Final Pamplico Stormwater Study

For

South Carolina

Office of Resilience

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Executive Summary

The Town of Pamplico experiences flooding during relatively minor storm events attributed to minimally sloping topography and undersized/failing infrastructure. The South Carolina Office of Resilience (SCOR) contracted with Kimley-Horn (KH) to analyze areas of concentrated flooding and determine existing infrastructure sufficiency. SAM, LLC surveyed existing infrastructure in Spring 2022 and obtained photos for visual inspection and elevation shots of inverts and rims. The analysis was conducted for seven (7) priority areas that were established based on citizen flooding complaints/questionnaires, Town staff input, and public meeting discussions. Existing conditions sufficiency was set based on if existing infrastructure (culverts/closed systems/ditches) met Levels of Service (LOS) guidelines which were determined by KH with guidance from various coastal communities' stormwater design manuals. The hydrologic and hydraulic analysis showed 85% of pipes and 41% of ditches to be insufficient, based on linear feet (LF). Undersized pipes made up the majority of insufficient pipes, greater than 90%, as opposed to blockage or accumulation of sediment. Proposed project alternatives were then determined within each priority area to alleviate flooding and improve sufficiency. The first alternative for each priority area upsized all existing insufficient infrastructure to meet LOS and matched existing pipe and ditch alignments. Other project alternatives were developed that created new alignments and established new flow pathways and outfalls. In some cases, an alternative reduced the project area to streets and properties with the most extreme reported flooding. A project scoring matrix was applied to each project alternative, calculating a preliminary selection criteria (PSC) score that takes into account community disruption, permitting, operation and maintenance, and easement effort, and a project performance criteria (PPC) score that factors in civic impact and flood mitigation. An opinion of probable construction cost (OPCC) was estimated for each alternative and that cost, along with the aggregate PSC and PPC score, were used to rank the project alternatives. The 5 highest ranking projects were found to be in priority areas 1-5 and were classified as recommended projects. A benefit-cost analysis (BCA) was conducted for each recommended project that calculated the economic value for benefits by factoring in avoided future costs/losses such as physical damage and loss of service/function and weighed those against the cost of the project.

		Project Score (out of 20)	OPCC	BCA
PA 5	ALT 3	16.3	$ 1,022,300	2.10
PA 1	ALT 2	12.45	$ 563,800	5.71
PA 2	ALT 3	12.9	$ 305,700	2.11
PA 4	ALT 3	6.95	$ 2,534,300	0.74
PA 3	ALT 2	8.85	$ 789,900	0.14

1.0 Introduction

The Town of Pamplico (Town) is located in a low-lying area on the eastern side of Florence County, South Carolina and has a recorded population of 1,052 according to the 2021 census. Over the years, flooding from minor storm events, 2-year and 5-year storms, has been a challenge to many areas of the Town. Rain events can flood roadways – causing them to become impassable - and even damage homes and businesses.

In an effort to combat this challenge, the South Carolina Office of Resilience (SCOR) contracted with Kimley-Horn and Associates (KH) in July 2021 to perform a Comprehensive Stormwater Study to identify flooding issues, conduct an assessment of the existing stormwater system, develop and prioritize projects, and establish an implementation strategy for projects to mitigate against future flooding in the Town. KH followed the process summarized below and detailed in this document to meet SCOR's specified goals:

- *Public involvement* was one of the primary focuses of the project. A detailed public involvement and outreach plan was developed that included an online questionnaire/survey, mailers, and a public meeting.
    - The online questionnaires/surveys went live and mailers were sent ahead of the public meeting. The questionnaire/survey asked for information regarding history, frequency, location, and severity of flooding and erosion that has occurred on their property and within the neighborhood on neighboring properties and roads.
    - 10 parcels completed the questionnaire and 19 total parcels were identified as having reported issues either by a recorded survey, mentioned as an accompaniment with a recorded survey, or discussed at the public meeting.
    - The public meeting was organized as an open house at the volunteer fire department (201 River Road) and held on February 8, 2022.
    - 7 Priority Areas were established utilizing the knowledge of historic flooding, questionnaire/survey results, public meeting input, and Pamplico Staff input.
- *Field reconnaissance* of the 7 Priority Areas was completed by KH in 2021 and professional survey was completed by SAM, LLC during the months of March and May 2022. Survey included visual inspection of infrastructure (pipes, inlets, ditches, etc.), pipe extents, and specific elevation data for inverts and rims. No pipe video or confined space investigation was conducted. Surveyed data shown on **Exhibit 1** in **Appendix A** and sealed survey drawings are included in **Attachment 1**.
- *Engineering analysis* was conducted on the problem areas identified above. The analysis included hydrologic analysis to predict the quantity of storm water runoff, and hydraulic analysis to predict capacity sufficiency of the drainage infrastructure.
- *Alternative analysis* was completed and conceptual improvements were designed for insufficient drainage infrastructure.
- *Prioritization* was completed for the alternatives by creating a matrix and corresponding point system. Priority was placed on a number of parameters including community disruption, land acquisition, flood mitigation, and opinion of probable cost (OPC).

