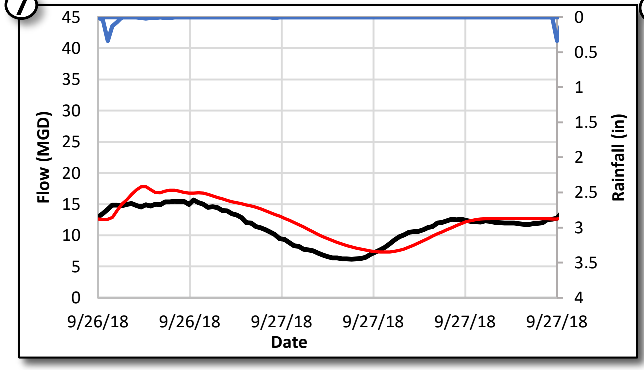

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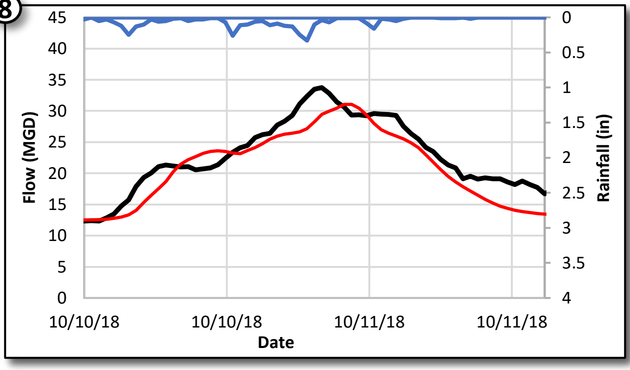

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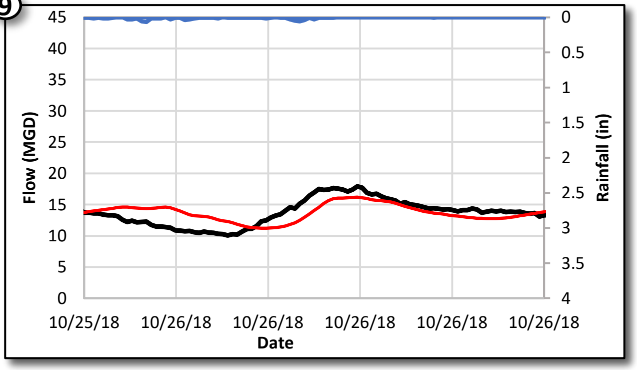


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

DK2

Sewershed:

North Fork Peachtree Creek

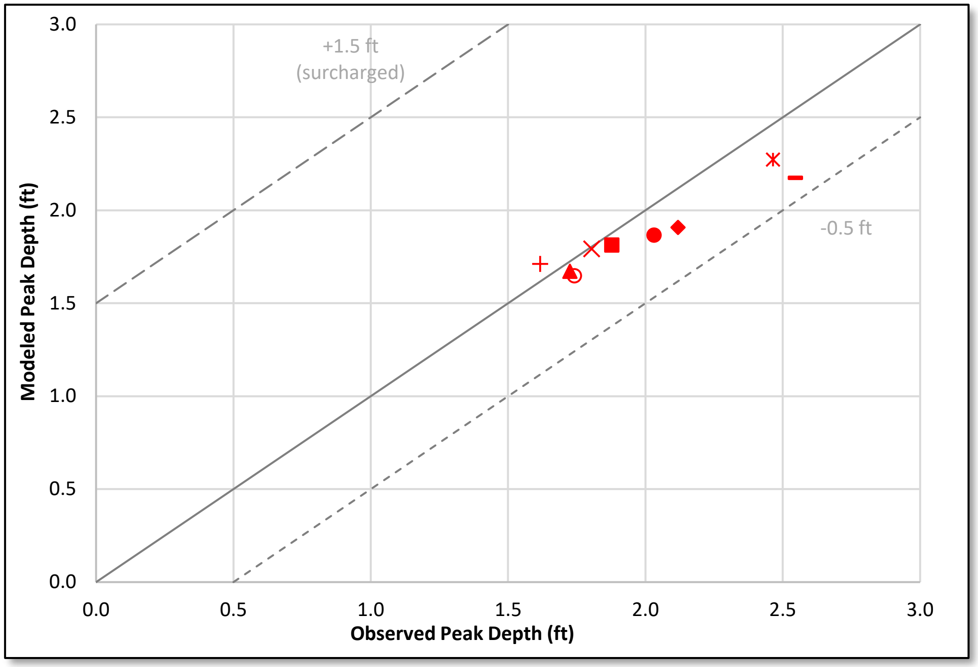
Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/16/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18

▨ Data Quality Issues



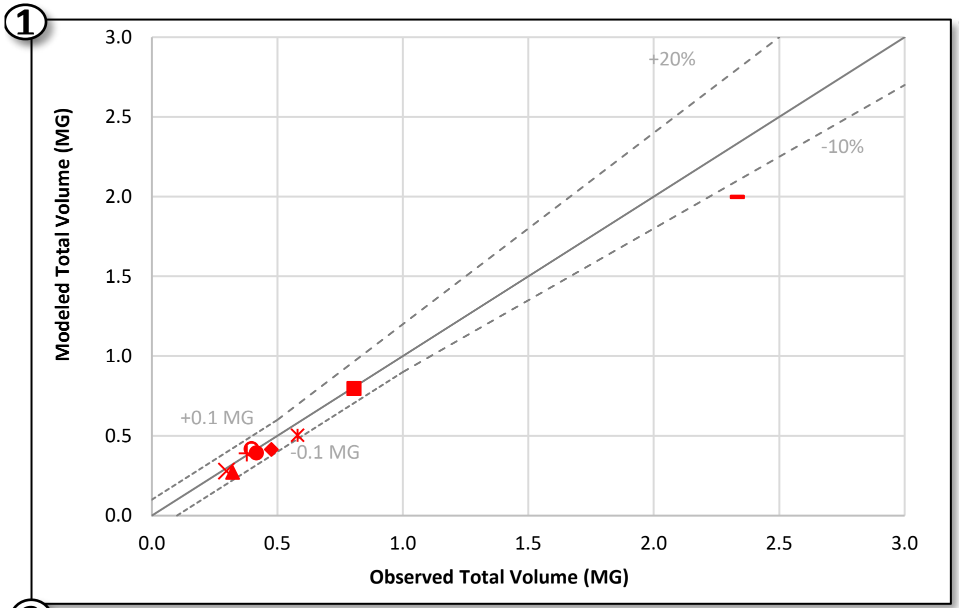
Flow Meter:

DK2

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✱	10/10/18
▲	7/16/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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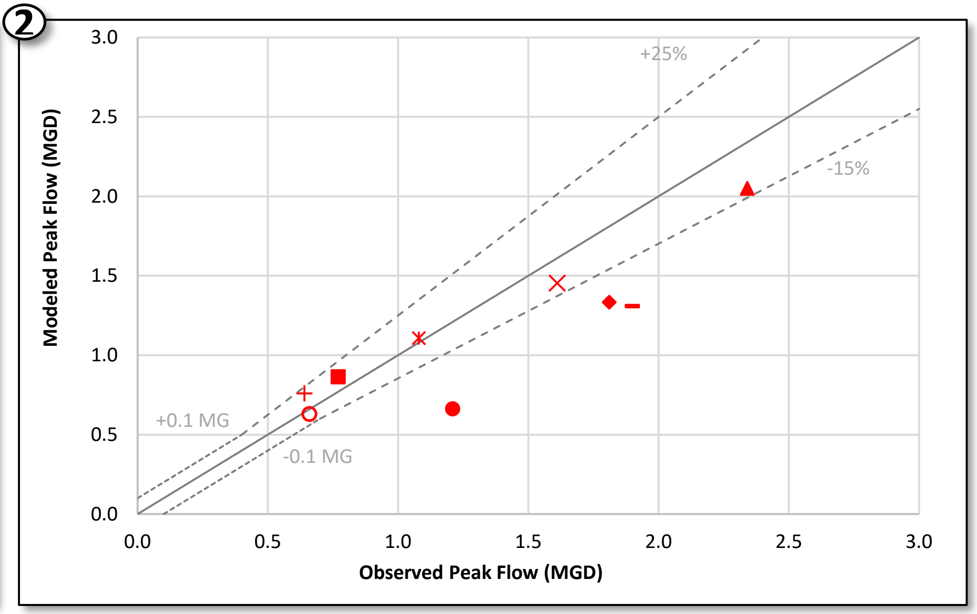

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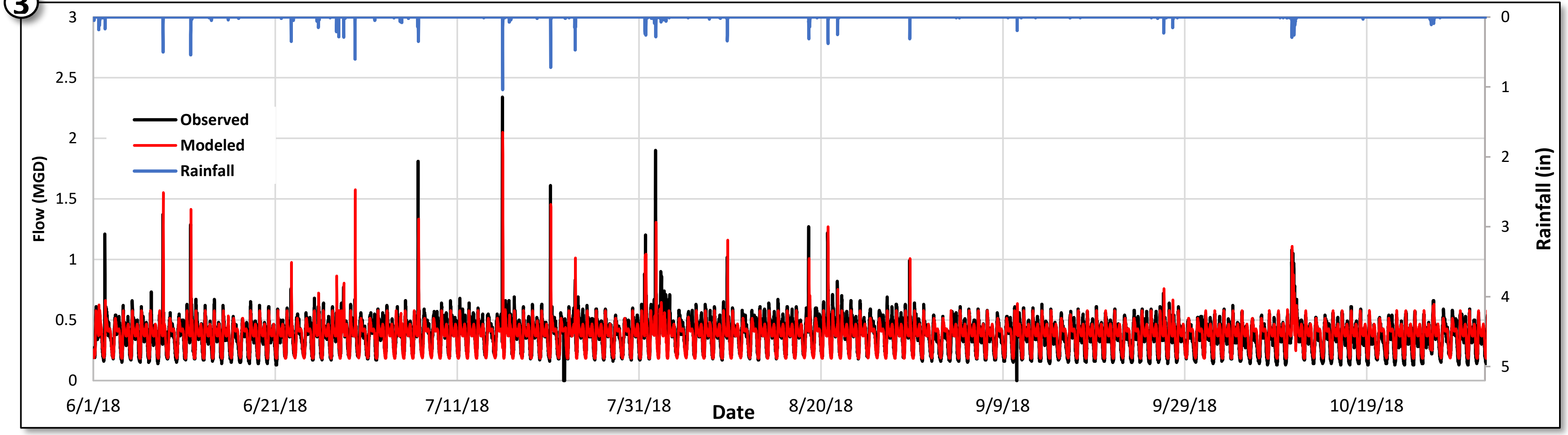


DeKalb Calibration Results

Wet Weather
Flow Summary

Flow Meter:

Roxboro

Sewershed:
North Fork Peachtree Creek

Sewer Basin:
Intergovernmental

① Total Event Volume

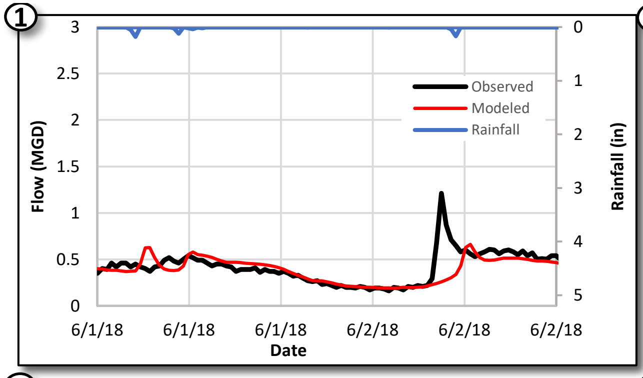
② Peak Event Flow

③ Time Series

Events:

●	6/1/18	—	7/31/18
■	6/27/18	+	9/26/18
◆	7/6/18	✳	10/10/18
▲	7/15/18	○	10/25/18
×	7/21/18	●	Data Quality Issues

①



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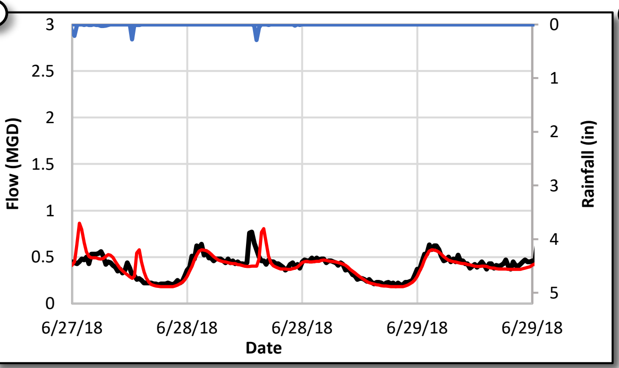

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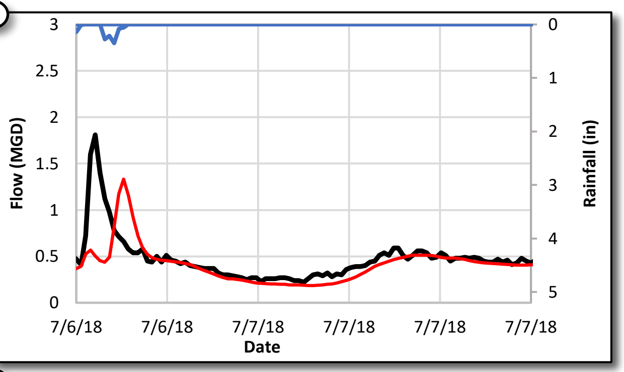

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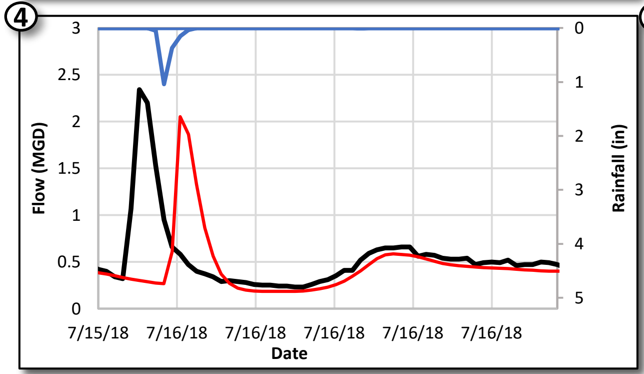

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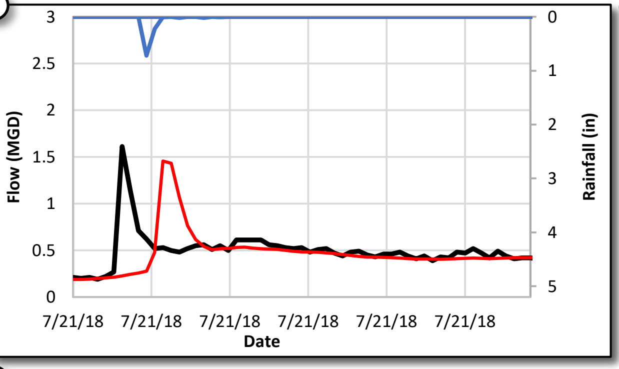
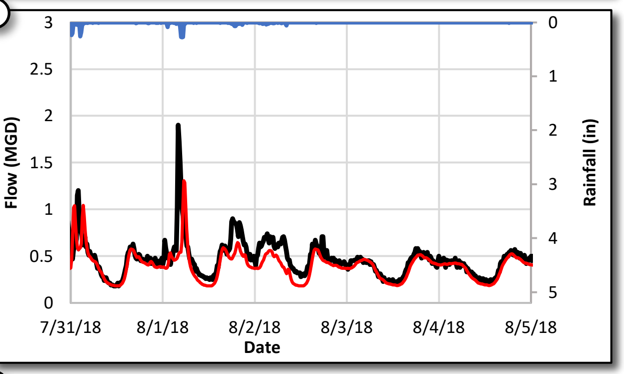


⑥



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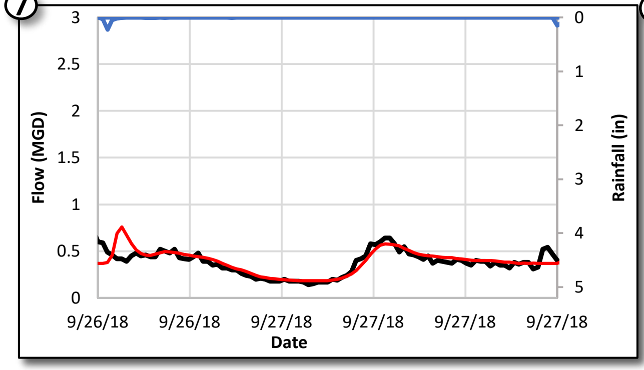

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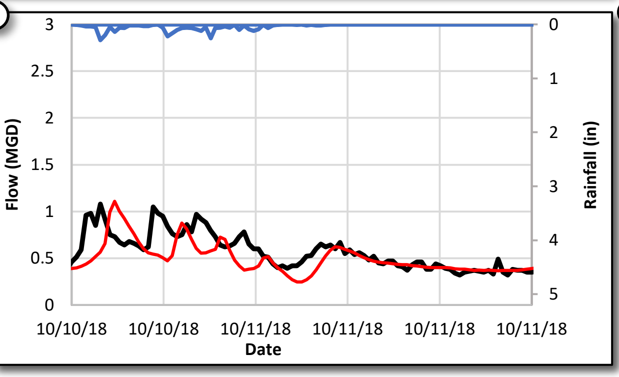

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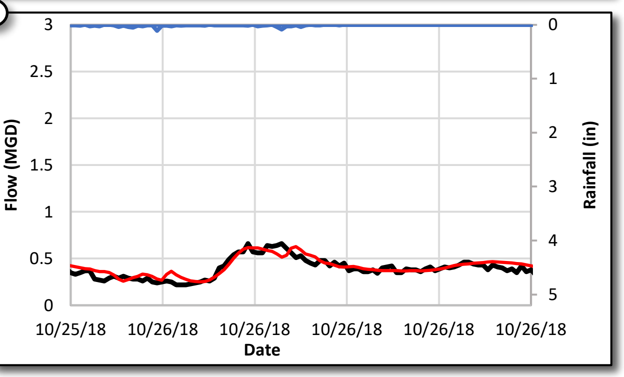


DeKalb Calibration Results

Event Hydrographs

Flow Meter:

Roxboro

Sewershed:

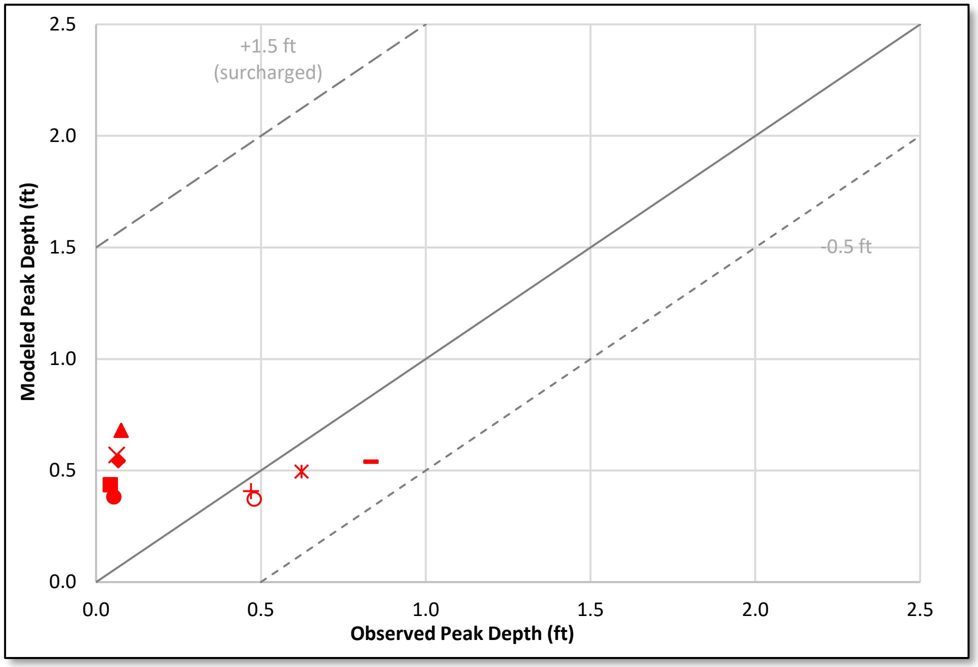
North Fork Peachtree Creek

Sewer Basin:

Intergovernmental

Events:

① 6/1/18
② 6/27/18
③ 7/6/18
④ 7/15/18
⑤ 7/21/18
⑥ 7/31/18
⑦ 9/26/18
⑧ 10/10/18
⑨ 10/25/18
▨ Data Quality Issues



Flow Meter:

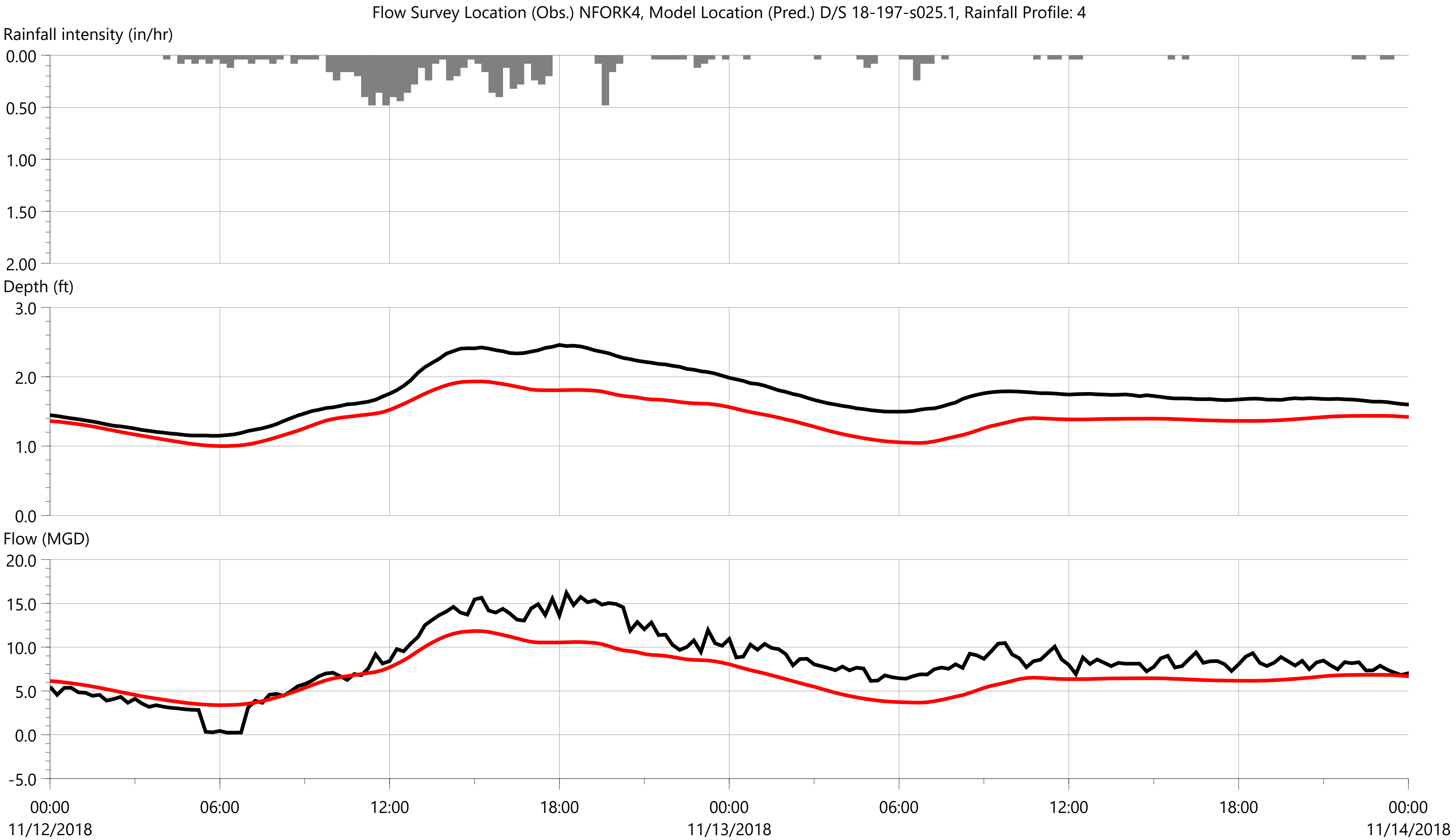
Roxboro

Events:

- ● 6/1/18
- ■ 6/27/18
- ◆ 7/6/18
- ▲ 7/15/18
- × 7/21/18
- — 7/31/18
- + 9/26/18
- ✳ 10/10/18
- ○ 10/25/18
- ● Data Quality Issues

Appendix D
WWF Verification

Meter ID	Monitored				Modeled			Comparison			
	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (ft)	Observed Surcharge?	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (ft)	Peak Flow (mgd)	Total Volume (MG)	Peak Depth (ft)	Predicted Surcharge?
NFORK4	16.20	17.24	2.46	N	11.84	13.53	1.93	-27%	-22%	-0.53	N
NFORK5	1.30	0.72	0.51	N	0.78	0.59	0.42	-40%	-18%	-0.10	N
NFORK6	5.84	5.02	4.42	Y	4.07	3.52	1.24	-30%	-30%	-3.18	N
NFORK8	3.29	1.90	1.47	N	2.31	1.38	1.06	-30%	-28%	-0.41	N
NFORK9	1.36	1.35	1.41	Y	1.27	1.29	0.88	-6%	-4%	-0.52	N
NFORK10	11.98	10.69	1.84	N	6.35	6.60	1.22	-47%	-38%	-0.63	N
NFORK16	1.91	1.88	1.06	N	1.29	1.16	0.56	-32%	-38%	-0.51	N
NFORK17	9.43	8.88	1.54	N	8.08	8.83	1.24	-14%	-1%	-0.30	N
NFORK18	5.91	6.30	1.59	N	4.23	4.19	1.16	-28%	-33%	-0.43	N
NFORK20	5.36	5.77	1.45	N	3.87	3.93	0.96	-28%	-32%	-0.49	N
NFORK23	7.36	7.41	1.66	N	4.74	5.01	1.10	-36%	-32%	-0.56	N
NFORK24	3.38	4.59	1.17	N	3.13	3.37	0.83	-8%	-26%	-0.34	N
NFORK26	2.55	2.53	1.10	N	2.23	2.02	0.85	-13%	-20%	-0.25	N
NFORK28	2.51	2.32	2.82	Y	2.26	1.92	0.98	-10%	-17%	-1.83	N
NFORK29	1.37	1.47	0.47	N	1.18	1.06	0.58	-14%	-28%	0.11	N
NFORK30	1.13	0.45	0.68	N	1.13	0.45	0.60	0%	1%	-0.08	N
NFORK32	1.59	1.42	0.66	N	1.03	1.03	0.46	-35%	-28%	-0.20	N
NFORK36	19.10	16.43	2.04	N	12.21	13.18	1.51	-36%	-20%	-0.53	N
NFORK37	15.70	16.19	2.12	N	11.42	12.78	1.78	-27%	-21%	-0.34	N
NFORK38	10.61	9.36	1.99	N	5.84	5.82	1.28	-45%	-38%	-0.71	N
NFORK39	1.20	1.16	0.69	N	1.35	1.26	0.42	13%	9%	-0.26	N
NFORK40	2.42	3.25	1.42	N	2.84	2.94	1.12	17%	-9%	-0.30	N
NFORK43	10.28	11.05	2.04	N	7.97	8.57	1.29	-23%	-22%	-0.75	N
NFORK47	5.70	5.98	0.98	N	4.44	4.53	0.79	-22%	-24%	-0.18	N
NFORK48	0.56	0.48	0.37	N	0.34	0.42	0.32	-39%	-14%	-0.05	N
NFORK49_2	1.15	0.72	1.27	N	0.53	0.36	0.38	-54%	-50%	-0.89	N
NFORK50	2.00	1.90	0.58	N	1.34	1.26	0.49	-33%	-33%	-0.09	N
NFORK51	3.98	3.56	1.35	N	3.05	2.68	1.09	-23%	-25%	-0.26	N
NFORK52	3.46	3.76	1.40	N	2.29	2.37	0.79	-34%	-37%	-0.61	N
NFORK53	1.30	1.43	0.68	N	1.13	1.08	0.48	-13%	-25%	-0.20	N
NFORK54	1.22	1.59	0.41	N	0.99	0.84	0.37	-19%	-47%	-0.04	N
NFORK55	4.26	4.28	1.12	N	3.23	3.56	1.43	-24%	-17%	0.31	N
NFORK56	2.38	1.12	1.22	N	0.77	0.72	0.34	-68%	-36%	-0.88	N
DK2	44.42	44.49	2.84	N	25.50	29.58	2.12	-43%	-34%	-0.73	N
Roxboro	1.21	1.10	0.66	N	0.87	0.86	0.44	-28%	-21%	-0.22	N



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	🟦	2.860	0.480	0.060					
Observed	⬛				1.147	2.459	0.250	16.200	16.868
...ainfall Event_2018	🟥				1.001	1.933	3.382	11.838	13.424

Observed / Predicted Report (Custom graph) - Graph Template

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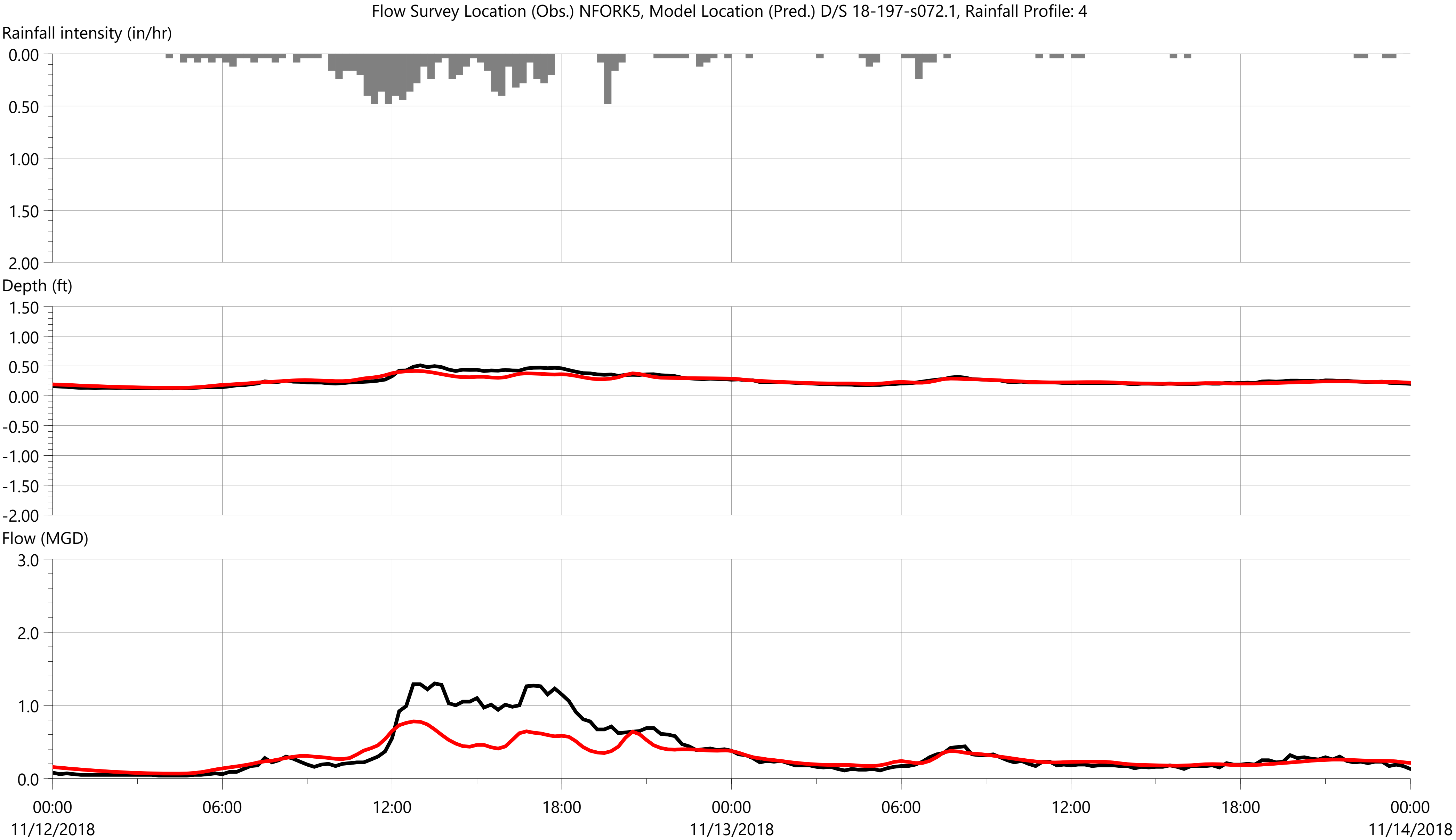
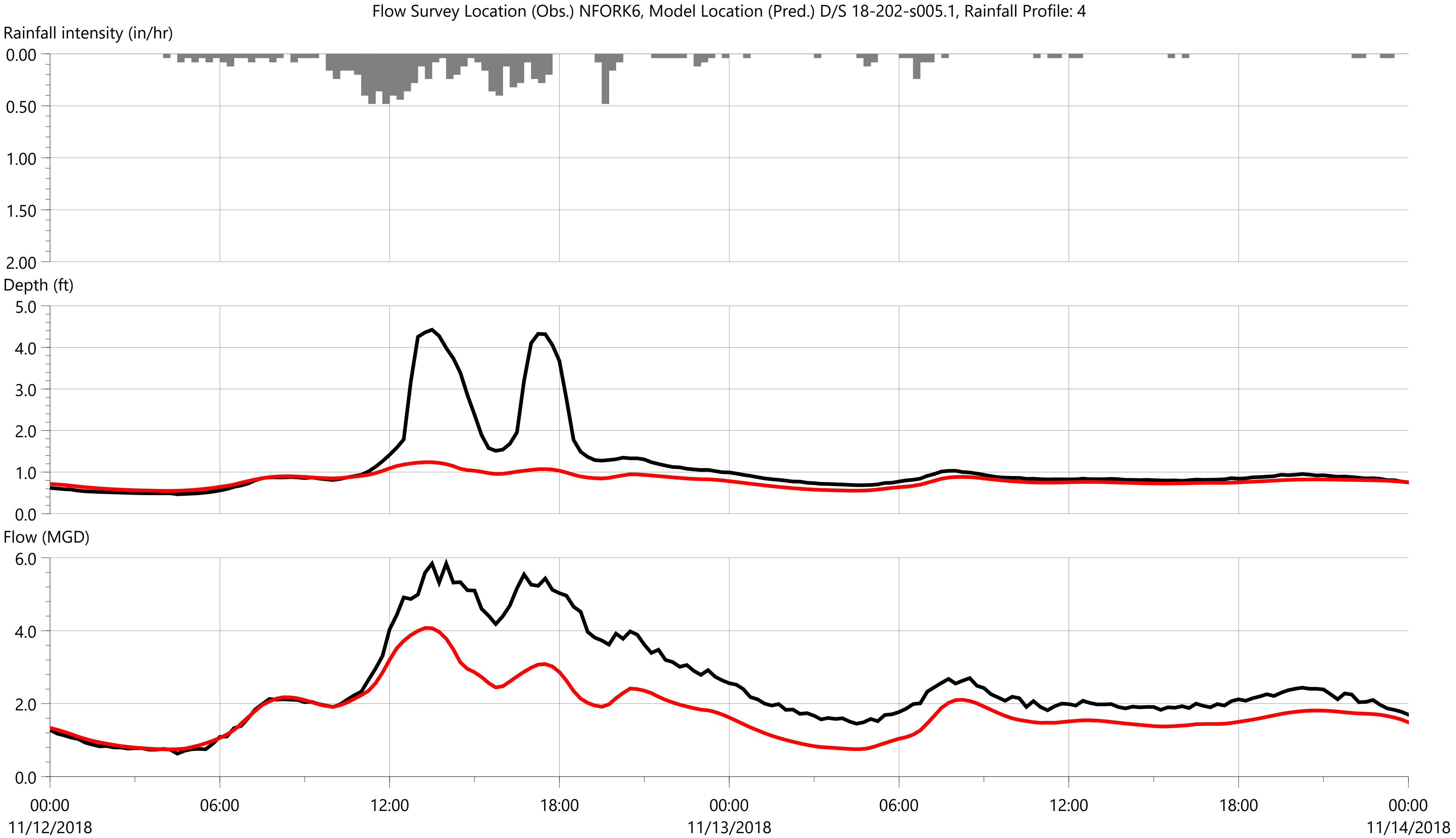


	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.860	0.480	0.060					
Observed				0.124	0.513	0.040	1.300	0.715
...ainfall Event_2018				0.135	0.416	0.066	0.779	0.585

Observed / Predicted Report (Custom graph) - Graph Template

Powered by InfoWorks®



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.480	0.060					
Observed	—				0.466	4.423	0.630	5.840	4.921
...ainfall Event_2018	—				0.550	1.239	0.747	4.074	3.507

Observed / Predicted Report (Custom graph) - Graph Template

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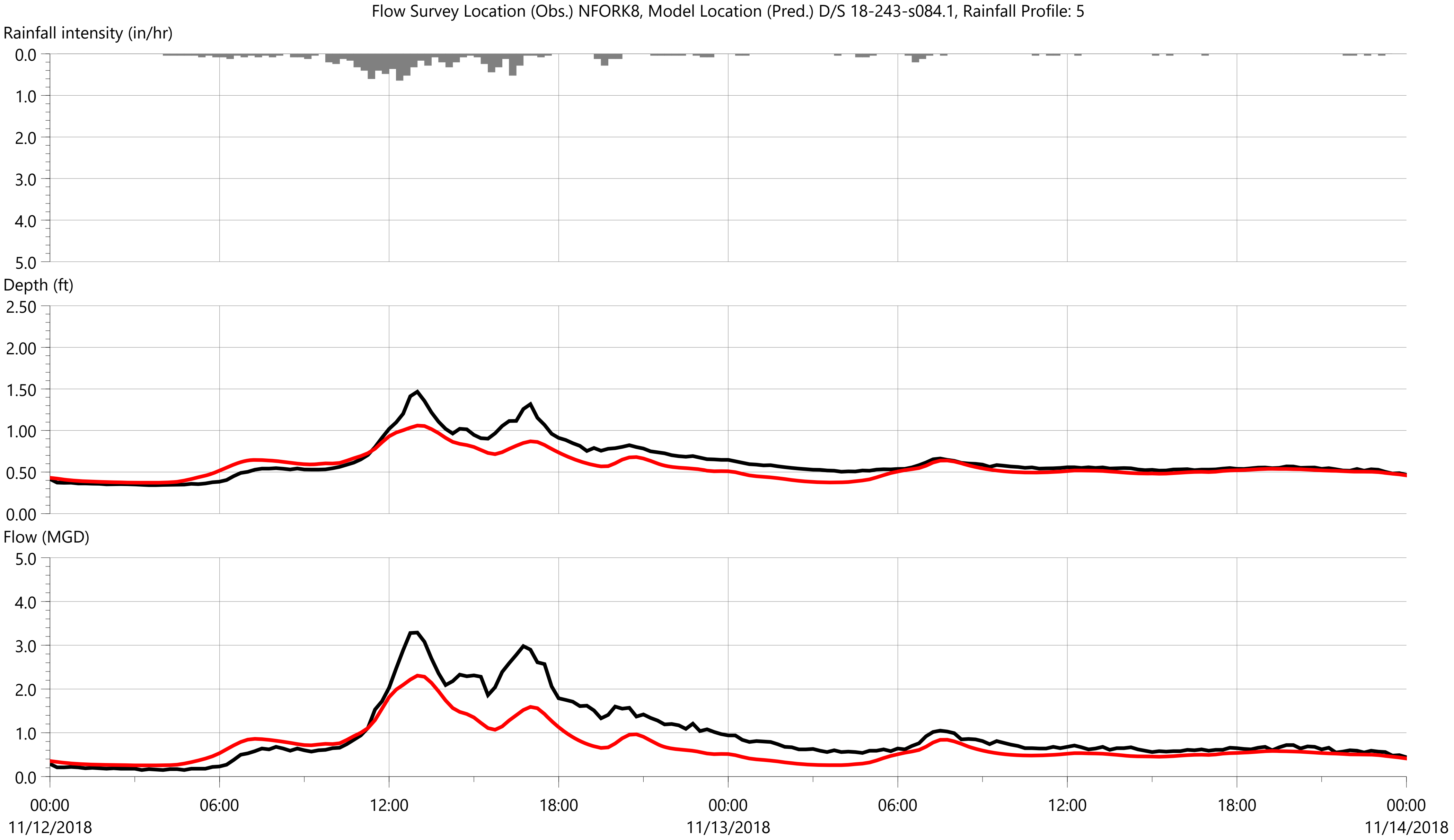
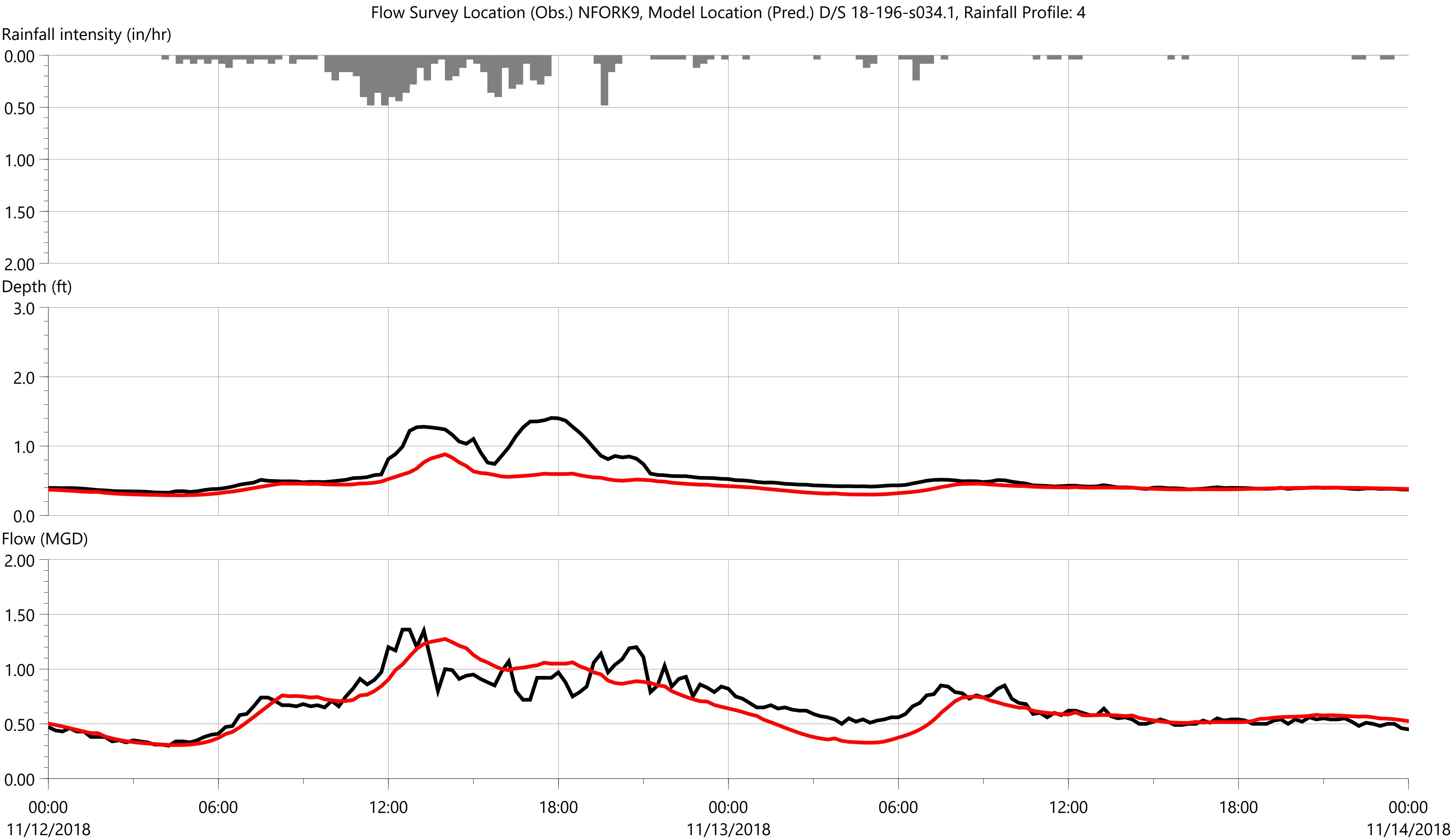


