CITY OF GEORGETOWN, SOUTH CAROLINA
STORMWATER SYSTEM IMPROVEMENTS – GISTORIC DISTRCT
ADDENDUM NO. 1
EDA # 04-79-07494
COG PROJECT # 4015
April 26, 2023

TO ALL BIDDERS:

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated March 2023 all previous Addenda.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

Below are changes, additions, and clarifications (questions/answers) to the bid documents for this project.

QUESTIONS AND ANSWERS / CLARIFIATIONS

Responses to Questions received are being provided for informational purposes only and will not be considered as part of the Contract Documents.

Clarification 1: The designated General Contractor will remove and reinstall the fire protection dry pipe attached to the boardwalk through the city's designated contractor: **Grand Strand Fire Sprinkler: Mr. Jeff Hunter or Mr. Randy Long at (843) 399-1227.** The cost for this work shall be incorporated under Division I Bid Item #5 Constitution Park Walkway.

Q1: Will there be one EDA project sign for the entire project or one for each division?

A1: Only one sign will be necessary. Place sign at Constitution Park.

Q2: How is the parking lot pavement to be paid in Division 2 at Bethel Church? We did not see a bid item.

A2: The cost is included as "trench and replace" under Section 33 42 13 of the Specifications. Disregard "Note A" on Sheets C2.4 and C2.6 calling for mill and overlay in the parking lot.

Q3: Will landscaping and trees have to be replaced? Where is this paid for?

A3: Landscaping will be replaced. Trees will be protected to the maximum extent feasible and replaced as necessary. Include the cost in the item of work being constructed.

Q4: Is there any required night work? If so, where?

A4: Yes, for the lane closures on Church Street, a.k.a US Hwy 17.

Q5: What base is required under brick pavements? Can we get a detail?

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A5: See Section 02 20 00 of the Specifications. Restoration shall be in accordance with Paragraph 1.1.B.1.

Q6: The pavement detail on Sheet F14.0 shows asphalt patch to be 3" minimum or match existing thickness. What is the exiting thickness? If unknown, what thickness do we price?

A6: Typically, 3", or less. Price for 3" thickness. Sheet D14.0.

Q7: Will all pipe trench cuts in the streets be required to have 3' of flow fill base? See Sheet 14.0. If not, what base will be required?

A7: Yes, on all SCDOT roads.

Q8: Is the existing soil material required to be mucked out before we place import fill in the church pond / ditch and in the fill area Sheet 1.2, Station 0+24? If so, how much do we muck out, and will it be paid?

A8: Mucking is not anticipated. If mucking is required, it would be measured and paid on a CY basis per change order.

Q9: If the native excavated material is not suitable for backfill around the pipe and structures, will import fill be an added pay item or is it to be included in the pipe?

A9: Include bedding with the cost of the pipe. The cost of suitable backfill material is to be included in pipe bid item.

Q10: Is all the pipe to be installed by SCDOT Details on Sheet D11.8?

A10: Yes, and in accordance with Divisions 31 and 33 of the Specifications.

Q11: Please confirm the Minority (33%) and Female (6.9%) goals pertain to the contractor's work force.

A11: Correct

Q12: Project wide, will there be hourly and daily work restrictions during construction.

A12: Reasonable working hours are seven (7) a.m. to seven (7) p.m. Exceptions will be discussed at the Pre-construction Conference with the Owner and successful bidder.

Q13: Which CPM scheduling software will the City require?

A13: The City has no preference on the CPM software.

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Q14: Please confirm the information contained in the Project Manual Section 01 40 00-1 1.5A Testing and Inspection Services.
A14: Confirmed

Q15: Please confirm that any possible schedule delay due to the various utility relocations will be added to the overall 560 days.
A15: A time extension will be issued in the form of a change order for any delays out of the control of the Contractor.

Q16: Will message board be required as part of the traffic control?
A16: This will be determined by the SCDOT.

Q17: Are there any schedule milestone dates associated with the completion of any of the divisions?
A17: No

Q18: Throughout all the Divisions, the relocate waterlines are listed with valves, are we to assume that all of the relocations will require a (2) valves?
A18: Yes, per the plans and the Bid Form.

Q19: Is there a specific type of material the City would like to use as select fill?
A19: In accordance with Section 31 23 16 of the specifications and recommendations of the inspection (testing) agent.

Q20: Does the City anticipate the need of SCDOT improved foundations for any pipe installation throughout the project?
A20: No. Existing drainage is being replaced in the SCDOT Right-of Ways.

Q21: Sheet TC-2, are we to assume that the total number of days for the full road closure will be 30 business days and temporary lane closures will be allowed if needed.
A21: Yes. The ultimate authority for the length, duration and timing will be the SCDOT.

Q22: Please confirm that the various utilities will be responsible for their own traffic control.
A22: Utilities will be responsible for their own traffic control. This item will be paid for out of the allowance provided for the utility being relocated.

Q23: Will the City of Georgetown be providing an area for the storage of the Historical Cannon and Anchor?
A23: Yes.

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Q24: The Historical Cannon's existing supports, are there as built record drawings or can a detail be provided.
A24: No. Replace the existing or submit a shop drawing for an alternative structure.

Q25: Are there any as built record drawings for the existing knee-high walls and are we to reuse the existing bricks?
A25: See the answer to Question 5. Yes, where possible.

Q26: Will the contractor be required to replace the planters?
A26: Yes.

Q27: Will Constitution Park be allowed to be closed to all pedestrian traffic during construction?
A27: Yes.

Q28: Will an erosion control plan be provided for the expansion of Constitution Park, more specifically for the placement of select fill, and the removal of the existing buck head and pier as well as the construction of the new bulkhead?
A28: The erosion control plan is a part of the Project Documents and the approved SWPPP. Comply with the conditions of the permits and the Construction Documents.

Q29: Sheet S-001 Environmental Considerations, during the construction of Constitution Park dewatering will be needed, please provide a general dewatering plan detailing the locations of the dewatering treatment bags and discharge points.
A29: These represent the means and methods of the Contractor.

Q30: Will we be able to pump the treated water bag into the bay?
A30: Refer to the SWPPP, attached as part of this addendum.

Q31: The existing bulkhead and pier demolition, please provide the limits of demolition for the posts are we to assume 2 feet below the existing grade?
A31: Two (2) feet below grade will be acceptable.

Q32: What are the pay items associated with the demolition of the existing bulkhead and pier?
A32: Lump Sum included in Division I-Item 4 of the Bid Form.

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Q33: In the event that over excavation or mucking and backfilling is required, how will the City of Georgetown handle this?
A33: See the answer to Question 8.

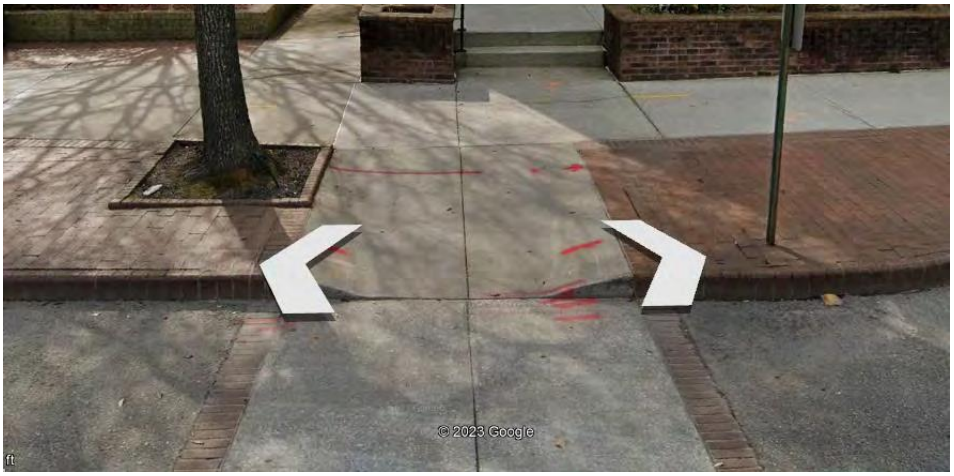
Q34: For the bulkhead construction, will the City of Georgetown consider a different type of anchoring system other than helical tiebacks?
A34: Not without approval from the Bulkhead Designer, Andrew Consulting Engineers, P.C.

Q35: Division 1 Bid Item 7, Place and Compact Select Fill, if the quantity of 760 CY over runs who will be reasonable for the additional cost of this over run.
A35: The quantity of compacted fill will be measured, verified by the independent testing agent, and paid accordingly.

Q36: Division 1, will there be a bid item added for the removal and replacement of existing signs?
A36: No.

Q37: Division 1, please add a bid item and detail for the pavement patching for the Front Street and Orange Street for the pipe installation and demolition.
A37: Replace these items in kind in accordance with Section 02 20 00, Paragraph 1.1.B.1. Include in the cost for the item requiring the removal and restoration. See Detail 3 Sheet D14.0.

Q38: Division 1 Bid Items 9, 10, and 11, please confirm these items are associated with the replacement pictured below.



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A38: Remove and replace (restore) the items shown on the plans and quantified in the Bid Form.

Q39: Will the existing fire hydrant near the intersection of Front Street and Orange Street need to be relocated?

A39: No.

Q40: Will a bid item and detail be added for the connection of an existing roof drain as noted on sheet S1.5?

A40: On Sheet C1.5, connect the existing roof drain to CB-12, and include the cost for that item in the Catch Basin cost.

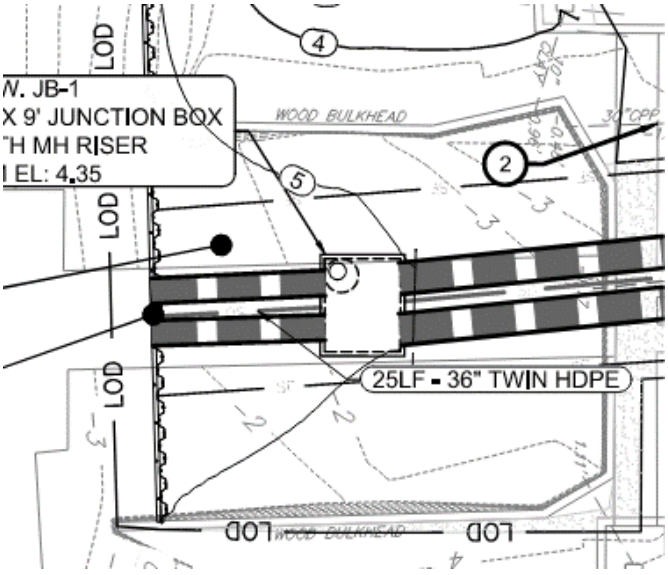
Q41: Please provide a pavement marking plan.

A41: Replace the existing pavement markings unless directed otherwise by the SCDOT. Pavement markings must comply with SCDOT standards.

Q42: In accordance with Project Manual Section 01 04 60 -2 3.05 A, are the existing trees which may or may not be damaged during construction fall under this or were they missed on the Demolition plan as detailed in Section 31 10 00-2 3.4 A.

A42: All items not called for to be removed and replaced should be preserved and protected.

Q43: Sheet S2.01, can an additional detail be added showing what is to be constructed in the area of the demolished pier and the limits, tie into the existing pier.



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A43: The inserted drawing is not from Sheet S2.01. The question is not clearly stated.

Q44: Division 2 Sheet TC-3, please confirm that the detour is for the HWY 17 (Church Street) work which is to be performed at night with two-way single lane movement on HWY 17 for a total duration of 10 business nights.
A44: The plan is clear.

Q45: Can a bid Item be added for vibration monitoring during the construction of Division 1?
A45: No. That would be the Contractor's responsibility as part of the means and methods.

Q46: Please add a bid item and detail for the pavement patching for the HWY 17 pipe crossing and demolition.
A46: The details are included in the Contract Documents and the cost should be included in the bid item being constructed.

Q47: Division 2, please add a bid item for the pavement patching associated with the various streets pipe installation and demolition.
A47: The cost for trenching and replacing pavements should be included in the cost for the bid item being constructed. A separate item is included for resurfacing (mill and overlay) for public roads.

Q48: Division 2 Sheet TC-3 note 5, will the City consider assisting with prohibiting off street parking?
A48: Yes.

Q49: Division 2 traffic control, please confirm that all other operations associated with this division will be performed under a flagging operation during daylight hours.
A49: Sheet TC-3 states "Night Work Only" for the flagging and drainage installations crossing Church Street, a.k.a US Hwy 17.

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Q50: Please confirm the photo below is for bid item number 4.

A50: The location of the inserted photo is not apparent. Division II-Item 4 is for the wooden fence at the rear of the El Cerro property.

Q51: Division 2, please provide a pavement marking plan.
A51: See the answer to Question 41.

Q52: Division 3 Sheet TC-4, please confirm that the detour will be for the road crossings only.
A52: The detour(s) may remain in place for up to thirty days and will be in place during the period when the drainage installation at Church Street, a.k.a. US Hwy 17 are being constructed.

Q53: Division 3, please add a bid item for the pavement patching associated with the various streets pipe installation and demolition.
A53: See the answer to Question 7.

Q54: Division 3 Sheet C3.1, please provide a detail for note 5.
A54: Install a grout dam and fill the pipe with flowable fill.

Q55: Division 3, please provide a pavement marking plan.
A55: See the answer to Question 41.

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Q56: Please verify the cost of Builder's Risk Insurance (Section 00 11 00-2).

A56: $5,497,686.00

END OF QUESTIONS AND ANSWERS

W. K. Dickson & Co., Inc.
SC Certificate of Authorization No. C00177

James C Reigart

James C. Reigart, PE
Project Manager

SEAL

Bidder Must Acknowledge Receipt of this Addendum on Bid Form

CITY OF GEORGETOWN, SOUTH CAROLINA

Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) For Construction Activities:

Project/Site Name:

Stormwater System Improvements - Historic District

Project Address/Location:
Division I – Front Street System
33°22′02.7″N, 79°17′05.3″W
Division II – Orange Street System
33°22′16.1″N, 79°16′51.9″W
Division III – Queen Street System
33°21′56.8″N, 79°16′48.5″W

Primary Permittee:

CITY OF GEORGETOWN

Permittee/Owner Contact:
Orlando Arteaga
Georgetown, SC, 29440
843-545-4501
oarteaga@georgetownsc.gov

SWPPP Preparer:

W.K. Dickson and Co., Inc.
James Reigart, P.E.
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843-416-5560
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Day-to-Day Operator:

Orlando Arteaga
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843-545-4501
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C-SWPPP Preparation Date:

09/02/2022

Modification Dates:

Modification I: __ __ / __ __ / __ __ __ __

Modification II: __ __ / __ __ / __ __ __ __

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Appendices

REFERENCE MATERIAL

***C-SWPPP is acronym for Comprehensive Storm Water Pollution Prevention Plan**
****OS-SWPPP is acronym for On-Site Storm Water Pollution Prevention Plan***

Section 1 PROJECT OVERVIEW

1.1 Narrative

Construction Activities and BMP Summary

The City of Georgetown is proposing the improvements to their stormwater infrastructure at three separate divisions (locations) within the historic district of the City of Georgetown to address flooding during storm events. Division 1 is located at the intersection of Front Street and Orange Street and covers an area of approximately 1.02 acres. Division 2 is located along Orange Street between Duke Street and Nimmer Street and covers an area of approximately 1.43 acres. Division 3 is located along Queen Street in between Prince Street and Highmarket Street and covers an area of approximately 0.55 acres.

Construction activities will include the demolition/grouting of existing pipes and structures, removal of the existing bulkhead in Constitution Park at Front Street and Orange Street, removal of conflict pavement areas and landscaping, installation of new stormwater pipes and structures, replacing pavements and landscapes to match existing conditions, and the installation of a new bulkhead in Constitution Park. Construction activities will be similar across all three divisions, excluding the grading activities and bulkhead construction in Constitution Park.

Perimeter Control BMP's will be installed prior to the initiation of the demolition of existing structures of each site. Inlet protection will be utilized where necessary. Once the installation of the new pipe and structures are complete all BMP's will be removed.

Pre-Development Conditions

According to the NRCS Soils Survey, shown on the Soils Map in Appendix A, the soils in the project areas are classified under Hydrologic Soil Group A, C/D, and B/D. The project areas are currently developed, which means that soil conditions will likely have little effect on the amount of runoff.

Division 1: Front Street

The pre-development land use conditions for this project area consists of impermeable paved parking and streets with commercial buildings. Constitution Park consists of both paved walkways and open grassed areas with landscaped benches, planter boxes and monuments. This system has two outfalls (30" CPP & 12" HDPE) through the existing bulkhead into the Sampit River. A Location Map is included in Appendix B of this report.

Division 2: Orange Street

The pre-development land use conditions for this project area consist of impermeable paved parking and streets with both residential and commercial buildings along the

street. This system has a single 18" RCP outfall to the Great Pee Dee River. A Location Map is included in Appendix B of this report.

Division 3: Queen Street

The pre-development land use conditions for this project area consists of impermeable paved parking and streets with residential properties along the street. The stormwater system currently discharges into the Sampit River near the intersection of Queen Street and Front Street as a 48" HDPE pipe.

Post-Development Conditions

Post development conditions will match the pre-development conditions outside of the additional catch basins/infrastructure to capture the runoff across each of the systems and reduce flooding within the roadways.

A stormwater hydrologic model was developed using EPA SWMM version 5.1 to evaluate the existing stormwater conveyance systems located within the project sites to compare pre-development condition peak flowrates with post-development condition peak flowrates. Per SCDHEC and Georgetown County requirements, the peak flows for the project were evaluated using a NRCS Type II rainfall distribution with a 24-hour duration for the two (2) and ten (10) year design storm event. The increase in peak flow rates for Front and Queen Street are due to the improvements to the system allowing additional flow into the system and out of the outfalls. A summary table showing the comparison of peak flowrates is illustrated in Table 1 below.

Table 1: Pre/Post-Development Peak Discharges

Rain Event	Front Street		Queen Street		Orange Street	
	Pre	Post	Pre	Post	Pre	Post
2-yr	49.8	50.5	31.6	31.8	64.2	60.4
10-yr	82.7	84.3	51.4	52.3	108.9	106.7

We are requesting a waiver from the detention requirement in accordance with R.72-302(B) and our justifications are 1) that the increases are "de minimis" and implementing additional stormwater management for peak control would disturb environmentally sensitive resources and potentially aggravate downstream flooding by delaying the time to peak of local hydrograph to be aligned with he peak of any larger offsite watersheds and reason 2) increases will discharge directly to tidally influenced waters and would not have any adverse impact on downstream/adjacent properties.

Flooding Issues

As part of the *City of Georgetown Stormwater Management Plan Volume I,* dated July 2019, flooding issues have been identified by the City, and through public questionnaires distributed by WK Dickson. Property holders surrounding each of these systems have

reported that they have experienced flooding in their yards and structures. In addition, City staff have received complaints through the years. Our questionnaire identified five (5) property owners within the Orange Street System, two (2) property owners within the Front Street System, and three (3) property owners within the Queen Street System that have experienced flooding over the years.

According to the FEMA Map, shown in Appendix A, the project areas are located in FEMA Flood Zones AE and X. The proposed project will not introduce any new potential flooding issue.

Limits of Disturbance

The limits of disturbance were minimized to the maximum extend allowable to permit the contractor enough work area to construct the proposed improvements. The project will disturb approximately 3.0 acres across the three project sites (1.02 acres Front Street, 1.43 acres Orange Street, 0.55 acres Queen Street).

1.2 Stormwater Management and Sediment Control (CGP Section 3.2.2)

Erosion Prevention BMPs

As the existing site pavements are demoed and construction of the stormwater pipes and structures are installed, erosion prevention BMPs shall be placed throughout the construction site to aid in the prevention of sediment-laden stormwater runoff. These BMPs shall be focused in areas with high potential of erosion, areas preceding infiltration practices, and shall be applied to all steep slopes.

Each erosion prevention measure shall be selected on a location-specific basis and details have been provided on the construction plans. The plans identify proposed Erosion Prevention BMPs and the recommended installation, maintenance, and inspection procedures.

Examples of Erosion Prevention BMPs are, but are not limited to, surface roughening, temporary seeding, inlet protection, erosion control blankets, turf reinforcement mats, sodding, riprap outlet protection and dust control. Information on the design and proper use of Erosion Prevention BMPs can found in SCDHEC's & Georgetown County's BMP Handbook. Any existing or proposed swales or ditches that may experience erosive velocities as a result of construction activities were designed to utilize erosion control blankets, matting or velocity dissipation BMPs to mitigate to erosive velocities if needed. Rip-rap outlet protection will be installed in proper locations as necessary and sized according to SCDHEC BMP Handbook recommendations to prevent scouring and erosion caused from high discharge velocities.

Sediment Control BMPs

Sediment Control BMPs are designed to remove some of the sediment accumulated within stormwater runoff, to the best extent practicable. These BMPs help prevent sediment impacts to adjacent properties and downstream water bodies from stormwater discharges originating from construction sites.

Typically, these BMPs are placed near each of the site's outfalls and are installed prior to clearing and grubbing of the site (before large areas of soil are exposed). However, these BMPs can also be located throughout the construction site and, in these circumstances, are installed after mass grading has occurred. Placement, sizing and modifications of Sediment Control BMPs should be left to the SWPPP preparer and/or the Site Engineer. **Contractors must consult the SWPPP Preparer as listed at the front of this SWPPP before making any significant changes to these BMPs**.

Each sediment control BMP shall be selected on a location-specific basis. Examples of Sediment Control BMPs are, but are not limited to sediment traps, sediment basins, compost sock, compost sock check dams, rock sediment dikes, sediment tubes, silt fence and inlet protection. Please consult SCDHEC's & Georgetown County's BMP Handbook for more information on Sediment Control BMPs.

Water Quality BMPs during Construction

Site-specific water quality BMPs (e.g., sediment traps, check dams, and rock sediment dikes) must be installed prior to the construction activities, grubbing and grading of the CCU parking lot, and must be kept in functioning order throughout the lifespan of all construction activities. Each of these BMPs must be maintained and inspected until all areas draining to these BMPs have reached final stabilization, approved by the construction site inspector or the SWPPP Preparer, and recorded within the stabilization log located as an appendix of the On-Site SWPPP. The location, installation procedures, and maintenance procedures for each water quality BMP can be found within the approved construction site plans.

Construction Entrances and Dust Control

All access areas into and out of the limits of disturbance, as shown on the construction plans, are required to be equipped with a construction entrance. The use of this BMP will limit the amount of sediment being transported by construction vehicles onto existing roadways or other impervious areas. Any tracked sediment, along with any attached pollutants, deposited on impervious areas could be washed downstream during the next rain event. Each construction entrance must be installed as shown in the details section of the construction site plans.

If an additional construction entrance is required that is not shown on the plans, install the construction entrance as noted by the temporary construction entrance detail, mark the location on the plans and make a record of this minor modification in the SWPPP's modification log, located in the appendices of the On-Site SWPPP.

Each stabilized construction entrance should be used in conjunction with Street Sweeping measures if it becomes apparent that sediment is still being tracked onto adjacent impervious areas, even with the use of the construction entrance.

During extremely dry conditions, drought, and/or excessive winds, the construction site should be treated for dust control to prevent the suspension of fine sediment particles into the air, being carried offsite, and deposited on adjacent properties or surface waters. This practice may not be directly called out for on the construction site plans. A water tanker used to spray the soil down may be an effective way to prevent excessive dust at a construction site.

Post-Construction Water Quality

Upon completion of all construction activities, final stabilization will have to be achieved. This will include permanent grassing utilizing native vegetation to the area. The temporary BMPs utilized during construction, double row silt fence, compost filter sock, etc. will remain in use and be maintained until the vegetation has reached complete coverage. Once the site has been stabilized and the temporary BMPs have been removed water quality will be addressed utilizing the newly established vegetation.

1.3 Sequence of Construction

The construction sequence for this project has been provided on sheet G2.0 of the construction plans. Each item/step of that construction sequence has been listed is the sequence as they should be implemented.

For additional information or questions on the sequencing please contact the SWPPP Preparer or the Permittee referenced on the cover of this SWPPP.

1.4 Buffer Zone Management

Division I: Front Street

Per Section 3.24.C.III of the Construction General Permit (CGP), the Front Street improvements will utilize Compliance Option C – Elimination of the Buffer Zone and will use the Exception – Pre-Existing Development, due to portions of Historic Georgetown within the buffer zone predate the issuance of the CGP. Before any land-disturbing activities all BMPs should be installed to prevent discharge of sediment-laden stormwater to the best extent possible.

Division II: Orange Street

Per Section 3.2.4.C.II of the Construction General Permit (CGP), the Orange Street improvements will utilize Compliance Option A – Provide the Entire Buffer Width, as the existing system discharged to this ditch. The buffer zone will be maintained along the water surface, as directed by the Compliance Option A for the CGP.

1.5 Non-Numeric Effluent Limits

Stormwater Volume and Velocity Control

During the implementation of construction activities, all parties performing work at this construction site whose work may affect the implementation of the SWPPP must be informed of and directed on how to comply with this Non-Numeric Effluent Limit, which requires the management of stormwater runoff **within** the construction site and at the **outfall**. The purpose of this requirement is to control the stormwater volume and velocity at these locations to minimize erosion.

Specifically, each responsible party should be made aware of the practices that have been or should be implemented at the construction site to accomplish these particular stormwater management practices. Below is a list of practices that may be utilized within the disturbed area and at each outfall at construction sites to control stormwater volume and velocity:

Volume Control

- Limiting the amount of disturbed area and exposed soils
- Staging and/or Phasing of the Construction Sequence;
- Sediment Basins and Sediment Traps
- Diverting off-site flow around the construction site;
- Controlling the Drainage Patterns within the Construction Site;
- Temporary Stabilization of Disturbed Areas.

Velocity Control

- Surface Roughening and/or other Slope Stabilization Practices;
- Level Spreaders, Riprap Plunge Pools and/or other Velocity Dissipation BMP's located at the Construction Site's and Sediment Basin Outfalls.

- Use of Rock Checks, Sediment Tubes, Etc. in Temporary Diversions Swales and Ditches.
- Use of Erosion Control Blankets, Turf Reinforcement Mats, and other Non-Vegetative BMPs that can be used to Quickly Stabilize Disturbed Areas.

The SWPPP Preparer/Engineer should approve any modifications (Additional BMPs or Changes to Existing BMPs) to address the management of stormwater volume and velocity prior to implementation. All approved SWPPPs that were issued coverage under the CGP should include ample BMPs and other control measures to address this specific Non-Numeric Effluent Limit.

Soil Exposure, Compaction and Preservation

Throughout construction activities, **the amount of soil exposed during construction should be kept to a minimum**. This may be accomplished by minimizing the amount the disturbed area within the permitted Limits of Disturbance (shown on the approved construction site plans) to only that which is necessary to complete the proposed work. For areas that have already been disturbed and where construction activities will not begin for a period of 14 days or more, temporary stabilization techniques must be implemented.