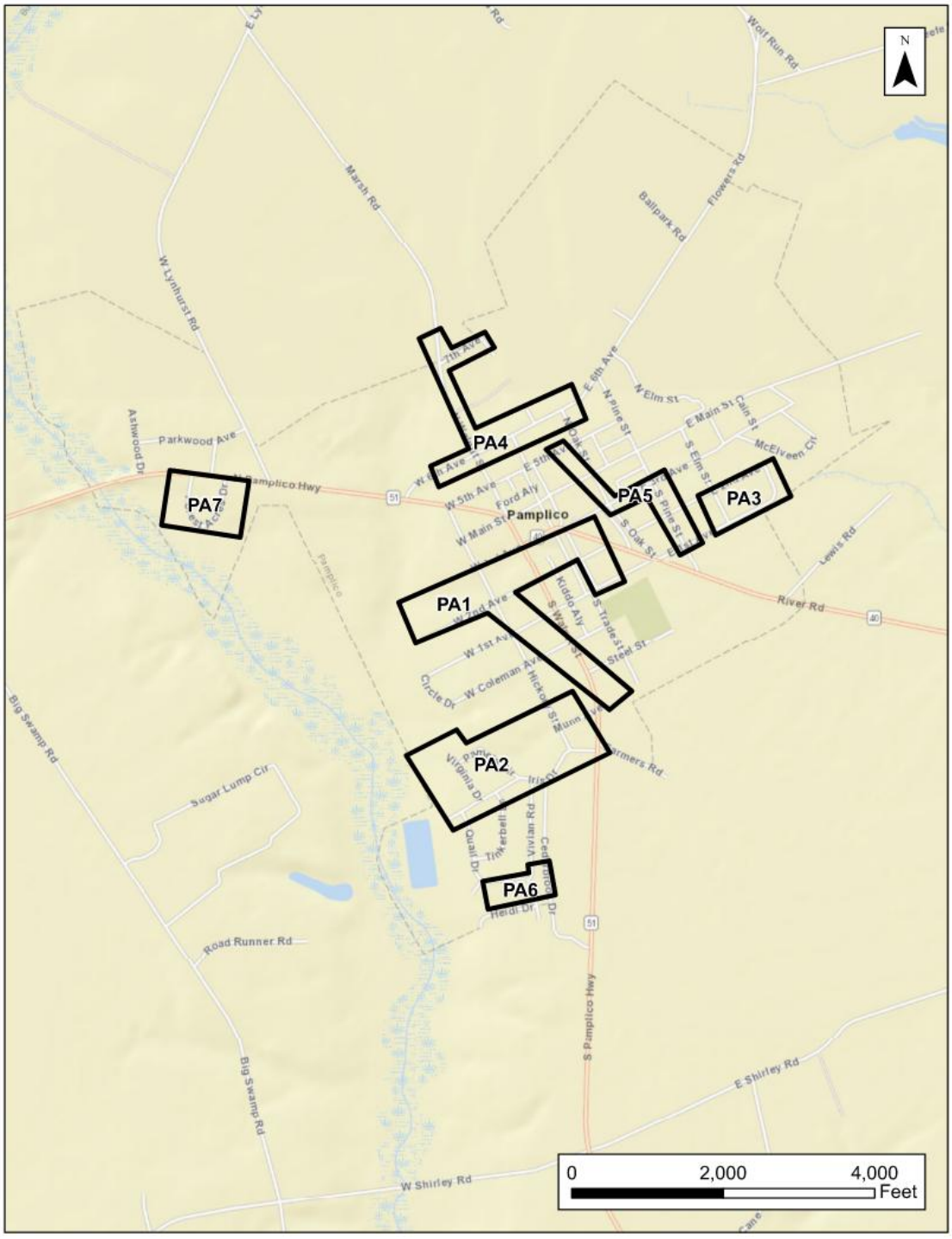

Figure 1. Town Priority Areas

2.0 Methodology and Assumptions

2.1 Sub-Basin Delineation

Based on priority area establishment, field work, and 2020 USGS LiDAR of the Savannah and Pee Dee river basins, the Town was divided into seven (7) sub-watersheds. The sub-watersheds are associated with the established priority areas and terminate at a unique outfall, with the exception of Priority Areas 4 and 5 sharing an outfall. Please reference **Exhibit 2** in **Appendix A** for names and locations of the sub-watersheds.