		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━━	2.970	0.640	0.062					
Observed	━━				0.342	1.467	0.150	3.290	1.869
...ainfall Event_2018	━━				0.372	1.059	0.255	2.306	1.371



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.860	0.480	0.060					
Observed				0.328	1.405	0.300	1.360	1.345
...ainfall Event_2018				0.291	0.883	0.306	1.275	1.287

Observed / Predicted Report (Custom graph) - Graph Template

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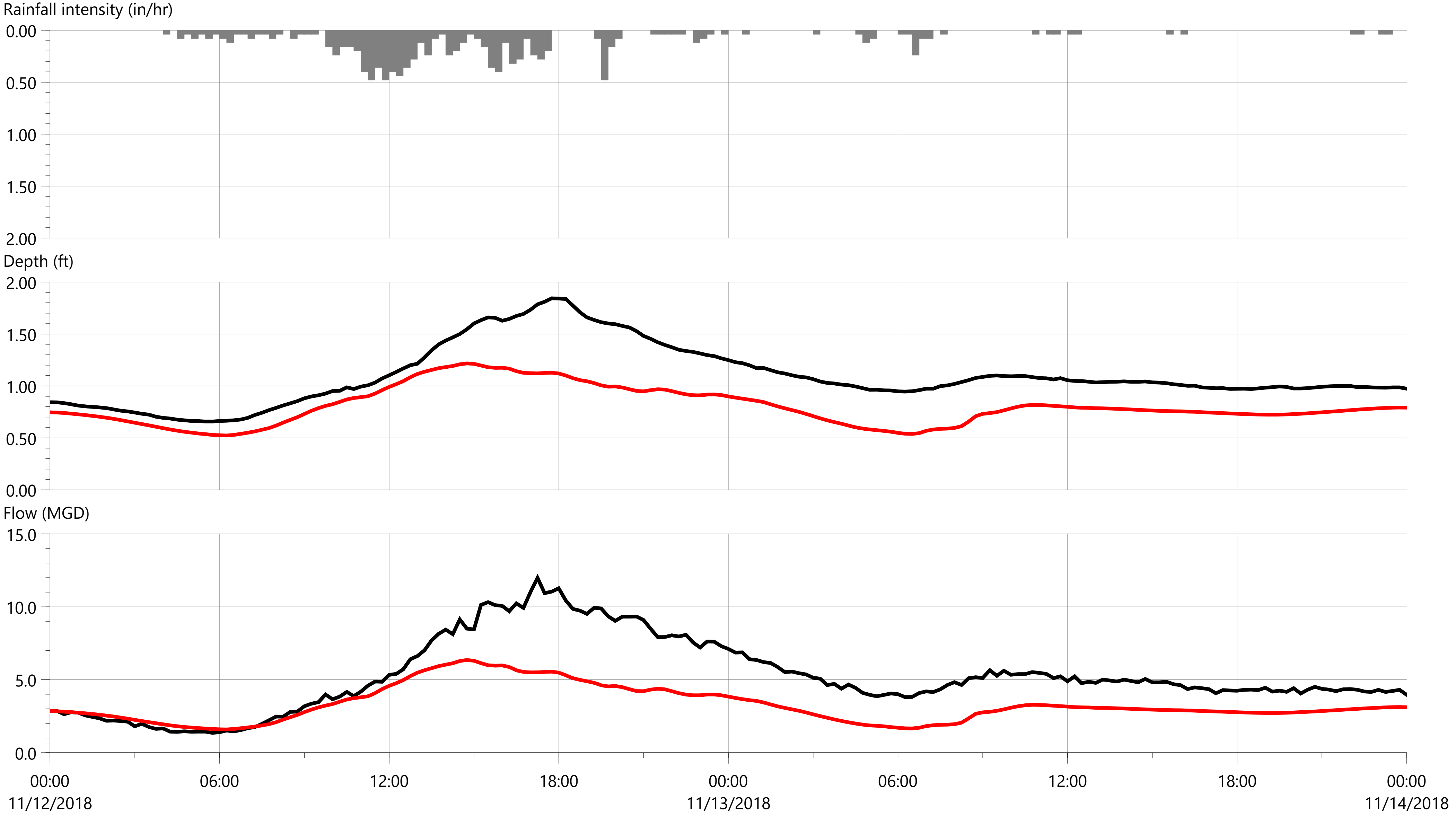
Flow Survey Location (Obs.) NFORK10, Model Location (Pred.) D/S 18-195-s003.1, Rainfall Profile: 4



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.480	0.060					
Observed	—				0.658	1.843	1.350	11.980	10.450
...ainfall Event_2018	—				0.523	1.216	1.590	6.347	6.551

Observed / Predicted Report (Custom graph) - Graph Template

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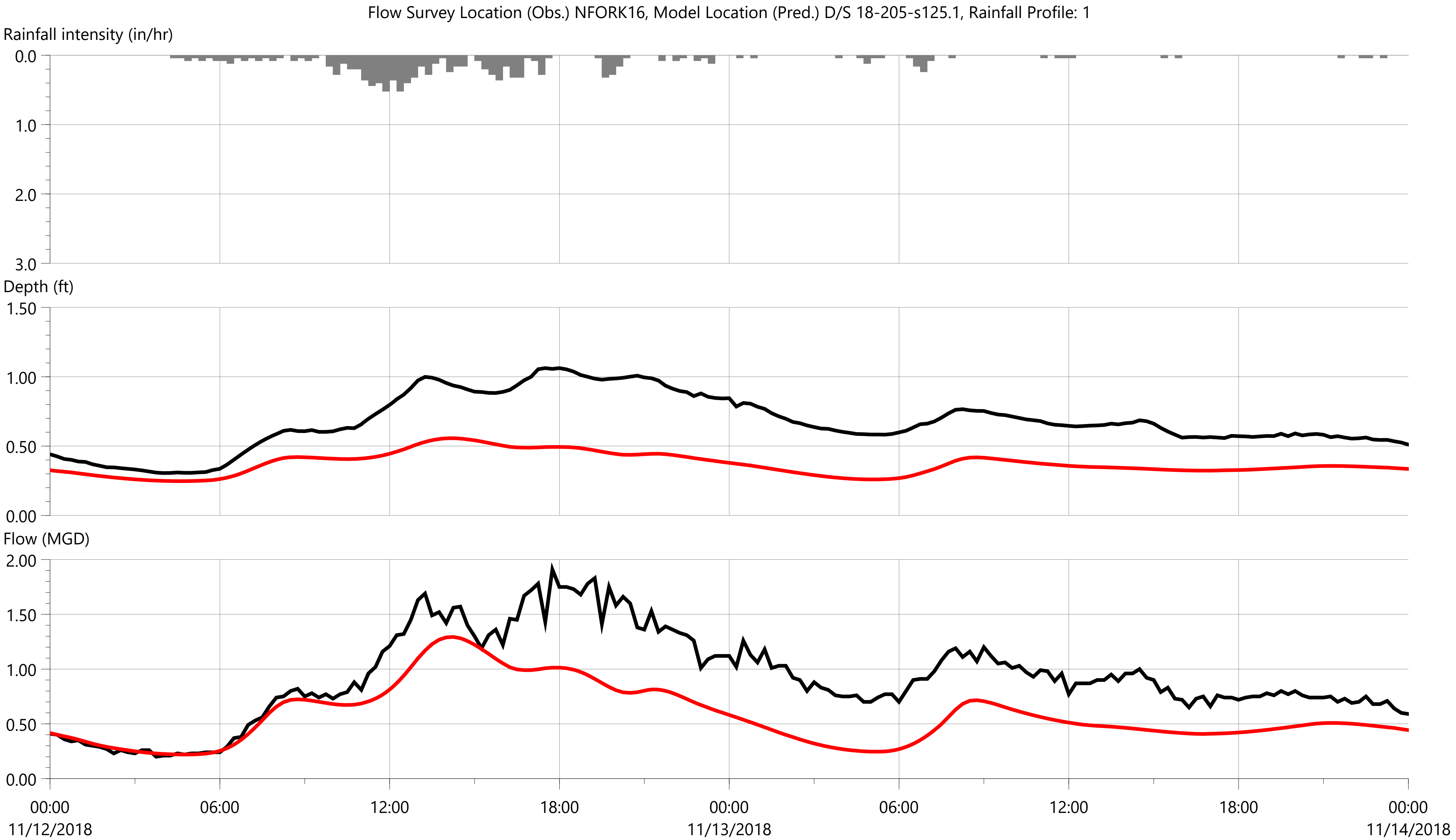

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.520	0.060					
Observed	—				0.306	1.063	0.200	1.910	1.844
...ainfall Event_2018	—				0.247	0.557	0.220	1.294	1.154

Observed / Predicted Report (Custom graph) - Graph Template

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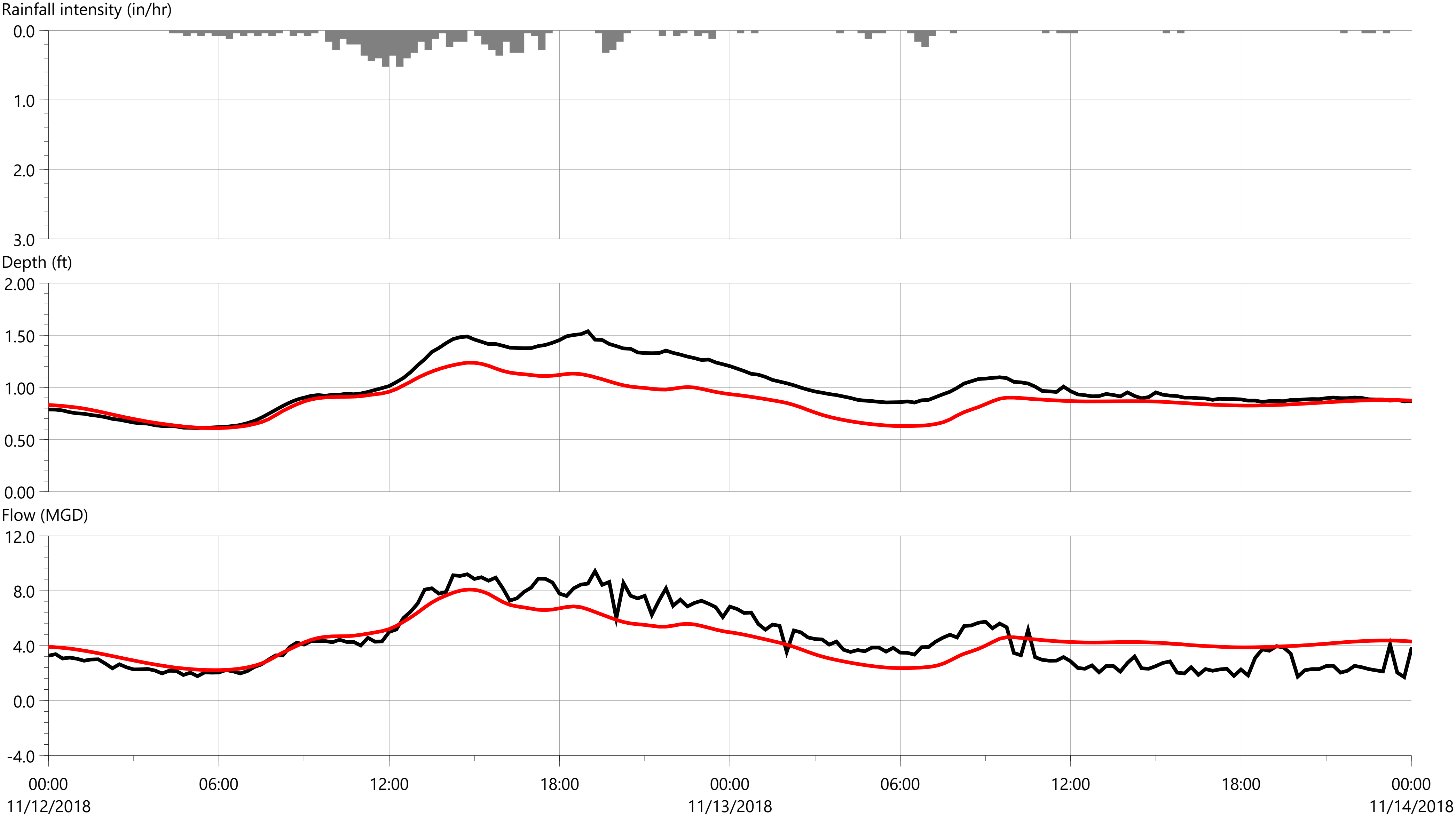
Flow Survey Location (Obs.) NFORK17, Model Location (Pred.) D/S 18-234-s054.1, Rainfall Profile: 1



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.860	0.520	0.060					
Observed				0.611	1.537	1.710	9.430	8.873
...ainfall Event_2018				0.609	1.237	2.217	8.081	8.764

Observed / Predicted Report (Custom graph) - Graph Template

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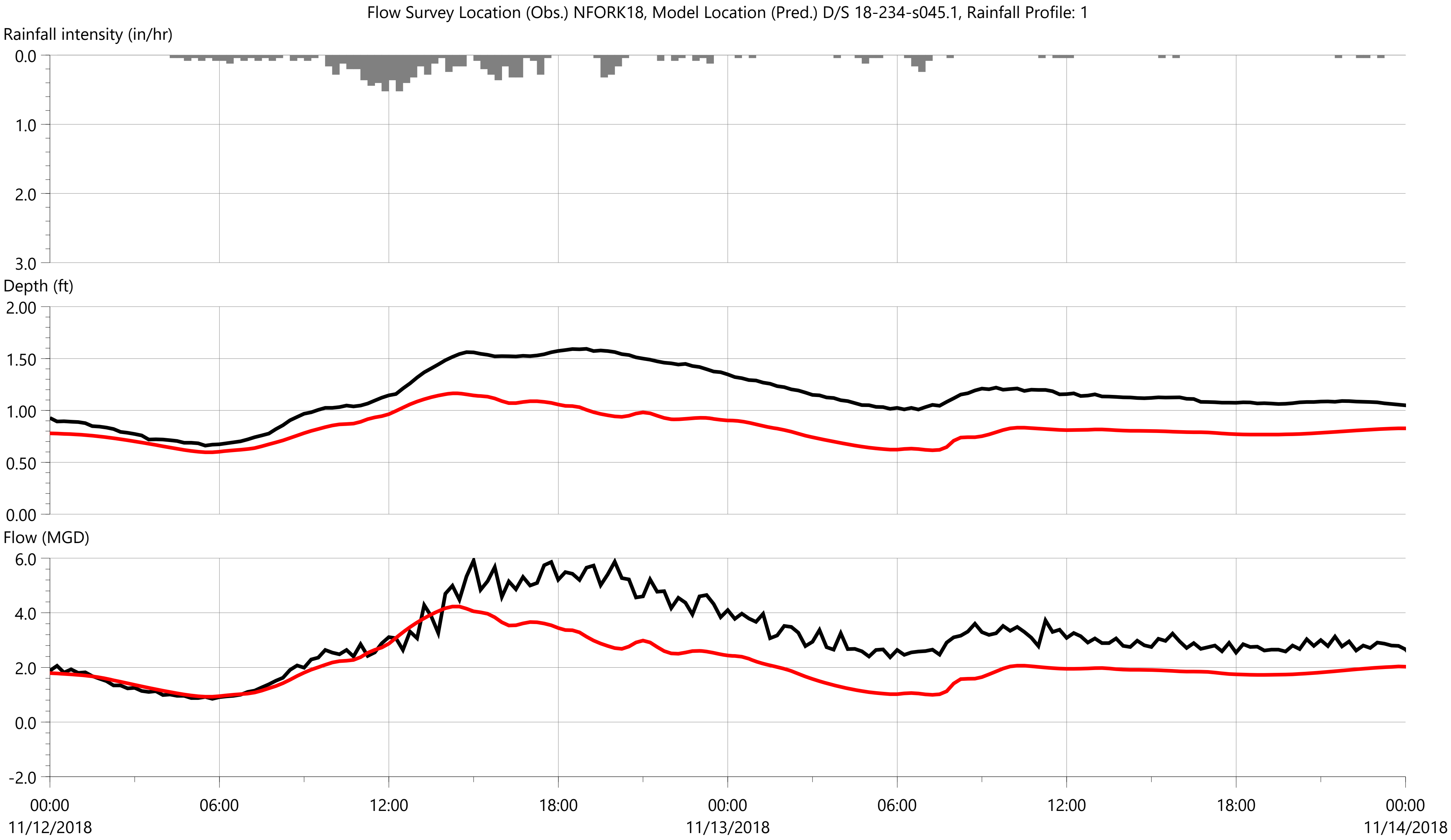
Flow Survey Location (Obs.) NFORK18, Model Location (Pred.) D/S 18-234-s045.1, Rainfall Profile: 1

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	2.860	0.520	0.060					
Observed	━				0.661	1.593	0.850	5.910	6.160
...ainfall Event_2018	━				0.596	1.164	0.927	4.230	4.163

Observed / Predicted Report (Custom graph) - Graph Template

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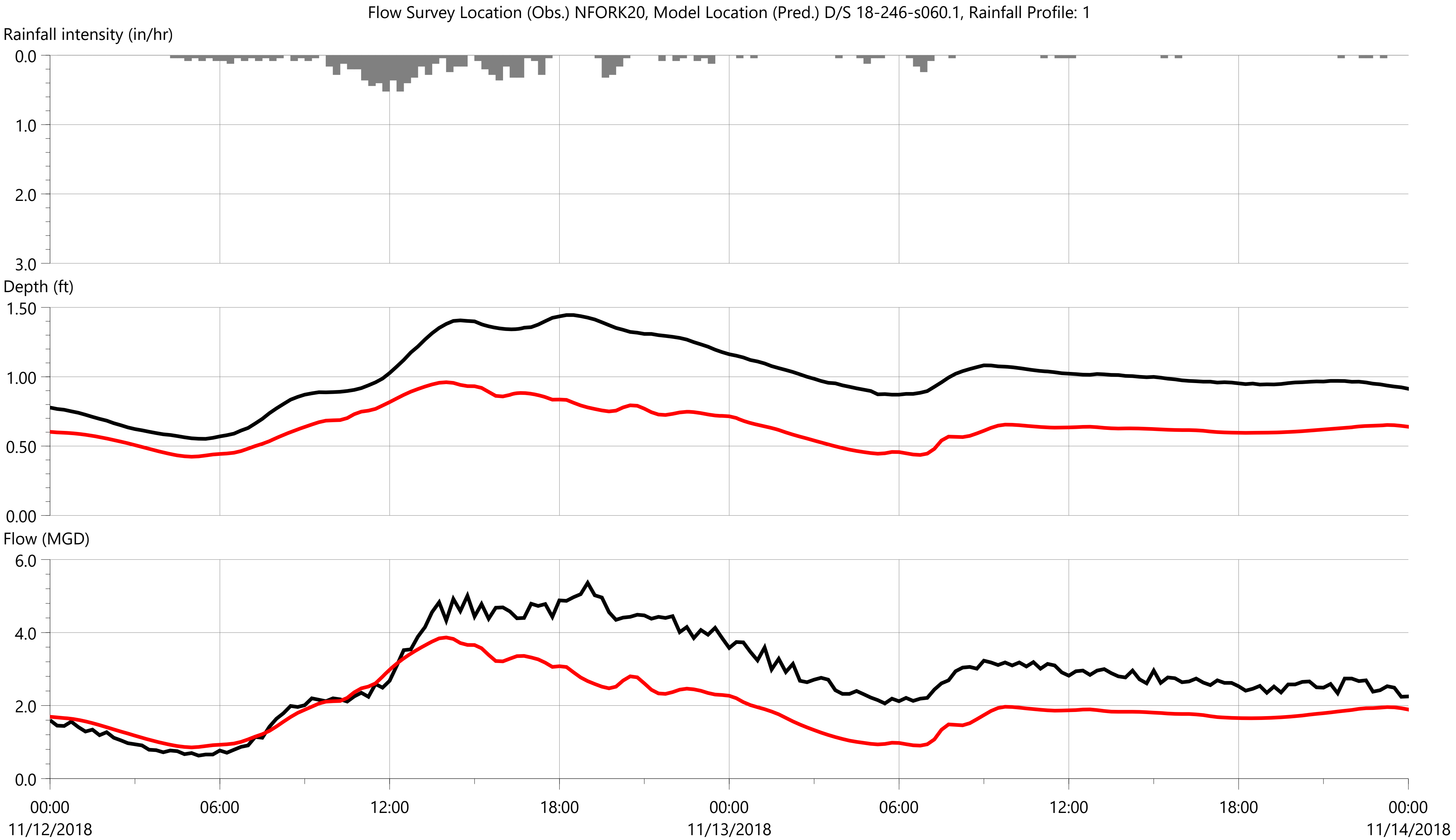
Flow Survey Location (Obs.) NFORK20, Model Location (Pred.) D/S 18-246-s060.1, Rainfall Profile: 1