Prior to implementation of any major grading activities, **topsoil is to be preserved** by placing it in areas designated for stockpiling until final grades are reached. Each stockpile must be equipped with proper sediment and erosion controls to preserve the topsoil and protect adjacent areas from impacts. Once final grades have been reached, the preserved topsoil should be utilized to apply to areas identified for stabilization. Topsoil contains nutrients and organisms that aid in the growth of vegetation.

The **Compaction of Soil** should also be minimized to the degree practicable during grading activities. This is especially important during the replacement of topsoil to aid in a quick establishment of vegetative cover. Compaction of soil may also reduce rainfall's ability to infiltrate into the soil, increasing the amount of stormwater runoff.

Soil Stabilization

Throughout construction activities, soil stabilization techniques are to be initiated as soon as practicable whenever any clearing, grading, excavating, or other land-disturbing activities have permanently or temporarily ceased on any portion of the construction site and will not resume for a period exceeding 14 calendar days. For areas where initiating stabilization measures is infeasible, (e.g., where snow cover, frozen ground, or drought conditions preclude stabilization), initiate vegetative or non-vegetative stabilization measures as soon as practicable.

Steep Slopes (Slopes of 30% grade or greater)

All disturbed steep slopes (30% grade, ~3H:1V, or greater), and steep slopes to be

created through grading activities must be managed in a fashion that limits the potential of erosion along the slopes. All parties whose work is/was responsible for the creation/disturbance of steep slopes must comply with the following items:

- **Minimize the Disturbance** of all steep slopes, when possible.
- **Divert Concentrated or Channelized Flows** of stormwater away from and around steep slope disturbances.
- **Use Specialized BMP Controls** including temporary and permanent seeding with soil binders, erosion control blankets, surface roughening, reducing continuous slope length with terracing or diversions, gradient terraces, interceptor dikes and swales, grass-lined channels, pipe slope drains, subsurface drains, level spreaders, check dams, seep berms, and triangular silt dikes to minimize erosion.
- **Initiate Stabilization Measures** as soon as practicable on any disturbed steep slope areas where construction activities have permanently or temporarily ceased and will not resume for a period exceeding 7 calendar days.
- **A Vegetative and/or Non-Vegetative Cover** must be established within 3 working days from the time that stabilization measures were initiated.

Stabilization of steep slopes should be a priority for those performing work at the construction site. At the very least, runoff control BMPs should be implemented to transport stormwater runoff from the top of the slope to the toe of the slope. An example of this is to install diversion swales along the top of slope and direct the runoff towards pipe slope drains to transport the runoff to the toe of the slope. All pipe slope drain outlets are to be equipped with proper outlet protection.

Sediment Discharge Minimization

Permittees, Contractors, and all other parties responsible for conducting land-disturbing activities are required to install and maintain all erosion and sediment BMPs that are identified on the approved construction site plans. These BMPs have been designed and approved to address such factors as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soils particle sizes expected to be present on the construction site. **Proper installation, inspection, and maintenance will allow these BMPs to operate at maximum efficiencies in order to minimize sediment discharges to the maximum extent practical.**

Pollutant Discharge Minimization

Permittees, Contractors, and all other parties responsible for conducting land-disturbing activities are required to install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, the following items must be implemented:

- **Minimize the discharge of pollutants from dewatering trenches and excavations** by managing runoff with the appropriate controls. Otherwise, these discharges are

prohibited;

- **Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters**. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- **Minimize the exposure of building materials, building products, construction wastes, trash,** landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
- **Minimize the discharge of pollutants from spills and leaks** and implement chemical spill and leak prevention and response procedures.

Prohibited Discharges

Permittees, Contractors, and all other responsible parties for conducting land-disturbing activities are prohibited to discharges, from the construction site, the following items:

- **Wastewater from washout of concrete**, unless managed by an appropriate control;
- **Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials**;
- **Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance**; and
- **Soaps or solvents used in vehicle and equipment washing**.

1.6 Certification Statement

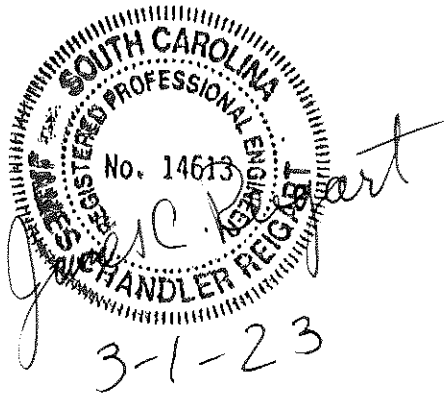
"I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000."

Name James Reigart

Title Senior Project Manager

Date 3/1/2023

(Signature and Seal)



Section 2

SITE FEATURES AND SENSITIVE AREAS

2.1 Sources of Pollution

Throughout construction activities, each permittee, contractor, and person responsible for conducting work will need to ensure that sources of pollution are managed to prevent their discharge from the construction site. Expected pollution sources during construction have been identified in **Table 2.1-A**, but due to the nature of construction activities, it is often tough to predict all pollution sources that may appear throughout the life of a construction project. For that reason, the following table has also been provided to help all those performing work at this construction site identify possible sources of pollution

Stormwater runoff subjected to the identified pollution sources must be treated by the appropriate BMPs as directed by this SWPPP.

In the event that any additional sources of pollution are identified during construction, the person(s) with day-to-day operational control at the site is to add the new source(s) to **Table 2.1-A** and consult with the SWPPP Preparer to properly address this source and to prevent the discharge of it's pollutant through stormwater runoff.

Table 2.1-A: Potential Sources of Pollution

Source	Material or Chemical	Location*	Appropriate Control Measures
Loose soil exposed/disturbed during clearing, grubbing and grading activities	Sediment	All areas within the Limits of Disturbance	As directed by the construction Plans. This includes Silt Fence, sediment tubes, sediment basins, and sediment traps.
Areas where construction equipment are cleaned, a.k.a. concrete washout	Heavy Metals & pH	Located adjacent to each construction entrance	Concrete Washout Basin as shown on sheet C-8 of the plans.
Water encountered during trenching	Nutrients & Sediment	In and around any trenching activities.	Direct water into impoundments such as basins or traps to allow for the sedimentation of the listed pollutants.
Paving Operations	Sediment & Trash	All areas to be paved.	Inlet protection.
Material Delivery and Storage Areas	Nutrients, pH, Sediment, Heavy Metals, oils & grease	All areas used as storage areas	Silt fence and/or sediment dikes

Equipment fueling and maintenance areas	Metals, hydrocarbons, oils and greases	Areas surrounding fuel tanks	Provide secondary containments, locate in upland areas. Repair leaking and broken hoses.
Paints	Metal oxides, stoddard solvent, talc, calcium-carbonate, arsenic	Throughout site, primarily in areas of building construction	Washwater should be contained and is prohibited from being discharged

***Area where material/chemical is used on site.**

2.2 Receiving Water Bodies

Stormwater runoff from the project sites that is to experience land disturbing activities discharges into the Sampit River from the Front St and Queen St. Systems and into The Great Pee Dee River for the Orange St System, both within the Pee Dee Coastal Frontage Basin(10-Digit HUC 03050208). Stormwater runoff from the project sites flow to Station MD-073, MD-074, MD077, MD-325, MD-275, MD-080, RO-13343, and RO-16391 (Nearest Downstream SCDHEC Water Quality Monitoring Stations-WQMS) located within Sampit River, and Winyah Bay. Refer to Site Maps in Appendix A.

2.3 Impairments and TMDLs

Some Waters of the State (WoS) have been identified as not meeting the State's water quality standards for recreational swimming, fish consumption, aquatic life use, and/or shellfish harvesting for one or more pollutants even after controls for point and nonpoint source pollution have been put in place. These waterbodies have been classified as "impaired." Once these waterbodies have been identified they are listed on the State's 303(d) List of Impaired Waterbodies. South Carolina lists impairments as "stations" where samples were taken along a waterbody. The most recently approved 303(d) list can be found on the SCDHEC's web site.

The primary permittee and/or contractor must ensure that the construction site discharges remain in compliance with the State's water quality standards. To do so, these parties will have to ensure the function of all approved BMPs to handle the specific pollutant.

Construction Stormwater Discharges are expected to contain pollutants that contribute and/or can cause the following impairments to receiving water bodies: BIO (Macroinvertebrate Community), Turbidity, TP (Total Phosphorus), TN (Total Nitrogen), CHLA (Chlorophyll-a), and Fecal Coliform in waters classified for Shellfish Harvesting in the coastal zone. The presence of any of these impairments in receiving waters will require approval control of the site's construction stormwater discharges. Information on each of these impairments and how to treat stormwater runoff for these impairments has been provided below.

Impairments Effected by Construction Site Discharges and Methods to Control Potential Pollutants Causing or Contributing to the Impairments

1. **BIO (Macroinvertebrate Community):** A balanced and varied group of Macroinvertebrate organisms is an indicator of a healthy stream that supports aquatic life. A balanced community can be defined as a natural, diverse group of organisms (including Macroinvertebrate) characterized by the ability to sustain itself through season changes, presence of food chain species and a lack of domination by pollutant tolerant or invasive species. If these conditions do not exist, then the site may be considered impaired due to the presence of an undesirable or non-existent Macroinvertebrate community. Sediment from construction sites may further threaten the propagation of these organisms.

   Address by: Sediment control BMPs to remove the maximum amount of sediment possible, immediate stabilization of disturbed areas and other practices may be utilized to control the discharge of sediment from construction sites.

2. **Turbidity:** Turbidity can be generally defined as the "cloudiness" of a waterbody and may be caused by the growth of aquatic phytoplankton and the presence of suspended solids in the water column. In SC, a water quality standard for turbidity is applicable to all waters of the State (see R. 61-68 D. 11. for numeric targets by waterbody classification). Turbidity levels that exceed the water quality standard may reduce light penetration, thereby inhibiting aquatic flora growth, and may reduce the ability of fauna, such as fish, to absorb oxygen across their gills.

   Address by: Sediment control BMPs to remove the maximum amount of sediment possible, immediate stabilization of disturbed areas and other practices may be utilized to control the discharge of sediment from construction sites.

3. **TP (Total Phosphorus):** Similar to total nitrogen, TP is an essential nutrient for the propagation of aquatic life. In SC, a water quality standard for TP is applicable to lakes greater than 40 acres (see R. 61-68 D. 11. for numeric and narrative targets). At acceptable levels, TP is assimilated by aquatic flora ensures the propagation of an overall balanced, indigenous aquatic community. TP levels that exceed the water quality standard are considered impaired and may cause negative impacts to the overall health of the aquatic community by promoting excessive algal growth in lakes. Phosphorous may enter a site's stormwater when excess amounts of the nutrient are applied to the site during temporary or final stabilization.

   Address by: To prevent this soil should be tested to determine the quantity of the nutrient present in the soil and the correct amount that needs to be added so that it is absorbed by the vegetation.

4. **TN (Total Nitrogen):** Similar to total phosphorus, TN is an essential nutrient for the propagation of aquatic life. In SC, a water quality standard for TN is applicable to lakes greater than 40 acres (see R. 61-68 D. 11. for numeric and narrative targets). At acceptable levels, TN is assimilated by aquatic flora and ensures the propagation of an overall balanced, indigenous aquatic community. TN levels that exceed the water quality standard are considered impaired and may cause negative impacts to the overall health of the aquatic community by promoting excessive algal growth in lakes. Nitrogen may enter a site's stormwater when excess amounts of the nutrient are applied to the site during temporary or final stabilization

   Address by: Examples include that the soil should be tested to determine the quantity of the nutrient present in the soil and the correct amount that needs to be added so that it is absorbed by the vegetation.

5. **Chlorophyll-a (CHLA):** CHLA is a pigment present in the cells of photosynthetic flora and some algal species. The presence of CHLA in an aquatic environment is a water quality indicator of the overall productivity in the aquatic system. CHLA is linked to the levels of TP, TN and light penetration in the water column. In SC, a water quality standard for CHLA is applicable to lakes greater than 40 acres (see R. 61-68 D. 11. for numeric and narrative targets). CHLA levels that exceed the water quality standard may suggest that other undesirable water quality impacts are present as the aquatic system may be too productive to support the propagation of an overall balanced, indigenous aquatic community. Excess nutrients may discharge from a construction site during temporary and final stabilization. Limiting the amount of phosphorus and nitrogen applied while establishing vegetation will prevent excessive levels of CHLA in receiving waters.

   Address by: Examples include that the soil should be tested to determine the quantity of the nutrients present in the soil and the correct amount that needs to be added so that it is absorbed by the vegetation.

6. **Fecal Coliform (FC) in Shellfish Harvesting waters:** Fecal Coliform is an indicator bacteria for other pathogens which may be present in a waterbody. Shellfish Harvesting Waters are tidal salt waters protected for shellfish harvesting and must be protected to a higher standard than other waters because of the risk to human health posed by ingesting shellfish from areas with high levels of bacteria. Bacteria levels increase following rain events. Potential sources of bacteria on construction sites include improperly located porta-johns and litter that may attract rodents and other animals.

Address by: Porta-johns should be placed away from WoS and not placed on catch basins and other drainage structures. Litter and construction debris should be placed in identified areas and emptied on a routine basis.

Impairment Sources and Prevention

Construction sites can contribute to these impairments directly through the release of excess soil and/or nutrients within stormwater runoff. For this reason, proper sediment and erosion control BMPs should be implemented and the design of the stormwater management systems, during both construction and post-construction, should address the control of stormwater runoff. A reduction in the volume released or the rate at which this volume is released can significantly improve the quality of stormwater runoff and limit the amount of the pollutants that contribute to the above listed impairments.

As an example, sediment basins and/or traps should be used during construction to allow for sedimentation of soils/nutrients, and to control the release of stormwater into the impaired water body. Vegetated Detention and Infiltration structures should be implemented as post-construction BMPs to control stormwater volumes. Caution is advised when using fertilizers to reach Final Stabilization; excess fertilizer can contribute to each of the above listed impairments.

Site-Specific Requirements

Due to the possibility of pollutants in construction stormwater discharges from this site that may contribute to impairments of receiving waters of the state, the following must be conducted throughout the lifespan of all land-disturbing activities at this site:

- Monthly monitoring of the construction site's outfalls;
- Inspections of all the primary sediment control BMPs as outlined in the 2021 Construction General Permit;
- Employee training/acknowledgement during the Pre-Construction Meeting;
- Installation of additional BMPs to meet the water quality standards (as directed by the SWPPP preparer and as approved by the regulating agency); and
- All sediment control BMPs have been designed to meet or exceed an 80% trapping efficiency.

Additionally, post-construction BMPs may be required to be installed, once final stabilization is reached, to address any established TMDL or Impairment once construction operations have been completed.

2.4 Critical Areas (CZC only)

The projects will be within two critical areas. The first critical area is within the Front St. System and will include a new bulkhead that will be within the Sampit River with two outfalls into the Sampit River. The second critical area is within the Orange St. System and will include a new outfall that will eventually get into the Great Pee Dee River. A CZC permit has been submitted for this project.

Section 3

Compliance Requirements

3.1 SWPPP Availability

The On-Site SWPPP (OS-SWPPP) and accompanying records shall be retained at the construction site and properly updated during construction. The OS-SWPPP must be implemented as written from commencement of construction activity until final stabilization and Notice of Termination is complete. It shall be placed such that it is accessible to the contractor, county, and Airport personnel.

3.2 Pre-Construction Conferences

The Pre-Construction Meeting is required prior to the commencement of any land disturbing activities. It will include the Owner, Georgetown County, Engineer, associated contractors, and all other affected parties. The Owner, or preparer of the SWPPP, will relay the requirements of the approved OS-SWPPP to all responsible parties completing work at the project site. The meeting location is to be determined; it will likely be held at a City of Georgetown Facility. A log to record attendance has been included in Appendix G.

3.3 Inspection Requirements

The project site shall be inspected regularly in accordance with the plans, OS-SWPPP, and the 2022 Construction General Permit for stormwater discharges. The contractor shall also maintain rainfall records using on-site rain gauges (See Appendix F).

3.4 Maintenance Requirements

All BMPs must be maintained in accordance with the manufacturer's recommendations and the OS-SWPPP as prescribed in section 4.3 of the NPDES General Permit for stormwater discharges. Additional requirements are included on the Site Plans.

3.5 Record Keeping

Logs are required to be maintained to track the progress, compliance, and any modifications associated with completing work at the project site. These logs can be found in Appendices F and G of the OS-SWPPP.

3.6 Final Stabilization

Upon completion of the construction, the accumulated sediment will be removed from the site and all sediment control BMPs. Permanent seeding and matting will be applied to all disturbed areas. Once final stabilization has been reached for all disturbed areas, all remaining erosion control measures will be removed, and the Notice of Termination is to be submitted.

Appendix A

Site Maps

WK DICKSON
community infrastructure consultants

Figure 1
Location Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina

0 1,000 2,000 4,000 Feet

1 in = 2,000 feet

WK DICKSON
community infrastructure consultants

Figure 2
Aerial Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina

0 210 420 840 Feet

1 in = 417 feet

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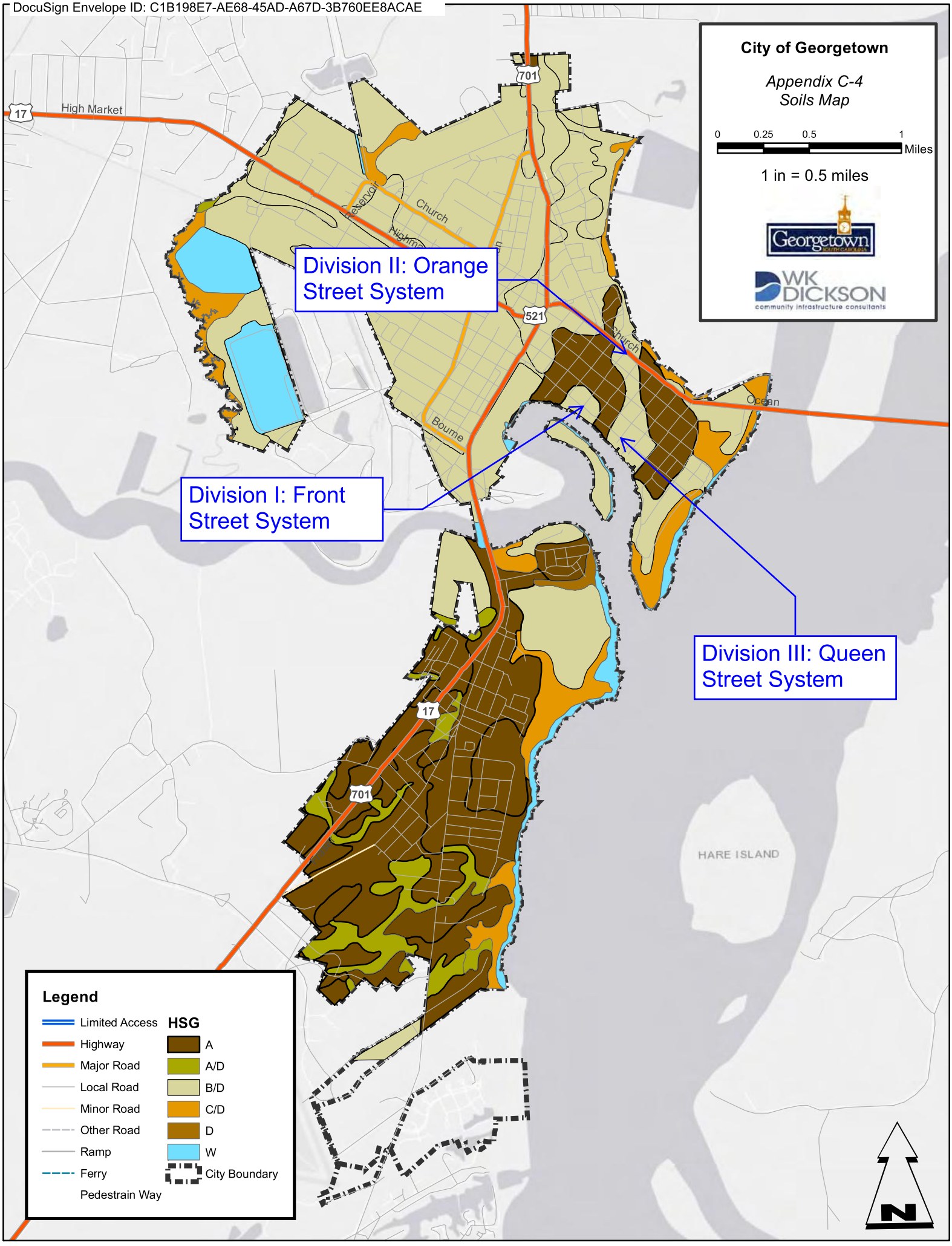
Figure 3
Topographic Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina



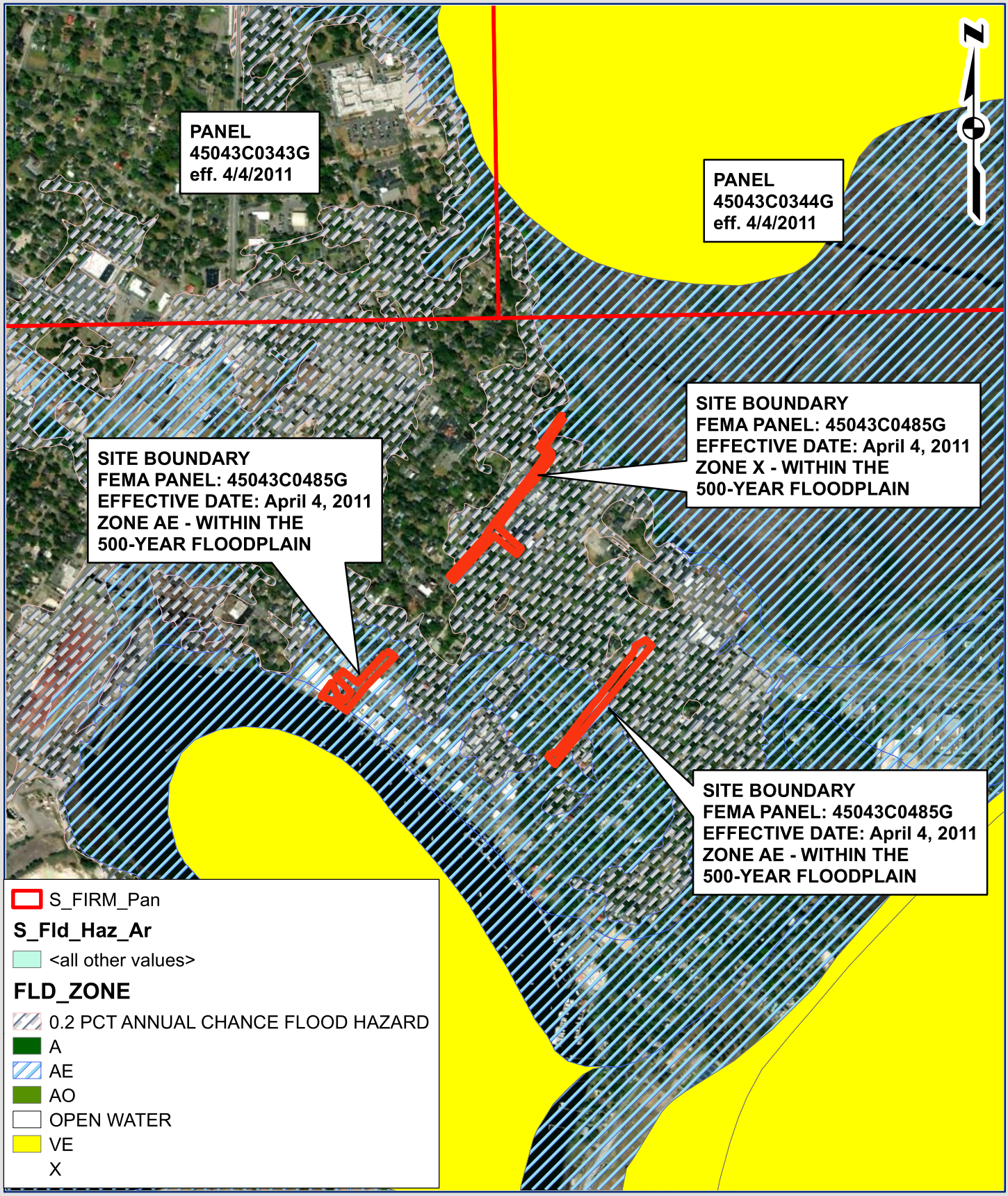
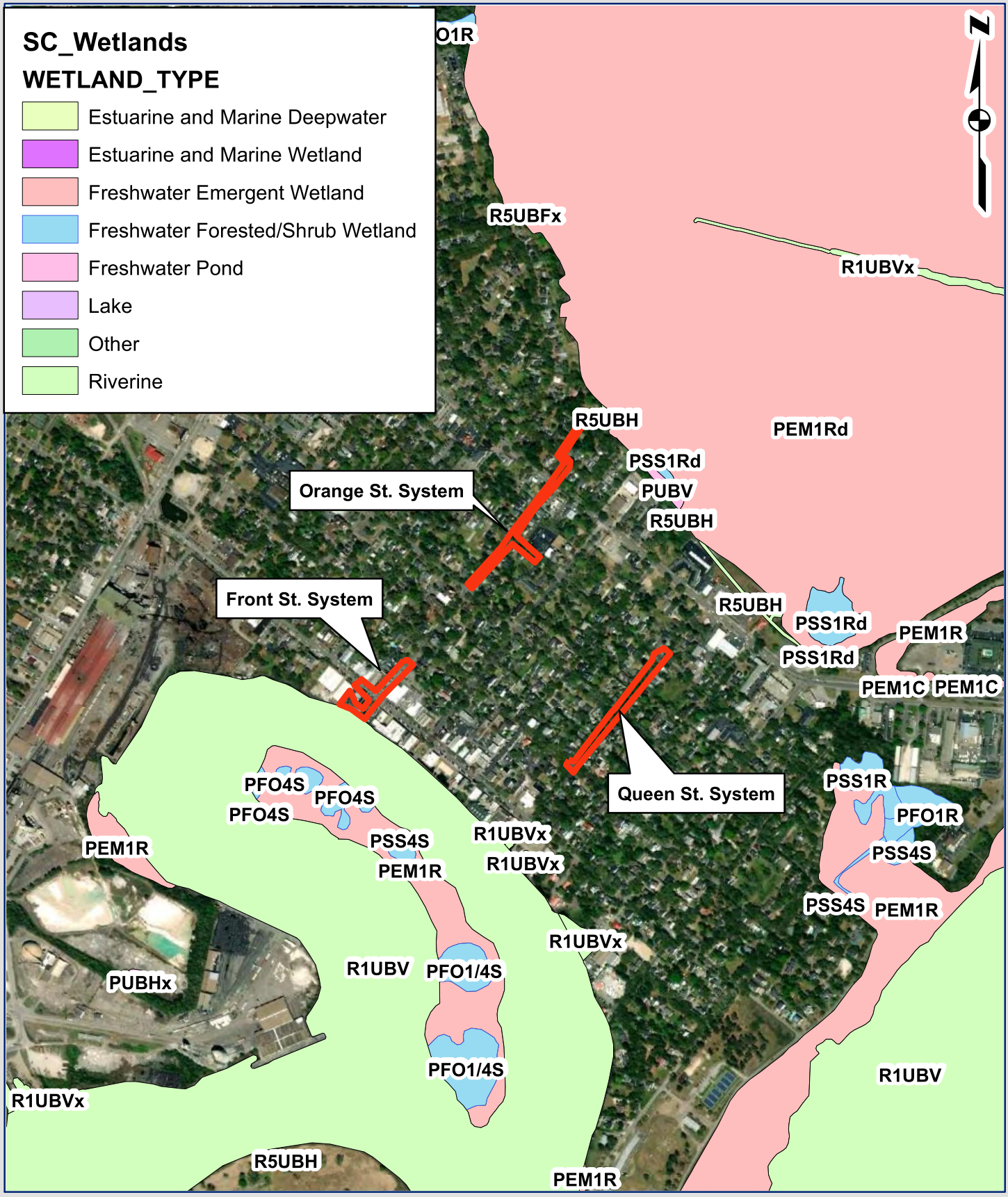