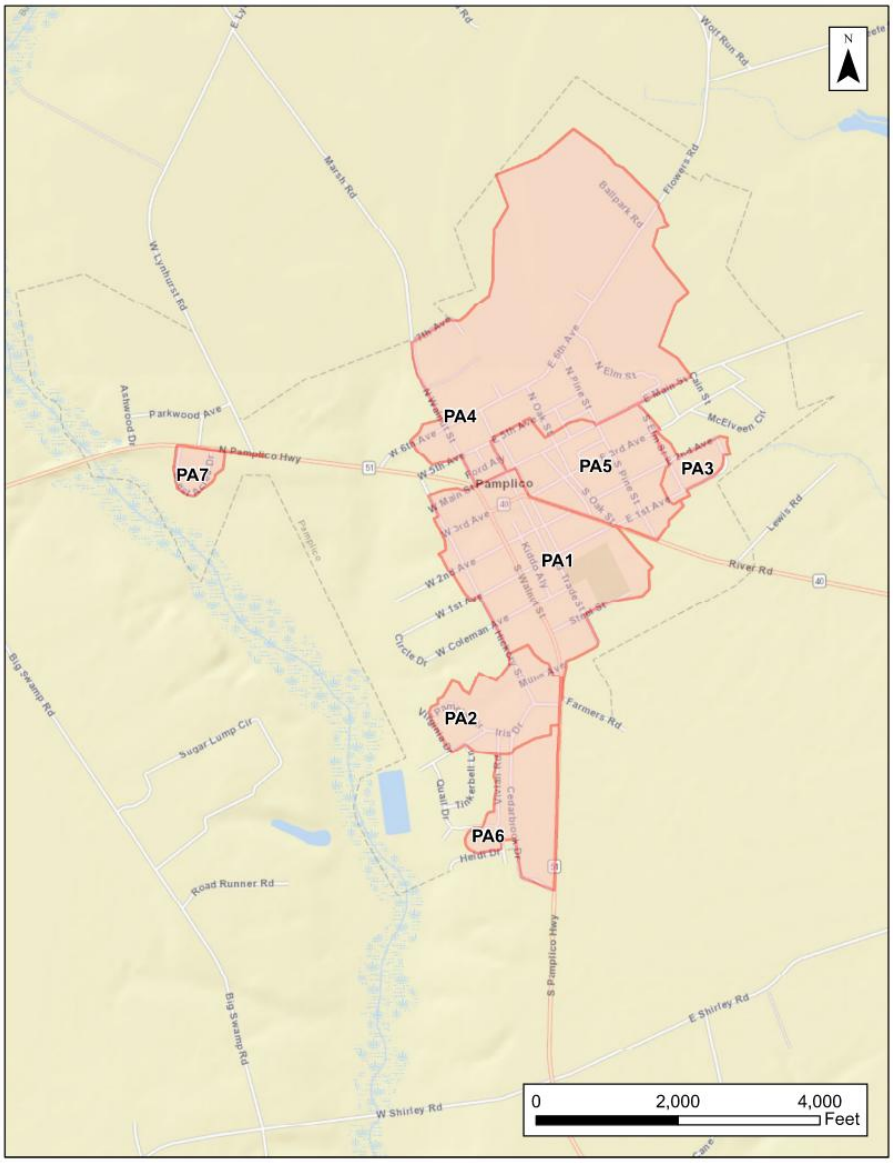

Figure 2. Town Sub-basins

2.2 Hydrology/Hydraulic Calculations

Provided the Florence County Stormwater Manual only provides guidance for stormwater as it pertains to land disturbing activities and compliance with the National Pollution Discharge Elimination System (NPDES), a methodology for hydrologic computations was pulled from nearby coastal counties with established stormwater design manuals (Georgetown and Horry County) and SCDOT guidelines.

The following guidelines were followed for the hydrologic analysis of the sub-basins:

- Runoff calculated by SCS Curve Number method
    - Georgetown County and Horry County stormwater manuals specify the SCS method may be used for drainage areas with no cited minimum acreage, only Horry County specifies a maximum area of 2,000 acres for this method
    - Rainfall duration of 24-hours, Type III rainfall distribution with a 6-minute time increment and peaking factor of 484
    - Rainfall intensity-duration-frequency (IDF) curves from SCDOT, specifically the 2019 updated values cited in Hydraulic Design Bulletin No. 2019-2
    - Rainfall depth from NOAA Atlas 14, Volume 2, Version 3
        - SCDOT hydraulic design manual specifies using either NOAA's values or SCDHEC's published rainfall depths, the most recent version being NOAA Atlas 14, Volume 2, Version 2 (2005)
        - Existing conditions analysis utilized the SCS rainfall depth as shown and future conditions analysis factored in a 20% increase to existing conditions rainfall depth per guidance from other coastal watershed studies
    - Curve Numbers (CN) from TR-55
        - Soil Group based on NRCS data
    - Time of Concentration (Tc) based on TR-55 methods
- Drainage Areas (DA) and Tc based on 2020 USGS LiDAR and supplemented with field reconnaissance and Google Maps-street view feature.
    - DA and Tc remained the same for existing and future conditions
- CN values based on land cover information from the national land cover database published in 2019 by the Multi-Resolution Land Characteristics (MRLC) Consortium.
- No detention in system is assumed (e.g., no significant storage behind culverts or in pipe systems).
- A minimum Tc was established to be 10 minutes based on the minimal slopes observed across the watershed and their corresponding sheet flow travel times.
- A 1 acre threshold was applied to the DAs to merit a Tc calculation
    - DAs less than 1 acre were assigned the minimum Tc of 10 minutes.