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	―	2.860	0.520	0.060					
Observed	―				0.553	1.445	0.630	5.360	5.638
...ainfall Event_2018	―				0.423	0.960	0.855	3.865	3.903

Observed / Predicted Report (Custom graph) - Graph Template

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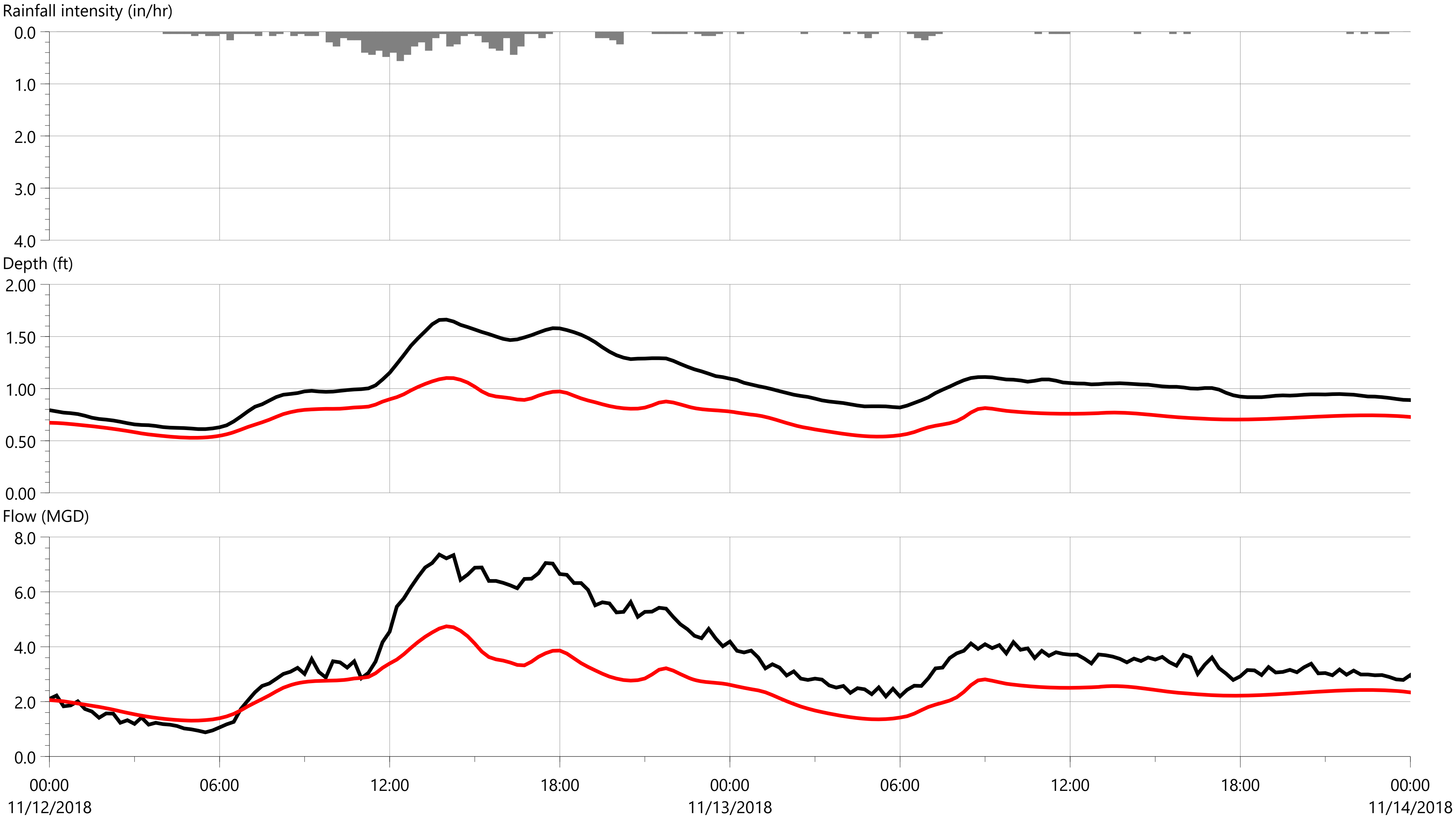
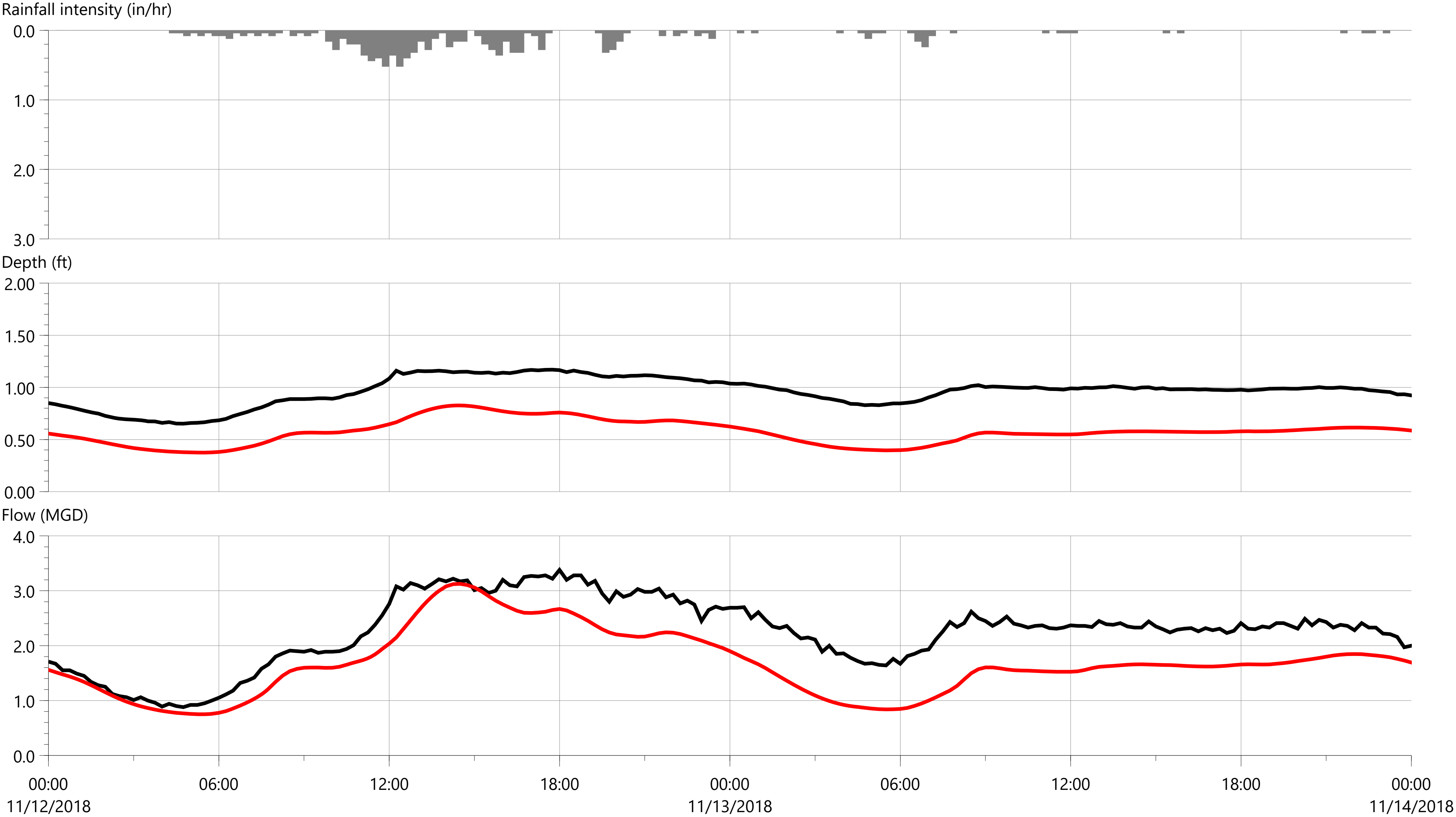
Flow Survey Location (Obs.) NFORK23, Model Location (Pred.) D/S 18-266-s083a.1, Rainfall Profile: 3



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	―	2.800	0.560	0.058					
Observed	―				0.612	1.662	0.880	7.360	7.258
...ainfall Event_2018	―				0.528	1.102	1.307	4.745	4.976

Flow Survey Location (Obs.) NFORK24, Model Location (Pred.) D/S 18-267-s010.1, Rainfall Profile: 1



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain 🟦	2.860	0.520	0.060					
Observed ■				0.652	1.169	0.880	3.380	4.517
...ainfall Event_2018 🟥				0.375	0.828	0.750	3.125	3.350

Observed / Predicted Report (Custom graph) - Graph Template

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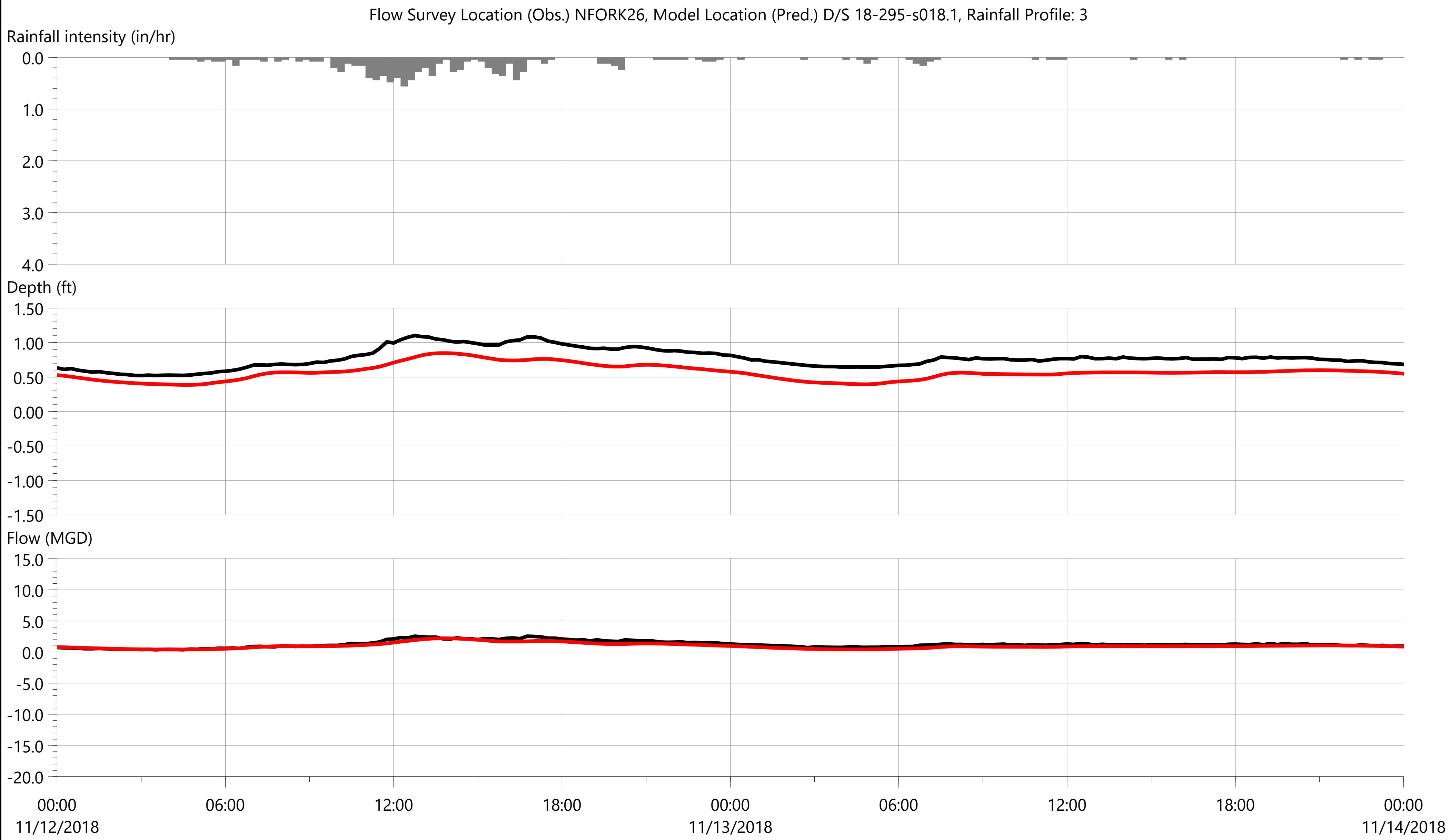

	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.800	0.560	0.058					
Observed				0.520	1.102	0.380	2.550	2.499
...ainfall Event_2018				0.385	0.848	0.397	2.226	2.009

Observed / Predicted Report (Custom graph) - Graph Template

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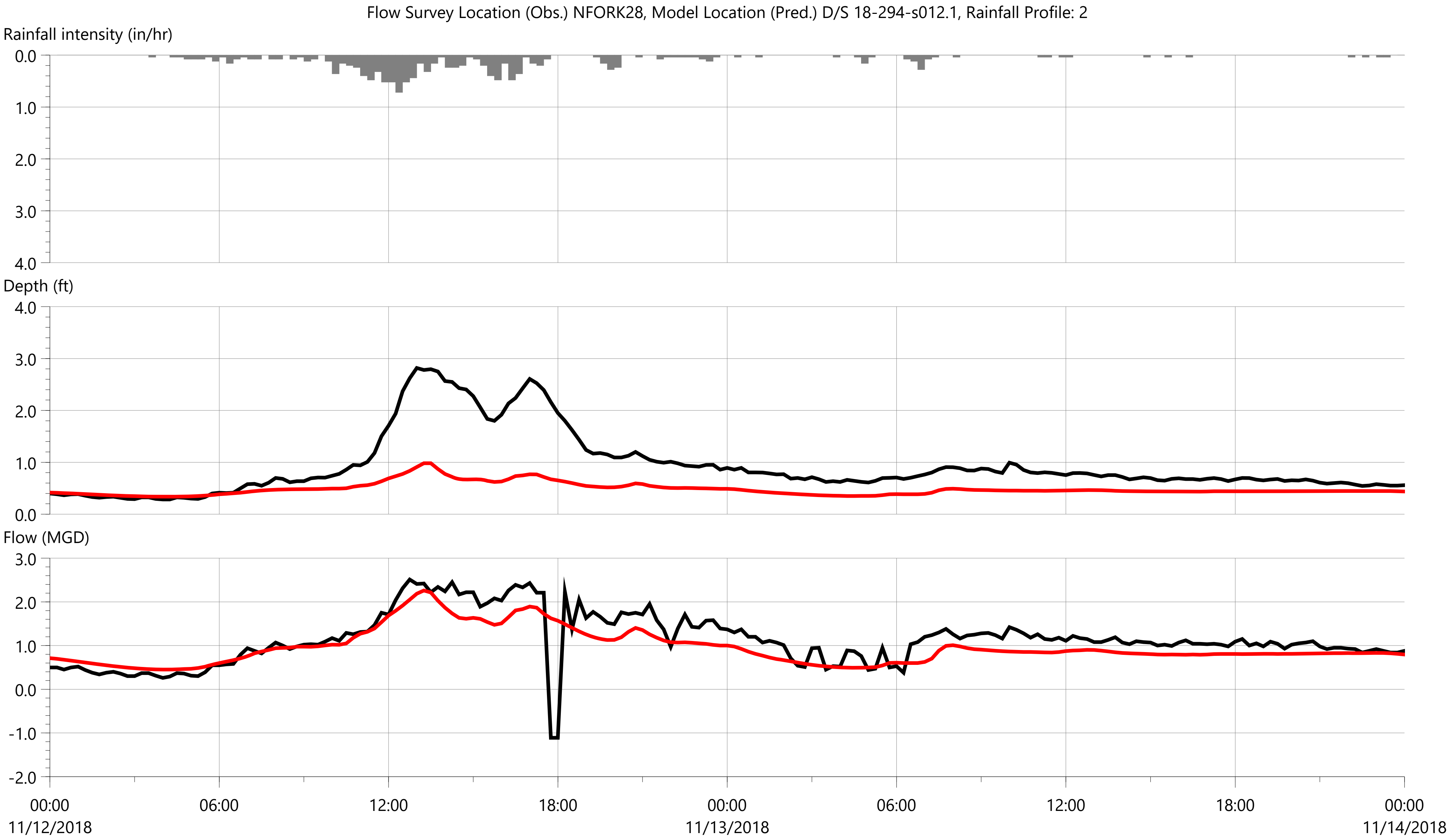
Flow Survey Location (Obs.) NFORK28, Model Location (Pred.) D/S 18-294-s012.1, Rainfall Profile: 2

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	3.310	0.720	0.069					
Observed	━				0.284	2.817	-1.110	2.510	2.272
...ainfall Event_2018	━				0.337	0.982	0.451	2.260	1.910