Figure 5
FEMA FIRM Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina

0 500 1,000 2,000 Feet

1 in = 1,000 feet



WK DICKSON
community infrastructure consultants

Figure 3
Topographic Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina

0 500 1,000 2,000 Feet

1 in = 1,000 feet

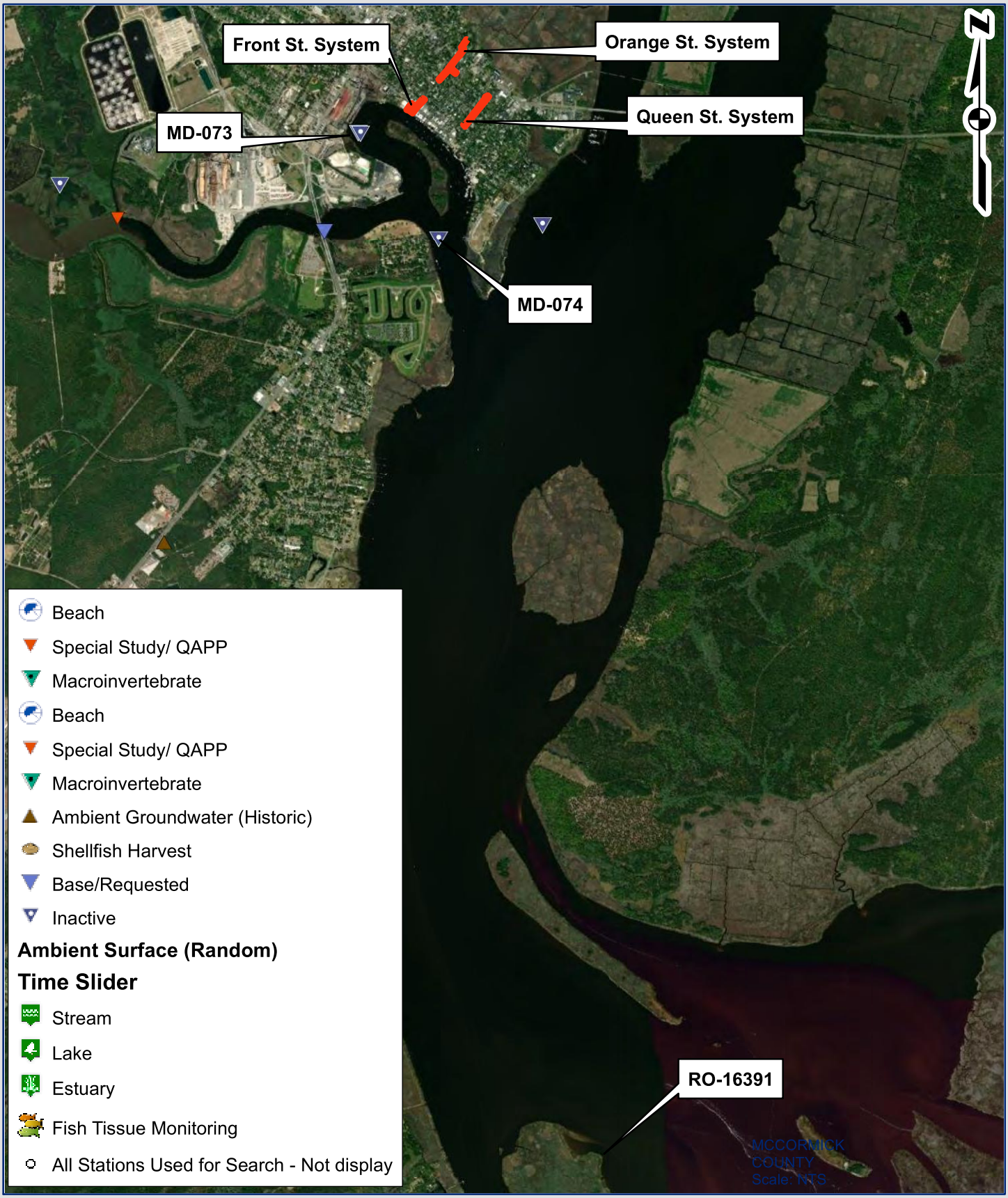


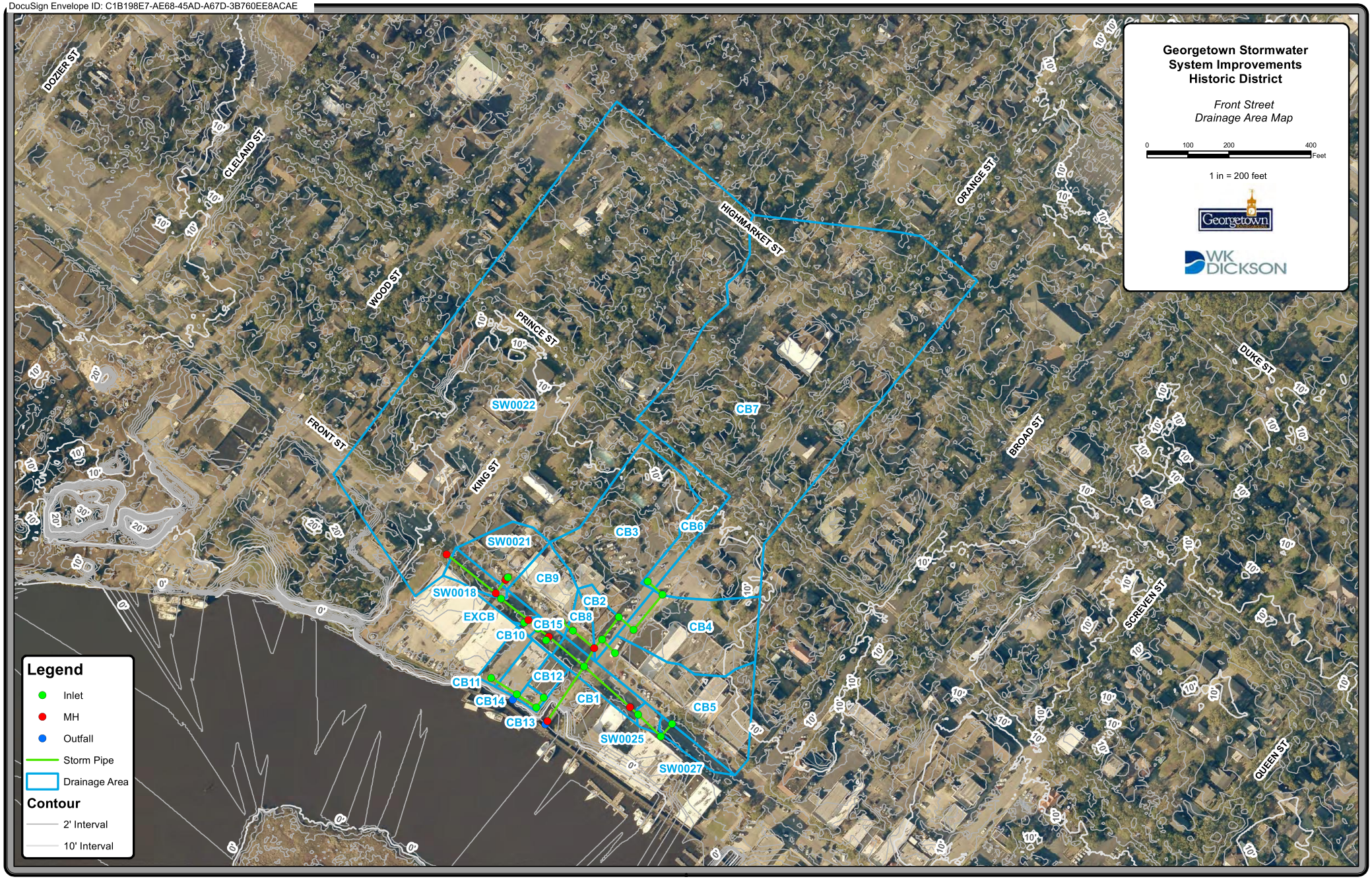
Figure 7
SCDHEC WQMS Map
Stormwater System Improvements
Historic District
Georgetown, South Carolina

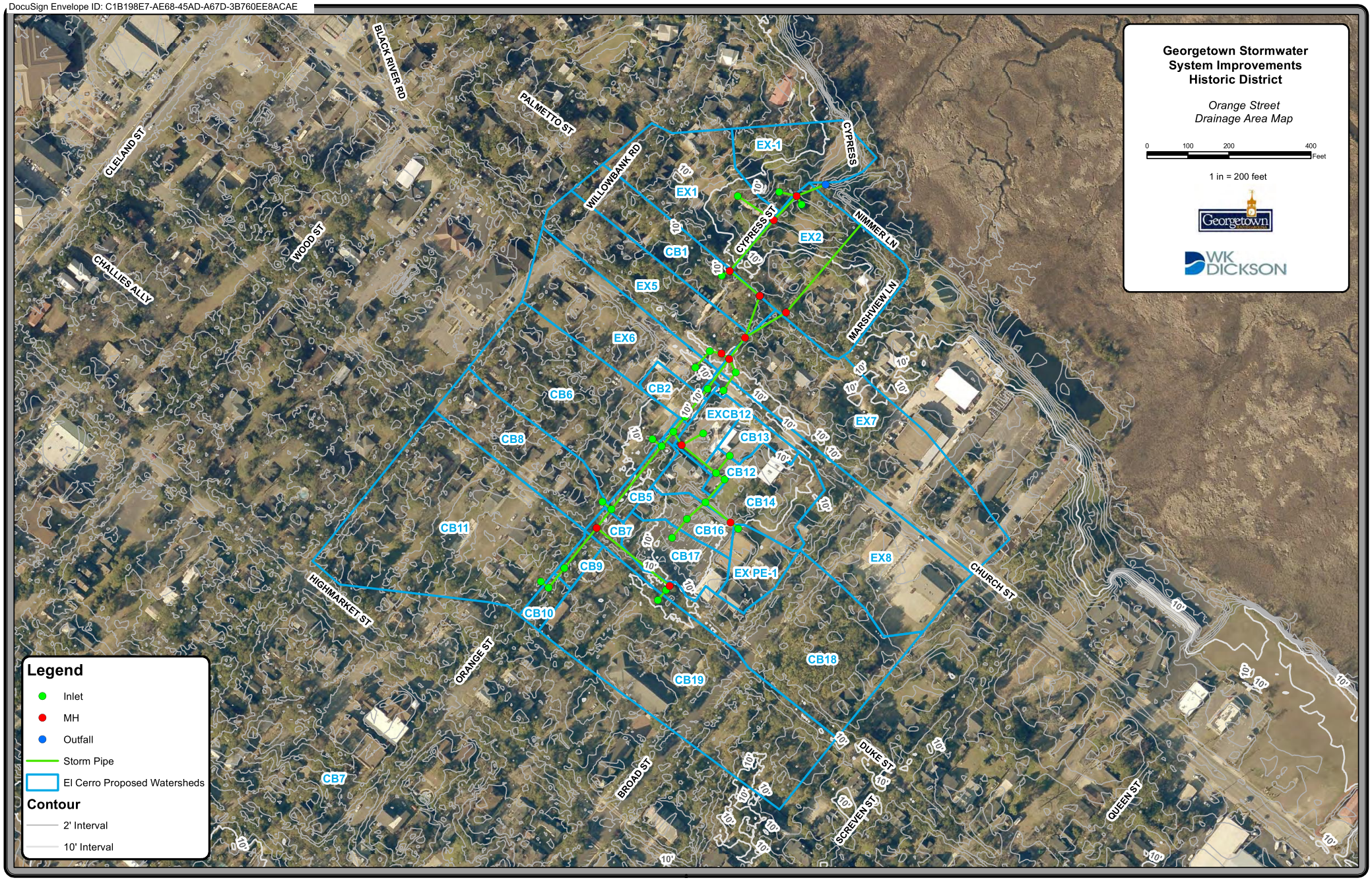
0 2,000 4,000 8,000 Feet

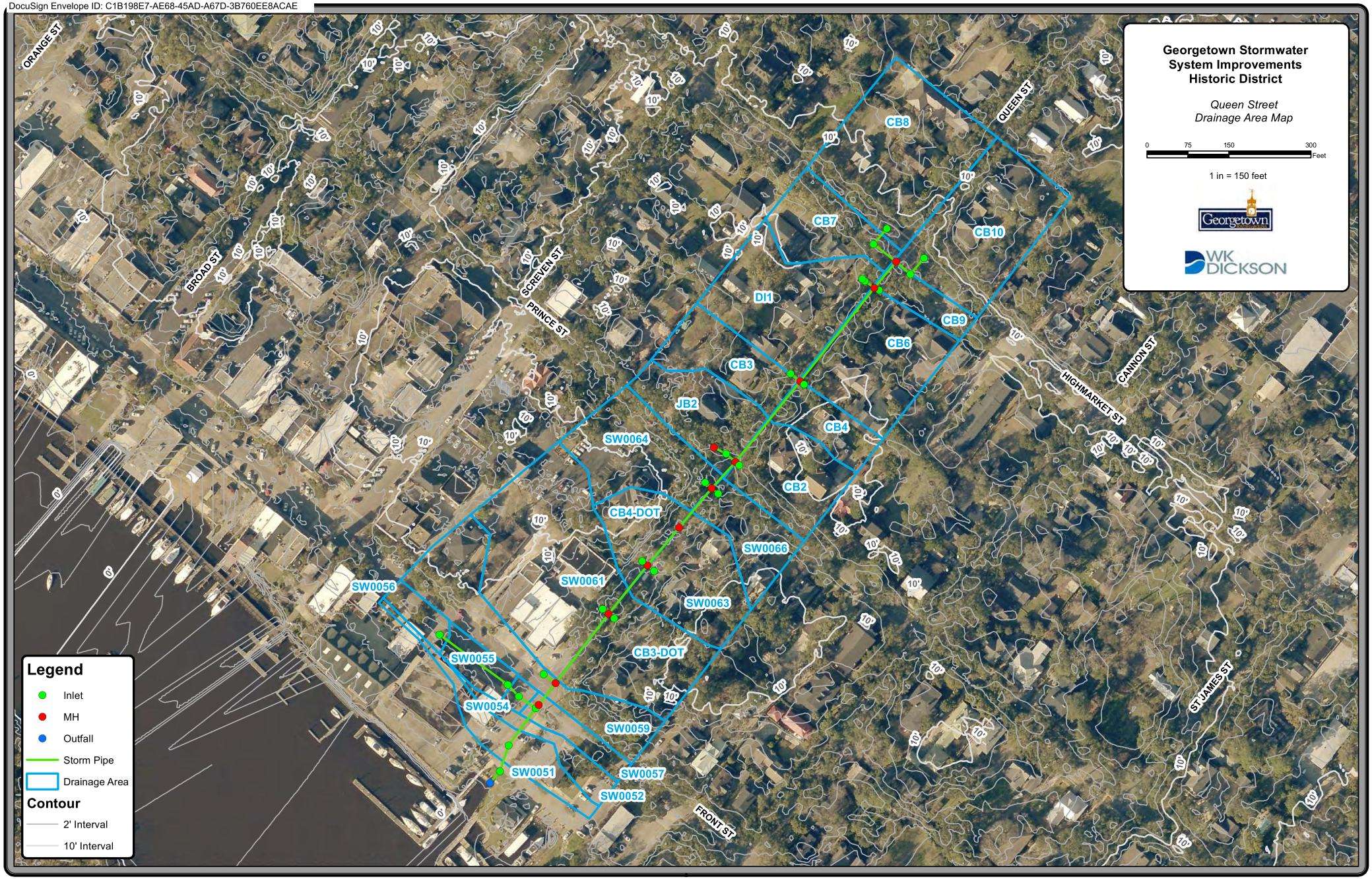
1 in = 4,000 feet

Appendix B

Drainage Maps







Appendix C

Additional Approvals/Certifications

1. ***US Army Corps of Engineers (USACE) – Bulkhead Permit***
2. ***Fish and Wildlife Services No. 2020-TA-0823***

Appendix D

Engineering Reports

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

  Alternative Analysis - Front Street


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:15:00
  Wet Time Step ............ 00:10:00
  Dry Time Step ............ 00:10:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......        11.205         4.558
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         3.219         1.310
  Surface Runoff ...........         7.828         3.184
  Final Storage ............         0.187         0.076
  Continuity Error (%) .....        -0.258


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

**************************	---------	---------
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	7.822	2.549
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	7.550	2.460
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.002	0.001
Final Stored Volume	0.137	0.045
Continuity Error (%)	1.755	

****
Highest Continuity Errors
****
Node CB15 (4.11%)
Node SW0024 (3.16%)
Node CB8 (1.21%)

****
Time-Step Critical Elements
****
Link CB3-CB2 (9.87%)
Link JB1-OUTFALL_A1 (5.97%)
Link JB2-CB1 (4.83%)
Link CB1-JB1 (2.66%)
Link CB2-JB2 (1.34%)

****
Highest Flow Instability Indexes
****
Link CB15-JB4 (3)
Link CB1-JB1 (2)
Link JB2-CB1 (2)
Link CB2-JB2 (2)
Link JB4-CB1 (1)

****
Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	8.62 sec
Maximum Time Step	:	10.00 sec
Percent in Steady State	:	-0.00
Average Iterations per Step	:	2.04
Percent Not Converging	:	0.35
Time Step Frequencies	:	
10.000 - 5.493 sec	:	84.86 %
5.493 - 3.017 sec	:	8.54 %
3.017 - 1.657 sec	:	4.70 %

```
      1.657 -  0.910 sec      :     1.63 %
      0.910 -  0.500 sec      :     0.27 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------
------------------------------------------------------------------------
----
                              Total      Total      Total
Total     Imperv       Perv      Total       Total     Peak
Runoff
                            Precip      Runon       Evap
Infil     Runoff     Runoff     Runoff      Runoff   Runoff
Coeff
  Subcatchment                 in         in         in
in         in         in         in    10^6 gal      CFS
  ------------------------------------------------------------------------
------------------------------------------------------------------------
----
  SW0022-BASIN               4.56       0.00       0.00
1.58       2.34       0.57       2.91       1.06    20.54
0.638
  SW0021-BASIN               4.56       0.00       0.00
0.33       3.60       0.59       4.19       0.05     1.08
0.919
  SW0018-BASIN               4.56       0.00       0.00
0.05       4.37       0.10       4.47       0.02     0.47
0.980
  SW0017-BASIN               4.56       0.00       0.00
0.14       4.14       0.25       4.38       0.02     0.32
0.961
  CB10_BASIN                 4.56       0.00       0.00
0.08       4.30       0.14       4.44       0.00     0.07
0.974
  CB15_BASIN                 4.56       0.00       0.00
0.20       3.96       0.36       4.32       0.01     0.20
0.948
  CB7_BASIN                  4.56       0.00       0.00
1.69       2.29       0.51       2.80       0.66    12.76
0.615
  CB3_BASIN                  4.56       0.00       0.00
0.70       2.63       1.18       3.81       0.18     3.97
0.836
  CB5_BASIN                  4.56       0.00       0.00
0.13       4.15       0.24       4.39       0.16     3.33
0.962
  CB8_BASIN                  4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.02     0.38
0.992
  CB1_BASIN                  4.56       0.00       0.00
0.17       4.06       0.30       4.36       0.04     0.79
0.956
  SW0027-BASIN               4.56       0.00       0.00
```

```
0.00       4.52       0.00       4.52       0.02     0.35
0.992
  SW0025-BASIN              4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.01     0.18
0.992
  CB14_BASIN                4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.02     0.33
0.992
  CB6_BASIN                 4.56       0.00       0.00
0.60       2.91       1.00       3.92       0.05     1.03
0.860
  CB4_BASIN                 4.56       0.00       0.00
0.62       2.93       0.98       3.90       0.12     2.64
0.856
  CB2_BASIN                 4.56       0.00       0.00
1.21       1.13       2.17       3.30       0.02     0.43
0.724
  CB9_BASIN                 4.56       0.00       0.00
0.17       4.04       0.31       4.35       0.06     1.15
0.954
  CB11_BASIN                4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.02     0.33
0.992
  CB12_BASIN                4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.02     0.33
0.992
  CB13_BASIN                4.56       0.00       0.00
0.00       4.52       0.00       4.52       0.02     0.33
0.992


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

  ----------------------------------------------------------
----------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                  Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------
----------------------
  JB1                   JUNCTION      1.41     3.27     0.86
0  13:00        3.27
  SW0024                JUNCTION      0.22     1.31     1.14
0  12:59        1.30
  SW0025                JUNCTION      0.06     0.55     1.13
0  13:00        0.54
  SW0026                JUNCTION      0.06     0.22     1.23
0  12:54        0.22
  SW0027                JUNCTION      0.22     0.49     1.36
0  12:53        0.49
  CB1                   JUNCTION      1.05     3.00     1.12
```

0	13:00	3.00				
	JB4		JUNCTION	0.85	2.75	1.26
0	13:00	2.74				
	CB15		JUNCTION	0.81	2.71	1.26
0	13:00	2.70				
	CB10		JUNCTION	0.78	2.66	1.32
0	13:00	2.65				
	JB5		JUNCTION	0.72	2.58	1.39
0	13:01	2.56				
	EX_CB		JUNCTION	0.14	1.28	1.40
0	13:00	1.26				
	SW0018		JUNCTION	0.29	1.26	1.72
0	13:00	1.24				
	SW0019		JUNCTION	0.39	1.61	2.21
0	13:00	1.61				
	SW0020		JUNCTION	0.06	0.24	2.28
0	13:00	0.24				
	SW0021		JUNCTION	0.11	0.49	2.62
0	13:00	0.49				
	SW0022		JUNCTION	0.41	1.81	3.26
0	13:00	1.80				
	JB2		JUNCTION	0.88	2.81	1.22
0	13:00	2.81				
	CB8		JUNCTION	0.42	1.90	1.25
0	13:00	1.89				
	CB2		JUNCTION	0.82	2.75	1.30
0	13:00	2.75				
	CB5		JUNCTION	0.45	2.05	1.44
0	13:00	2.04				
	CB3		JUNCTION	0.87	3.41	2.06
0	13:00	3.40				
	CB7		JUNCTION	0.36	3.24	3.49
0	13:00	3.24				
	CB14		JUNCTION	0.26	0.88	0.65
0	13:00	0.88				
	CB6		JUNCTION	0.19	2.97	3.50
0	13:00	2.96				
	CB4		JUNCTION	0.66	3.67	2.79
0	13:00	3.66				
	CB9		JUNCTION	0.24	1.39	1.27
0	13:00	1.38				
	CB11		JUNCTION	0.15	0.61	0.66
0	13:00	0.61				
	CB13		JUNCTION	0.18	0.73	0.67
0	13:00	0.73				
	CB12		JUNCTION	0.14	0.64	0.67
0	13:00	0.64				
	OUTFALL_A1		OUTFALL	1.87	4.08	1.64
0	00:59	4.08				
	OUTFALL_E1		OUTFALL	0.44	1.92	1.64
0	00:59	1.92				

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Total Inflow Volume 10^6 gal	Lateral Inflow Volume 10^6 gal	Flow Balance Error Percent
JB1	JUNCTION	0.00	49.22	0 13:00	0	2.42	0.782
SW0024	JUNCTION	0.00	0.86	0 13:02	0	0.0264	3.262
SW0025	JUNCTION	0.18	0.53	0 12:54	0.00859	0.0257	0.023
SW0026	JUNCTION	0.00	0.35	0 12:53	0	0.0172	0.031
SW0027	JUNCTION	0.35	0.35	0 12:50	0.0172	0.0172	0.179
CB1	JUNCTION	0.79	49.17	0 13:00	0.0378	2.44	0.834
JB4	JUNCTION	0.00	22.76	0 13:02	0	1.14	0.791
CB15	JUNCTION	0.20	0.20	0 13:00	0.00938	0.00952	4.290
CB10	JUNCTION	0.07	22.57	0 13:01	0.00361	1.14	0.692
JB5	JUNCTION	0.00	22.38	0 13:01	0	1.14	0.569
EX_CB	JUNCTION	0.32	0.32	0 13:00	0.0155	0.0156	1.005
SW0018	JUNCTION	0.47	21.99	0 13:00	0.023	1.13	0.014
SW0019	JUNCTION	0.00	21.58	0 13:00	0	1.11	0.026
SW0020	JUNCTION	0.00	1.08	0 13:00	0	0.0511	0.005
SW0021	JUNCTION	1.08	1.08	0 13:00	0.0511	0.0511	0.007
SW0022	JUNCTION	20.54	20.54	0 13:00	1.05	1.05	0.008
JB2	JUNCTION	0.00	25.52	0 13:00	0	1.25	0.857
CB8	JUNCTION	0.38	1.60	0 12:40	0.0184	0.0739	1.223
CB2	JUNCTION	0.43	24.03	0 13:00	0.0188	1.18	0.540
CB5	JUNCTION	3.33	3.33	0 13:00	0.161	0.161	0.343
CB3	JUNCTION	3.97	20.29	0 13:00	0.183	1.01	0.274
CB7	JUNCTION	12.76	13.75	0			

13:00	0.657	0.705	0.014		
CB14		JUNCTION	0.33	1.30	0
13:00	0.016	0.0634	1.008		
CB6		JUNCTION	1.03	1.03	0
13:00	0.0478	0.0478	0.112		
CB4		JUNCTION	2.64	16.35	0
13:00	0.123	0.827	0.249		
CB9		JUNCTION	1.15	1.15	0
13:00	0.0555	0.0555	0.407		
CB11		JUNCTION	0.33	0.33	0
13:00	0.016	0.016	0.591		
CB13		JUNCTION	0.33	0.65	0
13:00	0.016	0.0318	0.870		
CB12		JUNCTION	0.33	0.33	0
13:00	0.016	0.016	0.657		
OUTFALL_A1		OUTFALL	0.00	49.22	0
13:00	0	2.4	0.000		
OUTFALL_E1		OUTFALL	0.00	1.31	0
13:00	0	0.0627	0.000		