Existing infrastructure consists of crossings, closed systems, and open channels and were surveyed between the months of March and May 2022 by SAM, LLC. Inverts were captured for each pipe along with size and descriptions of their condition such as level of sediment. Rim elevations were documented for each node within a closed system and elevation shots were taken to render a typical section of the open channels. Ditch typical sections were supplemented with 2020 LiDAR if survey didn't suffice. Photos were provided for the end treatments of pipes, nodes, and some channels. The surveyed information and photos are compiled in a geodatabase under the dataset titled "Existing_Infrastructure".

The results of the hydrologic analysis and surveyed information were then used to model the existing infrastructure and determine hydraulic sufficiency based on the Level of Service (LOS) guidelines specified below. Drainage infrastructure that did not meet the LOS were classified as insufficient and marked appropriately within their feature class in the "Existing_Infrastructure" geodatabase. Inventory and sufficiency tables for the existing infrastructure are provided in tables in **Appendix B** and displayed graphically on **Exhibit 3** in **Appendix B**. The models used in our analysis consisted of:

- *StormCAD v10.03.04.53* for closed systems
- *HY-8 v7.60* for pipe crossings
- *FlowMaster v10.03.00.03* for open channels
- *GeoHEC-RAS v3.1.0.962* for floodplain
    - The Big Swamp Branch floodplain was modeled using GeoHEC-RAS in Priority Area 7. The effective FEMA model was obtained and the 100-yr flood results/water surface elevations were remapped through the priority area utilizing 2020 USGS LiDAR of the Savannah and Pee Dee river basins.

2.3 Level of Service:

A design Level of Service (LOS) was developed to determine the sufficiency of existing infrastructure within the seven (7) established priority areas. The design (LOS) for existing conditions utilized criteria found in nearby coastal counties (Georgetown and Horry County) and SCDOT guidelines. The following assumptions are made in defining the design LOS for existing conditions:

- The 25-year hydraulic grade line (HGL) shall be calculated for all closed storm sewer systems and remain below existing grade.
- Culverts under arterial and multi-lane collector roadways shall convey the 50-year storm event without overtopping the crown of the roadway.
    - Culverts under all other roadways and driveways* shall convey the 25-year event without overtopping the crown of the roadway.
    - *The town of Pamplico is a minimally sloping area with driveways matching grade with the connected roadway. Therefore, driveway pipes share the 25-year LOS guideline with local roadways provided the overtopped driveway would result in roadway flooding.
- Open channel systems shall convey the 25-year design storm event without overtopping the banks.

Project alternatives were developed for the 7 Priority Areas to achieve the minimum design LOS specified above. Alternative 1 of each Priority Area involved upsizing all insufficient existing infrastructure (closed systems/crossings/ditches) to achieve LOS and maintaining their existing alignment. Alternatives beyond Alternative 1, if any, for each Priority Area utilize elements of Alternative 1 and incorporate additional/revised alignments for proposed infrastructure to either achieve design LOS or a reduced design LOS, but improvement on existing sufficiency.

2.4 Opinions of Probable Construction Cost (OPCC)

For each alternative, KH developed an Opinion of Probable Construction Cost (OPCC) which included construction and planning/design/construction management costs. Easement cost was based on a percentage, 10%, of the construction costs subtotal. The easement cost is shown relatively low as it is assumed the majority of required easements will be donated by the

property owner. These estimates are based on conceptual designs, with limited to no survey or geotechnical information. Cost estimates are shown in 2022 dollars and adjustment for inflation should be accounted for based on implementation of projects.

2.5 Scoring Matrix

A scoring matrix was created to evaluate alternatives beyond their associated cost such as community impact and flood mitigation. The score is based on a Preliminary Selection Criteria (PSC) and a Project Performance Criteria (PPC). The final score attached to an alternative is the addition of the PSC and PPC.