Observed / Predicted Report (Custom graph) - Graph Template

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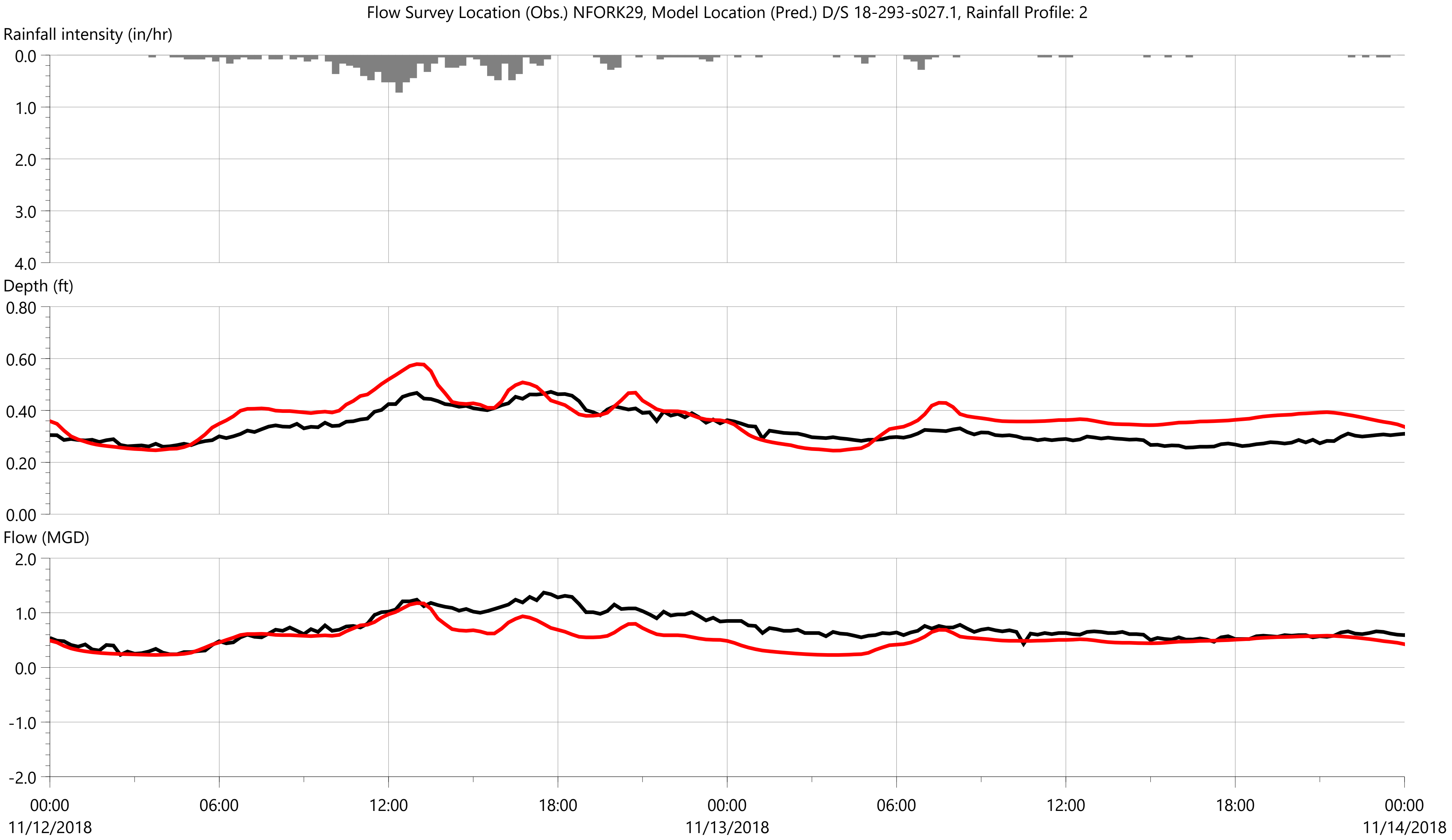
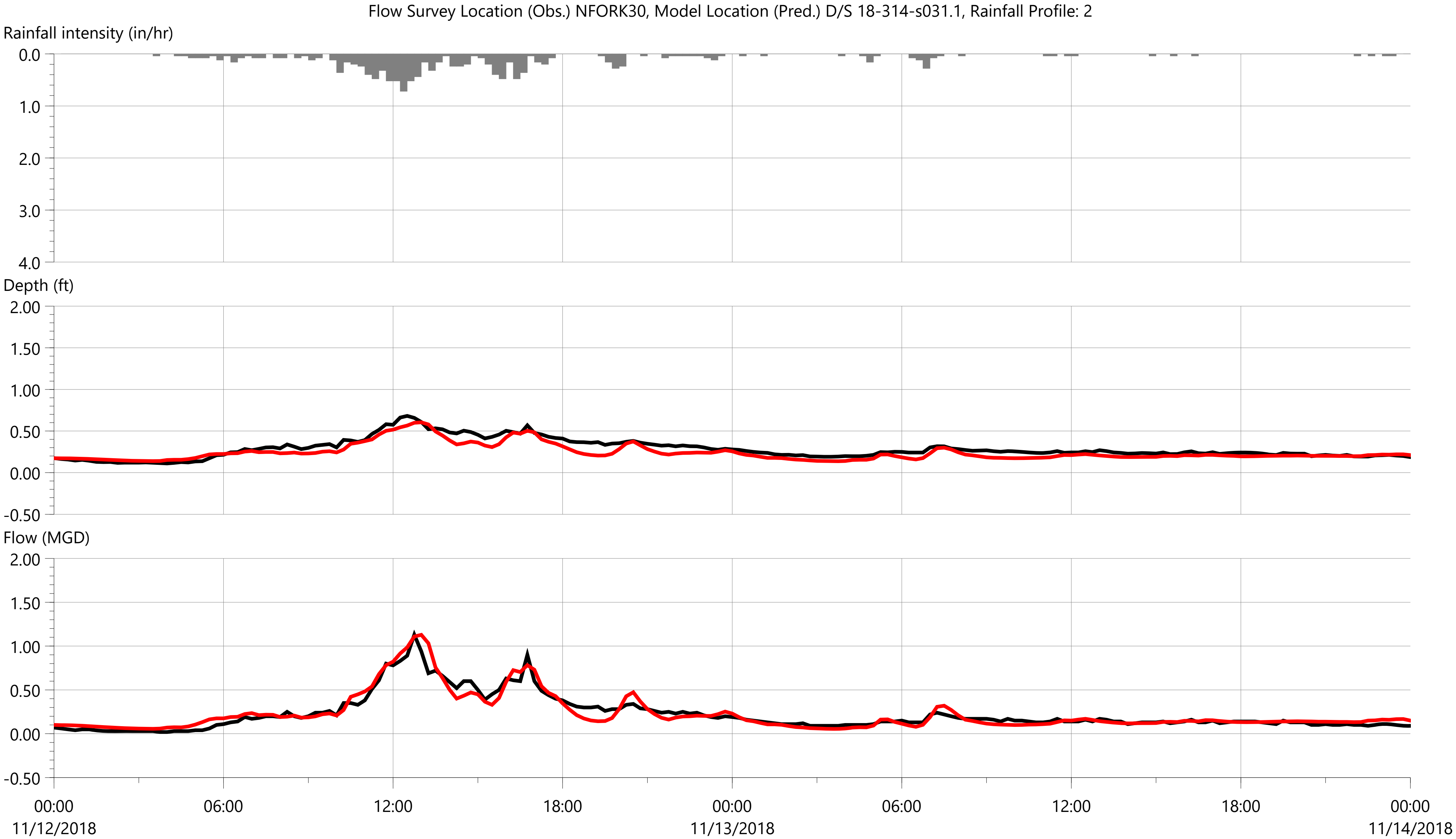


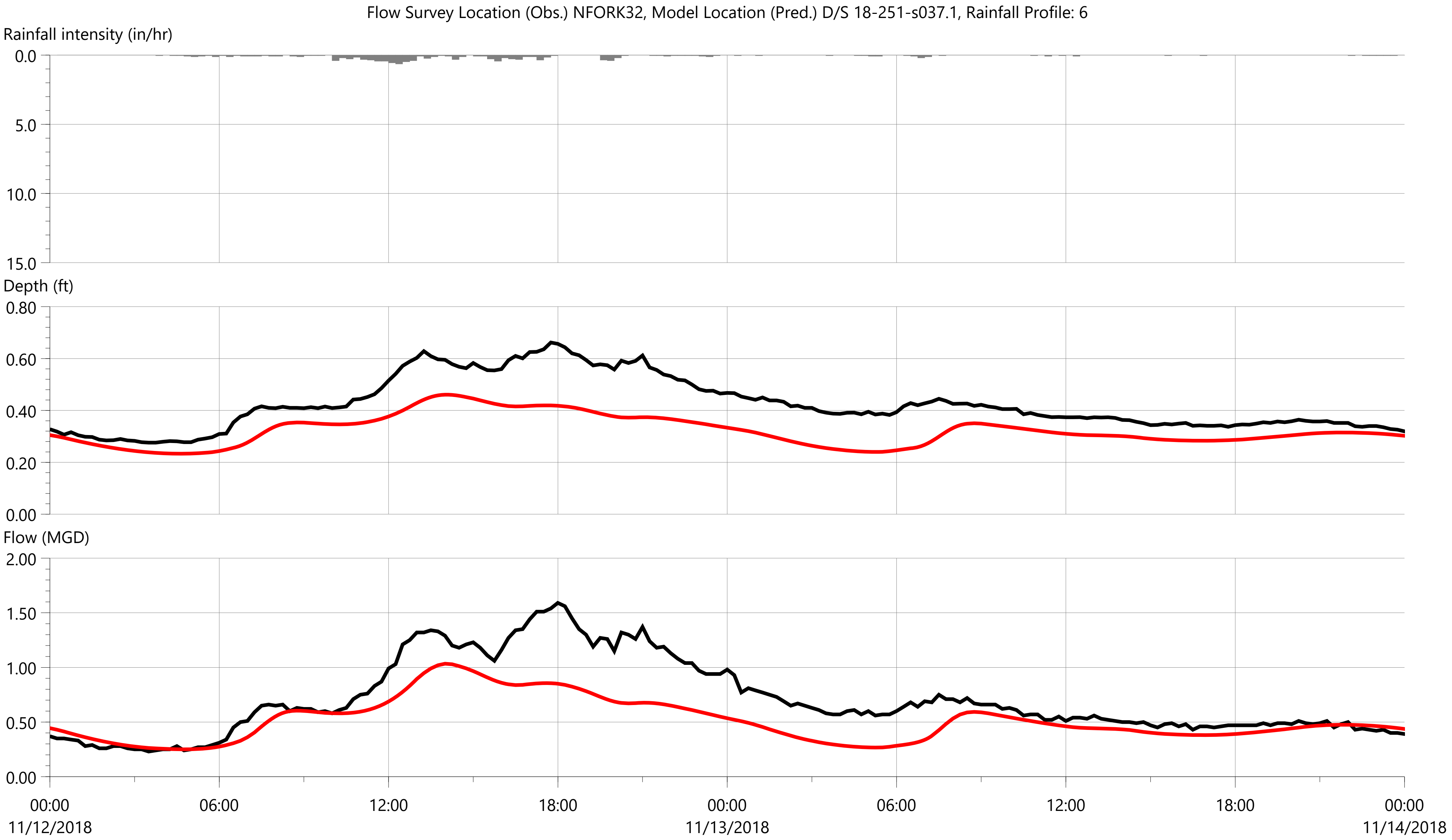
		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	▬	3.310	0.720	0.069					
Observed	▬				0.257	0.472	0.230	1.370	1.423
...ainfall Event_2018	▬				0.245	0.578	0.226	1.176	1.057

Observed / Predicted Report (Custom graph) - Graph Template

Powered by
InfoWorks®



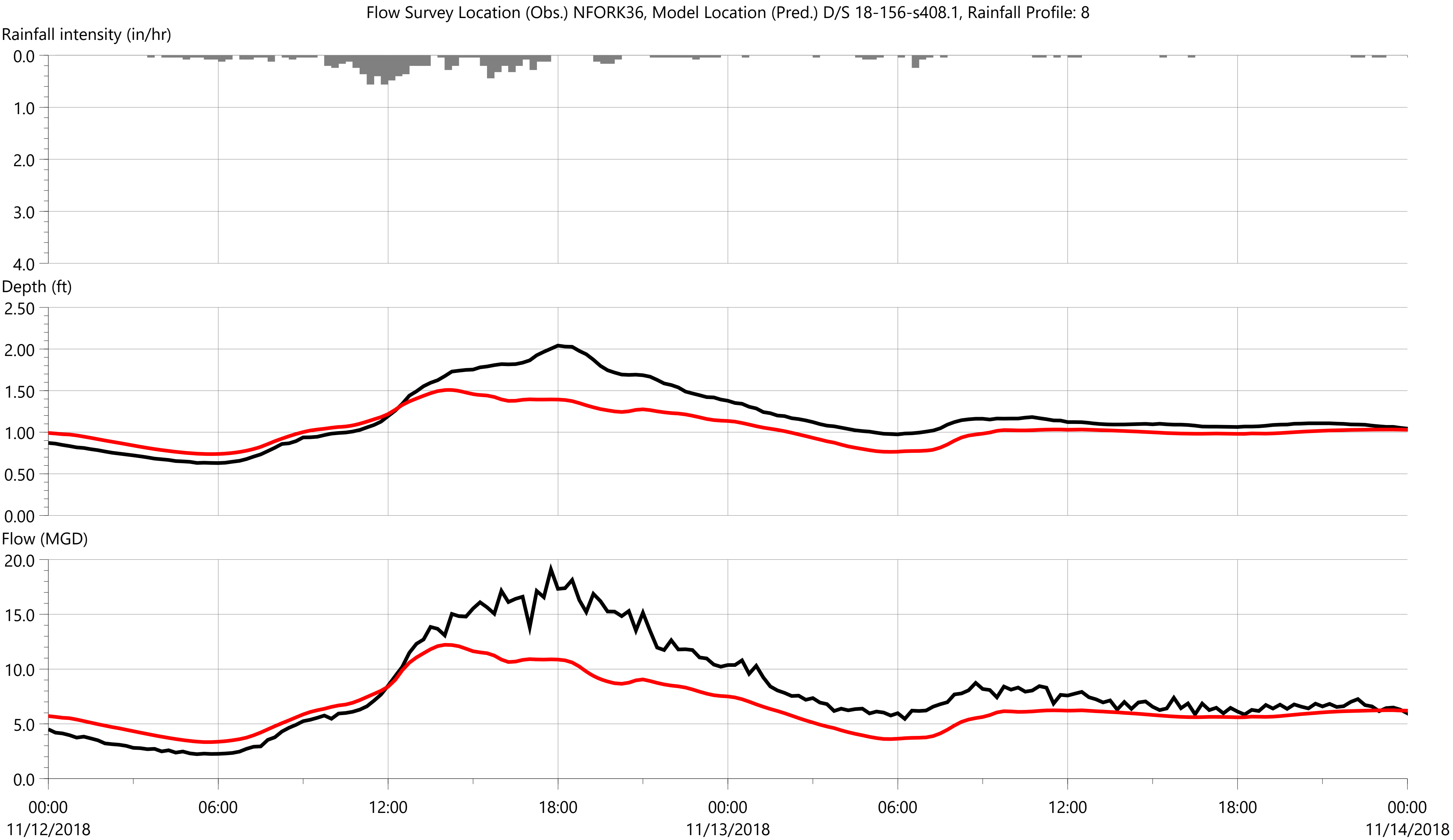
		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	3.310	0.720	0.069					
Observed	—				0.111	0.683	0.020	1.130	0.441
...ainfall Event_2018	—				0.138	0.604	0.056	1.128	0.452


Flow Survey Location (Obs.) NFORK32, Model Location (Pred.) D/S 18-251-s037.1, Rainfall Profile: 6

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	▬	3.160	0.640	0.066					
Observed	▬				0.276	0.662	0.230	1.590	1.410
...ainfall Event_2018	▬				0.233	0.461	0.251	1.034	1.026

Observed / Predicted Report (Custom graph) - Graph Template

Powered by InfoWorks®

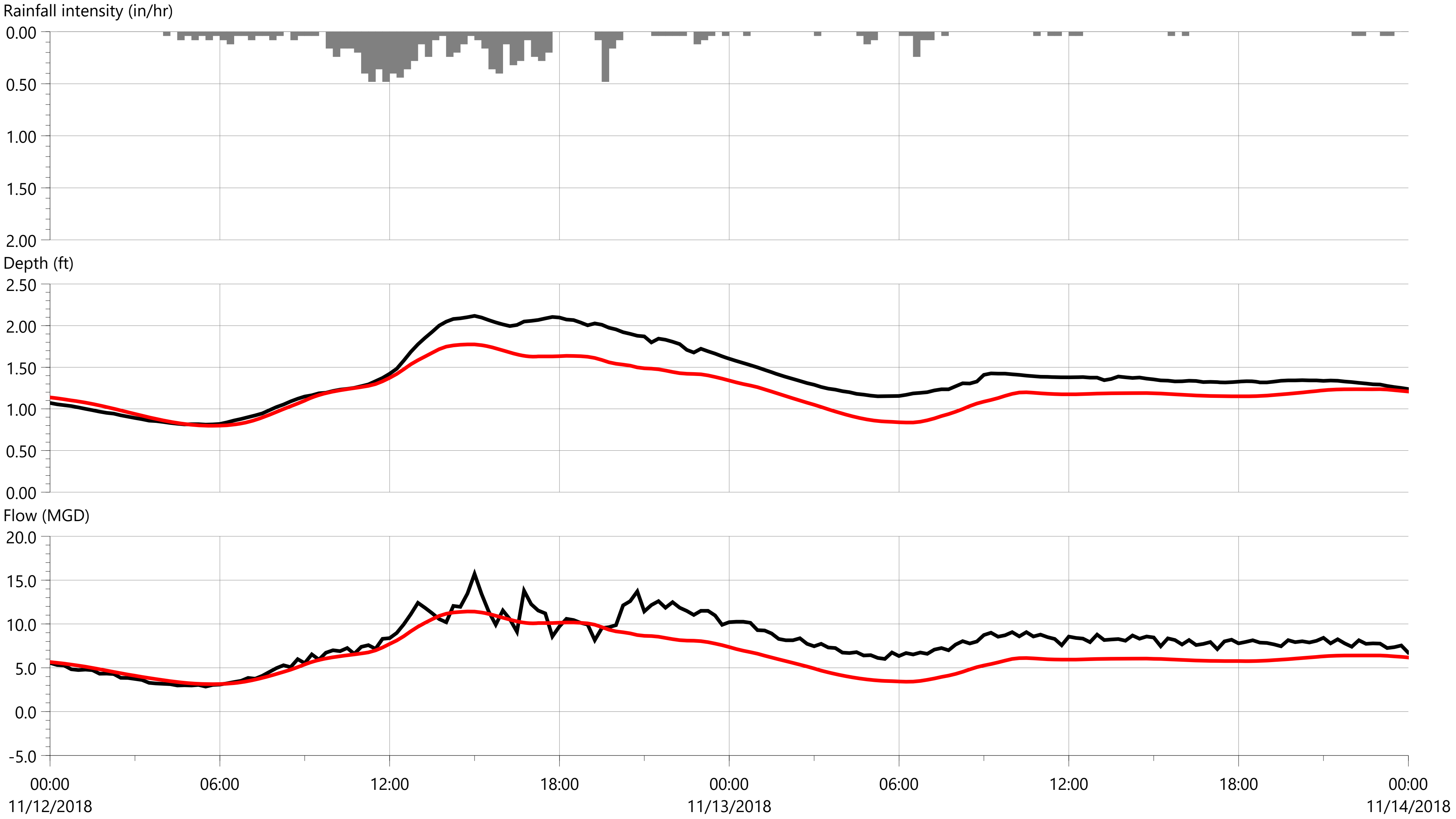


	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.760	0.560	0.058					
Observed				0.630	2.041	2.230	19.100	16.131
...ainfall Event_2018				0.738	1.506	3.336	12.213	13.084

Observed / Predicted Report (Custom graph) - Graph Template

Powered by

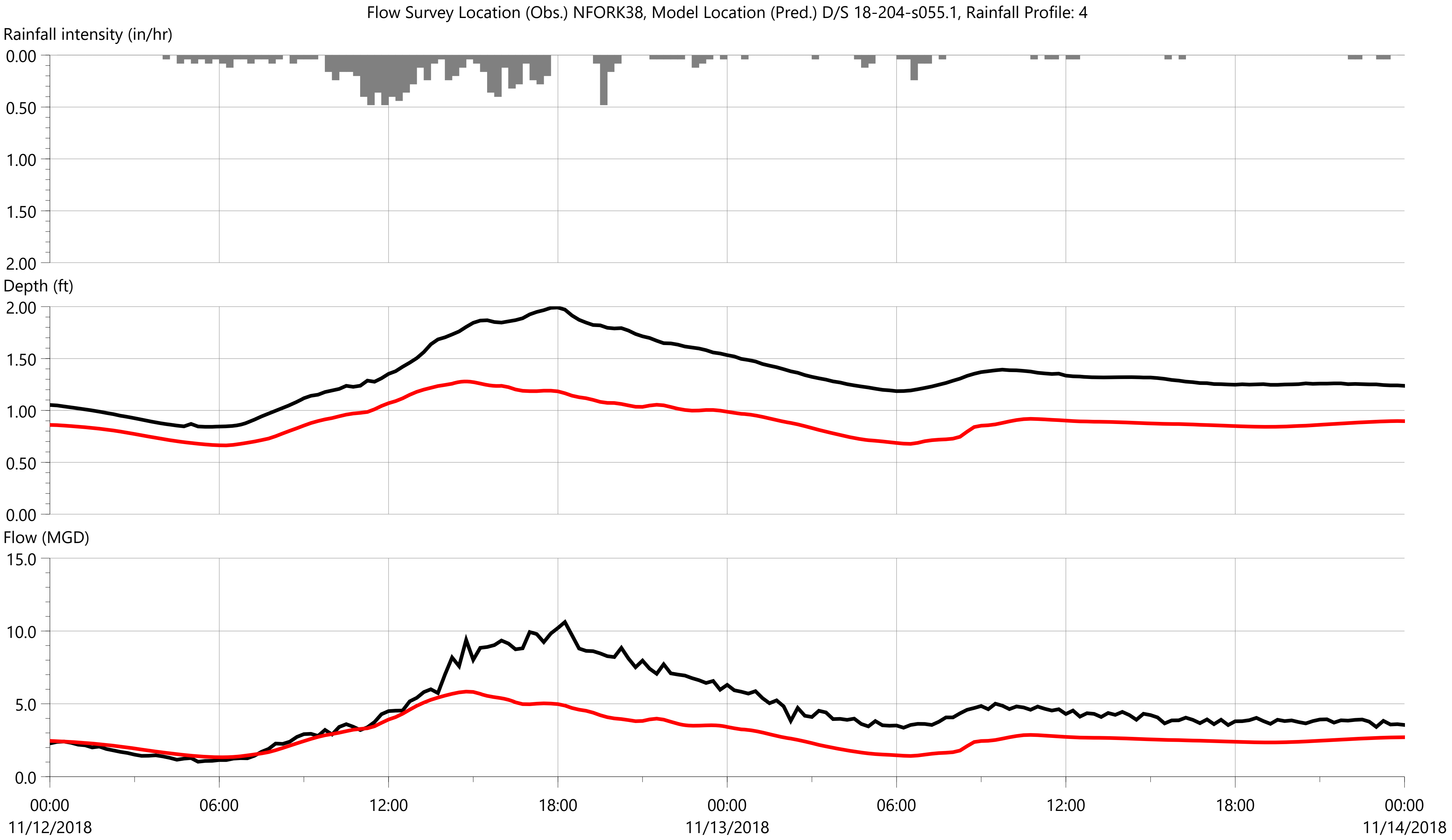
Flow Survey Location (Obs.) NFORK37, Model Location (Pred.) D/S 18-204-s060.1, Rainfall Profile: 4



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain ━	2.860	0.480	0.060					
Observed ━				0.811	2.117	2.850	15.700	15.910
...ainfall Event_2018 ━				0.798	1.775	3.137	11.416	12.684