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
JB1	JUNCTION	0.65	0.271	3.409
CB1	JUNCTION	0.60	0.453	1.697
JB4	JUNCTION	0.27	0.196	1.814
CB15	JUNCTION	6.59	1.709	0.991
CB10	JUNCTION	0.18	0.110	1.680
JB5	JUNCTION	0.11	0.081	2.609
EX_CB	JUNCTION	0.02	0.026	1.714
JB2	JUNCTION	1.26	0.683	2.097
CB8	JUNCTION	0.41	0.297	1.703
CB2	JUNCTION	0.64	0.629	

```
1.661
  CB5                   JUNCTION        0.49          0.545
1.675
  CB3                   JUNCTION        1.85          1.595
0.992
  CB7                   JUNCTION        0.45          1.617
1.240
  CB6                   JUNCTION        0.42          1.383
0.713
  CB4                   JUNCTION        0.52          1.506
1.141
  CB9                   JUNCTION        0.23          0.137
1.873


  **********************
  Node Flooding Summary
  **********************

  No nodes were flooded.


  ************************
  Outfall Loading Summary
  ************************

  -----------------------------------------------------------
                        Flow       Avg       Max       Total
                        Freq      Flow      Flow      Volume
  Outfall Node           Pcnt       CFS       CFS    10^6 gal
  -----------------------------------------------------------
  OUTFALL_A1            75.02      7.42     49.22       2.397
  OUTFALL_E1            81.08      0.18      1.31       0.063
  -----------------------------------------------------------
  System                78.05      7.59     50.53       2.460


  ********************
  Link Flow Summary
  ********************

  ---------------------------------------------------------------
-----------------
                                  Maximum  Time of Max
Maximum    Max/    Max/
                                   |Flow|   Occurrence
|Veloc|    Full    Full
  Link                Type          CFS  days hr:min
ft/sec    Flow   Depth
  ---------------------------------------------------------------
-----------------
  JB1-OUTFALL_A1        CONDUIT     49.22     0  13:00
3.48    0.50    1.00
  CB1-JB1               CONDUIT     49.22     0  13:00
3.33    0.60    1.00
  CB8-JB2               CONDUIT      1.64     0  12:40
```

1.71	0.23	1.00				
CB2-JB2			CONDUIT	24.01	0	13:00
2.35	0.58	1.00				
CB5-CB2			CONDUIT	3.33	0	12:59
1.93	0.58	1.00				
CB3-CB2			CONDUIT	20.28	0	13:00
6.14	2.50	1.00				
18_RCP_11			CONDUIT	1.02	0	13:03
0.65	0.09	0.94				
18_RCP_12			CONDUIT	0.86	0	13:02
2.19	0.05	0.62				
18_RCP_13			CONDUIT	0.35	0	12:54
2.15	0.04	0.26				
15_RCP_14			CONDUIT	0.35	0	12:53
1.24	0.09	0.28				
JB4-CB1			CONDUIT	22.84	0	13:01
2.38	0.47	1.00				
CB15-JB4			CONDUIT	0.20	0	12:49
0.35	0.18	1.00				
CB10-JB4			CONDUIT	22.60	0	13:02
2.68	0.46	1.00				
12_RCP_20			CONDUIT	0.47	0	12:42
1.90	0.05	1.00				
18_RCP_21			CONDUIT	22.02	0	13:01
5.60	0.38	0.75				
30_RCP_22			CONDUIT	21.53	0	13:00
7.62	0.64	0.57				
18_RCP_23			CONDUIT	1.08	0	13:00
1.21	0.05	0.58				
12_RCP_24			CONDUIT	1.08	0	13:00
4.21	0.29	0.36				
30_RCP_25			CONDUIT	20.50	0	13:00
5.73	0.67	0.68				
CB14-OUTFALL_E1			CONDUIT	1.31	0	13:00
1.61	0.21	0.70				
JB2-CB1			CONDUIT	25.54	0	13:00
2.50	0.46	1.00				
CB6-CB7			CONDUIT	1.07	0	13:00
0.54	0.06	1.00				
CB7-CB4			CONDUIT	13.71	0	13:00
4.16	0.77	1.00				
CB4-CB3			CONDUIT	16.34	0	13:00
4.95	0.90	1.00				
CB9-CB8			CONDUIT	1.22	0	12:40
1.82	0.27	1.00				
JB5-CB10			CONDUIT	22.51	0	13:01
2.66	0.45	1.00				
CB12-CB13			CONDUIT	0.33	0	13:00
0.87	0.09	0.55				
CB13-CB14			CONDUIT	0.65	0	13:00
0.98	0.17	0.64				
CB11-CB14			CONDUIT	0.33	0	13:00
1.03	0.10	0.54				

****

Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
JB1-OUTFALL_A1	18.20	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
CB1-JB1	1.00	0.04	0.00	0.00	0.94	0.00	0.00	0.02	0.42	0.00
CB8-JB2	1.63	0.04	0.00	0.00	0.43	0.00	0.00	0.53	0.05	0.00
CB2-JB2	4.21	0.04	0.00	0.00	0.51	0.00	0.00	0.46	0.00	0.00
CB5-CB2	1.40	0.04	0.00	0.00	0.41	0.00	0.00	0.56	0.02	0.00
CB3-CB2	1.40	0.04	0.00	0.00	0.54	0.00	0.00	0.43	0.00	0.00
18_RCP_11	1.00	0.04	0.00	0.00	0.88	0.03	0.00	0.05	0.65	0.00
18_RCP_12	5.96	0.04	0.00	0.00	0.39	0.57	0.00	0.00	0.93	0.00
18_RCP_13	1.48	0.04	0.05	0.00	0.61	0.30	0.00	0.00	0.02	0.00
15_RCP_14	2.31	0.04	0.05	0.00	0.91	0.00	0.00	0.00	0.00	0.00
JB4-CB1	1.24	0.04	0.00	0.00	0.80	0.00	0.00	0.16	0.07	0.00
CB15-JB4	6.48	0.04	0.01	0.00	0.91	0.00	0.05	0.00	0.00	0.00
CB10-JB4	4.20	0.04	0.00	0.00	0.48	0.00	0.00	0.48	0.01	0.00
12_RCP_20	10.96	0.04	0.00	0.00	0.31	0.01	0.00	0.65	0.04	0.00
18_RCP_21	2.44	0.04	0.00	0.00	0.42	0.54	0.00	0.00	0.69	0.00
30_RCP_22	8.32	0.04	0.00	0.00	0.02	0.94	0.00	0.00	0.00	0.00
18_RCP_23	4.56	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.96	0.00
12_RCP_24	13.11	0.04	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00
30_RCP_25	1.00	0.04	0.00	0.00	0.25	0.71	0.00	0.00	0.10	0.00
CB14-OUTFALL_E1	6.35	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
JB2-CB1	2.66	0.04	0.00	0.00	0.68	0.00	0.00	0.28	0.03	0.00
CB6-CB7	2.59	0.04	0.00	0.00	0.93	0.00				

```
0.00  0.03  0.69  0.00
  CB7-CB4                 1.12   0.04  0.00  0.00  0.29  0.01
0.00  0.67  0.07  0.00
  CB4-CB3                 2.66   0.04  0.00  0.00  0.44  0.00
0.00  0.52  0.01  0.00
  CB9-CB8                 2.87   0.04  0.00  0.00  0.33  0.00
0.00  0.63  0.02  0.00
  JB5-CB10                4.46   0.04  0.00  0.00  0.47  0.00
0.00  0.50  0.00  0.00
  CB12-CB13               3.12   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.77  0.00
  CB13-CB14               1.68   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.73  0.00
  CB11-CB14               1.20   0.04  0.00  0.00  0.37  0.00
0.00  0.59  0.07  0.00


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

  ------------------------------------------------------------
----------------

Hours        Hours
                        --------- Hours Full --------   Above
Full   Capacity
  Conduit               Both Ends  Upstream  Dnstream
Normal Flow   Limited
  ------------------------------------------------------------
----------------
  JB1-OUTFALL_A1             0.61      0.65      3.53
0.01         0.59
  CB1-JB1                    1.26      1.26      4.21
0.01         0.01
  CB8-JB2                    0.47      0.47      1.26
0.01         0.01
  CB2-JB2                    1.23      1.23      1.53
0.01         0.25
  CB5-CB2                    0.49      0.49      0.64
0.01         0.01
  CB3-CB2                    3.47      3.47      3.72
0.69         0.96
  18_RCP_11                  0.01      0.01      6.04
0.01         0.01
  JB4-CB1                    0.32      0.32      0.60
0.01         0.01
  CB15-JB4                   6.55      6.55      6.59
0.01         0.01
  CB10-JB4                   0.23      0.23      0.27
0.01         0.01
  12_RCP_20                  0.02      0.02      0.28
0.01         0.01
  18_RCP_21                  0.01      0.01      0.11
0.01         0.01
  18_RCP_23                  0.01      0.01      0.17
```

```
0.01          0.01
  CB14-OUTFALL_E1             0.01       0.01       1.77
0.01          0.01
  JB2-CB1                     2.41       2.41       3.43
0.01          0.01
  CB6-CB7                     0.42       0.42       0.45
0.01          0.01
  CB7-CB4                     0.46       0.46       0.52
0.01          0.23
  CB4-CB3                     0.87       0.87       1.85
0.01          0.52
  CB9-CB8                     0.23       0.23       0.41
0.01          0.01
  JB5-CB10                    0.11       0.11       0.18
0.01          0.01


  Analysis begun on:  Thu Oct 13 08:13:39 2022
  Analysis ended on:  Thu Oct 13 08:13:39 2022
  Total elapsed time: < 1 sec
```

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

  Alternative Analysis - Front Street


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:15:00
  Wet Time Step ............ 00:10:00
  Dry Time Step ............ 00:10:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......        17.191         6.993
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         4.275         1.739
  Surface Runoff ...........        12.749         5.186
  Final Storage ............         0.216         0.088
  Continuity Error (%) .....        -0.278


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

**************************	---------	---------
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	12.739	4.151
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	12.214	3.980
Flooding Loss	0.249	0.081
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.002	0.001
Final Stored Volume	0.138	0.045
Continuity Error (%)	1.098	

****
Highest Continuity Errors
****
Node CB15 (2.70%)
Node SW0024 (2.06%)

****
Time-Step Critical Elements
****
Link CB3-CB2 (12.39%)
Link JB1-OUTFALL_A1 (7.25%)
Link JB2-CB1 (5.17%)
Link CB4-CB3 (2.20%)
Link CB2-JB2 (2.17%)

****
Highest Flow Instability Indexes
****
Link CB15-JB4 (4)
Link JB2-CB1 (2)
Link CB2-JB2 (2)
Link CB1-JB1 (2)
Link 12_RCP_20 (2)

****
Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	8.43 sec
Maximum Time Step	:	10.00 sec
Percent in Steady State	:	-0.00
Average Iterations per Step	:	2.11
Percent Not Converging	:	1.04
Time Step Frequencies	:	
10.000 - 5.493 sec	:	82.58 %
5.493 - 3.017 sec	:	8.55 %
3.017 - 1.657 sec	:	5.74 %
1.657 - 0.910 sec	:	2.63 %

0.910 - 0.500 sec : 0.51 %

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
SW0022-BASIN	6.99	0.00	0.00	2.11	3.60	1.20	4.81	1.75	35.11	0.688
SW0021-BASIN	6.99	0.00	0.00	0.38	5.53	1.04	6.58	0.08	1.68	0.940
SW0018-BASIN	6.99	0.00	0.00	0.06	6.72	0.17	6.89	0.04	0.73	0.986
SW0017-BASIN	6.99	0.00	0.00	0.16	6.36	0.43	6.80	0.02	0.50	0.972
CB10_BASIN	6.99	0.00	0.00	0.09	6.61	0.25	6.86	0.01	0.11	0.981
CB15_BASIN	6.99	0.00	0.00	0.23	6.10	0.63	6.73	0.01	0.30	0.962
CB7_BASIN	6.99	0.00	0.00	2.28	3.53	1.11	4.63	1.09	21.76	0.662
CB3_BASIN	6.99	0.00	0.00	0.81	4.05	2.10	6.15	0.30	6.37	0.879
CB5_BASIN	6.99	0.00	0.00	0.15	6.39	0.42	6.81	0.25	5.15	0.973
CB8_BASIN	6.99	0.00	0.00	0.00	6.96	0.00	6.96	0.03	0.58	0.995
CB1_BASIN	6.99	0.00	0.00	0.19	6.24	0.53	6.77	0.06	1.22	0.968
SW0027-BASIN	6.99	0.00	0.00	0.00	6.96	0.00	6.96	0.03	0.54	

```
0.995
  SW0025-BASIN                6.99       0.00       0.00
0.00       6.95       0.00       6.95       0.01       0.27
0.994
  CB14_BASIN                  6.99       0.00       0.00
0.00       6.96       0.00       6.96       0.02       0.50
0.995
  CB6_BASIN                   6.99       0.00       0.00
0.68       4.49       1.78       6.27       0.08       1.64
0.896
  CB4_BASIN                   6.99       0.00       0.00
0.71       4.50       1.74       6.25       0.20       4.21
0.893
  CB2_BASIN                   6.99       0.00       0.00
1.38       1.74       3.83       5.57       0.03       0.72
0.796
  CB9_BASIN                   6.99       0.00       0.00
0.20       6.22       0.54       6.76       0.09       1.79
0.966
  CB11_BASIN                  6.99       0.00       0.00
0.00       6.96       0.00       6.96       0.02       0.50
0.995
  CB12_BASIN                  6.99       0.00       0.00
0.00       6.96       0.00       6.96       0.02       0.50
0.995
  CB13_BASIN                  6.99       0.00       0.00
0.00       6.96       0.00       6.96       0.02       0.50
0.995


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

  ----------------------------------------------------------
----------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                  Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------
----------------------
  JB1                   JUNCTION      1.52     3.54     1.13
0  13:00        3.54
  SW0024                JUNCTION      0.26     1.88     1.71
0  13:00        1.87
  SW0025                JUNCTION      0.08     1.12     1.71
0  13:00        1.12
  SW0026                JUNCTION      0.08     0.70     1.71
0  13:00        0.69
  SW0027                JUNCTION      0.24     0.85     1.72
0  13:01        0.85
  CB1                   JUNCTION      1.16     3.57     1.69
0  13:00        3.57
```

	JB4		JUNCTION	0.94	3.56	2.07
0	13:00	3.55				
	CB15		JUNCTION	0.90	3.53	2.08
0	13:00	3.52				
	CB10		JUNCTION	0.87	3.59	2.25
0	13:00	3.58				
	JB5		JUNCTION	0.81	3.63	2.44
0	13:00	3.62				
	EX_CB		JUNCTION	0.18	2.32	2.44
0	13:00	2.31				
	SW0018		JUNCTION	0.39	3.13	3.60
0	13:00	3.11				
	SW0019		JUNCTION	0.52	3.59	4.18
0	13:00	3.58				
	SW0020		JUNCTION	0.10	2.17	4.21
0	13:00	2.15				
	SW0021		JUNCTION	0.16	2.18	4.31
0	13:00	2.17				
	SW0022		JUNCTION	0.55	4.60	6.05
0	13:00	4.59				
	JB2		JUNCTION	0.97	3.43	1.84
0	13:00	3.43				
	CB8		JUNCTION	0.48	2.55	1.90
0	13:00	2.55				
	CB2		JUNCTION	0.91	3.41	1.96
0	13:00	3.40				
	CB5		JUNCTION	0.52	2.90	2.29
0	13:00	2.90				
	CB3		JUNCTION	0.99	4.33	2.98
0	13:00	4.32				
	CB7		JUNCTION	0.48	4.16	4.41
0	13:00	4.15				
	CB14		JUNCTION	0.29	0.93	0.70
0	13:00	0.93				
	CB6		JUNCTION	0.27	3.68	4.21
0	12:38	3.68				
	CB4		JUNCTION	0.78	4.66	3.78
0	13:00	4.66				
	CB9		JUNCTION	0.28	2.07	1.95
0	13:00	2.07				
	CB11		JUNCTION	0.16	0.66	0.71
0	13:00	0.66				
	CB13		JUNCTION	0.20	0.79	0.73
0	13:00	0.79				
	CB12		JUNCTION	0.16	0.71	0.74
0	13:00	0.71				
	OUTFALL_A1		OUTFALL	1.90	4.08	1.64
0	00:59	4.08				
	OUTFALL_E1		OUTFALL	0.45	1.92	1.64
0	00:59	1.92				

****
Node Inflow Summary
****

Node	Type	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Flow Balance Error Percent
JB1	JUNCTION	0	3.9	0.00	71.88	0	0.484
SW0024	JUNCTION	0	0.0405	0.00	1.59	0	2.099
SW0025	JUNCTION	0.0132	0.0396	0.27	1.13	0	0.026
SW0026	JUNCTION	0	0.0264	0.00	0.57	0	0.034
SW0027	JUNCTION	0.0264	0.0264	0.54	0.54	0	0.115
CB1	JUNCTION	0.0588	3.92	1.22	71.84	0	0.512
JB4	JUNCTION	0	1.89	0.00	38.27	0	0.485
CB15	JUNCTION	0.0146	0.0148	0.30	0.30	0	2.770
CB10	JUNCTION	0.00559	1.88	0.11	38.01	0	0.424
JB5	JUNCTION	0	1.88	0.00	37.88	0	0.361
EX_CB	JUNCTION	0.024	0.0241	0.50	0.50	0	0.760
SW0018	JUNCTION	0.0355	1.86	0.73	37.38	0	0.017
SW0019	JUNCTION	0	1.82	0.00	36.71	0	0.032
SW0020	JUNCTION	0	0.0803	0.00	1.69	0	0.024
SW0021	JUNCTION	0.0803	0.0803	1.68	1.68	0	0.049
SW0022	JUNCTION	1.74	1.74	35.11	35.11	0	0.020
JB2	JUNCTION	0	1.96	0.00	31.71	0	0.547
CB8	JUNCTION	0.0283	0.114	0.58	2.37	0	0.786
CB2	JUNCTION	0.0317	1.85	0.72	29.38	0	0.342
CB5	JUNCTION	0.249	0.249	5.15	5.15	0	0.222
CB3	JUNCTION	0.295	1.57	6.37	23.80	0	0.164
CB7	JUNCTION	1.09	1.14	21.76	21.76	0	-0.002

CB14		JUNCTION	0.50	2.00	0
13:00	0.0246	0.0976	0.771		
CB6		JUNCTION	1.64	10.43	0
13:00	0.0766	0.14	-0.023		
CB4		JUNCTION	4.21	18.37	0
12:39	0.197	1.28	0.155		
CB9		JUNCTION	1.79	1.79	0
13:00	0.0862	0.0862	0.266		
CB11		JUNCTION	0.50	0.50	0
13:00	0.0246	0.0246	0.519		
CB13		JUNCTION	0.50	1.00	0
13:00	0.0246	0.049	0.699		
CB12		JUNCTION	0.50	0.50	0
13:00	0.0246	0.0246	0.557		
OUTFALL_A1		OUTFALL	0.00	71.88	0
13:00	0	3.88	0.000		
OUTFALL_E1		OUTFALL	0.00	2.00	0
13:00	0	0.0969	0.000		

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
JB1	JUNCTION	0.79	0.545	3.135
SW0024	JUNCTION	0.40	0.376	1.624
CB1	JUNCTION	0.77	1.023	1.127
JB4	JUNCTION	0.55	1.014	0.996
CB15	JUNCTION	6.88	2.528	0.172
CB10	JUNCTION	0.53	1.045	0.745
JB5	JUNCTION	0.52	1.126	1.564
EX_CB	JUNCTION	0.51	1.075	0.665
SW0018	JUNCTION	0.22	0.628	0.672
SW0019	JUNCTION	0.29	1.087	0.513

```
  SW0020                JUNCTION        0.21          0.673
1.587
  SW0021                JUNCTION        0.31          1.177
0.193
  SW0022                JUNCTION        0.35          2.103
2.397
  JB2                   JUNCTION        1.56          1.304
1.476
  CB8                   JUNCTION        0.58          0.952
1.048
  CB2                   JUNCTION        0.84          1.286
1.004
  CB5                   JUNCTION        0.64          1.398
0.822
  CB3                   JUNCTION        2.24          2.513
0.073
  CB7                   JUNCTION        0.66          2.534
0.322
  CB6                   JUNCTION        0.60          2.097
0.000
  CB4                   JUNCTION        0.75          2.498
0.149
  CB9                   JUNCTION        0.53          0.824
1.186


  **********
  Node Flooding Summary
  **********

  Flooding refers to all water that overflows a node, whether
it ponds or not.
  ------------------------------------------------------------
--------------

Total   Maximum
                                    Maximum   Time of Max
Flood    Ponded
                       Hours        Rate    Occurrence
Volume     Depth
  Node                Flooded       CFS   days hr:min    10^6
gal      Feet
  ------------------------------------------------------------
--------------
  CB6                    0.46     10.41      0  13:00
0.081     0.000


  **********
  Outfall Loading Summary
  **********

  ---------------------------------------------------------
                        Flow       Avg       Max       Total
                        Freq      Flow      Flow      Volume
  Outfall Node          Pcnt       CFS       CFS    10^6 gal
```

OUTFALL_A1	84.75	9.68	71.88	3.883
OUTFALL_E1	83.58	0.24	2.00	0.097
System	84.16	9.92	73.88	3.980

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days	hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
JB1-OUTFALL_A1	CONDUIT	71.88	0	13:00	5.08	0.73	1.00
CB1-JB1	CONDUIT	71.88	0	13:00	4.86	0.88	1.00
CB8-JB2	CONDUIT	2.38	0	12:49	1.91	0.33	1.00
CB2-JB2	CONDUIT	29.36	0	12:49	2.88	0.70	1.00
CB5-CB2	CONDUIT	5.14	0	13:00	2.91	0.89	1.00
CB3-CB2	CONDUIT	23.82	0	12:40	7.22	2.93	1.00
18_RCP_11	CONDUIT	1.58	0	13:02	0.89	0.14	1.00
18_RCP_12	CONDUIT	1.59	0	13:02	2.46	0.09	0.87
18_RCP_13	CONDUIT	0.91	0	13:02	1.97	0.12	0.61
15_RCP_14	CONDUIT	0.57	0	13:02	1.44	0.15	0.62
JB4-CB1	CONDUIT	38.38	0	13:00	3.91	0.79	1.00
CB15-JB4	CONDUIT	0.30	0	12:47	0.39	0.27	1.00
CB10-JB4	CONDUIT	37.98	0	13:00	3.87	0.78	1.00
12_RCP_20	CONDUIT	0.50	0	13:00	2.07	0.06	1.00
18_RCP_21	CONDUIT	37.39	0	13:00	7.62	0.65	1.00
30_RCP_22	CONDUIT	36.65	0	13:00	7.64	1.09	1.00
18_RCP_23	CONDUIT	1.85	0	13:02	1.35	0.09	1.00
12_RCP_24	CONDUIT	1.69	0	12:49			

```
4.55    0.45    1.00
  30_RCP_25             CONDUIT     35.06     0  13:00
7.14    1.14    1.00
  CB14-OUTFALL_E1       CONDUIT      2.00     0  13:00
1.81    0.32    0.73
  JB2-CB1               CONDUIT     31.73     0  12:49
3.11    0.57    1.00
  CB6-CB7               CONDUIT      8.79     0  13:00
2.66    0.49    1.00
  CB7-CB4               CONDUIT     15.86     0  13:06
4.81    0.89    1.00
  CB4-CB3               CONDUIT     18.34     0  12:39
5.56    1.02    1.00
  CB9-CB8               CONDUIT      1.80     0  12:49
2.03    0.39    1.00
  JB5-CB10              CONDUIT     37.90     0  13:00
3.86    0.76    1.00
  CB12-CB13             CONDUIT      0.50     0  13:00
0.96    0.13    0.60
  CB13-CB14             CONDUIT      1.00     0  13:00
1.13    0.26    0.69
  CB11-CB14             CONDUIT      0.50     0  13:00
1.04    0.16    0.58


  **************************
  Flow Classification Summary
  **************************

  -------------------------------------------------------------
-------------------------
                       Adjusted    ---------- Fraction of Time
in Flow Class ----------
                        /Actual         Up    Down  Sub   Sup
Up    Down  Norm  Inlet
  Conduit               Length    Dry  Dry   Dry   Crit  Crit
Crit  Crit  Ltd   Ctrl
  -------------------------------------------------------------
-------------------------
  JB1-OUTFALL_A1         18.20   0.00  0.00  0.00  1.00  0.00
0.00  0.00  0.00  0.00
  CB1-JB1                 1.00   0.04  0.00  0.00  0.94  0.00
0.00  0.02  0.41  0.00
  CB8-JB2                 1.63   0.04  0.00  0.00  0.45  0.00
0.00  0.52  0.05  0.00
  CB2-JB2                 4.21   0.04  0.00  0.00  0.54  0.00
0.00  0.42  0.00  0.00
  CB5-CB2                 1.40   0.04  0.00  0.00  0.42  0.00
0.00  0.55  0.01  0.00
  CB3-CB2                 1.40   0.04  0.00  0.00  0.53  0.00
0.00  0.43  0.00  0.00
  18_RCP_11               1.00   0.04  0.00  0.00  0.94  0.00
0.00  0.02  0.70  0.00
  18_RCP_12               5.96   0.04  0.00  0.00  0.37  0.60
0.00  0.00  0.92  0.00
  18_RCP_13               1.48   0.04  0.04  0.00  0.56  0.36
```

```
0.00  0.00  0.01  0.00
  15_RCP_14              2.31   0.04  0.04  0.00  0.93  0.00
0.00  0.00  0.00  0.00
  JB4-CB1                1.24   0.04  0.00  0.00  0.88  0.00
0.00  0.08  0.06  0.00
  CB15-JB4               6.48   0.04  0.00  0.00  0.93  0.00
0.03  0.00  0.00  0.00
  CB10-JB4               4.20   0.04  0.00  0.00  0.54  0.00
0.00  0.42  0.01  0.00
  12_RCP_20             10.96   0.04  0.00  0.00  0.33  0.01
0.00  0.62  0.04  0.00
  18_RCP_21              2.44   0.04  0.00  0.00  0.41  0.56
0.00  0.00  0.47  0.00
  30_RCP_22              8.32   0.04  0.00  0.00  0.04  0.93
0.00  0.00  0.00  0.00
  18_RCP_23              4.56   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.94  0.00
  12_RCP_24             13.11   0.04  0.00  0.00  0.02  0.94
0.00  0.00  0.00  0.00
  30_RCP_25              1.00   0.04  0.00  0.00  0.24  0.72
0.00  0.00  0.06  0.00
  CB14-OUTFALL_E1        6.35   0.00  0.00  0.00  1.00  0.00
0.00  0.00  0.00  0.00
  JB2-CB1                2.66   0.04  0.00  0.00  0.84  0.00
0.00  0.12  0.02  0.00
  CB6-CB7                2.59   0.04  0.00  0.00  0.95  0.00
0.00  0.02  0.62  0.00
  CB7-CB4                1.12   0.04  0.00  0.00  0.31  0.01
0.00  0.65  0.03  0.00
  CB4-CB3                2.66   0.04  0.00  0.00  0.48  0.00
0.00  0.48  0.01  0.00
  CB9-CB8                2.87   0.04  0.00  0.00  0.35  0.00
0.00  0.61  0.01  0.00
  JB5-CB10               4.46   0.04  0.00  0.00  0.52  0.00
0.00  0.44  0.00  0.00
  CB12-CB13              3.12   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.71  0.00
  CB13-CB14              1.68   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.70  0.00
  CB11-CB14              1.20   0.04  0.00  0.00  0.46  0.00
0.00  0.51  0.08  0.00


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

  ---------------------------------------------------------------
---------------

Hours        Hours
                         --------- Hours Full --------   Above
Full   Capacity
  Conduit                Both Ends  Upstream  Dnstream
Normal Flow   Limited
  ---------------------------------------------------------------
```

```
----------------
  JB1-OUTFALL_A1              0.64      0.79      3.53
0.01          0.62
  CB1-JB1                     1.53      1.53      4.69
0.01          0.23
  CB8-JB2                     0.62      0.62      1.56
0.01          0.01
  CB2-JB2                     1.56      1.56      1.73
0.01          0.52
  CB5-CB2                     0.64      0.64      0.84
0.01          0.40
  CB3-CB2                     4.13      4.16      4.28
1.47          1.71
  18_RCP_11                   0.40      0.40      6.40
0.01          0.01
  18_RCP_12                   0.01      0.01      0.40
0.01          0.01
  JB4-CB1                     0.57      0.57      0.77
0.01          0.10
  CB15-JB4                    6.84      6.84      6.88
0.01          0.03
  CB10-JB4                    0.54      0.54      0.55
0.01          0.39
  12_RCP_20                   0.51      0.51      0.56
0.01          0.01
  18_RCP_21                   0.22      0.22      0.52
0.01          0.01
  30_RCP_22                   0.22      0.29      0.22
0.19          0.22
  18_RCP_23                   0.21      0.21      0.53
0.01          0.01
  12_RCP_24                   0.31      0.31      0.31
0.01          0.25
  30_RCP_25                   0.29      0.35      0.29
0.23          0.29
  CB14-OUTFALL_E1             0.01      0.01      1.77
0.01          0.01
  JB2-CB1                     3.08      3.08      3.99
0.01          0.01
  CB6-CB7                     0.60      0.60      0.66
0.01          0.01
  CB7-CB4                     0.67      0.67      0.75
0.01          0.54
  CB4-CB3                     1.59      1.59      2.24
0.05          0.80
  CB9-CB8                     0.54      0.54      0.58
0.01          0.01
  JB5-CB10                    0.52      0.52      0.53
0.01          0.39


  Analysis begun on:  Thu Oct 13 08:14:22 2022
  Analysis ended on:  Thu Oct 13 08:14:23 2022
  Total elapsed time: 00:00:01
```