2.5.1 Preliminary Selection Criteria

- Permitting and Compliance
    a) Definition: Extent of environmental state/federal regulatory approvals that will be required and from how many agencies.
    b) Measurement: Qualitative
    c) Scoring: Highest points were awarded to projects not expected to require permits. Point values will decline as the number of agencies requiring permits and the level of permitting complexity increases (Nationwide or Regional to SCDOT).
- Community Disruption
    - Residential Community Disruption
        a) Definition: Adverse impacts to the ability of citizens to access their neighborhood or community assets as well as the nature (temporary/permanent) and duration of impacts.
        b) Measurement: Qualitative
            1) Does the alternative inhibit or reduce points of ingress/egress to existing neighborhoods?
            2) What about community assets such as recreation areas, public libraries, churches, shopping centers, and government buildings?
        c) Scoring: Higher points were awarded to alternatives that do not inhibit or reduce access to these facilities and/or have shorter construction durations, lower points were awarded for temporary impacts or longer construction durations, no points were awarded for permanent impacts.
    - Non-residential Community Disruption
        a) Definition: Adverse impacts to the ability of business-owners, employees and clients to access their place of business or other non-residential facility, as well as the nature (temporary/permanent) and duration of impacts.
        b) Measurement: Qualitative
            1) Does the alternative inhibit or reduce points of ingress/egress to existing commercial and industrial properties?
            2) Does the alternative affect the economic impact of the business?
        c) Scoring: Higher points were awarded to alternatives that do not inhibit or reduce access to these facilities and/or have shorter construction durations, lower points were awarded for temporary impacts or longer construction durations, no points were awarded for permanent impacts.
- Operation and Maintenance

a) Definition: O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure
b) Measurement: Qualitative
    1) Does the alternative increase the methods of frequency of infrastructure maintenance beyond typical practices?
    2) Are there any specific areas in the system that will require special attention?
    3) Is sufficient access available for maintenance activities?
c) Scoring: More points were awarded to alternatives with typical maintenance procedures and sufficient access, fewer points were awarded to alternatives with significant maintenance burdens and/or difficult access.

- Land Acquisition/Available Easements
    a) Definition: The acquisition of land that is required for implementation of the alternative. Acquisitions may require standard easements for infrastructure or entire parcels and could include public or private property
    b) Measurement: Qualitative
    c) Scoring: Higher points were awarded to alternatives that require minimal land acquisition from publicly owned land, lower points were awarded for more extensive acquisition that is required from private land owners.

An example of the PSC scoring is provided below. PSC scoring matrices for each Priority Area alternative are provided in **Appendix E**.

Preliminary Selection Criteria Example (Priority Area 1 – ALT 1)

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PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 1

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets – includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	6	0.9	Temporarily impacts access to residential areas along Hickory St, W 2nd Ave, W 1st Ave, and W Coleman Ave through 4 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility – includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non- residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non-residential facility and/or has short construction duration.*	6	0.6	Temporarily impacts access to businesses along S Walnut St and the elementary school along Hickory St.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative – may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	5	1.5	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		100%				6.5/10		

2.5.2 Project Performance Criteria

- Flood Reports
    a) Definition: Documented citizen complaints that are addressed by a particular project. The total number, frequency, history, and timing of complaints were considered. Timing is important to understand if the complaint only occurred during a major storm event (i.e. hurricane).
    b) Measurement: Quantitative
    c) Scoring: Points were awarded to projects that address issues described in documented questionnaire/survey responses. No points were rewarded to projects that don't.
- Non-Structural Flood Mitigation:
    a) Definition: Reduction in the frequency, depth, and/or duration of non-structural flooding experienced on private property. This will include flooding experienced on backyards/front yards and agricultural fields.
    b) Measurement: Quantitative
    c) Scoring: Points were awarded to projects that reduce flooding in these areas, no points were awarded to projects that don't.
- Habitable Structure:
    a) Definition: Reduction in frequency, depth, and/or duration of flooding experienced by habitable structures.
    b) Measurement: Quantitative
    c) Scoring: Points were awarded to projects that reduce flooding in these areas, no points were awarded to projects that don't.
- Effects on Other Priority Areas
    a) Level of improvement to upstream/downstream established Priority Areas attributed to the project.
    b) Measurement: Quantitative
    c) Scoring: Points were awarded to projects that reduce flooding in these areas, no points were awarded to projects that don't.

An example of the PPC scoring is provided below. PPC scoring matrices for each Priority Area alternative are provided in **Appendix E**.

Project Performance Criteria Example (Priority Area 1 – ALT 1)

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PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 1

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along W 2nd Ave.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Resolves flooding reported in backyard by properties along W 2nd Ave.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**11/20**

2.6 Summary of Alternatives

Table 1 below summarizes the proposed alternatives to improve the insufficient infrastructure identified in the hydrologic and hydraulic analysis. The summary includes the aggregate score (out of 20) of the PSC and PPC as well as the OPCC. Detailed descriptions of the alternatives along with their associated PSC and PPC score breakdown and OPCC line items are included in **Appendix E**.