Observed / Predicted Report (Custom graph) - Graph Template

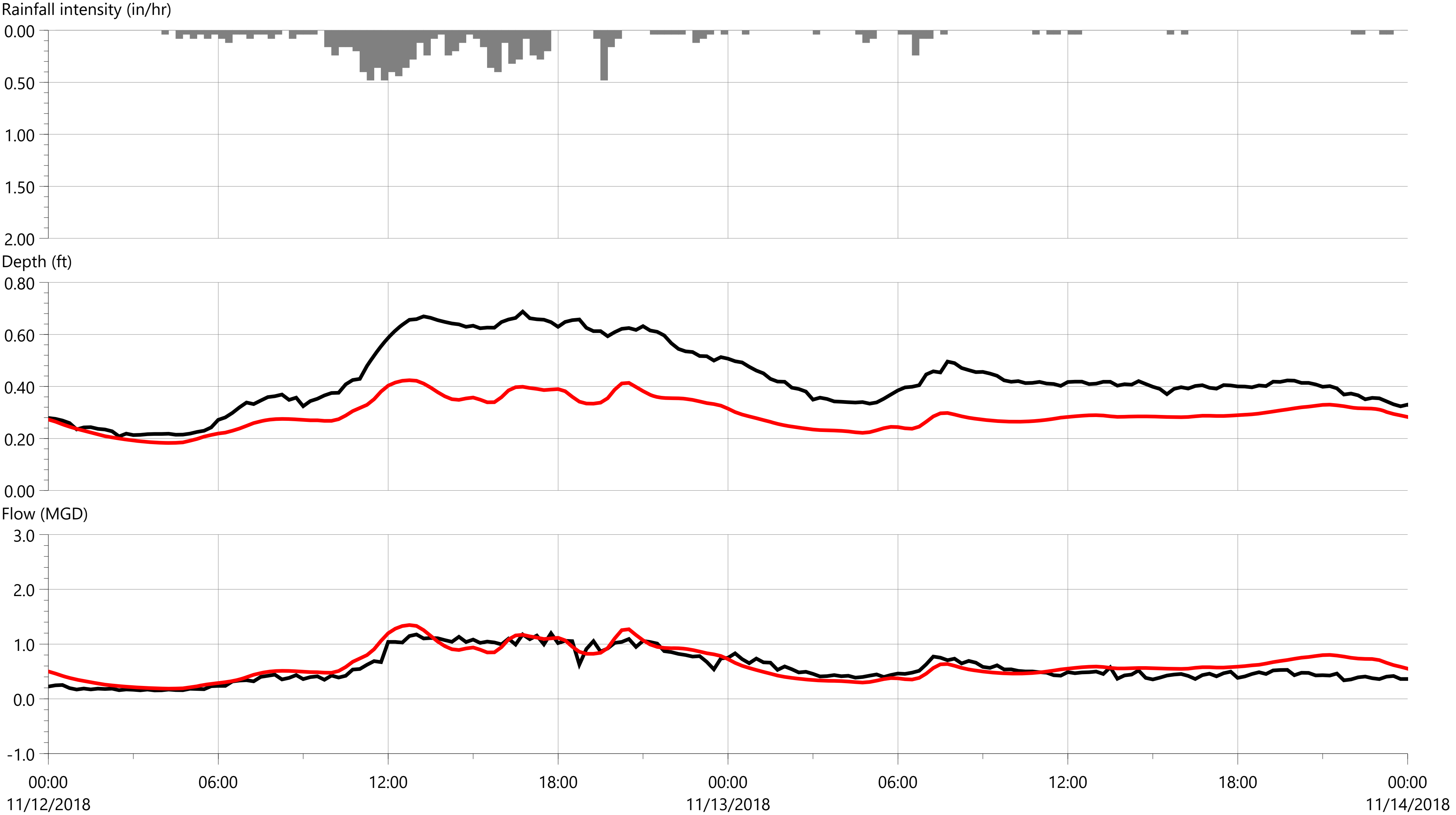
Powered by InfoWorks®



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.480	0.060					
Observed	—				0.842	1.992	1.030	10.610	9.129
...ainfall Event_2018	—				0.663	1.278	1.331	5.841	5.772

Observed / Predicted Report (Custom graph) - Graph Template

Flow Survey Location (Obs.) NFORK39, Model Location (Pred.) D/S 18-204-s124.1, Rainfall Profile: 4



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.480	0.060					
Observed	—				0.208	0.688	0.153	1.197	1.139
...ainfall Event_2018	—				0.183	0.424	0.187	1.348	1.255

Observed / Predicted Report (Custom graph) - Graph Template

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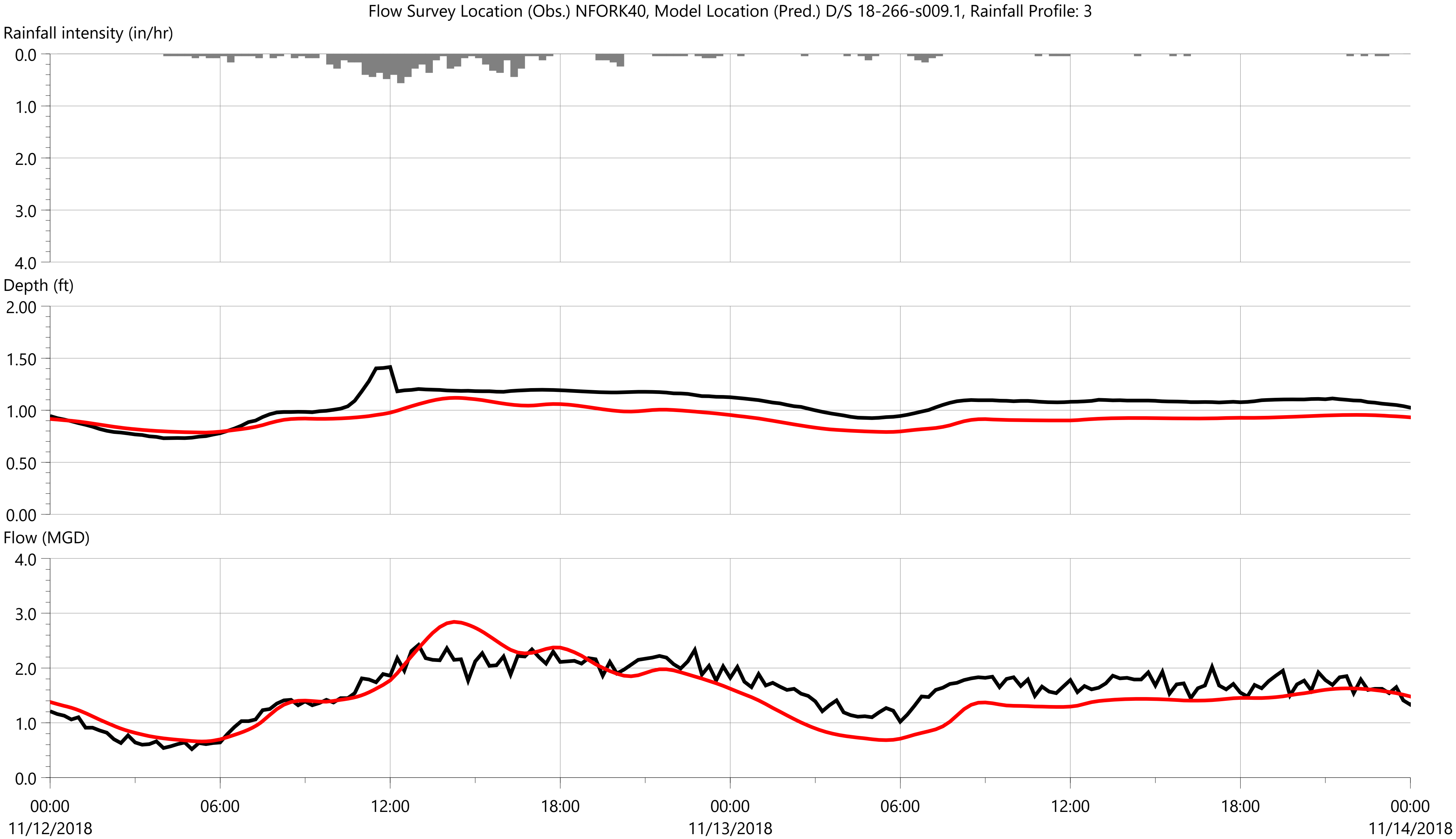
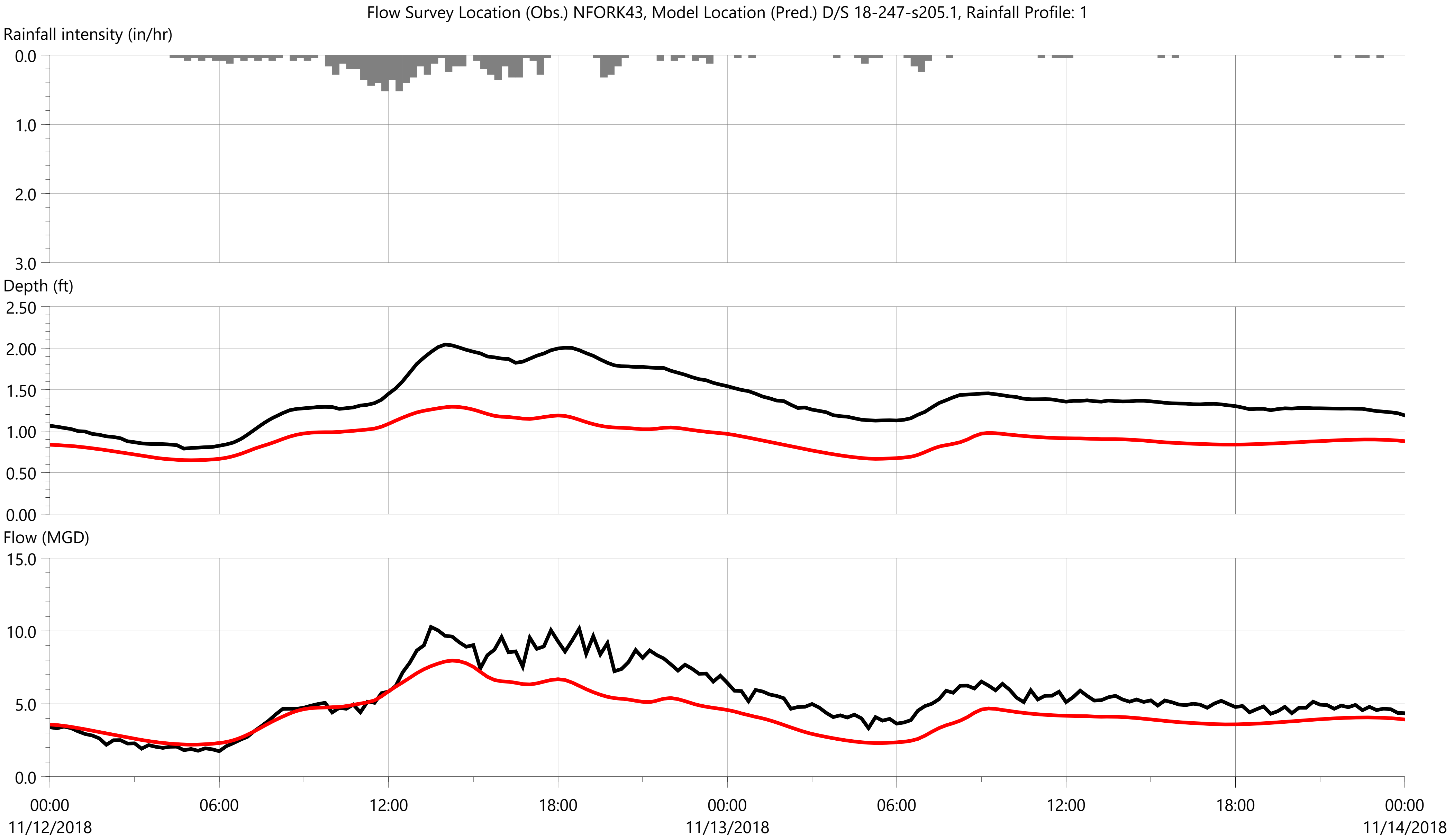


		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	2.800	0.560	0.058					
Observed	━				0.731	1.415	0.520	2.420	3.203
...ainfall Event_2018	━				0.786	1.119	0.660	2.843	2.927

Observed / Predicted Report (Custom graph) - Graph Template

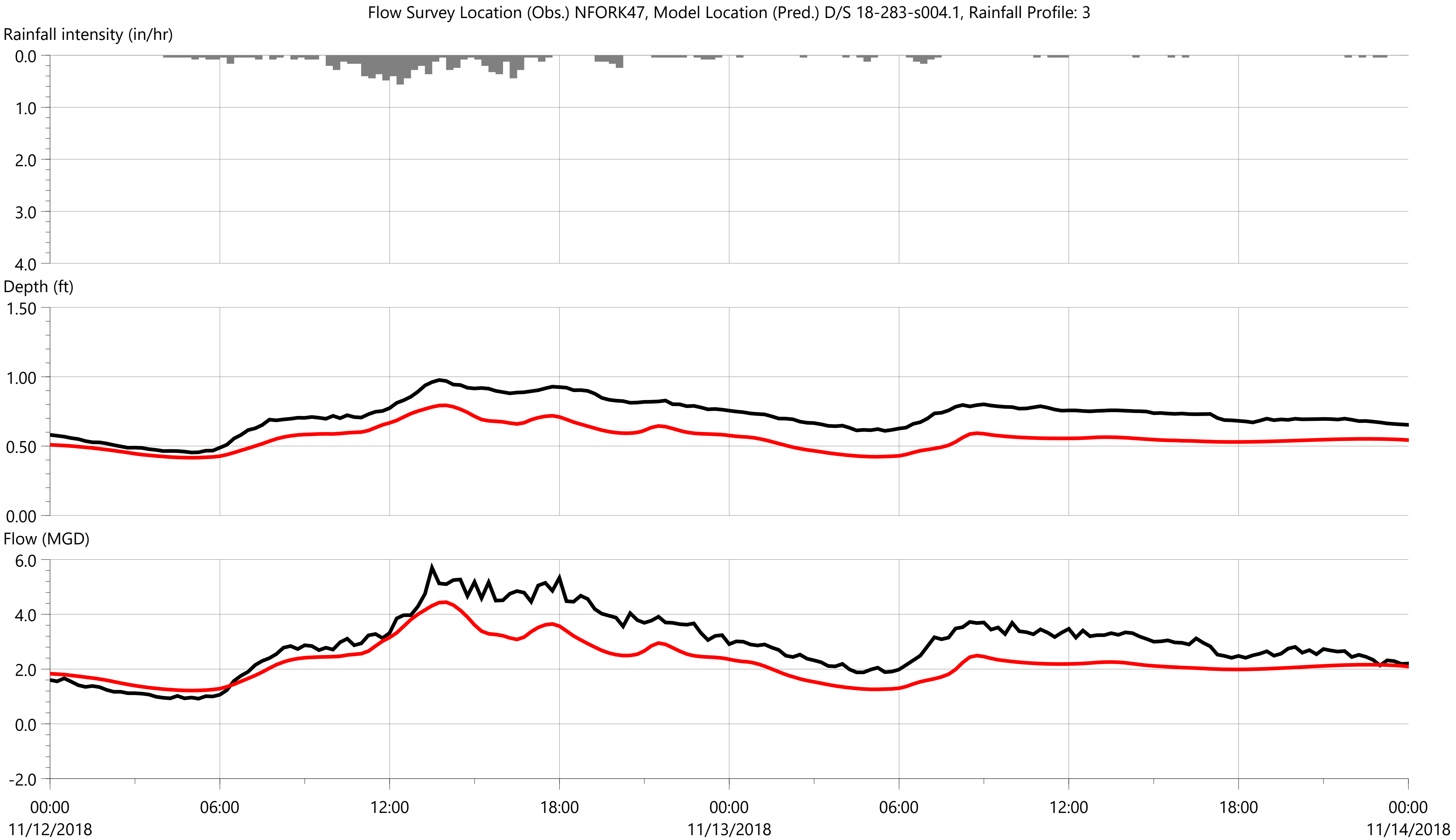
Powered by InfoWorks®



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	🟦	2.860	0.520	0.060					
Observed	⬛				0.790	2.043	1.750	10.280	10.883
...ainfall Event_2018	🟥				0.649	1.294	2.199	7.965	8.523

Observed / Predicted Report (Custom graph) - Graph Template

Powered by InfoWorks®



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	2.800	0.560	0.058					
Observed	━				0.454	0.977	0.920	5.700	5.874
...ainfall Event_2018	━				0.416	0.794	1.217	4.445	4.502

Observed / Predicted Report (Custom graph) - Graph Template

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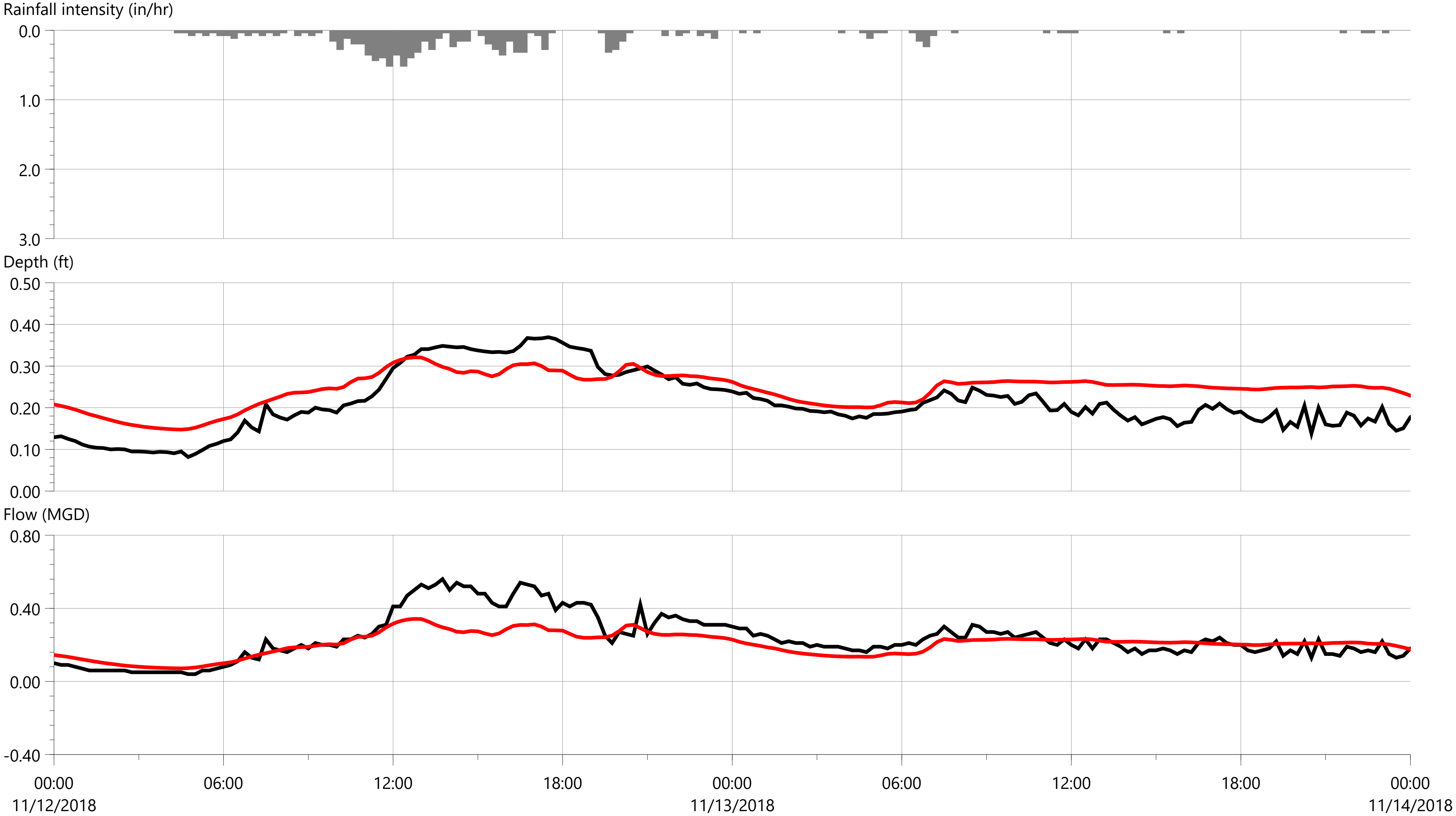
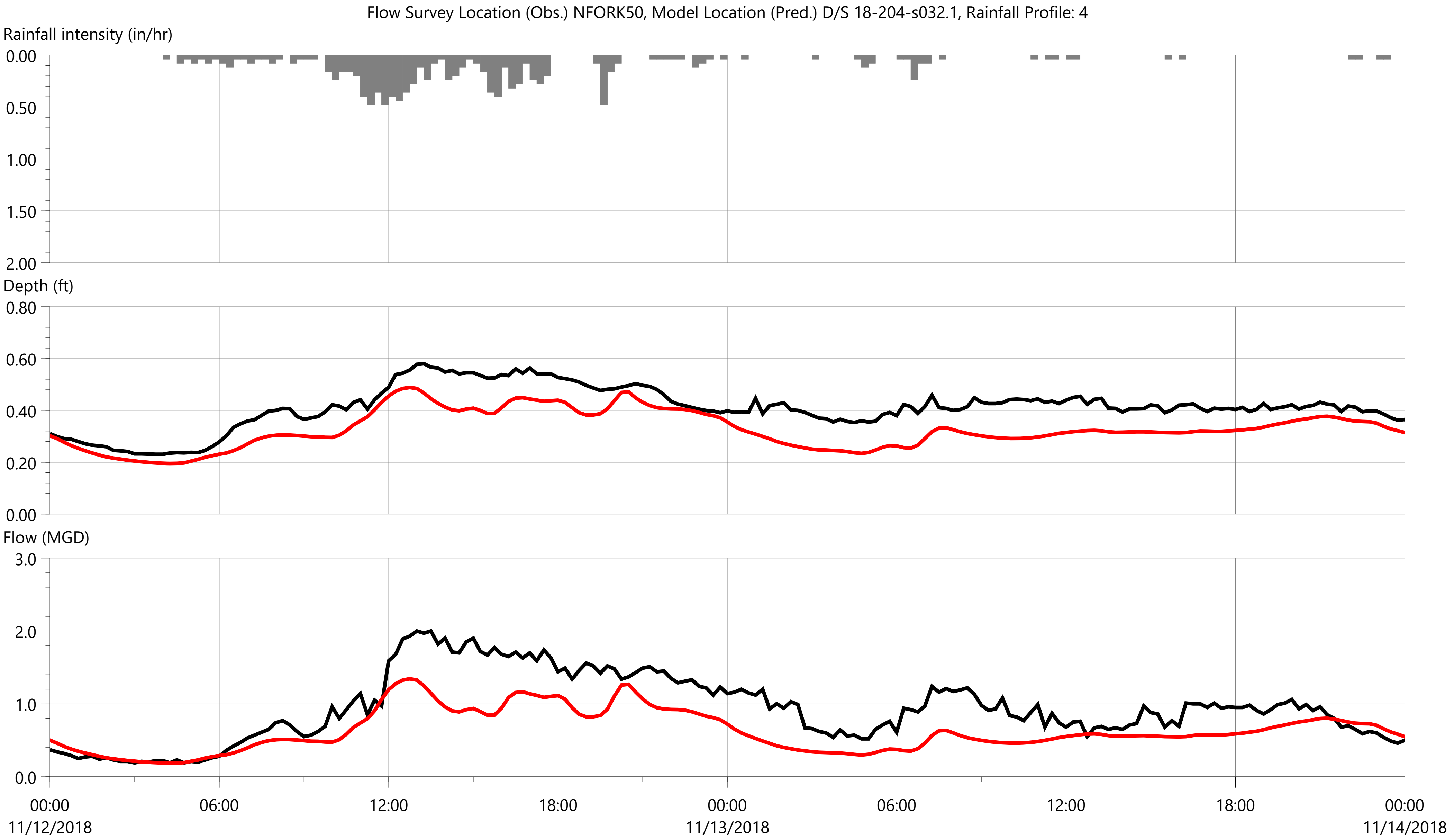
Flow Survey Location (Obs.) NFORK48, Model Location (Pred.) D/S 18-267-s058.1, Rainfall Profile: 1