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

  Alternative Analysis - El Cerro


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:15:00
  Wet Time Step ............ 00:10:00
  Dry Time Step ............ 00:10:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......        13.184         4.558
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         3.980         1.376
  Surface Runoff ...........         9.042         3.126
  Final Storage ............         0.195         0.068
  Continuity Error (%) .....        -0.254


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

**************************	---------	---------
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	9.034	2.944
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	8.975	2.925
Flooding Loss	0.039	0.013
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.012	0.004
Continuity Error (%)	0.084	

****
Time-Step Critical Elements
****
Link EX_8-7 (2.26%)

****
Highest Flow Instability Indexes
****
All links are stable.

****
Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	9.68 sec
Maximum Time Step	:	10.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.01
Percent Not Converging	:	0.00
Time Step Frequencies	:	
10.000 - 5.493 sec	:	96.05 %
5.493 - 3.017 sec	:	2.12 %
3.017 - 1.657 sec	:	1.09 %
1.657 - 0.910 sec	:	0.52 %
0.910 - 0.500 sec	:	0.22 %

****
Subcatchment Runoff Summary
****

		Total	Total	Total		
Total	Imperv	Perv	Total	Total	Peak	
Runoff						
		Precip	Runon	Evap		
Infil	Runoff	Runoff	Runoff	Runoff	Runoff	

Subcatchment	in	in	in	in	in	Coeff
				10^6 gal	CFS	
CB1_BASIN	1.78	1.63	4.56	3.41	0.00	0.00	0.11	2.50	0.748
CB13_BASIN	3.69	0.52	4.56	4.21	0.00	0.00	0.03	0.65	0.924
CB-14_BASIN	4.52	0.00	4.56	4.52	0.00	0.00	0.01	0.30	0.992
CB16_BASIN	2.81	1.09	4.56	3.91	0.00	0.00	0.05	1.03	0.857
CB17_BASIN	3.64	0.56	4.56	4.21	0.00	0.00	0.08	1.73	0.923
CB18_BASIN	1.66	1.73	4.56	3.40	0.00	0.00	0.27	5.83	0.745
CB19_BASIN	1.03	1.43	4.56	2.46	0.00	0.00	0.27	5.36	0.540
CB2_BASIN	3.01	0.97	4.56	3.98	0.00	0.00	0.00	0.07	0.873
CB3_BASIN	2.68	1.18	4.56	3.86	0.00	0.00	0.03	0.61	0.846
EX-CB12_BASIN	3.87	0.41	4.56	4.29	0.00	0.00	0.04	0.85	0.941
CB4_BASIN	3.39	0.72	4.56	4.11	0.00	0.00	0.00	0.09	0.902
CB5_BASIN	3.39	0.72	4.56	4.12	0.00	0.00	0.00	0.09	0.903
CB9_BASIN	3.11	0.31	4.56	3.41	0.00	0.00	0.01	0.31	0.749
CB10_BASIN	2.93	0.35	4.56	3.27	0.00	0.00	0.02	0.32	0.718
CB11_BASIN	1.67	0.61	4.56	2.28	0.00	0.00	0.26	5.30	0.500
EX-1_BASIN	1.25	2.00	4.56	3.25	0.00	0.00	0.10	2.28	0.714
EX-2_BASIN	1.31	1.92	4.56	3.22	0.00	0.00	0.20	4.54	

```
0.707
  EX-5_BASIN                4.56       0.00       0.00
1.29       2.06       1.16       3.22       0.13       2.83
0.707
  EX-6_BASIN                4.56       0.00       0.00
1.00       2.76       0.75       3.51       0.16       3.40
0.771
  EX-7_BASIN                4.56       0.00       0.00
0.94       2.63       0.93       3.56       0.33       7.04
0.781
  EX8_BASIN                 4.56       0.00       0.00
0.72       3.14       0.65       3.79       0.24       5.11
0.831
  CB6_BASIN                 4.56       0.00       0.00
1.99       1.19       1.31       2.51       0.17       3.73
0.550
  EX1_BASIN                 4.56       0.00       0.00
1.26       1.26       1.99       3.25       0.16       3.52
0.712
  CB15_BASIN                4.56       0.00       0.00
1.19       1.20       2.12       3.32       0.11       2.48
0.728
  EX_PE1_BASIN              4.56       0.00       0.00
0.85       2.13       1.53       3.66       0.05       1.17
0.803
  CB8_BASIN                 4.56       0.00       0.00
1.86       1.84       0.81       2.64       0.10       2.02
0.580


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

  ----------------------------------------------------------
----------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                 Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------
----------------------
  CB1                  JUNCTION      0.23     1.88     3.69
0  13:01        1.87
  CB13                 JUNCTION      0.20     1.30     5.62
0  13:00        1.30
  CB12                 JUNCTION      0.22     1.55     5.62
0  13:00        1.54
  CB14                 JUNCTION      0.22     1.53     5.78
0  13:00        1.52
  CB16                 JUNCTION      0.16     1.22     6.07
0  13:00        1.21
  CB17                 JUNCTION      0.13     0.96     6.09
0  13:00        0.95
```

	JB11		JUNCTION	0.19	0.80	6.21
0	13:00	0.80				
	CB19		JUNCTION	0.14	0.61	6.92
0	13:00	0.60				
	CB2		JUNCTION	0.36	2.41	4.91
0	13:01	2.39				
	CB3		JUNCTION	0.39	2.27	5.04
0	13:01	2.25				
	EX_CB-12		JUNCTION	0.11	1.07	5.28
0	13:01	1.06				
	CB4		JUNCTION	0.41	2.26	5.16
0	13:01	2.23				
	CB5		JUNCTION	0.36	2.18	5.22
0	13:01	2.15				
	CB9		JUNCTION	0.19	0.80	5.48
0	13:00	0.80				
	CB10		JUNCTION	0.19	0.83	5.90
0	13:00	0.83				
	CB11		JUNCTION	0.20	0.90	6.25
0	13:00	0.90				
	EX_CB-1		JUNCTION	0.20	1.57	3.23
0	13:00	1.57				
	EX_CB-2		JUNCTION	0.96	2.20	3.46
0	12:38	2.20				
	JB7		JUNCTION	0.29	2.22	4.82
0	13:00	2.21				
	EX_CB-5		JUNCTION	0.42	1.81	5.08
0	13:00	1.81				
	EX_CB-6		JUNCTION	0.20	1.39	5.19
0	13:00	1.39				
	EX_CB-7		JUNCTION	0.30	1.68	5.39
0	13:00	1.67				
	EX_CB-8		JUNCTION	0.33	1.80	5.67
0	13:00	1.80				
	CB6		JUNCTION	0.15	0.80	6.62
0	13:00	0.80				
	CB15		JUNCTION	0.21	1.44	6.01
0	13:00	1.43				
	JB1		JUNCTION	0.56	2.44	3.13
0	13:01	2.44				
	JB2		JUNCTION	0.51	2.41	3.34
0	13:00	2.40				
	JB3		JUNCTION	0.47	2.24	3.66
0	13:01	2.22				
	JB4		JUNCTION	0.49	2.30	4.01
0	13:01	2.29				
	JB5		JUNCTION	0.49	2.30	4.34
0	13:01	2.29				
	JB6		JUNCTION	0.51	2.51	4.74
0	13:00	2.50				
	SW0147		JUNCTION	0.11	1.24	3.76
0	13:01	1.23				
	EX_DI1		JUNCTION	0.12	0.59	6.51
0	13:00	0.59				
	JB8		JUNCTION	0.28	1.55	5.35
0	13:01	1.52				

```
  CB18                    JUNCTION     0.20      0.92      6.47
0  13:00         0.92
  JB10                    JUNCTION     0.11      0.91      6.04
0  13:00         0.90
  EX_PE-1                 JUNCTION     0.13      0.79      6.09
0  13:00         0.78
  CB7                     JUNCTION     0.29      1.65      5.28
0  13:01         1.62
  CB8                     JUNCTION     0.12      0.58      6.00
0  13:00         0.58
  JB9                     JUNCTION     0.26      1.63      5.27
0  13:01         1.62
  HW1                     OUTFALL      0.43      1.69      2.15
0  13:01         1.69
  EL_CERRO_OUTFALL_2      OUTFALL      0.09      1.07      2.41
0  13:01         1.05


  ********************
  Node Inflow Summary
  ********************

  -------------------------------------------------------------
-------------------------------------
                                     Maximum  Maximum
Lateral       Total        Flow
                                     Lateral    Total  Time of
Max      Inflow      Inflow     Balance
                                      Inflow   Inflow
Occurrence      Volume      Volume       Error
  Node                  Type           CFS      CFS  days
hr:min    10^6 gal    10^6 gal     Percent
  -------------------------------------------------------------
-------------------------------------
  CB1                     JUNCTION      2.50     2.50     0
13:00       0.113       0.113       0.013
  CB13                    JUNCTION      0.65     0.65     0
13:00      0.0308      0.0308       0.000
  CB12                    JUNCTION      0.00     7.13     0
13:00           0       0.337      -0.011
  CB14                    JUNCTION      0.30     6.51     0
13:00      0.0147       0.306       0.026
  CB16                    JUNCTION      1.03     2.72     0
12:59      0.0477        0.13       0.029
  CB17                    JUNCTION      1.73     1.73     0
13:00      0.0821      0.0821       0.018
  JB11                    JUNCTION      0.00    11.15     0
13:00           0       0.542       0.027
  CB19                    JUNCTION      5.36     5.36     0
13:00       0.274       0.274       0.023
  CB2                     JUNCTION      0.07    30.91     0
13:02     0.00324        1.51       0.020
  CB3                     JUNCTION      0.61    30.63     0
13:02      0.0283        1.51       0.019
  EX_CB-12                JUNCTION      0.85     0.85     0
13:00      0.0407      0.0407       0.011
```

CB4		JUNCTION	0.09	30.02	0
13:01	0.00446	1.48	0.003		
CB5		JUNCTION	0.09	22.25	0
13:00	0.00447	1.1	0.026		
CB9		JUNCTION	0.31	5.91	0
13:00	0.0148	0.286	0.099		
CB10		JUNCTION	0.32	5.61	0
13:00	0.0151	0.271	0.019		
CB11		JUNCTION	5.30	5.30	0
13:00	0.256	0.256	0.018		
EX_CB-1		JUNCTION	2.28	2.28	0
13:00	0.0988	0.0988	0.136		
EX_CB-2		JUNCTION	4.54	4.54	0
13:00	0.199	0.199	0.212		
JB7		JUNCTION	0.00	6.20	0
13:00	0	0.289	-0.045		
EX_CB-5		JUNCTION	2.83	6.21	0
13:00	0.13	0.289	0.128		
EX_CB-6		JUNCTION	3.40	3.40	0
13:00	0.159	0.159	0.021		
EX_CB-7		JUNCTION	7.04	12.15	0
13:00	0.333	0.576	0.115		
EX_CB-8		JUNCTION	5.11	5.11	0
13:00	0.243	0.243	0.032		
CB6		JUNCTION	3.73	3.73	0
13:00	0.17	0.17	0.016		
CB15		JUNCTION	2.48	6.23	0
13:00	0.109	0.291	0.034		
JB1		JUNCTION	0.00	48.26	0
13:00	0	2.74	0.012		
JB2		JUNCTION	0.00	43.55	0
13:01	0	2.46	0.020		
JB3		JUNCTION	0.00	40.24	0
13:01	0	2.3	0.020		
JB4		JUNCTION	0.00	37.95	0
13:01	0	2.19	0.020		
JB5		JUNCTION	0.00	48.21	0
13:00	0	2.37	0.018		
JB6		JUNCTION	0.00	48.27	0
13:00	0	2.37	0.007		
SW0147		JUNCTION	0.00	10.21	0
13:01	0	0.185	-0.008		
EX_DI1		JUNCTION	3.52	3.52	0
13:00	0.155	0.155	0.014		
JB8		JUNCTION	0.00	16.95	0
13:00	0	0.827	-0.010		
CB18		JUNCTION	5.83	11.16	0
13:00	0.268	0.542	0.052		
JB10		JUNCTION	0.00	1.15	0
12:59	0	0.0526	-0.041		
EX_PE-1		JUNCTION	1.17	1.17	0
13:00	0.0526	0.0526	0.097		
CB7		JUNCTION	0.00	18.77	0
13:00	0	0.923	0.025		
CB8		JUNCTION	2.02	2.02	0
13:00	0.0954	0.0954	0.017		

```
  JB9                    JUNCTION      0.00     7.95     0
13:00           0        0.377        0.087
  HW1                    OUTFALL       0.00    48.26     0
13:01           0          2.74       0.000
  EL_CERRO_OUTFALL_2     OUTFALL       0.00    10.20     0
13:01           0        0.185        0.000


  **********************
  Node Surcharge Summary
  **********************

  Surcharging occurs when water rises above the top of the
highest conduit.
  -------------------------------------------------------------
---------
                                                    Max. Height
Min. Depth
                                       Hours       Above Crown
Below Rim
  Node                   Type      Surcharged           Feet
Feet
  -------------------------------------------------------------
---------
  CB1                    JUNCTION        0.40          0.377
6.723
  CB12                   JUNCTION        0.17          0.198
2.322
  CB14                   JUNCTION        0.14          0.178
1.852
  EX_CB-1                JUNCTION        0.39          0.324
2.766
  EX_CB-2                JUNCTION        6.84          1.200
0.000
  EX_CB-5                JUNCTION        0.07          0.064
3.556
  EX_CB-8                JUNCTION        0.25          0.298
2.822
  CB15                   JUNCTION        0.07          0.093
1.487
  JB9                    JUNCTION        0.07          0.050
3.006


  **********************
  Node Flooding Summary
  **********************

  Flooding refers to all water that overflows a node, whether
it ponds or not.
  -------------------------------------------------------------
--------------

Total   Maximum
                                      Maximum   Time of Max
Flood    Ponded
```

Node	Hours Flooded	Rate CFS	Occurrence days hr:min	Volume 10^6 gal	Depth Feet
EX_CB-2	0.45	1.91	0 13:00	0.013	0.000

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
HW1	95.34	5.76	48.26	2.739
EL_CERRO_OUTFALL_2	30.37	1.80	10.20	0.185
System	62.85	7.56	58.44	2.924

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
JB5-SW0147	CONDUIT	10.21	0 13:01	3.85	1.63	0.79
JB6-JB5	CONDUIT	48.21	0 13:00	5.19	0.77	0.85
CB2-JB6	CONDUIT	31.13	0 13:02	3.05	0.62	1.00
CB3-CB2	CONDUIT	30.86	0 13:02	3.60	0.48	0.83
CB4-CB3	CONDUIT	30.12	0 13:02	3.75	0.49	0.80
CB5-CB4	CONDUIT	22.23	0 13:02	2.82	0.35	0.78
CB7-CB5	CONDUIT	18.60	0 13:01	3.29	0.29	0.68
CB10-CB9	CONDUIT	5.60	0 13:00	3.54	0.40	0.48
CB11-CB10	CONDUIT	5.29	0 13:00			

3.24	0.36	0.50				
CB6-CB5			CONDUIT	3.72	0	13:00
5.40	0.43	0.55				
CB13-CB12			CONDUIT	0.64	0	12:59
1.09	0.11	0.98				
CB14-CB12			CONDUIT	6.50	0	13:00
3.00	0.84	1.00				
CB15-CB14			CONDUIT	6.21	0	13:00
2.88	0.80	1.00				
EX_CB-7-JB6			CONDUIT	12.12	0	13:00
5.56	0.54	0.75				
EX_8-7			CONDUIT	5.11	0	13:00
2.89	1.45	1.00				
EX_CB-5-JB7			CONDUIT	6.20	0	13:00
3.62	1.01	0.98				
EX_CB-6-5			CONDUIT	3.38	0	13:00
2.15	0.44	0.96				
EX12_JB9			CONDUIT	0.84	0	12:59
1.48	0.13	0.93				
JB1-HW1			CONDUIT	48.26	0	13:01
5.23	0.56	0.65				
JB2-JB1			CONDUIT	43.57	0	13:01
4.02	0.51	0.77				
EX_D1-JB2			CONDUIT	3.51	0	13:00
6.80	0.35	0.44				
JB3-JB2			CONDUIT	40.27	0	13:01
3.86	0.47	0.73				
JB4-JB3			CONDUIT	37.92	0	13:01
3.75	0.44	0.72				
JB5-JB4			CONDUIT	37.95	0	13:01
4.23	0.59	0.81				
EX_CB-2-JB1			CONDUIT	3.32	0	12:42
5.15	0.50	1.00				
CB1-JB3			CONDUIT	2.50	0	13:00
1.56	0.26	1.00				
EX_CB-1-JB1			CONDUIT	2.27	0	13:00
2.73	0.56	1.00				
SW0147-EXHW2			CONDUIT	10.20	0	13:01
4.62	0.40	0.46				
CB16-CB15			CONDUIT	2.68	0	13:00
2.23	0.43	1.00				
CB17-CB16			CONDUIT	1.70	0	12:48
2.29	0.27	0.89				
CB19-CB18			CONDUIT	5.34	0	13:00
3.10	0.40	0.48				
JB11-JB8			CONDUIT	11.07	0	13:00
3.63	0.40	0.47				
CB9-JB8			CONDUIT	5.90	0	13:00
3.81	0.42	0.58				
CB18-JB11			CONDUIT	11.15	0	13:00
3.30	0.39	0.51				
EX_PE1-JB10			CONDUIT	1.15	0	12:59
2.85	0.56	0.80				
JB10-CB15			CONDUIT	1.19	0	13:01
1.83	0.22	0.87				
CB8-CB7			CONDUIT	2.01	0	13:00

```
4.28    0.27    0.41
  JB8-CB7              CONDUIT     16.80      0  13:01
3.92    0.27    0.56
  CB12-JB9             CONDUIT      7.12      0  13:00
3.14    0.92    1.00
  JB9-CB4              CONDUIT      7.93      0  13:00
3.34    0.59    1.00
  JB7-JB6              CONDUIT      6.17      0  13:00
1.96    0.26    1.00


  ***************************
  Flow Classification Summary
  ***************************

  ------------------------------------------------------------
-------------------------
                       Adjusted    ---------- Fraction of Time
in Flow Class ----------
                        /Actual         Up    Down  Sub   Sup
Up    Down  Norm  Inlet
  Conduit               Length    Dry  Dry   Dry   Crit  Crit
Crit  Crit  Ltd   Ctrl
  ------------------------------------------------------------
-------------------------
  JB5-SW0147              1.00   0.58  0.08  0.00  0.34  0.00
0.00  0.00  0.31  0.00
  JB6-JB5                 2.41   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.10  0.00
  CB2-JB6                 1.44   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.69  0.00
  CB3-CB2                 1.81   0.04  0.00  0.00  0.78  0.18
0.00  0.00  0.00  0.00
  CB4-CB3                 3.35   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.11  0.00
  CB5-CB4                 3.51   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.28  0.00
  CB7-CB5                 1.00   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.89  0.00
  CB10-CB9                1.85   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  CB11-CB10               4.87   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  CB6-CB5                 4.77   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  CB13-CB12               2.03   0.04  0.02  0.00  0.93  0.00
0.00  0.00  0.91  0.00
  CB14-CB12               3.63   0.04  0.00  0.00  0.06  0.00
0.00  0.90  0.00  0.00
  CB15-CB14               1.32   0.04  0.00  0.00  0.07  0.00
0.00  0.89  0.00  0.00
  EX_CB-7-JB6             4.19   0.04  0.00  0.00  0.04  0.00
0.00  0.91  0.00  0.00
  EX_8-7                  1.68   0.04  0.00  0.00  0.25  0.00
0.00  0.70  0.00  0.00
  EX_CB-5-JB7             3.52   0.04  0.02  0.00  0.05  0.00
```

0.89	0.00	0.00	0.00						
EX_CB-6-5				2.11	0.04	0.00	0.00	0.33	0.00
0.00	0.63	0.00	0.00						
EX12_JB9				1.91	0.04	0.00	0.00	0.54	0.03
0.00	0.39	0.50	0.00						
JB1-HW1				2.20	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.00	0.00						
JB2-JB1				2.06	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.20	0.00						
EX_D1-JB2				1.38	0.04	0.00	0.00	0.00	0.00
0.00	0.96	0.00	0.00						
JB3-JB2				1.02	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.11	0.00						
JB4-JB3				1.77	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.04	0.00						
JB5-JB4				1.46	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.00	0.00						
EX_CB-2-JB1				5.87	0.04	0.11	0.00	0.05	0.00
0.80	0.00	0.00	0.00						
CB1-JB3				5.44	0.04	0.00	0.00	0.52	0.01
0.00	0.43	0.17	0.00						
EX_CB-1-JB1				2.21	0.04	0.00	0.00	0.12	0.00
0.00	0.84	0.00	0.00						
SW0147-EXHW2				1.00	0.66	0.00	0.00	0.28	0.05
0.00	0.00	0.00	0.00						
CB16-CB15				1.57	0.04	0.00	0.00	0.19	0.00
0.00	0.76	0.00	0.00						
CB17-CB16				1.66	0.04	0.00	0.00	0.06	0.00
0.00	0.90	0.00	0.00						
CB19-CB18				3.10	0.04	0.00	0.00	0.00	0.00
0.00	0.96	0.00	0.00						
JB11-JB8				1.00	0.04	0.00	0.00	0.00	0.00
0.00	0.96	0.00	0.00						
CB9-JB8				1.00	0.04	0.00	0.00	0.04	0.00
0.00	0.92	0.00	0.00						
CB18-JB11				9.11	0.04	0.00	0.00	0.03	0.00
0.00	0.93	0.00	0.00						
EX_PE1-JB10				3.40	0.04	0.00	0.00	0.03	0.00
0.00	0.93	0.00	0.00						
JB10-CB15				1.36	0.04	0.00	0.00	0.30	0.00
0.00	0.65	0.23	0.00						
CB8-CB7				4.34	0.04	0.00	0.00	0.00	0.00
0.00	0.96	0.00	0.00						
JB8-CB7				2.72	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.19	0.00						
CB12-JB9				1.00	0.04	0.00	0.00	0.18	0.00
0.00	0.78	0.00	0.00						
JB9-CB4				2.90	0.04	0.00	0.00	0.06	0.00
0.00	0.90	0.00	0.00						
JB7-JB6				6.77	0.06	0.00	0.00	0.71	0.04
0.00	0.19	0.23	0.00						

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
JB5-SW0147	0.01	0.01	0.01	0.43	0.01
CB2-JB6	0.35	0.35	0.44	0.01	0.01
CB13-CB12	0.01	0.01	0.23	0.01	0.01
CB14-CB12	0.17	0.21	0.17	0.01	0.17
CB15-CB14	0.13	0.13	0.14	0.01	0.09
EX_8-7	0.10	0.25	0.10	0.44	0.10
EX_CB-5-JB7	0.01	0.01	0.32	0.05	0.01
EX_CB-6-5	0.01	0.01	0.07	0.01	0.01
EX12_JB9	0.01	0.01	0.27	0.01	0.01
EX_CB-2-JB1	0.13	0.13	6.84	0.01	0.01
CB1-JB3	0.40	0.40	0.47	0.01	0.01
EX_CB-1-JB1	0.39	0.39	0.43	0.01	0.01
CB16-CB15	0.04	0.04	0.12	0.01	0.01
JB10-CB15	0.01	0.01	0.07	0.01	0.01
CB12-JB9	0.23	0.23	0.26	0.01	0.08
JB9-CB4	0.07	0.07	0.07	0.01	0.04
JB7-JB6	0.24	0.24	0.35	0.01	0.01