Table 1. Pamplico Priority Area Project Alternatives Summary

		Project Score (out of 20)	OPCC	Project Description
PA 1	ALT 1	11	$ 1,040,000	Upsize all insufficient infrastructure within PA, primarily consists of 15”-36” RCP closed system along S Walnut St, 24”-42” RCP closed systems at intersection of W 2nd Ave and Hickory St, and channel/crossing improvements behind properties along W 2nd Ave.
	ALT 2	12.45	$ 563,800	Upsize closed systems at intersection of W 2nd Ave and Hickory S to 24”-42” RCP, and upsize channels/crossings behind properties along W 2nd Ave.
PA 2	ALT 1	12.15	$ 509,900	Upsize all insufficient infrastructure within PA, includes crossings and 30”-42” closed systems along Pamela Cr and upstream ditch improvements.
	ALT 2	12	$ 510,900	Upsize closed systems along Pamela Cr to 30”-42” RCP while also improving geometry, upstream ditches, and improve closed system geometry at intersection of Hickory St and Munn Ave while maintaining existing size.
	ALT 3	12.9	$ 305,700	Upsize and improve geometry of northmost closed system on Pamela Cr to 36”-42” RCP and replace southmost closed system on Pamela Cr with a 30” RCP crossing.
PA 3	ALT 1	8.8	$ 174,200	Upsize all insufficient crossings, install crossing at intersection of E 1st Ave and E 2nd Ave, and grade more defined outlet channel into Barfields Old Mill Creek.
	ALT 2	8.85	$ 789,900	Upsize insufficient crossings and install closed system of approximately 2,220 LF ranging in size from 15”-24” RCP from the intersection of E 1st Ave and E 2nd Ave to River Rd.
PA 4	ALT 1	6.2	$ 4,715,100	Upsize all insufficient infrastructure within PA, primarily consists of a 7’x7’ RCBC closed system on the lumber processing plant and terminates with a 7’x7’ RCBC crossing into Big Swamp Branch Tributary floodplain.
	ALT 2	6.35	$ 6,262,100	Upsize insufficient infrastructure and provide new alignment for 7’x7’ RCBC lumber plant closed system by extending down E 6th Ave by approximately 1,000

				LF and establishing a new outfall into Big Swamp Branch Tributary 1. Reduces hydrologic loading on infrastructure along N Walnut St.
	ALT 3	6.95	$ 2,534,300	Upsize lumber plant closed system to 60" RCP and provide new alignment that extends down E 6th Ave approximately 1,000 LF and establish new outfall into Big Swamp Branch Tributary 1. Reduces hydrologic loading on infrastructure along N Walnut St.
PA 5	ALT 1	16.25	$ 651,300	Upsize all insufficient infrastructure, results in 48" RCP driveway crossings along E 3rd Ave and 54" RCP crossings at the transition to PA 4.
	ALT 2	15.9	$ 966,000	Upsize all insufficient infrastructure and opting for a 48" RCP closed system along E 3rd Ave of approximately 660 LF.
	ALT 3	16.3	$ 1,022,300	Installation of bypass line, approximately 1,420 LF ranging in size from 18"-42" RCP, extending from E 3rd Ave to a new outfall south of River Rd. Reduces hydrologic loading on downstream infrastructure and permits 24" RCP driveway crossings along E 3rd Ave to meet LOS.
PA 4 & 5	ALT 4	13.95	$ 6,036,300	Installation of bypass line, approximately 900 LF ranging in size from 42"-54" RCP, extending from E 3rd Ave to E 5th Ave. Reduces hydrologic loading on E 3rd Ave, but flow is still directed towards PA 4 and therefore PA 4 improvements in the form of 7'x7' RCBC are included.
PA 6	ALT 1	7.65	$ 536,700	Upsize all insufficient infrastructure, primarily consists of closed system along Vivian Rd and ditch/crossing between Quail Dr and Heidi Dr.
	ALT 2	7.5	$ 954,600	Upsize closed system along Vivian Rd and extend system down Heidi Dr to a new outfall and tail ditch into Big Swamp Branch floodplain. Extended closed system alleviates hydrologic loading on ditch/crossing between Quail Dr and Heidi Dr.
PA 7	ALT 1	10.65	$ 162,400	Upsize existing closed system along Forest Acres Dr and the upstream and downstream ditches.