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	2.860	0.520	0.060					
Observed	━				0.082	0.369	0.040	0.560	0.475
...ainfall Event_2018	━				0.147	0.321	0.071	0.342	0.409



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain —	2.860	0.480	0.060					
Observed —				0.231	0.580	0.190	2.000	1.877
...ainfall Event_2018 —				0.195	0.488	0.187	1.344	1.253

Observed / Predicted Report (Custom graph) - Graph Template

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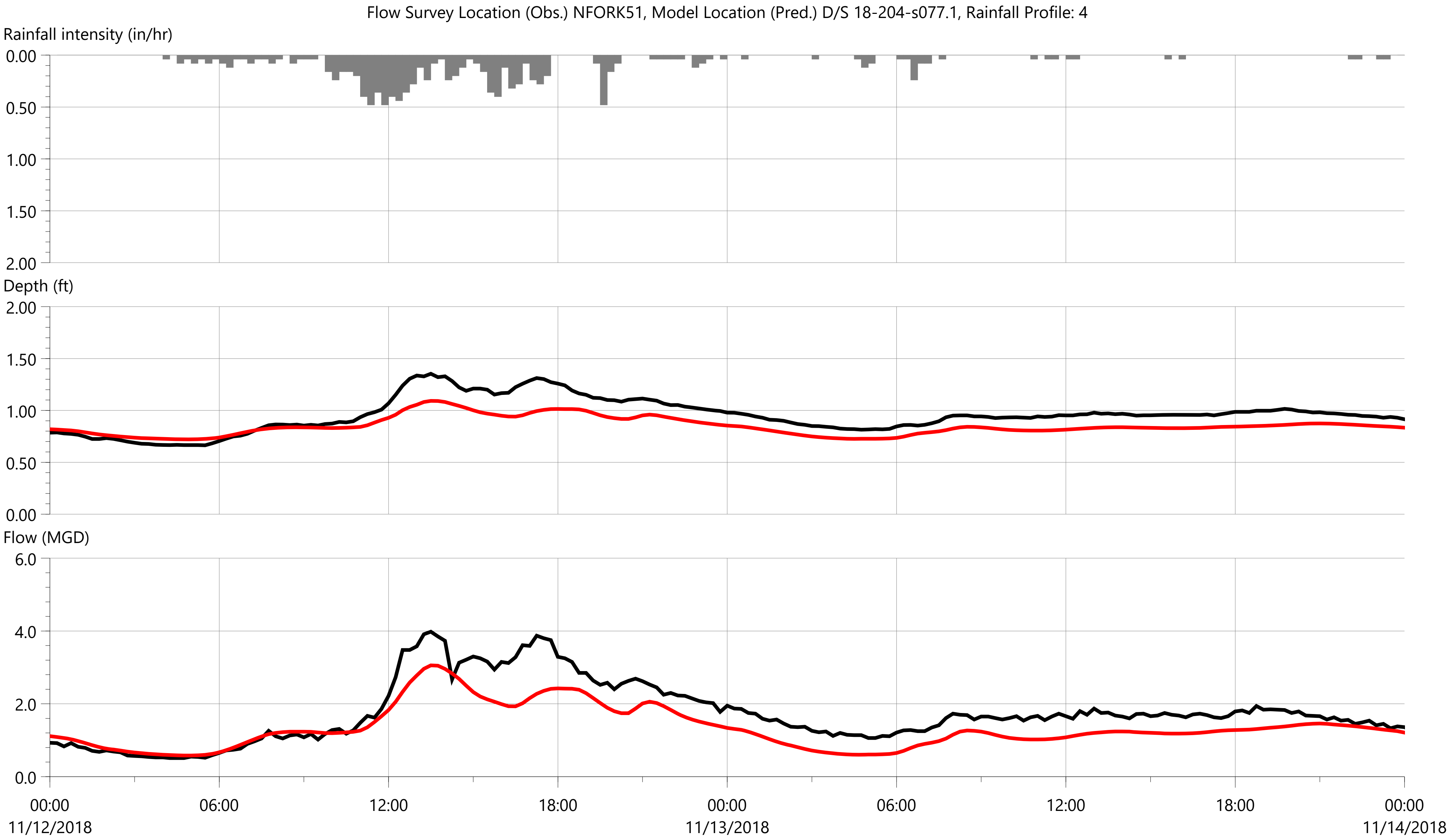

	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.860	0.480	0.060					
Observed				0.664	1.353	0.510	3.980	3.486
...ainfall Event_2018				0.722	1.092	0.581	3.055	2.663

Observed / Predicted Report (Custom graph) - Graph Template

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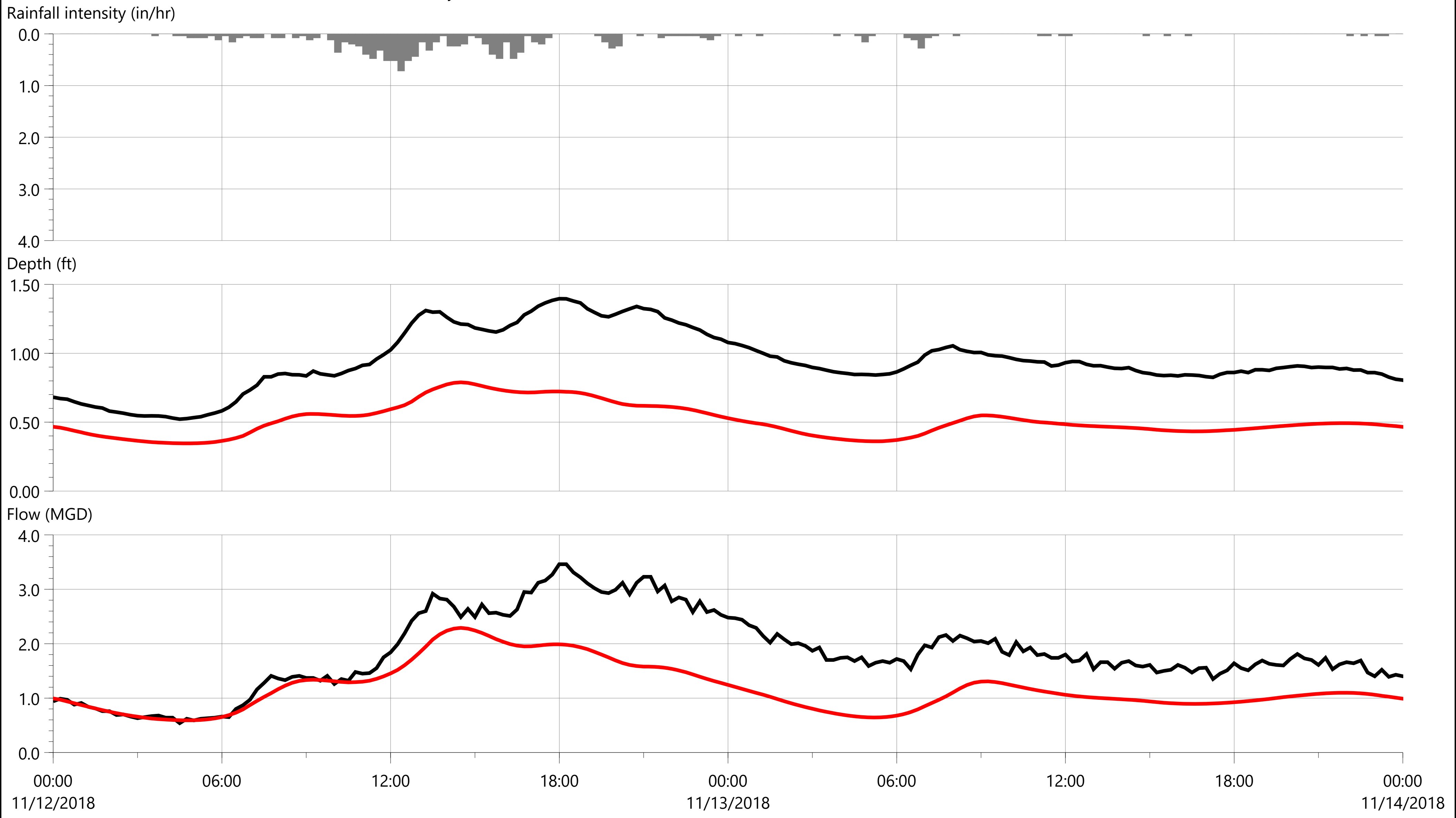
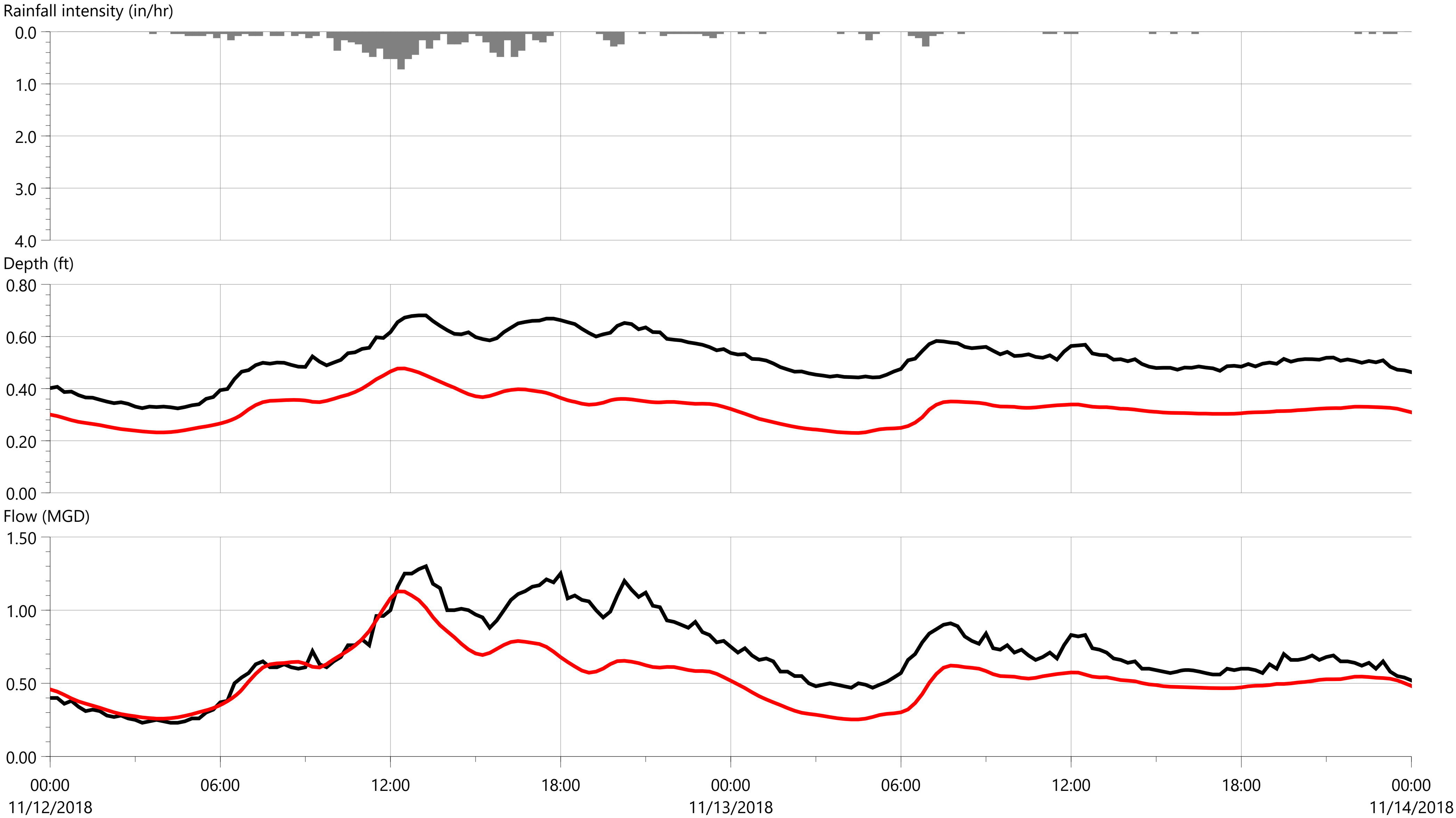
Flow Survey Location (Obs.) NFORK52, Model Location (Pred.) D/S 18-249-s016.1, Rainfall Profile: 2



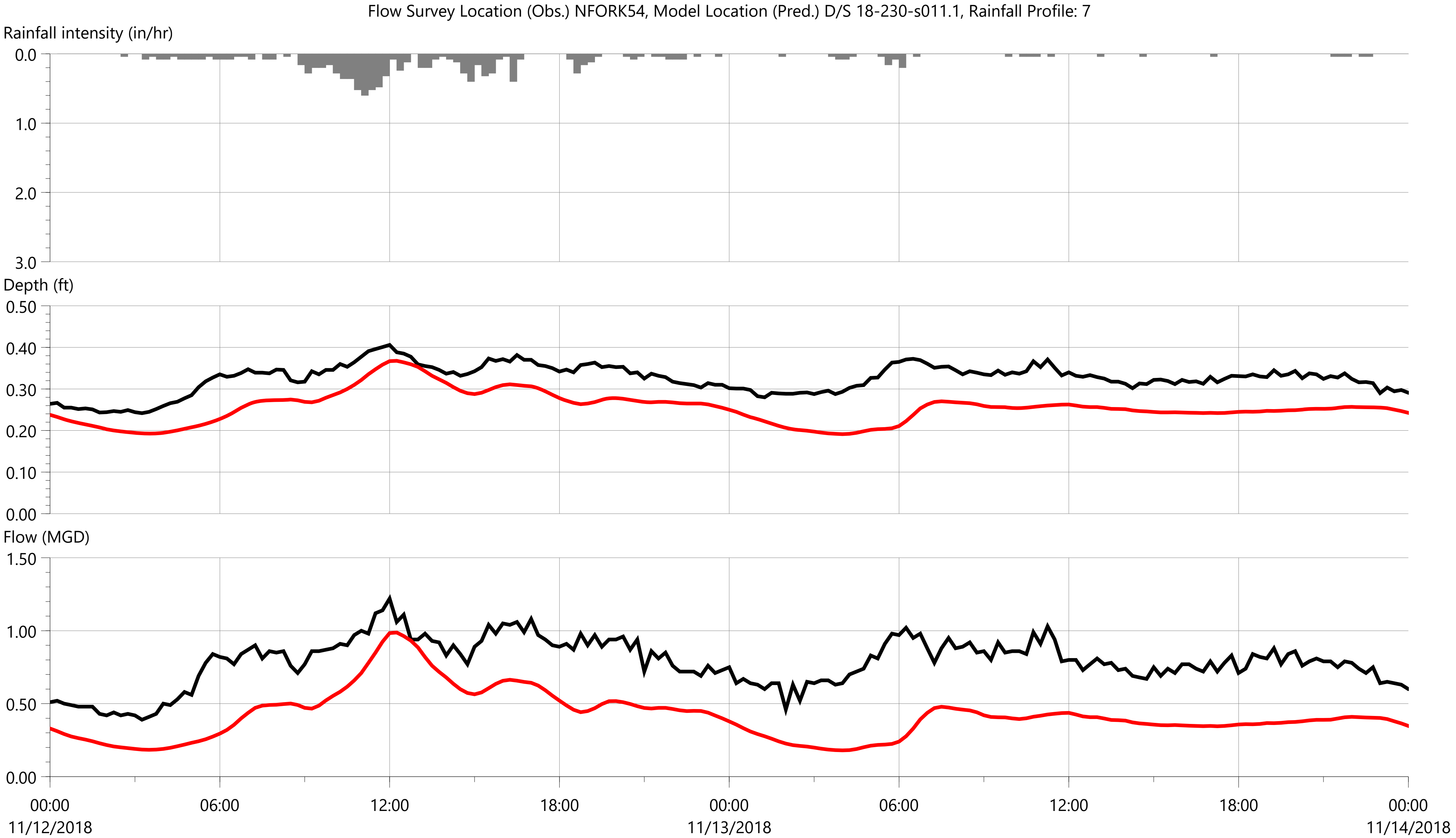
		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	🟦	3.310	0.720	0.069					
Observed	⬛				0.522	1.396	0.540	3.460	3.674
...ainfall Event_2018	🟥				0.346	0.789	0.593	2.290	2.360

Observed / Predicted Report (Custom graph) - Graph Template


Flow Survey Location (Obs.) NFORK53, Model Location (Pred.) D/S 18-249-s046.1, Rainfall Profile: 2

		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	━	3.310	0.720	0.069					
Observed	━				0.324	0.681	0.230	1.300	1.409
...ainfall Event_2018	━				0.229	0.477	0.253	1.128	1.077

Observed / Predicted Report (Custom graph) - Graph Template



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.880	0.600	0.060					
Observed				0.242	0.406	0.390	1.220	1.574
...ainfall Event_2018				0.191	0.368	0.180	0.987	0.837

Observed / Predicted Report (Custom graph) - Graph Template

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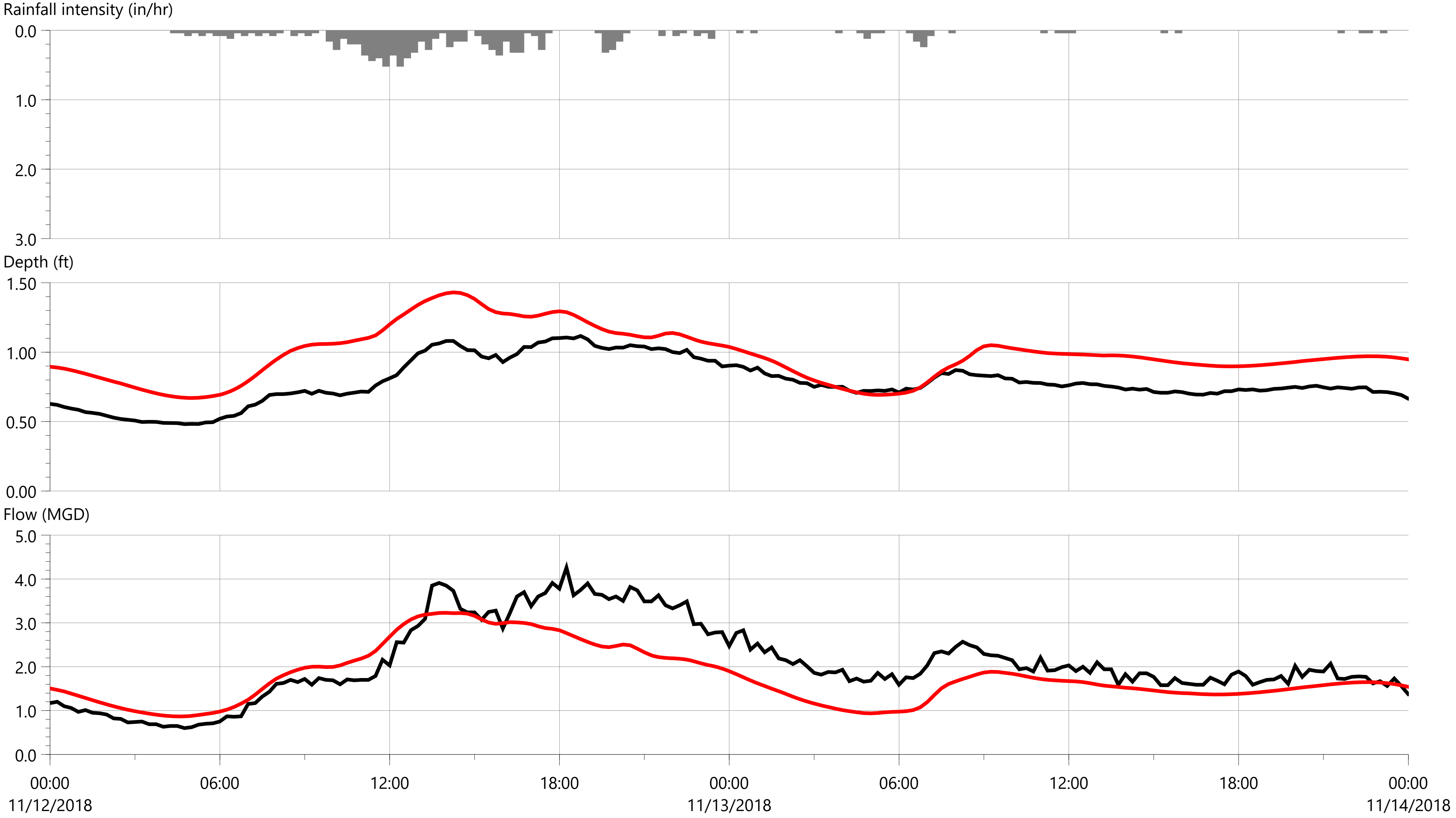
Flow Survey Location (Obs.) NFORK55, Model Location (Pred.) D/S 18-247-s163.1, Rainfall Profile: 1