Analysis begun on: Thu Oct 13 08:11:44 2022
Analysis ended on: Thu Oct 13 08:11:45 2022
Total elapsed time: 00:00:01

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

  Alternative Analysis - El Cerro


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:15:00
  Wet Time Step ............ 00:10:00
  Dry Time Step ............ 00:10:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......        20.227         6.993
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         4.954         1.713
  Surface Runoff ...........        15.109         5.224
  Final Storage ............         0.218         0.075
  Continuity Error (%) .....        -0.271


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

**************************	---------	---------
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	15.096	4.919
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	14.538	4.737
Flooding Loss	0.527	0.172
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.017	0.006
Continuity Error (%)	0.091	

****
Time-Step Critical Elements
****
Link JB4-JB3 (2.48%)
Link EX_8-7 (1.74%)

****
Highest Flow Instability Indexes
****
Link CB1-JB3 (3)
Link EX_CB-1-JB1 (2)
Link CB13-CB12 (2)
Link EX12_JB9 (2)
Link CB17-CB16 (2)

****
Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	9.44 sec
Maximum Time Step	:	10.00 sec
Percent in Steady State	:	-0.00
Average Iterations per Step	:	2.17
Percent Not Converging	:	1.51
Time Step Frequencies	:	
10.000 - 5.493 sec	:	92.90 %
5.493 - 3.017 sec	:	3.30 %
3.017 - 1.657 sec	:	2.09 %
1.657 - 0.910 sec	:	1.11 %
0.910 - 0.500 sec	:	0.60 %

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
CB1_BASIN	6.99	0.00	0.00	1.27	2.74	2.94	5.67	0.19	4.16	0.811
CB13_BASIN	6.99	0.00	0.00	0.36	5.67	0.93	6.60	0.05	1.01	0.943
CB-14_BASIN	6.99	0.00	0.00	0.00	6.95	0.00	6.95	0.02	0.46	0.994
CB16_BASIN	6.99	0.00	0.00	0.70	4.33	1.93	6.25	0.08	1.64	0.894
CB17_BASIN	6.99	0.00	0.00	0.36	5.60	0.99	6.59	0.13	2.70	0.943
CB18_BASIN	6.99	0.00	0.00	1.27	2.56	3.10	5.66	0.45	9.83	0.810
CB19_BASIN	6.99	0.00	0.00	2.52	1.59	2.79	4.38	0.49	10.20	0.627
CB2_BASIN	6.99	0.00	0.00	0.61	4.64	1.70	6.34	0.01	0.11	0.906
CB3_BASIN	6.99	0.00	0.00	0.75	4.12	2.08	6.20	0.05	0.98	0.887
EX-CB12_BASIN	6.99	0.00	0.00	0.26	5.96	0.73	6.69	0.06	1.32	0.957
CB4_BASIN	6.99	0.00	0.00	0.46	5.22	1.27	6.49	0.01	0.15	0.928
CB5_BASIN	6.99	0.00	0.00	0.46	5.22	1.28	6.49	0.01	0.15	0.928
CB9_BASIN	6.99	0.00	0.00	1.51	4.78	0.66	5.44	0.02	0.50	0.778
CB10_BASIN	6.99	0.00	0.00	1.71	4.50	0.75	5.24	0.02	0.51	0.750
CB11_BASIN	6.99	0.00	0.00	3.05	2.57	1.32	3.89	0.44	9.30	0.556

```
  EX-1_BASIN                 6.99       0.00       0.00
1.45       1.92       3.57       5.49       0.17     3.80
0.786
  EX-2_BASIN                 6.99       0.00       0.00
1.49       2.01       3.44       5.46       0.34     7.64
0.780
  EX-5_BASIN                 6.99       0.00       0.00
1.57       3.18       2.20       5.37       0.22     4.77
0.768
  EX-6_BASIN                 6.99       0.00       0.00
1.24       4.25       1.46       5.71       0.26     5.55
0.816
  EX-7_BASIN                 6.99       0.00       0.00
1.14       4.05       1.75       5.80       0.54    11.61
0.829
  EX8_BASIN                  6.99       0.00       0.00
0.88       4.84       1.23       6.07       0.39     8.25
0.867
  CB6_BASIN                  6.99       0.00       0.00
2.51       1.84       2.58       4.42       0.30     6.75
0.632
  EX1_BASIN                  6.99       0.00       0.00
1.45       1.94       3.55       5.49       0.26     5.93
0.785
  CB15_BASIN                 6.99       0.00       0.00
1.35       1.84       3.75       5.59       0.18     4.15
0.799
  EX_PE1_BASIN               6.99       0.00       0.00
0.97       3.28       2.70       5.98       0.09     1.89
0.855
  CB8_BASIN                  6.99       0.00       0.00
2.44       2.83       1.67       4.49       0.16     3.51
0.643


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

  ----------------------------------------------------------------
---------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                 Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------------
---------------------
  CB1                  JUNCTION      0.40     2.89     4.70
0  13:00        2.89
  CB13                 JUNCTION      0.33     2.97     7.29
0  12:48        2.97
  CB12                 JUNCTION      0.39     3.29     7.36
0  12:49        3.28
  CB14                 JUNCTION      0.39     3.20     7.45
```

0	12:49	3.16				
	CB16		JUNCTION	0.30	2.82	7.67
0	12:49	2.79				
	CB17		JUNCTION	0.25	2.61	7.74
0	12:49	2.57				
	JB11		JUNCTION	0.33	2.96	8.37
0	13:00	2.96				
	CB19		JUNCTION	0.25	2.38	8.69
0	13:00	2.38				
	CB2		JUNCTION	0.61	4.31	6.81
0	13:00	4.30				
	CB3		JUNCTION	0.64	4.31	7.08
0	13:00	4.31				
	EX_CB-12		JUNCTION	0.25	3.09	7.30
0	12:55	3.09				
	CB4		JUNCTION	0.66	4.38	7.28
0	13:00	4.38				
	CB5		JUNCTION	0.61	4.41	7.45
0	13:00	4.41				
	CB9		JUNCTION	0.37	3.42	8.10
0	13:00	3.42				
	CB10		JUNCTION	0.35	3.26	8.33
0	13:00	3.25				
	CB11		JUNCTION	0.35	3.16	8.51
0	13:00	3.16				
	EX_CB-1		JUNCTION	0.32	2.33	3.99
0	13:00	2.32				
	EX_CB-2		JUNCTION	1.08	2.20	3.46
0	12:33	2.20				
	JB7		JUNCTION	0.51	4.07	6.67
0	13:00	4.07				
	EX_CB-5		JUNCTION	0.64	4.17	7.44
0	13:00	4.17				
	EX_CB-6		JUNCTION	0.39	3.95	7.75
0	13:00	3.95				
	EX_CB-7		JUNCTION	0.49	3.79	7.50
0	13:00	3.79				
	EX_CB-8		JUNCTION	0.54	4.36	8.23
0	13:00	4.36				
	CB6		JUNCTION	0.26	2.18	8.00
0	12:48	2.18				
	CB15		JUNCTION	0.36	2.93	7.50
0	12:49	2.93				
	JB1		JUNCTION	0.77	2.99	3.68
0	13:00	2.99				
	JB2		JUNCTION	0.72	3.13	4.06
0	13:00	3.13				
	JB3		JUNCTION	0.67	3.18	4.60
0	13:00	3.18				
	JB4		JUNCTION	0.71	3.37	5.08
0	13:00	3.37				
	JB5		JUNCTION	0.71	3.65	5.69
0	13:00	3.64				
	JB6		JUNCTION	0.76	4.22	6.45
0	13:00	4.22				
	SW0147		JUNCTION	0.22	1.97	4.49

```
0  13:00        1.97
  EX_DI1                JUNCTION     0.17     0.84     6.76
0  13:00        0.84
  JB8                   JUNCTION     0.50     4.02     7.82
0  13:00        4.02
  CB18                  JUNCTION     0.35     2.98     8.53
0  13:00        2.98
  JB10                  JUNCTION     0.20     1.88     7.01
0  12:49        1.86
  EX_PE-1               JUNCTION     0.19     1.00     6.30
0  12:39        1.00
  CB7                   JUNCTION     0.51     4.08     7.71
0  13:00        4.08
  CB8                   JUNCTION     0.24     2.51     7.93
0  13:00        2.51
  JB9                   JUNCTION     0.45     3.66     7.30
0  13:00        3.66
  HW1                   OUTFALL      0.58     1.97     2.43
0  13:00        1.97
  EL_CERRO_OUTFALL_2    OUTFALL      0.18     1.50     2.84
0  13:00        1.50


  ********************
  Node Inflow Summary
  ********************

  ------------------------------------------------------------
-------------------------------------
                                  Maximum  Maximum
Lateral       Total        Flow
                                  Lateral    Total  Time of
Max      Inflow      Inflow     Balance
                                   Inflow   Inflow
Occurrence      Volume      Volume       Error
  Node                  Type           CFS      CFS  days
hr:min    10^6 gal    10^6 gal     Percent
  ------------------------------------------------------------
-------------------------------------
  CB1                   JUNCTION      4.16     4.16     0
13:00       0.188       0.188       0.003
  CB13                  JUNCTION      1.01     2.52     0
13:00      0.0483      0.0532       0.000
  CB12                  JUNCTION      0.00     9.37     0
12:40           0       0.478      -0.014
  CB14                  JUNCTION      0.46     8.42     0
12:39      0.0226       0.436       0.029
  CB16                  JUNCTION      1.64     4.34     0
13:00      0.0763       0.205       0.017
  CB17                  JUNCTION      2.70     2.70     0
13:00       0.129       0.129      -0.006
  JB11                  JUNCTION      0.00    20.02     0
13:00           0       0.935       0.128
  CB19                  JUNCTION     10.20    10.20     0
13:00       0.489       0.489       0.019
  CB2                   JUNCTION      0.11    44.65     0
```

12:49	0.00516	2.48	0.013		
CB3		JUNCTION	0.98	44.51	0
12:49	0.0454	2.47	0.017		
EX_CB-12		JUNCTION	1.32	1.32	0
13:00	0.0635	0.0635	-0.013		
CB4		JUNCTION	0.15	43.49	0
12:49	0.00704	2.43	0.010		
CB5		JUNCTION	0.15	39.51	0
13:00	0.00705	1.88	0.020		
CB9		JUNCTION	0.50	10.30	0
13:00	0.0236	0.484	0.008		
CB10		JUNCTION	0.51	9.81	0
13:00	0.0242	0.461	0.051		
CB11		JUNCTION	9.30	9.30	0
13:00	0.437	0.437	0.092		
EX_CB-1		JUNCTION	3.80	3.80	0
13:00	0.167	0.167	0.022		
EX_CB-2		JUNCTION	7.64	9.76	0
13:00	0.337	0.351	0.136		
JB7		JUNCTION	0.00	10.31	0
13:00	0	0.475	-0.031		
EX_CB-5		JUNCTION	4.77	10.31	0
13:00	0.217	0.476	0.095		
EX_CB-6		JUNCTION	5.55	5.55	0
13:00	0.259	0.259	0.017		
EX_CB-7		JUNCTION	11.61	19.86	0
13:00	0.543	0.932	0.106		
EX_CB-8		JUNCTION	8.25	8.25	0
13:00	0.39	0.39	0.029		
CB6		JUNCTION	6.75	6.75	0
13:00	0.3	0.3	0.069		
CB15		JUNCTION	4.15	8.49	0
13:00	0.183	0.453	0.009		
JB1		JUNCTION	0.00	68.66	0
13:00	0	4.32	0.016		
JB2		JUNCTION	0.00	64.91	0
13:00	0	3.9	0.019		
JB3		JUNCTION	0.00	59.00	0
13:00	0	3.64	0.019		
JB4		JUNCTION	0.00	54.85	0
13:00	0	3.45	0.022		
JB5		JUNCTION	0.00	74.33	0
13:00	0	3.88	0.019		
JB6		JUNCTION	0.00	74.33	0
13:00	0	3.88	0.009		
SW0147		JUNCTION	0.00	19.48	0
13:00	0	0.429	-0.010		
EX_DI1		JUNCTION	5.93	5.93	0
13:00	0.262	0.262	0.011		
JB8		JUNCTION	0.00	30.33	0
13:00	0	1.42	-0.037		
CB18		JUNCTION	9.83	20.02	0
13:00	0.447	0.936	0.038		
JB10		JUNCTION	0.00	4.43	0
13:00	0	0.104	-0.094		
EX_PE-1		JUNCTION	1.89	6.32	0

13:00	0.0859	0.126	0.085		
CB7		JUNCTION	0.00	33.83	0
13:00	0	1.58	0.015		
CB8		JUNCTION	3.51	3.51	0
13:00	0.162	0.162	0.120		
JB9		JUNCTION	0.00	10.44	0
12:40	0	0.536	0.050		
HW1		OUTFALL	0.00	66.52	0
13:00	0	4.31	0.000		
EL_CERRO_OUTFALL_2		OUTFALL	0.00	19.46	0
13:00	0	0.429	0.000		

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
CB1	JUNCTION	0.63	1.390	5.710
CB13	JUNCTION	0.50	1.620	0.000
CB12	JUNCTION	0.54	1.938	0.582
CB14	JUNCTION	0.53	1.848	0.182
CB16	JUNCTION	0.49	1.555	0.178
CB17	JUNCTION	0.45	1.447	0.056
JB11	JUNCTION	0.27	1.281	1.135
CB19	JUNCTION	0.24	1.215	0.509
CB2	JUNCTION	0.43	1.472	1.915
CB3	JUNCTION	0.41	1.473	1.093
EX_CB-12	JUNCTION	0.49	1.840	0.000
CB4	JUNCTION	0.41	1.547	0.670
CB5	JUNCTION	0.25	0.812	0.548
CB9	JUNCTION	0.34	1.640	

```
2.576
  CB10                  JUNCTION        0.30          1.473
2.114
  CB11                  JUNCTION        0.30          1.574
1.733
  EX_CB-1               JUNCTION        0.62          1.077
2.013
  EX_CB-2               JUNCTION        9.89          1.200
0.000
  JB7                   JUNCTION        0.50          1.805
2.795
  EX_CB-5               JUNCTION        0.52          2.416
1.204
  EX_CB-6               JUNCTION        0.49          2.454
0.776
  EX_CB-7               JUNCTION        0.43          1.787
1.033
  EX_CB-8               JUNCTION        0.55          2.862
0.258
  CB6                   JUNCTION        0.28          0.930
0.000
  CB15                  JUNCTION        0.51          1.580
0.000
  JB3                   JUNCTION        0.03          0.013
5.810
  JB4                   JUNCTION        0.21          0.206
5.488
  JB5                   JUNCTION        0.35          0.812
4.715
  JB6                   JUNCTION        0.34          1.049
3.121
  JB8                   JUNCTION        0.28          1.187
2.750
  CB18                  JUNCTION        0.24          1.165
0.518
  JB10                  JUNCTION        0.39          0.628
1.002
  EX_PE-1               JUNCTION        0.47          0.000
0.000
  CB7                   JUNCTION        0.30          1.245
2.362
  CB8                   JUNCTION        0.29          1.263
2.647
  JB9                   JUNCTION        0.53          2.074
0.982


  **********************
  Node Flooding Summary
  **********************

  Flooding refers to all water that overflows a node, whether
it ponds or not.
  ------------------------------------------------------------
--------------
```

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 gal	Maximum Ponded Depth Feet
CB13	0.22	2.52	0 13:00	0.010	0.000
EX_CB-12	0.09	0.63	0 13:00	0.001	0.000
EX_CB-2	0.62	9.76	0 13:00	0.097	0.000
CB6	0.18	1.21	0 13:00	0.003	0.000
CB15	0.09	0.27	0 13:00	0.000	0.000
EX_PE-1	0.47	6.32	0 13:00	0.061	0.000

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
HW1	95.61	9.95	66.52	4.308
EL_CERRO_OUTFALL_2	43.72	3.38	19.46	0.429
System	69.66	13.33	85.98	4.737

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
JB5-SW0147	CONDUIT	19.48	0 13:00	6.21	3.11	0.99
JB6-JB5	CONDUIT	74.33	0 13:00	7.29	1.19	1.00

CB2-JB6			CONDUIT	44.72	0	12:49
4.38	0.89	1.00				
CB3-CB2			CONDUIT	44.54	0	12:49
4.37	0.69	1.00				
CB4-CB3			CONDUIT	43.54	0	12:49
4.27	0.71	1.00				
CB5-CB4			CONDUIT	39.52	0	13:00
3.87	0.61	1.00				
CB7-CB5			CONDUIT	33.83	0	13:00
3.45	0.54	1.00				
CB10-CB9			CONDUIT	9.81	0	13:00
3.93	0.70	1.00				
CB11-CB10			CONDUIT	9.30	0	13:00
3.57	0.63	1.00				
CB6-CB5			CONDUIT	6.30	0	13:01
5.84	0.73	1.00				
CB13-CB12			CONDUIT	1.52	0	13:00
1.24	0.27	1.00				
CB14-CB12			CONDUIT	8.37	0	12:40
3.41	1.08	1.00				
CB15-CB14			CONDUIT	7.96	0	12:39
3.24	1.03	1.00				
EX_CB-7-JB6			CONDUIT	19.86	0	13:00
6.32	0.88	1.00				
EX_8-7			CONDUIT	8.25	0	13:00
4.67	2.34	1.00				
EX_CB-5-JB7			CONDUIT	10.31	0	13:00
5.83	1.69	1.00				
EX_CB-6-5			CONDUIT	5.54	0	13:00
3.14	0.73	1.00				
EX12_JB9			CONDUIT	1.52	0	12:40
1.56	0.24	1.00				
JB1-HW1			CONDUIT	66.52	0	13:00
6.02	0.77	0.78				
JB2-JB1			CONDUIT	64.90	0	13:00
5.09	0.76	0.97				
EX_D1-JB2			CONDUIT	5.92	0	13:00
7.55	0.59	0.61				
JB3-JB2			CONDUIT	58.99	0	13:00
4.58	0.69	0.99				
JB4-JB3			CONDUIT	54.85	0	13:00
4.25	0.63	1.00				
JB5-JB4			CONDUIT	54.85	0	13:00
5.38	0.86	1.00				
EX_CB-2-JB1			CONDUIT	3.31	0	12:38
5.15	0.50	1.00				
CB1-JB3			CONDUIT	4.16	0	13:00
2.36	0.44	1.00				
EX_CB-1-JB1			CONDUIT	3.80	0	13:00
3.09	0.93	1.00				
SW0147-EXHW2			CONDUIT	19.46	0	13:00
5.36	0.76	0.69				
CB16-CB15			CONDUIT	4.36	0	12:40
2.42	0.70	1.00				
CB17-CB16			CONDUIT	2.71	0	12:40
2.29	0.43	1.00				

```
  CB19-CB18             CONDUIT     10.20     0  13:00
3.49    0.76    1.00
  JB11-JB8              CONDUIT     20.02     0  13:00
3.96    0.73    1.00
  CB9-JB8               CONDUIT     10.30     0  13:00
3.94    0.74    1.00
  CB18-JB11             CONDUIT     20.02     0  13:00
3.53    0.70    1.00
  EX_PE1-JB10           CONDUIT      4.43     0  13:00
5.64    2.14    1.00
  JB10-CB15             CONDUIT      4.43     0  13:00
3.61    0.83    1.00
  CB8-CB7               CONDUIT      3.51     0  13:00
4.62    0.47    1.00
  JB8-CB7               CONDUIT     30.34     0  13:00
4.02    0.48    1.00
  CB12-JB9              CONDUIT      9.41     0  12:40
3.84    1.21    1.00
  JB9-CB4               CONDUIT     10.48     0  12:40
3.24    0.77    1.00
  JB7-JB6               CONDUIT     10.31     0  13:00
3.28    0.43    1.00


  ***************************
  Flow Classification Summary
  ***************************

  -------------------------------------------------------------
-------------------------
                       Adjusted    ---------- Fraction of Time
in Flow Class ----------
                        /Actual         Up    Down  Sub   Sup
Up    Down  Norm  Inlet
  Conduit               Length    Dry  Dry   Dry   Crit  Crit
Crit  Crit  Ltd   Ctrl
  -------------------------------------------------------------
-------------------------
  JB5-SW0147              1.00   0.43  0.09  0.00  0.48  0.00
0.00  0.00  0.24  0.00
  JB6-JB5                 2.41   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.03  0.00
  CB2-JB6                 1.44   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.56  0.00
  CB3-CB2                 1.81   0.04  0.00  0.00  0.72  0.24
0.00  0.00  0.00  0.00
  CB4-CB3                 3.35   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.08  0.00
  CB5-CB4                 3.51   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.20  0.00
  CB7-CB5                 1.00   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.83  0.00
  CB10-CB9                1.85   0.04  0.00  0.00  0.07  0.00
0.00  0.89  0.00  0.00
  CB11-CB10               4.87   0.04  0.00  0.00  0.07  0.00
0.00  0.89  0.00  0.00
```

CB6-CB5		4.77	0.04	0.00	0.00	0.05	0.01	
0.00	0.91	0.00	0.00					
CB13-CB12		2.03	0.04	0.02	0.00	0.94	0.00	
0.00	0.00	0.87	0.00					
CB14-CB12		3.63	0.04	0.00	0.00	0.10	0.00	
0.00	0.86	0.00	0.00					
CB15-CB14		1.32	0.04	0.00	0.00	0.16	0.00	
0.00	0.80	0.00	0.00					
EX_CB-7-JB6		4.19	0.04	0.00	0.00	0.08	0.00	
0.00	0.88	0.00	0.00					
EX_8-7		1.68	0.04	0.00	0.00	0.35	0.00	
0.00	0.61	0.00	0.00					
EX_CB-5-JB7		3.52	0.04	0.01	0.00	0.08	0.00	
0.87	0.00	0.00	0.00					
EX_CB-6-5		2.11	0.04	0.00	0.00	0.53	0.00	
0.00	0.43	0.01	0.00					
EX12_JB9		1.91	0.04	0.00	0.00	0.73	0.04	
0.00	0.19	0.68	0.00					
JB1-HW1		2.20	0.04	0.00	0.00	0.96	0.00	
0.00	0.00	0.00	0.00					
JB2-JB1		2.06	0.04	0.00	0.00	0.96	0.00	
0.00	0.00	0.12	0.00					
EX_D1-JB2		1.38	0.04	0.00	0.00	0.00	0.00	
0.00	0.96	0.00	0.00					
JB3-JB2		1.02	0.04	0.00	0.00	0.96	0.00	
0.00	0.00	0.05	0.00					
JB4-JB3		1.77	0.04	0.00	0.00	0.96	0.00	
0.00	0.00	0.02	0.00					
JB5-JB4		1.46	0.04	0.00	0.00	0.96	0.00	
0.00	0.00	0.00	0.00					
EX_CB-2-JB1		5.87	0.04	0.07	0.00	0.09	0.00	
0.80	0.00	0.00	0.00					
CB1-JB3		5.44	0.04	0.00	0.00	0.73	0.00	
0.00	0.23	0.31	0.00					
EX_CB-1-JB1		2.21	0.04	0.00	0.00	0.23	0.00	
0.00	0.73	0.00	0.00					
SW0147-EXHW2		1.00	0.52	0.00	0.00	0.38	0.10	
0.00	0.00	0.00	0.00					
CB16-CB15		1.57	0.04	0.00	0.00	0.29	0.00	
0.00	0.67	0.00	0.00					
CB17-CB16		1.66	0.04	0.00	0.00	0.13	0.00	
0.00	0.83	0.00	0.00					
CB19-CB18		3.10	0.04	0.00	0.00	0.05	0.00	
0.00	0.91	0.00	0.00					
JB11-JB8		1.00	0.04	0.00	0.00	0.07	0.00	
0.00	0.89	0.00	0.00					
CB9-JB8		1.00	0.04	0.00	0.00	0.08	0.00	
0.00	0.88	0.00	0.00					
CB18-JB11		9.11	0.04	0.00	0.00	0.07	0.00	
0.00	0.89	0.00	0.00					
EX_PE1-JB10		3.40	0.04	0.00	0.00	0.07	0.00	
0.00	0.89	0.00	0.00					
JB10-CB15		1.36	0.04	0.00	0.00	0.45	0.00	
0.00	0.51	0.31	0.00					
CB8-CB7		4.34	0.04	0.00	0.00	0.06	0.00	
0.00	0.90	0.00	0.00					

JB8-CB7	2.72	0.04	0.00	0.00	0.96	0.00
0.00	0.00	0.11	0.00			
CB12-JB9	1.00	0.04	0.00	0.00	0.28	0.00
0.00	0.68	0.00	0.00			
JB9-CB4	2.90	0.04	0.00	0.00	0.11	0.00
0.00	0.85	0.00	0.00			
JB7-JB6	6.77	0.05	0.00	0.00	0.77	0.06
0.00	0.12	0.30	0.00			

****
Conduit Surcharge Summary
****

Conduit	Hours Both Ends	Hours Upstream	Hours Dnstream	Hours Above Full	Hours Capacity Limited
JB5-SW0147	0.01	0.01	0.49	0.65	0.01
JB6-JB5	0.35	0.43	0.35	0.31	0.35
CB2-JB6	0.61	0.61	0.65	0.01	0.35
CB3-CB2	0.41	0.41	0.43	0.01	0.19
CB4-CB3	0.40	0.41	0.41	0.01	0.39
CB5-CB4	0.40	0.40	0.41	0.01	0.22
CB7-CB5	0.30	0.30	0.40	0.01	0.01
CB10-CB9	0.33	0.33	0.34	0.01	0.20
CB11-CB10	0.30	0.30	0.30	0.01	0.29
CB6-CB5	0.25	0.28	0.25	0.01	0.25
CB13-CB12	0.50	0.50	0.56	0.01	0.01
CB14-CB12	0.54	0.55	0.54	0.02	0.21
CB15-CB14	0.52	0.52	0.53	0.01	0.06
EX_CB-7-JB6	0.34	0.43	0.34	0.01	0.34
EX_8-7	0.51	0.55	0.51	0.59	0.51
EX_CB-5-JB7	0.50	0.50	0.60	0.49	0.01

EX_CB-6-5		0.49	0.49	0.52
0.01	0.22			
EX12_JB9		0.48	0.48	0.57
0.01	0.01			
JB3-JB2		0.01	0.03	0.01
0.01	0.01			
JB4-JB3		0.03	0.21	0.03
0.01	0.03			
JB5-JB4		0.31	0.35	0.31
0.01	0.31			
EX_CB-2-JB1		0.52	0.52	9.88
0.01	0.01			
CB1-JB3		0.63	0.63	0.68
0.01	0.01			
EX_CB-1-JB1		0.61	0.62	0.65
0.01	0.42			
CB16-CB15		0.50	0.50	0.52
0.01	0.01			
CB17-CB16		0.45	0.45	0.49
0.01	0.01			
CB19-CB18		0.24	0.24	0.24
0.01	0.24			
JB11-JB8		0.28	0.28	0.34
0.01	0.01			
CB9-JB8		0.38	0.38	0.42
0.01	0.01			
CB18-JB11		0.27	0.28	0.27
0.01	0.27			
EX_PE1-JB10		0.47	0.47	0.47
0.35	0.01			
JB10-CB15		0.39	0.39	0.51
0.01	0.01			
CB8-CB7		0.29	0.29	0.32
0.01	0.01			
JB8-CB7		0.28	0.28	0.30
0.01	0.01			
CB12-JB9		0.55	0.56	0.57
0.05	0.09			
JB9-CB4		0.52	0.53	0.53
0.01	0.11			
JB7-JB6		0.57	0.57	0.60
0.01	0.07			