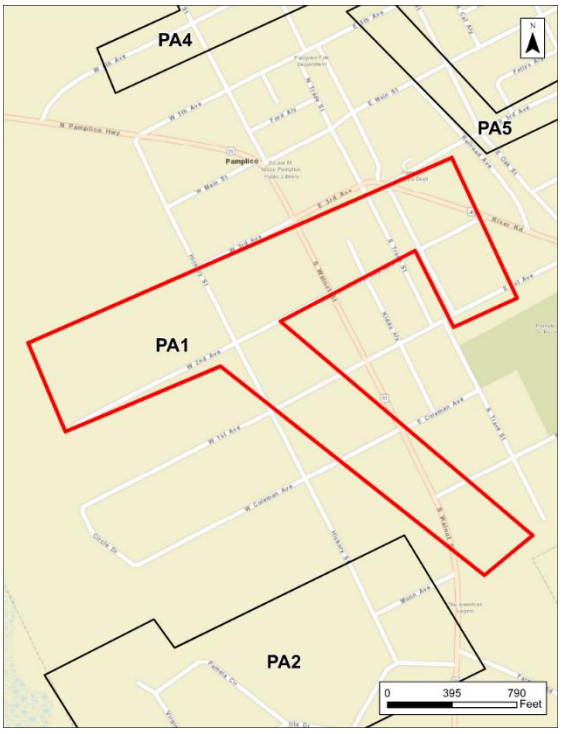
Additional alternatives are proposed for both PA 5 and PA 7 that are not included in **Table 1**. These alternatives involve purchasing properties experiencing the highest level of flooding within the priority area. These buyout alternatives were not scored given the parameters of the scoring matrix and their cost should be estimated by their most recent appraisal value, adjusted for inflation. They are represented as "Buyout Alternative" on their respective Priority Area Alternatives exhibits included in **Appendix C**. More details regarding the buyout alternatives are included in **Section 3**.

3.0 Project Alternatives

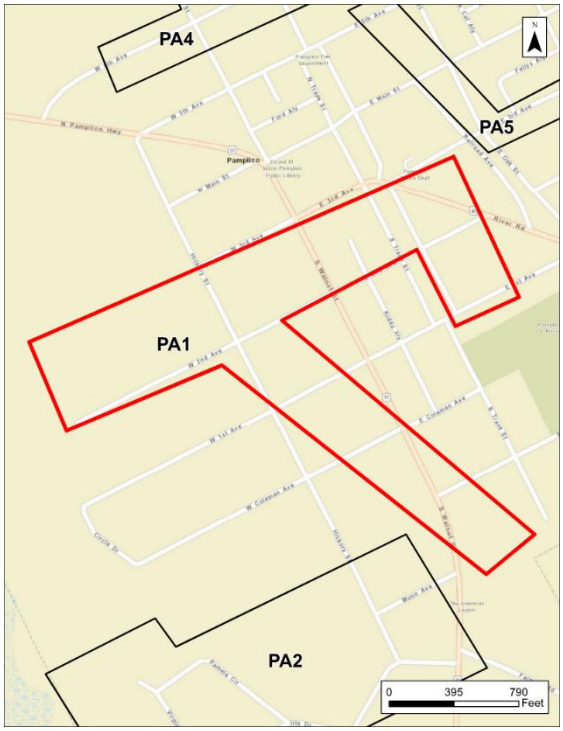
This section provides a general description of the priority area as well as a summary of the project scope for the proposed alternative. The individual PSC and PPC are provided along with their associated OPCC. Priority Area exhibits with graphic displays of the alternatives are provided in **Appendix C** and individual score breakdowns/detailed OPCCs are provided in **Appendix E**.

3.1 Priority Area 1

3.1.1 PA 1 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. PA 1 – ALT 1 shown on **Exhibit 4** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.5
Project Performance Criteria (PPC):	4.5
Opinion of Probable Construction Cost (OPCC):	$1,040,000
Priority Area Location	**Priority Area Description**
	Priority Area 1 (PA 1) extends roughly from Steel St to W 3rd Ave. 4 parcels have reported flooding issues within the Priority Area and all are located where the sub-basin associated with PA 1 outfalls, along W 2nd Ave. The reported issues primarily cite backyard flooding.

3.1.2 PA 1 – ALT 2

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure in areas where there are documented flooding issues so that design LOS (25-yr) is achieved. Project scope is reduced from ALT 1 to the northern section of PA 1 that directly impact the properties along W 2nd Ave. PA 1 – ALT 2 shown on **Exhibit 4** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.95
Project Performance Criteria (PPC):	4.5
Opinion of Probable Construction Cost (OPCC):	$563,800
Priority Area Location	**Priority Area Description**
	Priority Area 1 (PA 1) extends roughly from Steel St to W 3rd Ave. 4 parcels have reported flooding issues within the Priority Area and all are located where the sub-basin associated with PA 1 outfalls, along W 2nd Ave. The reported issues primarily cite with backyard flooding.