		Rainfall			Depth		Flow		
		Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	—	2.860	0.520	0.060					
Observed	—				0.482	1.117	0.600	4.260	4.199
...ainfall Event_2018	—				0.670	1.431	0.867	3.229	3.542

Observed / Predicted Report (Custom graph) - Graph Template

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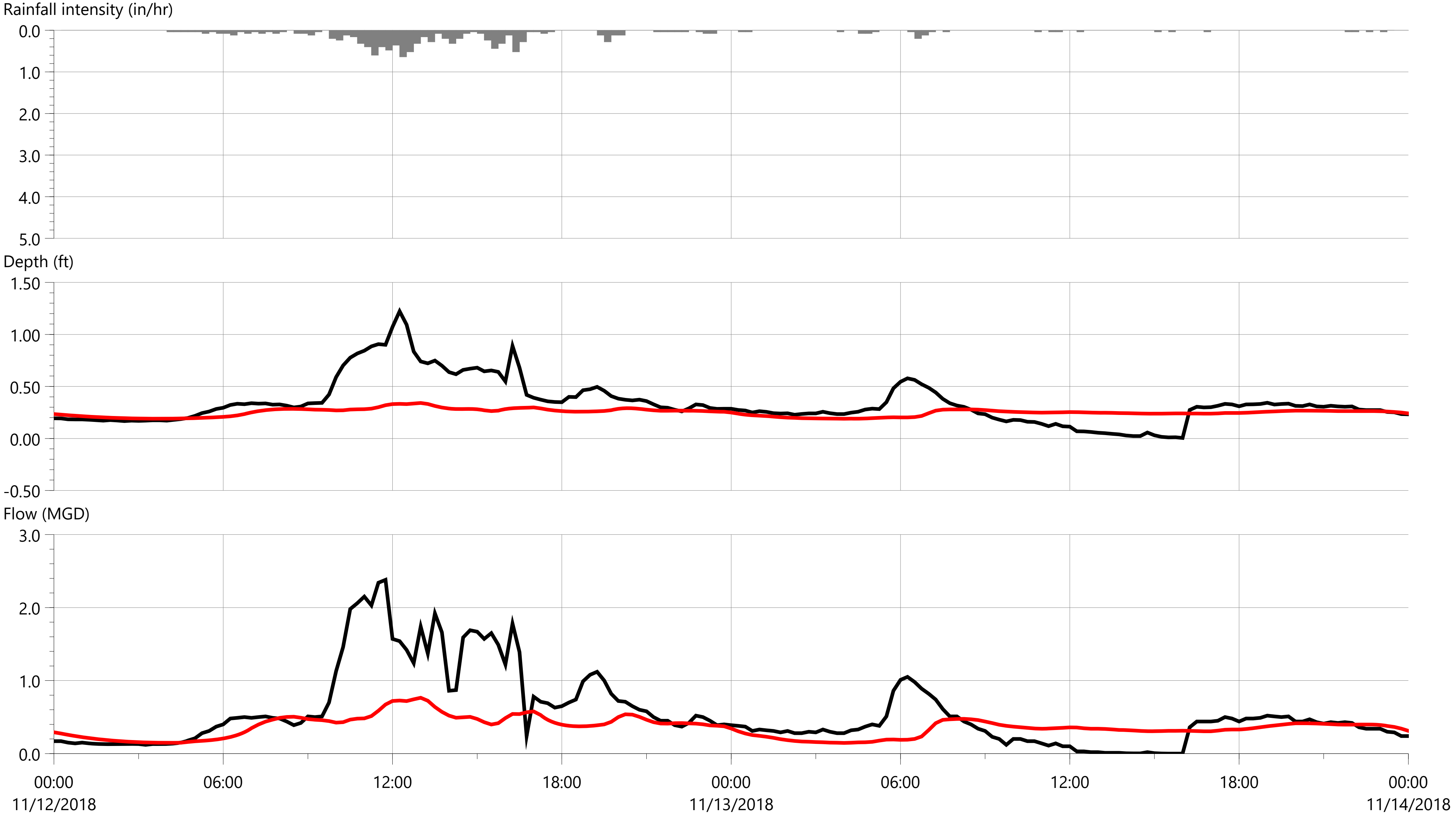
Flow Survey Location (Obs.) NFORK56, Model Location (Pred.) D/S 18-202-s045.1, Rainfall Profile: 5



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain ━	2.970	0.640	0.062					
Observed ━				0.005	1.222	0.000	2.380	1.106
...ainfall Event_2018 ━				0.190	0.341	0.145	0.765	0.720

Observed / Predicted Report (Custom graph) - Graph Template

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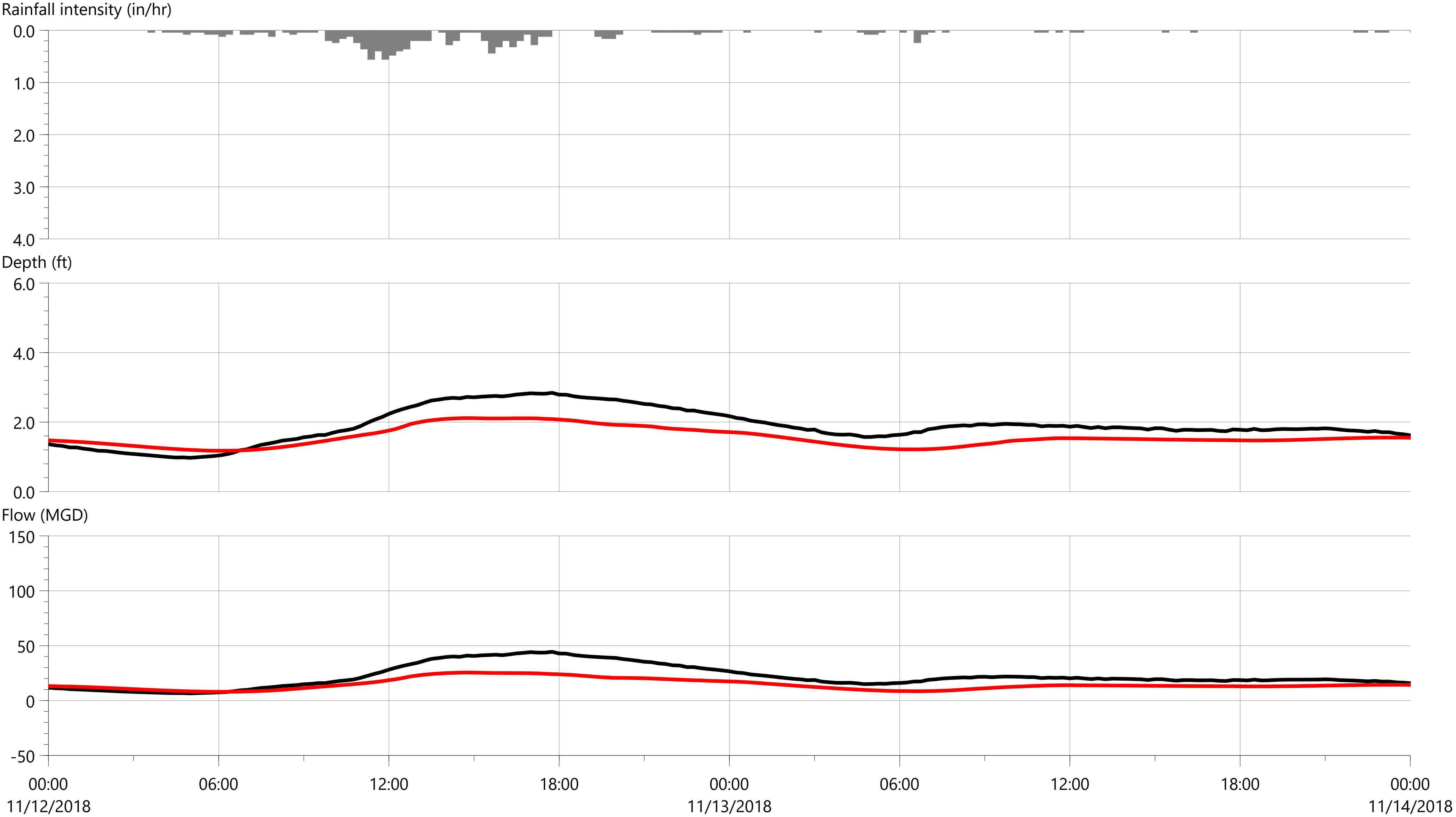
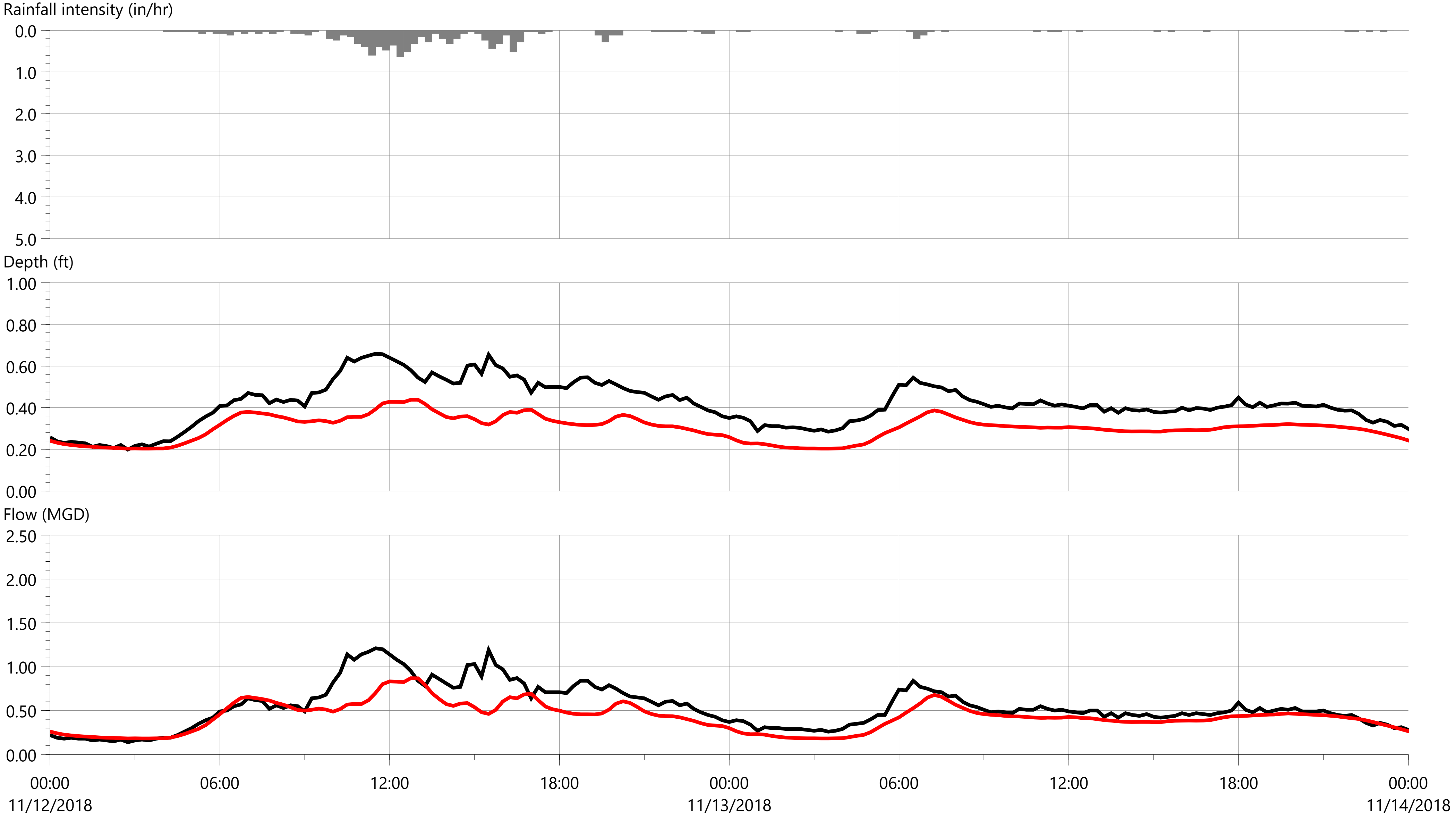
Flow Survey Location (Obs.) DK2, Model Location (Pred.) D/S 18-154-x312.1, Rainfall Profile: 8



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.760	0.560	0.058					
Observed				0.973	2.842	6.610	44.420	43.790
...ainfall Event_2018				1.177	2.116	7.987	25.504	29.349

Flow Survey Location (Obs.) Roxboro, Model Location (Pred.) D/S 18-200-s024.1, Rainfall Profile: 5



	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.970	0.640	0.062					
Observed				0.199	0.659	0.140	1.210	1.084
...ainfall Event_2018				0.204	0.438	0.183	0.870	0.859

Observed / Predicted Report (Custom graph) - Graph Template

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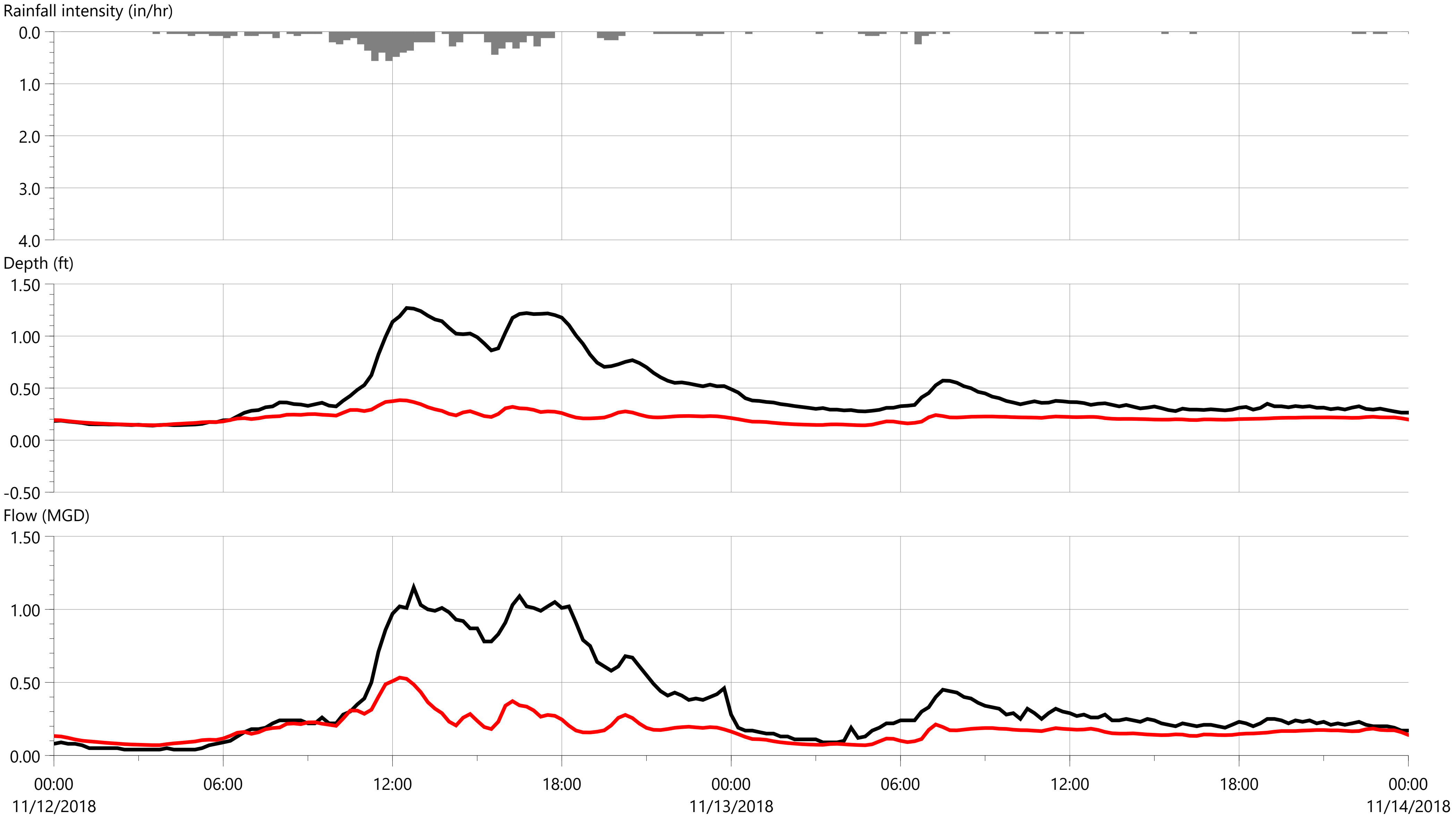
Flow Survey Location (Obs.) NFORK49_2, Model Location (Pred.) D/S 18-154-s097.1, Rainfall Profile: 8

	Rainfall			Depth		Flow		
	Depth (in)	Peak (in/hr)	Average (in/hr)	Min (ft)	Max (ft)	Min (MGD)	Max (MGD)	Volume (US Mgal)
Rain	2.760	0.560	0.058					
Observed				0.139	1.269	0.040	1.150	0.704
...ainfall Event_2018				0.143	0.383	0.070	0.533	0.356

Observed / Predicted Report (Custom graph) - Graph Template

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Appendix E
Certification Letter

Jacobs

Ten 10th Street, NW
Suite 1400
Atlanta, GA 30309
United States
T +1.404.978.7600
F +1.404.978.7660
www.jacobs.com

March 31, 2021

Attention: Director Maria Houser
Director of Consent Decree and Environmental Compliance
DeKalb County Department of Watershed Management
4572 Memorial Drive
Decatur, GA 30032

Subject: Final Sanitary Sewer System-Wide Hydraulic Model Application Reports

Dear Director Houser,

In March 2021, our team submitted final Sanitary Sewer System-Wide Hydraulic Model Application Reports to DeKalb County for the County's collection and transmission system. The model reports were provided in draft beginning May 31, 2019 and have been reviewed and commented on by the County, a third party peer reviewer, the U.S. Environmental Protection Agency, and the Georgia Environmental Protection Division. The March 2021 final reports reflect changes associated with those reviews and comments.

There are seven final reports, one for each of the County's seven hydraulically independent drainage areas within the system, which are:

- *Snapfinger Basin* encompassing all flows to the Snapfinger WWTF
- *Pole Bridge Basin* encompassing all flows to the Pole Bridge WWTF
- *South Fork Peachtree Creek* encompassing all flows to the City of Atlanta's South Fork Peachtree Creek Trunk/Relief Sewer
- *North Fork Peachtree Creek* encompassing all flows to the City of Atlanta's North Fork Peachtree Creek Trunk/Relief Sewer
- *Intrenchment Creek* encompassing all flows to the City of Atlanta's Sugar Creek Trunk Sewer
- *Nancy Creek* encompassing all flows to the City of Atlanta's Nancy Creek Basin
- *Miscellaneous Sewersheds* encompassing all flows to Fulton County and Gwinnett County.

Pursuant to the Modification to Consent Decree, lodged October 21, 2020 in *United States and State of Georgia v. DeKalb County*, Civil Action No. 1:10-cv-04039-SDG (the Modification), Jacobs certifies that each of the seven above described reports was developed fully consistent with the requirements of the Consent Decree, as amended by the lodged Modification. In particular, each of the above reports meets the requirements of new paragraphs 28 and 29 to the Consent Decree (*See* Modification, ¶4, p. 9-20), including specifically the requirements of paragraph 29(a). We note that, while the final reports addressed comments received, the prior drafts of these reports also met all the requirements of the lodged Modification.

We note that to achieve meaningful results, these tools must be properly applied by a competent professional in the manner anticipated in the reports and consistent with DeKalb County's Capacity Assurance Program document.

Please let us know if you have any questions or need any further assistance.

Sincerely,

CH2M Hill Engineers, Inc.

Kai Iaukea, P.E.
Program Manager