Analysis begun on: Thu Oct 13 08:12:36 2022
Analysis ended on: Thu Oct 13 08:12:36 2022
Total elapsed time: < 1 sec

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

  Existing Conditions - Queen Street


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:05:00
  Wet Time Step ............ 00:05:00
  Dry Time Step ............ 00:05:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......         5.724         4.558
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         1.143         0.910
  Surface Runoff ...........         4.520         3.599
  Final Storage ............         0.071         0.057
  Continuity Error (%) .....        -0.159


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

```
  **************************     ---------     ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         4.517         1.472
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         4.395         1.432
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.004         0.001
  Final Stored Volume ......         0.046         0.015
  Continuity Error (%) .....         1.775


  **************************
  Time-Step Critical Elements
  **************************
  Link 12_RCP_11 (1.83%)


  ********************************
  Highest Flow Instability Indexes
  ********************************
  Link 24_RCP_7 (1)
  Link 36_RCP_2 (1)
  Link 36_RCP_1.1 (1)


  *************************
  Routing Time Step Summary
  *************************
  Minimum Time Step           :     0.27 sec
  Average Time Step           :     9.76 sec
  Maximum Time Step           :    10.00 sec
  Percent in Steady State     :     0.00
  Average Iterations per Step :     2.01
  Percent Not Converging      :     0.00
  Time Step Frequencies       :
     10.000 -  5.493 sec      :    97.34 %
      5.493 -  3.017 sec      :     1.20 %
      3.017 -  1.657 sec      :     0.90 %
      1.657 -  0.910 sec      :     0.38 %
      0.910 -  0.500 sec      :     0.17 %


  **************************
  Subcatchment Runoff Summary
  **************************

  ---------------------------------------------------------------
---------------------------------------------------------------
----
                             Total      Total      Total
Total     Imperv       Perv      Total       Total     Peak
Runoff
```

Subcatchment	Infil in	Runoff in	Precip Runoff in	Runon Runoff in	Evap Runoff 10^6 gal	Runoff CFS	Coeff
SW0051-BASIN	4.56	0.00	0.00				
	0.32	3.60	0.58	4.18	0.05	1.08	0.918
SW0052-BASIN	4.56	0.00	0.00				
	0.52	3.07	0.92	3.99	0.03	0.58	0.876
SW0055-BASIN	4.56	0.00	0.00				
	0.21	3.93	0.38	4.31	0.03	0.54	0.945
SW0056-BASIN	4.56	0.00	0.00				
	0.08	4.29	0.15	4.44	0.02	0.40	0.974
SW0057-BASIN	4.56	0.00	0.00				
	0.59	2.85	1.05	3.90	0.02	0.50	0.857
SW0059-BASIN	4.56	0.00	0.00				
	0.59	2.88	1.05	3.93	0.11	2.28	0.861
SW0061-BASIN	4.56	0.00	0.00				
	0.61	2.81	1.09	3.90	0.18	3.83	0.856
SW0063-BASIN	4.56	0.00	0.00				
	1.14	1.44	1.92	3.36	0.07	1.55	0.738
SW0064-BASIN	4.56	0.00	0.00				
	0.74	2.46	1.32	3.77	0.08	1.82	0.827
SW0066-BASIN	4.56	0.00	0.00				
	0.78	2.41	1.32	3.73	0.05	1.02	0.818
CB2-BASIN	4.56	0.00	0.00				
	0.73	2.55	1.23	3.78	0.07	1.48	0.829
JB2-BASIN	4.56	0.00	0.00				
	0.87	2.08	1.56	3.64	0.06	1.36	0.798
CB6-BASIN	4.56	0.00	0.00				
	1.32	2.19	1.00	3.18	0.08	1.80	0.699
DI1-BASIN	4.56	0.00	0.00				
	1.00	1.72	1.78	3.50	0.10	2.32	0.767
CB7-BASIN	4.56	0.00	0.00				
	0.67	2.64	1.20	3.84	0.06	1.28	0.843
CB8_1-BASIN	4.56	0.00	0.00				
	1.38	1.89	1.24	3.13	0.12	2.68	0.687

```
  SW0054-BASIN                4.56       0.00       0.00
0.12       4.19       0.21       4.40       0.01       0.15
0.966
  CB3_DOT_BASIN               4.56       0.00       0.00
0.61       2.81       1.09       3.91       0.09       1.89
0.857
  CB4_DOT_BASIN               4.56       0.00       0.00
1.14       1.44       1.92       3.37       0.04       0.84
0.739
  CB3_BASIN                   4.56       0.00       0.00
1.00       1.72       1.78       3.50       0.05       1.10
0.768
  CB4_BASIN                   4.56       0.00       0.00
1.32       2.19       1.00       3.19       0.03       0.65
0.699
  CB8_2_BASIN                 4.56       0.00       0.00
1.38       1.89       1.24       3.13       0.02       0.46
0.688
  CB10_BASIN                  4.56       0.00       0.00
1.32       2.19       1.00       3.18       0.10       2.23
0.698
  CB9_BASIN                   4.56       0.00       0.00
1.32       2.19       1.00       3.19       0.02       0.44
0.699


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

  ----------------------------------------------------------------
----------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                 Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------------
----------------------
  AODI_STANTEC         JUNCTION     1.10     3.05     0.84
0  13:00        3.05
  A1_STANTEC           JUNCTION     1.02     3.02     0.95
0  13:00        3.02
  SW0054               JUNCTION     0.08     0.60     1.06
0  13:00        0.60
  SW0055               JUNCTION     0.07     0.29     1.18
0  12:41        0.29
  SW0056               JUNCTION     0.04     0.17     3.72
0  13:00        0.17
  A2_STANTEC           JUNCTION     0.94     2.96     1.06
0  13:00        2.96
  SW0058               JUNCTION     0.62     2.00     1.50
0  13:00        2.00
  CB1_DOT              JUNCTION     0.12     0.59     2.28
0  13:00        0.59
```

```
  JB3_DOT              JUNCTION     0.56     2.36     2.14
0  13:00        2.36
  CB2_DOT              JUNCTION     0.26     1.68     2.24
0  13:00        1.68
  JB4_DOT              JUNCTION     0.35     2.15     2.26
0  13:00        2.15
  CB5_DOT              JUNCTION     0.07     0.57     2.26
0  13:00        0.57
  SW0064               JUNCTION     0.31     1.52     3.08
0  13:00        1.52
  CB7_DOT              JUNCTION     0.07     0.35     3.37
0  13:00        0.35
  JB1                  JUNCTION     0.38     1.69     3.86
0  13:00        1.69
  CB1                  JUNCTION     0.20     1.49     3.88
0  13:00        1.49
  CB2                  JUNCTION     0.31     1.64     3.89
0  13:00        1.64
  JB4                  JUNCTION     0.37     1.91     4.49
0  13:00        1.91
  CB6                  JUNCTION     0.13     0.74     4.65
0  13:00        0.74
  CB5                  JUNCTION     0.12     0.70     4.71
0  13:00        0.70
  DI1                  JUNCTION     0.15     0.76     4.88
0  13:00        0.76
  CB10                 JUNCTION     0.11     0.57     4.78
0  13:00        0.57
  CB9                  JUNCTION     0.15     1.29     4.62
0  13:00        1.29
  JB5                  JUNCTION     0.36     1.93     4.56
0  13:00        1.92
  CB7                  JUNCTION     0.16     0.80     5.07
0  13:00        0.80
  CB8                  JUNCTION     0.09     0.48     5.14
0  13:00        0.48
  JB3                  JUNCTION     0.38     1.85     4.21
0  13:00        1.84
  CB4                  JUNCTION     0.13     1.40     4.21
0  13:00        1.40
  CB3                  JUNCTION     0.12     1.30     4.23
0  13:00        1.30
  JB2                  JUNCTION     0.17     1.39     3.91
0  13:00        1.39
  JB2_DOT              JUNCTION     0.46     2.02     1.73
0  13:00        2.02
  CB3_DOT              JUNCTION     0.79     1.43     2.91
0  13:00        1.43
  CB4_DOT              JUNCTION     0.06     0.47     2.26
0  13:00        0.47
  JBX_DOT              JUNCTION     0.29     1.48     2.41
0  13:00        1.48
  CB6_DOT              JUNCTION     0.00     0.15     3.09
0  13:00        0.14
  A0_STANTEC           OUTFALL      1.62     3.91     1.64
0  00:59        3.91
```

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

  ------------------------------------------------------------
-------------------------------------
                                    Maximum  Maximum
Lateral       Total        Flow
                                    Lateral    Total  Time of
Max      Inflow      Inflow     Balance
                                     Inflow   Inflow
Occurrence      Volume      Volume       Error
  Node                  Type           CFS      CFS  days
hr:min    10^6 gal    10^6 gal     Percent
  ------------------------------------------------------------
-------------------------------------
  AODI_STANTEC          JUNCTION      1.08    31.72     0
13:01      0.0511        1.44       0.867
  A1_STANTEC            JUNCTION      0.58    30.70     0
13:01      0.0271         1.4       0.780
  SW0054                JUNCTION      0.15     1.12     0
12:46     0.00717       0.0522       0.026
  SW0055                JUNCTION      0.54     0.94     0
13:00      0.0257        0.045       0.001
  SW0056                JUNCTION      0.40     0.40     0
13:00      0.0193       0.0193       0.005
  A2_STANTEC            JUNCTION      0.50    30.12     0
13:01      0.0233        1.38       0.519
  SW0058                JUNCTION      0.00    28.61     0
13:00           0        1.31       0.230
  CB1_DOT               JUNCTION      2.28     2.28     0
13:00       0.105       0.105       0.013
  JB3_DOT               JUNCTION      0.00    26.38     0
13:00           0        1.21       0.110
  CB2_DOT               JUNCTION      3.83     3.83     0
13:00       0.177       0.177       0.111
  JB4_DOT               JUNCTION      0.00    20.75     0
13:00           0       0.948       0.058
  CB5_DOT               JUNCTION      1.55     1.55     0
13:00      0.0676       0.0676       0.036
  SW0064                JUNCTION      1.82    18.43     0
13:00      0.0829       0.844       0.014
  CB7_DOT               JUNCTION      1.02     1.02     0
13:00      0.0465       0.0465       0.152
  JB1                   JUNCTION      0.00    15.63     0
13:00           0       0.715       0.057
  CB1                   JUNCTION      0.00     1.36     0
13:00           0       0.0612       0.035
  CB2                   JUNCTION      1.48     1.48     0
13:00      0.0677       0.0677       0.051
  JB4                   JUNCTION      0.00    11.13     0
13:00           0       0.507       0.025
  CB6                   JUNCTION      1.80     1.80     0
13:00      0.0821       0.0821       0.102
```

CB5		JUNCTION	0.00	2.31	0
13:00	0	0.104	0.040		
DI1		JUNCTION	2.32	2.32	0
13:00	0.104	0.104	0.043		
CB10		JUNCTION	2.23	2.23	0
13:00	0.102	0.102	0.064		
CB9		JUNCTION	0.44	2.66	0
13:00	0.0199	0.122	0.020		
JB5		JUNCTION	0.00	7.04	0
13:00	0	0.321	0.005		
CB7		JUNCTION	1.28	4.41	0
13:00	0.0584	0.199	0.021		
CB8		JUNCTION	3.14	3.14	0
13:00	0.141	0.141	0.015		
JB3		JUNCTION	0.00	12.83	0
13:00	0	0.586	0.047		
CB4		JUNCTION	0.65	0.65	0
13:00	0.0294	0.0294	0.037		
CB3		JUNCTION	1.10	1.10	0
13:00	0.0494	0.0494	0.021		
JB2		JUNCTION	1.36	1.36	0
13:00	0.0612	0.0612	0.001		
JB2_DOT		JUNCTION	0.00	28.64	0
13:00	0	1.31	0.161		
CB3_DOT		JUNCTION	1.89	1.89	0
13:00	0.0869	0.0869	0.962		
CB4_DOT		JUNCTION	0.84	0.84	0
13:00	0.0366	0.0366	0.204		
JBX_DOT		JUNCTION	0.00	18.41	0
13:00	0	0.843	-0.012		
CB6_DOT		JUNCTION	0.00	0.02	0
12:46	0	6.43e-05	8.921		
A0_STANTEC		OUTFALL	0.00	31.78	0
13:01	0	1.43	0.000		

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
CB2_DOT	JUNCTION	0.32	0.180	1.010
CB1	JUNCTION	0.40	0.245	1.965

```
  CB2                   JUNCTION        0.47          0.389
2.181
  CB4                   JUNCTION        0.32          0.151
3.569
  CB3                   JUNCTION        0.16          0.046
3.464
  JB2                   JUNCTION        0.32          0.139
2.811


  **********************
  Node Flooding Summary
  **********************

  No nodes were flooded.


  ************************
  Outfall Loading Summary
  ************************

  -----------------------------------------------------------
                        Flow       Avg       Max       Total
                        Freq      Flow      Flow      Volume
  Outfall Node          Pcnt       CFS       CFS    10^6 gal
  -----------------------------------------------------------
  A0_STANTEC           78.54      3.61     31.78       1.432
  -----------------------------------------------------------
  System               78.54      3.61     31.78       1.432


  ********************
  Link Flow Summary
  ********************

  -------------------------------------------------------------
-----------------
                                    Maximum  Time of Max
Maximum    Max/    Max/
                                     |Flow|   Occurrence
|Veloc|    Full    Full
  Link                 Type          CFS  days hr:min
ft/sec    Flow   Depth
  -------------------------------------------------------------
-----------------
  36_RCP_1.1           CONDUIT     31.78     0  13:01
3.19    0.36    0.82
  36_RCP_2             CONDUIT     30.79     0  13:01
3.02    0.38    0.76
  18_RCP_4             CONDUIT      1.23     0  12:43
2.82    0.08    0.65
  18_RCP_5             CONDUIT      0.98     0  12:46
4.10    0.07    0.29
  18_RCP_6             CONDUIT      0.40     0  13:00
2.53    0.03    0.15
  24_RCP_7             CONDUIT     30.21     0  13:01
```

3.01	0.43	0.75				
18_RCP_9			CONDUIT	2.28	0	13:00
4.17	0.20	0.35				
24_RCP_10			CONDUIT	26.36	0	13:00
4.16	1.15	0.63				
12_RCP_11			CONDUIT	3.83	0	13:00
2.89	1.26	1.00				
24_RCP_12			CONDUIT	20.86	0	13:01
2.92	0.52	0.93				
18_RCP_13			CONDUIT	1.53	0	13:00
4.84	0.06	0.69				
24_RCP_14			CONDUIT	18.40	0	13:00
4.40	0.44	0.64				
12_RCP_15			CONDUIT	1.02	0	13:00
3.96	0.07	0.23				
JB1-SW0064			CONDUIT	15.61	0	13:00
5.04	1.06	0.60				
CB1-JB1			CONDUIT	1.36	0	13:00
1.11	0.19	1.00				
CB2-JB1			CONDUIT	1.48	0	13:00
1.21	0.22	1.00				
JB4-JB3			CONDUIT	11.10	0	13:00
2.81	0.79	0.75				
CB6-JB4			CONDUIT	1.80	0	13:00
3.26	0.31	0.57				
CB5-JB4			CONDUIT	2.31	0	13:00
4.18	0.29	0.55				
DI1-CB5			CONDUIT	2.31	0	13:00
3.39	0.47	0.55				
CB8-CB7			CONDUIT	3.13	0	13:00
2.31	0.19	0.47				
CB10-CB9			CONDUIT	2.22	0	13:00
3.18	0.28	0.50				
CB9-JB5			CONDUIT	2.65	0	13:00
2.42	0.32	1.00				
CB7-JB5			CONDUIT	4.39	0	13:00
3.85	0.53	0.61				
JB5-JB4			CONDUIT	7.03	0	13:00
1.77	0.56	0.77				
CB3-JB3			CONDUIT	1.10	0	13:00
1.77	0.16	1.00				
CB4-JB3			CONDUIT	0.65	0	13:00
1.49	0.09	1.00				
JB3-JB1			CONDUIT	12.80	0	13:00
3.47	0.91	0.71				
JB2-CB1			CONDUIT	1.36	0	13:00
1.49	0.27	1.00				
49			CONDUIT	28.63	0	13:01
7.11	0.26	0.56				
50			CONDUIT	28.61	0	13:00
4.51	0.28	0.50				
51			CONDUIT	1.88	0	13:00
1.83	0.07	0.56				
52			CONDUIT	0.83	0	13:00
4.20	0.04	0.43				
53			CONDUIT	18.41	0	13:00

```
6.30    0.57    0.58
  54                    CONDUIT       0.07     0  13:02
0.84    0.00    0.18


  ***************************
  Flow Classification Summary
  ***************************

  -------------------------------------------------------------
-------------------------
                      Adjusted    ---------- Fraction of Time
in Flow Class ----------
                       /Actual         Up    Down  Sub   Sup
Up    Down  Norm  Inlet
  Conduit               Length    Dry  Dry   Dry   Crit  Crit
Crit  Crit  Ltd   Ctrl
  -------------------------------------------------------------
-------------------------
  36_RCP_1.1              6.69   0.00  0.00  0.00  1.00  0.00
0.00  0.00  0.00  0.00
  36_RCP_2                3.54   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.05  0.00
  18_RCP_4                4.28   0.04  0.00  0.00  0.25  0.01
0.00  0.70  0.21  0.00
  18_RCP_5                5.03   0.04  0.00  0.00  0.13  0.82
0.00  0.00  0.12  0.00
  18_RCP_6                1.00   0.04  0.00  0.00  0.82  0.14
0.00  0.00  0.96  0.00
  24_RCP_7                2.02   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.08  0.00
  18_RCP_9                4.95   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  24_RCP_10               1.00   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.00  0.00
  12_RCP_11               6.19   0.04  0.00  0.00  0.07  0.00
0.00  0.89  0.00  0.00
  24_RCP_12               1.25   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.65  0.00
  18_RCP_13              14.00   0.04  0.00  0.00  0.05  0.03
0.00  0.88  0.01  0.00
  24_RCP_14               1.61   0.04  0.00  0.00  0.05  0.00
0.00  0.91  0.00  0.00
  12_RCP_15              10.10   0.04  0.00  0.00  0.00  0.03
0.00  0.93  0.00  0.00
  JB1-SW0064              1.87   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  CB1-JB1                 5.48   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.43  0.00
  CB2-JB1                13.02   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.10  0.00
  JB4-JB3                 1.00   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.36  0.00
  CB6-JB4                 7.33   0.04  0.00  0.00  0.04  0.00
0.00  0.92  0.00  0.00
  CB5-JB4                 7.95   0.05  0.00  0.00  0.03  0.01
```

```
0.00  0.92  0.00  0.00
  DI1-CB5                17.29   0.04  0.00  0.00  0.01  0.00
0.00  0.95  0.00  0.00
  CB8-CB7                 2.83   0.04  0.00  0.00  0.05  0.00
0.00  0.91  0.00  0.00
  CB10-CB9                2.75   0.04  0.00  0.00  0.03  0.00
0.00  0.93  0.00  0.00
  CB9-JB5                 3.11   0.04  0.00  0.00  0.09  0.00
0.00  0.87  0.00  0.00
  CB7-JB5                 2.05   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  JB5-JB4                 1.85   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.09  0.00
  CB3-JB3                 5.34   0.04  0.00  0.00  0.24  0.02
0.00  0.70  0.10  0.00
  CB4-JB3                13.48   0.04  0.00  0.00  0.27  0.01
0.00  0.69  0.00  0.00
  JB3-JB1                 1.00   0.04  0.00  0.00  0.95  0.00
0.00  0.00  0.45  0.00
  JB2-CB1                 4.08   0.04  0.00  0.00  0.79  0.16
0.00  0.00  0.16  0.00
  49                     29.74   0.04  0.04  0.00  0.16  0.06
0.69  0.00  0.00  0.00
  50                      3.86   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.12  0.00
  51                     18.10   0.04  0.14  0.00  0.00  0.00
0.81  0.00  0.00  0.00
  52                     15.14   0.04  0.00  0.00  0.04  0.00
0.00  0.91  0.00  0.00
  53                      1.66   0.04  0.00  0.00  0.00  0.00
0.00  0.96  0.00  0.00
  54                      9.32   0.51  0.01  0.00  0.04  0.00
0.00  0.44  0.00  0.00


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

  ---------------------------------------------------------------
----------------

Hours        Hours
                         --------- Hours Full --------   Above
Full   Capacity
  Conduit                Both Ends  Upstream  Dnstream
Normal Flow   Limited
  ---------------------------------------------------------------
----------------
  24_RCP_10                  0.01      0.01      0.01
0.34         0.01
  12_RCP_11                  0.23      0.32      0.23
0.41         0.23
  JB1-SW0064                 0.01      0.01      0.01
0.21         0.01
  CB1-JB1                    0.40      0.40      0.49
```

```
0.01          0.01
  CB2-JB1                      0.47       0.47       0.49
0.01          0.01
  CB9-JB5                      0.25       0.25       0.36
0.01          0.01
  CB3-JB3                      0.16       0.16       0.38
0.01          0.01
  CB4-JB3                      0.32       0.32       0.38
0.01          0.01
  JB2-CB1                      0.32       0.32       0.40
0.01          0.01


  Analysis begun on:  Thu Oct 13 08:06:50 2022
  Analysis ended on:  Thu Oct 13 08:06:51 2022
  Total elapsed time: 00:00:01
```

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

  Existing Conditions - Queen Street


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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CFS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... YES
    Ponding Allowed ........ NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Flow Routing Method ...... DYNWAVE
  Surcharge Method ......... EXTRAN
  Starting Date ............ 05/05/2016 00:00:00
  Ending Date .............. 05/06/2016 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:05:00
  Wet Time Step ............ 00:05:00
  Dry Time Step ............ 00:05:00
  Routing Time Step ........ 10.00 sec
  Variable Time Step ....... YES
  Maximum Trials ........... 8
  Number of Threads ........ 1
  Head Tolerance ........... 0.005000 ft


  **************************        Volume         Depth
  Runoff Quantity Continuity     acre-feet        inches
  **************************     ---------       -------
  Total Precipitation ......         8.782         6.993
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         1.350         1.075
  Surface Runoff ...........         7.370         5.869
  Final Storage ............         0.077         0.061
  Continuity Error (%) .....        -0.172


  **************************        Volume        Volume
  Flow Routing Continuity        acre-feet      10^6 gal
```

```
  **************************     ---------     ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         7.366         2.400
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         7.224         2.354
  Flooding Loss ............         0.014         0.004
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.004         0.001
  Final Stored Volume ......         0.047         0.015
  Continuity Error (%) .....         1.153


  ***************************
  Time-Step Critical Elements
  ***************************
  Link JB1-SW0064 (2.54%)


  *******************************
  Highest Flow Instability Indexes
  *******************************
  Link 24_RCP_7 (2)
  Link CB2-JB1 (2)
  Link CB4-JB3 (1)
  Link 36_RCP_1.1 (1)
  Link 12_RCP_11 (1)


  *************************
  Routing Time Step Summary
  *************************
  Minimum Time Step           :     0.50 sec
  Average Time Step           :     9.70 sec
  Maximum Time Step           :    10.00 sec
  Percent in Steady State     :    -0.00
  Average Iterations per Step :     2.07
  Percent Not Converging      :     0.33
  Time Step Frequencies       :
     10.000 -  5.493 sec      :    95.95 %
      5.493 -  3.017 sec      :     2.90 %
      3.017 -  1.657 sec      :     0.72 %
      1.657 -  0.910 sec      :     0.29 %
      0.910 -  0.500 sec      :     0.15 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------
-------------------------------------------------------------
----
                             Total      Total      Total
```

Subcatchment	Total Precip in	Imperv Runon in	Perv Runoff in	Total Runoff in	Total Evap in	Peak Runoff CFS	Runoff Coeff
					10^6 gal		
SW0051-BASIN	6.99	0.00	0.00	0.37	5.55	1.03	6.57	0.08	1.69	0.940
SW0052-BASIN	6.99	0.00	0.00	0.59	4.73	1.63	6.36	0.04	0.92	0.909
SW0055-BASIN	6.99	0.00	0.00	0.24	6.05	0.67	6.72	0.04	0.83	0.960
SW0056-BASIN	6.99	0.00	0.00	0.09	6.60	0.26	6.86	0.03	0.61	0.981
SW0057-BASIN	6.99	0.00	0.00	0.68	4.39	1.86	6.25	0.04	0.80	0.894
SW0059-BASIN	6.99	0.00	0.00	0.67	4.43	1.85	6.28	0.17	3.63	0.898
SW0061-BASIN	6.99	0.00	0.00	0.70	4.33	1.92	6.25	0.28	6.10	0.894
SW0063-BASIN	6.99	0.00	0.00	1.31	2.22	3.41	5.63	0.11	2.56	0.805
SW0064-BASIN	6.99	0.00	0.00	0.84	3.78	2.32	6.10	0.13	2.92	0.873
SW0066-BASIN	6.99	0.00	0.00	0.90	3.71	2.34	6.05	0.08	1.65	0.865
CB2-BASIN	6.99	0.00	0.00	0.84	3.93	2.18	6.11	0.11	2.38	0.874
JB2-BASIN	6.99	0.00	0.00	1.00	3.19	2.76	5.95	0.10	2.21	0.851
CB6-BASIN	6.99	0.00	0.00	1.65	3.37	1.93	5.30	0.14	3.01	0.757
DI1-BASIN	6.99	0.00	0.00	1.14	2.65	3.14	5.79	0.17	3.84	0.828
CB7-BASIN	6.99	0.00	0.00	0.77	4.06	2.12	6.19	0.09	2.04	0.885
CB8_1-BASIN	6.99	0.00	0.00							

```
1.68       2.92       2.35       5.26       0.20     4.53
0.752
  SW0054-BASIN              6.99       0.00       0.00
0.13       6.44       0.37       6.82       0.01     0.23
0.975
  CB3_DOT_BASIN             6.99       0.00       0.00
0.70       4.33       1.93       6.26       0.14     3.00
0.895
  CB4_DOT_BASIN             6.99       0.00       0.00
1.31       2.22       3.41       5.64       0.06     1.39
0.806
  CB3_BASIN                 6.99       0.00       0.00
1.14       2.65       3.14       5.79       0.08     1.82
0.828
  CB4_BASIN                 6.99       0.00       0.00
1.65       3.37       1.93       5.30       0.05     1.08
0.758
  CB8_2_BASIN               6.99       0.00       0.00
1.68       2.92       2.35       5.27       0.03     0.77
0.753
  CB10_BASIN                6.99       0.00       0.00
1.65       3.37       1.93       5.29       0.17     3.73
0.757
  CB9_BASIN                 6.99       0.00       0.00
1.65       3.37       1.93       5.30       0.03     0.73
0.758


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

  ----------------------------------------------------------
---------------------
                                    Average  Maximum  Maximum
Time of Max    Reported
                                      Depth    Depth      HGL
Occurrence   Max Depth
  Node                  Type          Feet     Feet     Feet
days hr:min        Feet
  ----------------------------------------------------------
---------------------
  AODI_STANTEC          JUNCTION     1.21     3.44     1.23
0  13:00        3.44
  A1_STANTEC            JUNCTION     1.13     3.52     1.45
0  13:00        3.52
  SW0054                JUNCTION     0.12     1.24     1.69
0  12:59        1.24
  SW0055                JUNCTION     0.10     0.81     1.69
0  12:59        0.80
  SW0056                JUNCTION     0.05     0.21     3.76
0  13:00        0.21
  A2_STANTEC            JUNCTION     1.05     3.57     1.67
0  13:00        3.57
  SW0058                JUNCTION     0.74     2.88     2.38
0  13:00        2.88
```

	CB1_DOT		JUNCTION	0.17	1.05	2.74
0	13:00	1.05				
	JB3_DOT		JUNCTION	0.72	3.29	3.07
0	13:00	3.29				
	CB2_DOT		JUNCTION	0.37	2.69	3.25
0	12:49	2.69				
	JB4_DOT		JUNCTION	0.50	3.36	3.47
0	13:00	3.36				
	CB5_DOT		JUNCTION	0.13	1.83	3.52
0	13:00	1.83				
	SW0064		JUNCTION	0.44	2.92	4.48
0	13:00	2.92				
	CB7_DOT		JUNCTION	0.12	1.47	4.49
0	13:00	1.47				
	JB1		JUNCTION	0.51	2.73	4.90
0	13:00	2.73				
	CB1		JUNCTION	0.32	2.58	4.97
0	13:00	2.58				
	CB2		JUNCTION	0.44	2.73	4.98
0	13:00	2.73				
	JB4		JUNCTION	0.52	3.45	6.03
0	13:00	3.45				
	CB6		JUNCTION	0.21	2.27	6.18
0	13:00	2.27				
	CB5		JUNCTION	0.20	2.22	6.23
0	13:00	2.22				
	DI1		JUNCTION	0.23	2.24	6.36
0	13:00	2.24				
	CB10		JUNCTION	0.19	2.25	6.46
0	13:00	2.25				
	CB9		JUNCTION	0.25	3.01	6.34
0	13:00	3.01				
	JB5		JUNCTION	0.51	3.52	6.15
0	13:00	3.52				
	CB7		JUNCTION	0.25	2.40	6.67
0	13:00	2.39				
	CB8		JUNCTION	0.16	2.05	6.71
0	12:52	2.05				
	JB3		JUNCTION	0.52	3.11	5.47
0	13:00	3.11				
	CB4		JUNCTION	0.23	2.67	5.48
0	13:00	2.67				
	CB3		JUNCTION	0.21	2.59	5.52
0	13:00	2.59				
	JB2		JUNCTION	0.27	2.51	5.03
0	13:00	2.51				
	JB2_DOT		JUNCTION	0.59	2.91	2.62
0	13:00	2.91				
	CB3_DOT		JUNCTION	0.85	2.12	3.60
0	12:34	1.99				
	CB4_DOT		JUNCTION	0.12	1.69	3.48
0	13:00	1.69				
	JBX_DOT		JUNCTION	0.41	2.82	3.75
0	13:00	2.82				
	CB6_DOT		JUNCTION	0.05	1.54	4.48
0	13:00	1.54				

```
  A0_STANTEC            OUTFALL      1.65     3.91     1.64
0  00:59        3.91


  ********************
  Node Inflow Summary
  ********************

  -------------------------------------------------------------
-------------------------------------
                                  Maximum  Maximum
Lateral       Total        Flow
                                   Lateral    Total  Time of
Max      Inflow      Inflow     Balance
                                    Inflow   Inflow
Occurrence      Volume      Volume       Error
  Node                 Type           CFS      CFS  days
hr:min    10^6 gal    10^6 gal     Percent
  -------------------------------------------------------------
-------------------------------------
  AODI_STANTEC          JUNCTION      1.69    50.87     0
13:00      0.0803        2.37       0.532
  A1_STANTEC            JUNCTION      0.92    49.21     0
13:00      0.0431         2.3       0.475
  SW0054                JUNCTION      0.23     1.82     0
12:45      0.0111       0.081       0.037
  SW0055                JUNCTION      0.83     1.45     0
13:00      0.0401      0.0699       0.010
  SW0056                JUNCTION      0.61     0.61     0
13:00      0.0298      0.0298      -0.024
  A2_STANTEC            JUNCTION      0.80    48.31     0
13:00      0.0373        2.26       0.317
  SW0058                JUNCTION      0.00    45.86     0
13:00           0        2.15       0.143
  CB1_DOT               JUNCTION      3.63     3.63     0
13:00       0.169       0.169       0.149
  JB3_DOT               JUNCTION      0.00    42.26     0
13:00           0        1.98       0.067
  CB2_DOT               JUNCTION      6.10     6.10     0
13:00       0.283       0.283       0.031
  JB4_DOT               JUNCTION      0.00    34.16     0
13:00           0        1.56       0.040
  CB5_DOT               JUNCTION      2.56     2.56     0
13:00       0.113       0.113       0.002
  SW0064                JUNCTION      2.92    30.23     0
13:00       0.134        1.39       0.034
  CB7_DOT               JUNCTION      1.65     1.65     0
13:00      0.0755      0.0755       0.166
  JB1                   JUNCTION      0.00    25.67     0
13:00           0        1.18       0.057
  CB1                   JUNCTION      0.00     2.21     0
13:00           0         0.1       0.018
  CB2                   JUNCTION      2.38     2.38     0
13:00       0.109       0.109       0.049
  JB4                   JUNCTION      0.00    18.19     0
13:00           0       0.841       0.026
```

CB6		JUNCTION	3.01	3.01	0
13:00	0.137	0.137	0.129		
CB5		JUNCTION	0.00	3.83	0
13:00	0	0.173	0.033		
DI1		JUNCTION	3.84	3.84	0
13:00	0.173	0.173	0.066		
CB10		JUNCTION	3.73	3.73	0
13:00	0.17	0.17	0.099		
CB9		JUNCTION	0.73	4.46	0
13:00	0.0331	0.202	-0.007		
JB5		JUNCTION	0.00	11.49	0
12:53	0	0.532	0.001		
CB7		JUNCTION	2.04	7.16	0
12:52	0.094	0.33	0.092		
CB8		JUNCTION	5.29	5.29	0
13:00	0.237	0.237	0.026		
JB3		JUNCTION	0.00	21.08	0
13:00	0	0.972	0.044		
CB4		JUNCTION	1.08	1.08	0
13:00	0.0489	0.0489	0.045		
CB3		JUNCTION	1.82	1.82	0
13:00	0.0817	0.0817	0.038		
JB2		JUNCTION	2.21	2.21	0
13:00	0.1	0.1	0.011		
JB2_DOT		JUNCTION	0.00	45.86	0
13:00	0	2.15	0.091		
CB3_DOT		JUNCTION	3.00	3.00	0
13:00	0.139	0.139	0.772		
CB4_DOT		JUNCTION	1.39	1.39	0
13:00	0.0612	0.0612	0.198		
JBX_DOT		JUNCTION	0.00	30.25	0
13:00	0	1.39	-0.013		
CB6_DOT		JUNCTION	0.00	0.42	0
12:38	0	0.00102	2.464		
A0_STANTEC		OUTFALL	0.00	50.86	0
12:59	0	2.35	0.000		

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
CB2_DOT	JUNCTION	0.53	1.190	0.000

```
  JB4_DOT              JUNCTION        0.32          0.406
0.997
  CB5_DOT              JUNCTION        0.30          0.329
0.241
  JB1                  JUNCTION        0.23          0.228
1.702
  CB1                  JUNCTION        0.56          1.327
0.883
  CB2                  JUNCTION        0.60          1.478
1.092
  JB4                  JUNCTION        0.35          0.955
1.305
  CB6                  JUNCTION        0.35          1.015
0.775
  CB5                  JUNCTION        0.32          0.888
0.372
  DI1                  JUNCTION        0.33          0.990
1.000
  CB10                 JUNCTION        0.35          1.086
0.988
  CB9                  JUNCTION        0.38          1.154
1.000
  JB5                  JUNCTION        0.35          0.987
1.896
  CB7                  JUNCTION        0.33          1.028
0.015
  CB8                  JUNCTION        0.31          0.883
0.000
  JB3                  JUNCTION        0.30          0.607
2.263
  CB4                  JUNCTION        0.53          1.424
2.296
  CB3                  JUNCTION        0.51          1.343
2.167
  JB2                  JUNCTION        0.53          1.261
1.689
  CB3_DOT              JUNCTION        0.46          0.624
0.266
  CB4_DOT              JUNCTION        0.24          0.195
0.825
  JBX_DOT              JUNCTION        0.22          0.178
1.782
  CB6_DOT              JUNCTION        0.11          0.036
1.464


  **********************
  Node Flooding Summary
  **********************

  Flooding refers to all water that overflows a node, whether
it ponds or not.
  ------------------------------------------------------------
--------------

Total   Maximum
```

Node	Hours Flooded	Maximum Rate CFS	Time of Max Occurrence days hr:min	Flood Volume 10^6 gal	Ponded Depth Feet
CB2_DOT	0.20	0.99	0 13:00	0.004	0.000
CB8	0.13	0.44	0 13:00	0.001	0.000

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
A0_STANTEC	82.82	5.83	50.86	2.354
System	82.82	5.83	50.86	2.354

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
36_RCP_1.1	CONDUIT	50.86	0 12:59	4.78	0.58	0.82
36_RCP_2	CONDUIT	49.20	0 13:00	4.24	0.60	0.87
18_RCP_4	CONDUIT	1.71	0 12:50	3.19	0.11	0.91
18_RCP_5	CONDUIT	1.59	0 12:45	4.42	0.12	0.68
18_RCP_6	CONDUIT	0.61	0 13:00	2.85	0.04	0.34
24_RCP_7	CONDUIT	48.30	0 13:00	4.10	0.69	0.89
18_RCP_9	CONDUIT	3.62	0 13:00	4.51	0.32	0.75

24_RCP_10			CONDUIT	42.24	0	13:00
4.73	1.85	0.88				
12_RCP_11			CONDUIT	6.00	0	12:49
3.40	1.97	1.00				
24_RCP_12			CONDUIT	34.16	0	13:00
4.62	0.85	1.00				
18_RCP_13			CONDUIT	2.58	0	12:39
4.75	0.09	1.00				
24_RCP_14			CONDUIT	30.27	0	13:00
4.41	0.72	1.00				
12_RCP_15			CONDUIT	1.82	0	13:01
4.26	0.12	0.99				
JB1-SW0064			CONDUIT	25.66	0	13:00
5.67	1.75	0.98				
CB1-JB1			CONDUIT	2.21	0	13:00
1.80	0.32	1.00				
CB2-JB1			CONDUIT	2.38	0	13:00
1.94	0.36	1.00				
JB4-JB3			CONDUIT	18.18	0	13:00
3.70	1.29	1.00				
CB6-JB4			CONDUIT	3.01	0	13:00
3.51	0.53	1.00				
CB5-JB4			CONDUIT	3.83	0	13:00
4.31	0.49	1.00				
DI1-CB5			CONDUIT	3.83	0	13:00
3.51	0.77	1.00				
CB8-CB7			CONDUIT	5.14	0	12:52
2.29	0.32	1.00				
CB10-CB9			CONDUIT	3.73	0	13:00
3.23	0.46	1.00				
CB9-JB5			CONDUIT	4.46	0	13:00
2.48	0.54	1.00				
CB7-JB5			CONDUIT	7.15	0	12:52
4.00	0.87	1.00				
JB5-JB4			CONDUIT	11.49	0	12:53
2.34	0.91	1.00				
CB3-JB3			CONDUIT	1.82	0	13:00
1.79	0.27	1.00				
CB4-JB3			CONDUIT	1.08	0	13:00
1.49	0.15	1.00				
JB3-JB1			CONDUIT	21.08	0	13:00
4.29	1.50	1.00				
JB2-CB1			CONDUIT	2.21	0	13:00
1.80	0.44	1.00				
49			CONDUIT	45.83	0	13:00
7.74	0.41	0.81				
50			CONDUIT	45.86	0	13:00
4.87	0.46	0.72				
51			CONDUIT	3.00	0	13:00
2.59	0.10	0.76				
52			CONDUIT	1.56	0	12:39
4.32	0.08	1.00				
53			CONDUIT	30.25	0	13:00
6.36	0.94	1.00				
54			CONDUIT	0.45	0	13:02
1.07	0.03	1.00				

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
36_RCP_1.1	6.69	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
36_RCP_2	3.54	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.04	0.00
18_RCP_4	4.28	0.04	0.00	0.00	0.25	0.01	0.00	0.69	0.21	0.00
18_RCP_5	5.03	0.04	0.00	0.00	0.06	0.90	0.00	0.00	0.07	0.00
18_RCP_6	1.00	0.04	0.00	0.00	0.73	0.23	0.00	0.00	0.96	0.00
24_RCP_7	2.02	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.06	0.00
18_RCP_9	4.95	0.04	0.00	0.00	0.04	0.00	0.00	0.92	0.00	0.00
24_RCP_10	1.00	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00
12_RCP_11	6.19	0.04	0.00	0.00	0.17	0.00	0.00	0.79	0.00	0.00
24_RCP_12	1.25	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.57	0.00
18_RCP_13	14.00	0.04	0.00	0.00	0.08	0.09	0.00	0.79	0.03	0.00
24_RCP_14	1.61	0.04	0.00	0.00	0.06	0.00	0.00	0.90	0.00	0.00
12_RCP_15	10.10	0.04	0.00	0.00	0.05	0.00	0.00	0.91	0.00	0.00
JB1-SW0064	1.87	0.04	0.00	0.00	0.03	0.00	0.00	0.92	0.00	0.00
CB1-JB1	5.48	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.22	0.00
CB2-JB1	13.02	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.06	0.00
JB4-JB3	1.00	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.16	0.00
CB6-JB4	7.33	0.04	0.00	0.00	0.05	0.00	0.00	0.91	0.00	0.00
CB5-JB4	7.95	0.04	0.00	0.00	0.05	0.00	0.00	0.91	0.00	0.00
DI1-CB5	17.29	0.04	0.00	0.00	0.05	0.00	0.00	0.91	0.00	0.00

```
  CB8-CB7                 2.83   0.04  0.00  0.00  0.09  0.00
0.00  0.87  0.00  0.00
  CB10-CB9                2.75   0.04  0.00  0.00  0.05  0.00
0.00  0.91  0.00  0.00
  CB9-JB5                 3.11   0.04  0.00  0.00  0.17  0.00
0.00  0.78  0.00  0.00
  CB7-JB5                 2.05   0.04  0.00  0.00  0.04  0.00
0.00  0.91  0.00  0.00
  JB5-JB4                 1.85   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.05  0.00
  CB3-JB3                 5.34   0.04  0.00  0.00  0.33  0.01
0.00  0.62  0.09  0.00
  CB4-JB3                13.48   0.04  0.00  0.00  0.35  0.01
0.00  0.59  0.00  0.00
  JB3-JB1                 1.00   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.24  0.00
  JB2-CB1                 4.08   0.04  0.00  0.00  0.91  0.04
0.00  0.00  0.28  0.00
  49                     29.74   0.04  0.03  0.00  0.16  0.05
0.72  0.00  0.00  0.00
  50                      3.86   0.04  0.00  0.00  0.96  0.00
0.00  0.00  0.08  0.00
  51                     18.10   0.04  0.11  0.00  0.04  0.00
0.81  0.00  0.00  0.00
  52                     15.14   0.04  0.00  0.00  0.05  0.00
0.00  0.90  0.00  0.00
  53                      1.66   0.04  0.00  0.00  0.05  0.00
0.00  0.91  0.00  0.00
  54                      9.32   0.51  0.00  0.00  0.05  0.00
0.00  0.44  0.00  0.00


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

  ---------------------------------------------------------------
---------------

Hours        Hours
                         --------- Hours Full --------   Above
Full   Capacity
  Conduit                Both Ends  Upstream  Dnstream
Normal Flow   Limited
  ---------------------------------------------------------------
---------------
  18_RCP_4                    0.01      0.01      0.46
0.01         0.01
  24_RCP_10                   0.01      0.01      0.01
0.53         0.01
  12_RCP_11                   0.52      0.53      0.52
0.52         0.52
  24_RCP_12                   0.46      0.46      0.49
0.01         0.28
  18_RCP_13                   0.30      0.30      0.50
0.01         0.01
```

24_RCP_14		0.30	0.30	0.32
0.01	0.01			
12_RCP_15		0.01	0.01	0.22
0.01	0.01			
JB1-SW0064		0.01	0.22	0.01
0.51	0.01			
CB1-JB1		0.56	0.56	0.63
0.01	0.01			
CB2-JB1		0.60	0.60	0.63
0.01	0.08			
JB4-JB3		0.30	0.35	0.30
0.41	0.30			
CB6-JB4		0.35	0.35	0.36
0.01	0.32			
CB5-JB4		0.34	0.34	0.36
0.01	0.01			
DI1-CB5		0.32	0.33	0.32
0.01	0.32			
CB8-CB7		0.31	0.31	0.33
0.01	0.01			
CB10-CB9		0.35	0.35	0.38
0.01	0.01			
CB9-JB5		0.52	0.52	0.54
0.01	0.09			
CB7-JB5		0.35	0.38	0.35
0.01	0.35			
JB5-JB4		0.35	0.36	0.35
0.01	0.35			
CB3-JB3		0.51	0.51	0.55
0.01	0.01			
CB4-JB3		0.53	0.53	0.55
0.01	0.01			
JB3-JB1		0.22	0.30	0.22
0.47	0.22			
JB2-CB1		0.53	0.53	0.56
0.01	0.01			
51		0.01	0.01	0.46
0.01	0.01			
52		0.24	0.24	0.37
0.01	0.01			
53		0.22	0.27	0.22
0.01	0.22			
54		0.11	0.11	0.23
0.01	0.01			

```
  Analysis begun on:  Thu Oct 13 08:10:46 2022
  Analysis ended on:  Thu Oct 13 08:10:46 2022
  Total elapsed time: < 1 sec
```

Appendix E

Inspection Log and Reports

SWPPP Inspection Log			
Name of Construction Site	**Location of Construction Site**		
Date of Inspection	**Inspector Name**	**Does Inspection Report require maintenance of installed BMPs?**	
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**
		☐ **Yes**	☐ **No**

		☐ Yes	☐ No
		☐ Yes	☐ No

SWPPP Inspection Log (Continued)

Date of Inspection	Inspector Name	Does Inspection Report require maintenance of installed BMPs?	
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No

		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No

Appendix F

Rainfall Log and Reports

SWPPP Rainfall Records (January - June)										Year:	
January	Rainfall	February	Rainfall	March	Rainfall	April	Rainfall	May	Rainfall	June	Rainfall
1		1		1		1		1		1	
2		2		2		2		2		2	
3		3		3		3		3		3	
4		4		4		4		4		4	
5		5		5		5		5		5	
6		6		6		6		6		6	
7		7		7		7		7		7	
8		8		8		8		8		8	
9		9		9		9		9		9	
10		10		10		10		10		10	
11		11		11		11		11		11	
12		12		12		12		12		12	
13		13		13		13		13		13	
14		14		14		14		14		14	
15		15		15		15		15		15	
16		16		16		16		16		16	
17		17		17		17		17		17	
18		18		18		18		18		18	
19		19		19		19		19		19	
20		20		20		20		20		20	
21		21		21		21		21		21	

22		22		22		22		22		22	
23		23		23		23		23		23	
24		24		24		24		24		24	
25		25		25		25		25		25	
26		26		26		26		26		26	
27		27		27		27		27		27	
28		28		28		28		28		28	
29		29		29		29		29		29	
30				30		30		30		30	
31				31				31			

SWPPP Rainfall Records (July - December)

Year:

July	Rainfall	August	Rainfall	September	Rainfall	October	Rainfall	November	Rainfall	December	Rainfall
1		1		1		1		1		1	
2		2		2		2		2		2	
3		3		3		3		3		3	
4		4		4		4		4		4	
5		5		5		5		5		5	
6		6		6		6		6		6	
7		7		7		7		7		7	
8		8		8		8		8		8	
9		9		9		9		9		9	
10		10		10		10		10		10	
11		11		11		11		11		11	

12		12		12		12		12		12	
13		13		13		13		13		13	
14		14		14		14		14		14	
15		15		15		15		15		15	
16		16		16		16		16		16	
17		17		17		17		17		17	
18		18		18		18		18		18	
19		19		19		19		19		19	
20		20		20		20		20		20	
21		21		21		21		21		21	
22		22		22		22		22		22	
23		23		23		23		23		23	
24		24		24		24		24		24	
25		25		25		25		25		25	
26		26		26		26		26		26	
27		27		27		27		27		27	
28		28		28		28		28		28	
29		29		29		29		29		29	
30		30		30		30		30		30	
31		31				31				31	

Appendix G

Additional Site Logs and Records

SWPPP Pre-Construction Conference Attendance Log	
Date & Time	**Description/Outline and Name of the Presenter of SWPPP and Site Requirements**

Name	Company	Signature

SWPPP Pre-Construction Conference Attendance Log (Continued)

Name	Company	Signature

SWPPP Contractor & Sub-Contractor Log

Name of Construction Site	Location of Construction Site

Company/Individual Name		Work Responsibilities
1.)		
Start Date:		
Completion Date:		
2.)		
Start Date:		
Completion Date:		
3.)		
Start Date:		
Completion Date:		
4.)		
Start Date:		
Completion Date:		
5.)		
Start Date:		
Completion Date:		

6.)		
Start Date:		
Completion Date:		
7.)		
Start Date:		
Completion Date:		
8.)		
Start Date:		
Completion Date:		
9.)		
Start Date:		
Completion Date:		
10.)		
Start Date:		
Completion Date:		

SWPPP Contractor & Sub-Contractor Log (Continued)

11.)		
Start Date:		
Completion Date:		
12.)		
Start Date:		
Completion Date:		
13.)		

Start Date:		
Completion Date:		
14.)		
Start Date:		
Completion Date:		
15.)		
Start Date:		
Completion Date:		
16.)		
Start Date:		
Completion Date:		
17.)		
Start Date:		
Completion Date:		
18.)		
Start Date:		
Completion Date:		
19.)		
Start Date:		
Completion Date:		
20.)		
Start Date:		
Completion Date:		
21.)		
Start Date:		

Completion Date:		

SWPPP Modification Log				
Name of Construction Site		Location of Construction Site		
Type of Modification		Description of Modification		Location of Modification
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		Description of Modification		Location of Modification
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		Description of Modification		Location of Modification
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		Description of Modification		Location of Modification
☐ Major	☐ Minor			
Start Date:				
Completion Date:				

Reason for Modifications:		**Approved/Implemented By:**	

Type of Modification	Description of Modification	Location of Modification
☐ Major ☐ Minor		
Start Date:		
Completion Date:		

Reason for Modifications:		**Approved/Implemented By:**	

SWPPP Modification Log (Continued)

Name of Construction Site	Location of Construction Site

Type of Modification	Description of Modification	Location of Modification
☐ Major ☐ Minor		
Start Date:		
Completion Date:		

Reason for Modifications:		**Approved/Implemented By:**	

Type of Modification	Description of Modification	Location of Modification
☐ Major ☐ Minor		
Start Date:		
Completion Date:		

Reason for Modifications:		**Approved/Implemented By:**	

Type of Modification		Description of Modification		Location of Modification
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major	☐ Minor			
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	

SWPPP Soil Stabilization Log

Name of Construction Site	Location of Construction Site

Type of Stabilization		Description of Stabilization	Location of Stabilization
☐ Final	☐ Temporary		
Initiate Date:			

Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**	**Location of Stabilization**
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**	**Location of Stabilization**
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**	**Location of Stabilization**
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**	**Location of Stabilization**
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			

Additional work proposed for this area:		**Inspection Frequency for Stabilized Area:**	

SWPPP Modification Log (Continued)

Name of Construction Site	Location of Construction Site

Type of Stabilization		Description of Stabilization	Location of Stabilization
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	

Type of Stabilization		Description of Stabilization	Location of Stabilization
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	

Type of Stabilization		Description of Stabilization	Location of Stabilization
☐ Final ☐ Temporary			
Initiate Date:			
Completion Date:			
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:	

Type of Stabilization		Description of Stabilization		Location of Stabilization
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:		

Type of Stabilization		Description of Stabilization		Location of Stabilization
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:		Inspection Frequency for Stabilized Area:		

Appendix H

Construction General Permit SCR100000

A copy of the NPDES General Permit for Stormwater Discharges from Construction Activities (SCR100000) can be found at the following address:

http://www.scdhec.gov/environment/water/swater/docs/CGP-permit.pdf

DocuSign

Certificate Of Completion

Envelope Id: C1B198E7AE6845ADA67D3B760EE8ACAE
Status: Completed
Subject: Complete with DocuSign: Addendum No. 1 COG#4015 4-26-23.pdf
Source Envelope:
Document Pages: 139
Signatures: 1
Envelope Originator:
Certificate Pages: 4
Initials: 0
Nan Lee
AutoNav: Enabled
nlee@wkdickson.com
EnvelopeId Stamping: Enabled
IP Address: 4.1.77.186
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Record Tracking

Status: Original
4/26/2023 12:47:45 PM
Holder: Nan Lee
nlee@wkdickson.com
Location: DocuSign

Signer Events	Signature	Timestamp
James C Reigart jreigart@wkdickson.com Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 170.52.185.63	Sent: 4/26/2023 12:50:58 PM Viewed: 4/26/2023 12:58:08 PM Signed: 4/26/2023 1:00:50 PM

Electronic Record and Signature Disclosure:
Accepted: 4/26/2023 12:58:08 PM
ID: 0bcf67bf-0d84-4ecb-bf85-5f82103939e5

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	4/26/2023 12:50:58 PM
Certified Delivered	Security Checked	4/26/2023 12:58:08 PM
Signing Complete	Security Checked	4/26/2023 1:00:50 PM
Completed	Security Checked	4/26/2023 1:00:50 PM

Payment Events	Status	Timestamps

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