3.1.3 PA 1 – Alternatives Sensitivity Analysis

ALT 1 upsizes all existing insufficient infrastructure so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. A majority of the pipes (~80%), both closed system and crossings, in PA 1 are included in ALT 1 improvements and based on their proximity to roads, street flooding can be expected on storm events larger than the 25-yr event. Ditch improvements for ALT 1 are confined to the northern section of PA 1 located at the ultimate outfall of the of the subbasin and between Walnut St and Pine St. Backyard flooding due to ditch banks overtopping can be expected on storm events larger than the 25-yr event, however, all of the existing ditches south of 2nd Ave within PA 1 are able to contain flow from the

50-yr event with the majority demonstrating sufficiency during the 100-yr event. ALT 2 improvements are located solely on and north of 2nd Ave, therefore, street and backyard flooding can be expected for storm events larger than the 25-yr event. Provided the existing pipes are to remain in place south of 2nd Ave, street flooding can be expected on storm events greater than the 5-yr storm at the crossings and especially concentrated at the large closed system running parallel to and traversing Walnut St. However, similarly to ALT 1, existing ditches south of 2nd Ave will be sufficient during the 50-yr event.

3.2 Priority Area 2

3.2.1 PA 2 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. PA 2 – ALT 1 shown on **Exhibit 5** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.65
Project Performance Criteria (PPC):	4.5
Opinion of Probable Construction Cost (OPCC):	$509,900
Priority Area Location	**Priority Area Description**
	Priority Area 2 (PA 2) extends roughly from Virginia Dr to the west and Munn Ave to the east. 6 parcels have reported flooding issues within PA 2 and the majority are located where the sub-basin associated with PA 2 outfalls, along Pamela Cr. The reported issues primarily cite front yard and street flooding.

3.2.2 PA 2 – ALT 2

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. Slight adjustments have been made to the existing closed system alignment along Pamela Cr so better geometry is achieved from a head loss perspective. Additionally, the closed system at the intersection of Hickory St and Munn Ave, a system that currently achieves design LOS, is replaced with an updated alignment to enhance geometry. PA 2 – ALT 2 shown on **Exhibit 5** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.5
Project Performance Criteria (PPC):	4.5
Opinion of Probable Construction Cost (OPCC):	$510,900
Priority Area Location	**Priority Area Description**
	Priority Area 2 (PA 2) extends roughly from Virginia Dr to the west and Munn Ave to the east. 6 parcels have reported flooding issues within the Priority Area and the majority are located where the sub-basin associated with PA 2 outfalls, along Pamela Cr. The reported issues primarily cite front yard and street flooding.

3.2.3 PA 2 – ALT 3

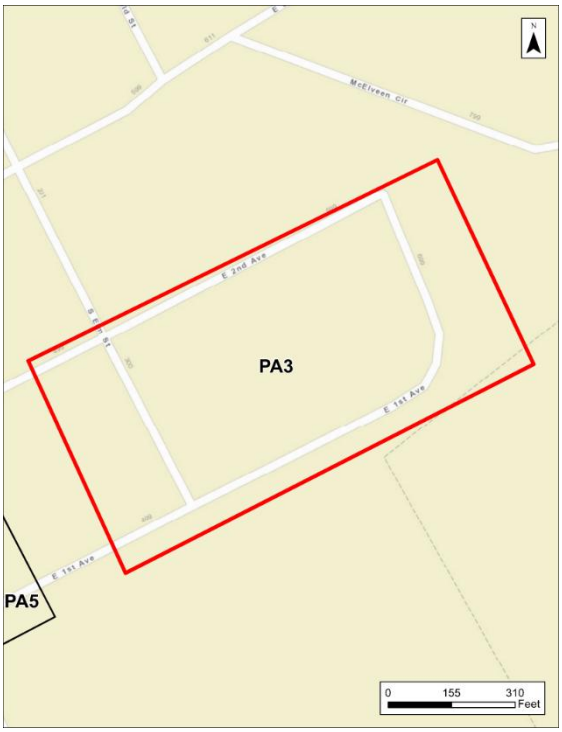
Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure in areas where there are documented flooding issues so that design LOS (25-yr) is achieved. Project scope is reduced from ALTS 1 and 2 to upsizing infrastructure only along Pamela Cr and opts for a crossing as opposed to closed system to convey drainage from the channel upstream of Pamela Cr. PA 2 – ALT 3 shown on **Exhibit 5** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	8.4
Project Performance Criteria (PPC):	4.5
Opinion of Probable Construction Cost (OPCC):	$305,700
Priority Area Location	**Priority Area Description**
	Priority Area 2 (PA 2) extends roughly from Virginia Dr to the west and Munn Ave to the east. 6 parcels have reported flooding issues within the Priority Area and the majority are located where the sub-basin associated with PA 2 outfalls, along Pamela Cr. The reported issues primarily cite front yard and street flooding.

3.2.4 PA 2 – Alternatives Sensitivity Analysis

ALTS 1 and 2 upsize all existing insufficient infrastructure so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. A majority of the pipes (~70%), all closed system, in PA 2 are included in ALT 1 improvements, additional pipes are included in ALT 2 to improve the geometry of the existing sufficient closed system located at the intersection of Munn Ave and Hickory St, and based on their proximity to roads, street flooding can be expected during storm events larger than the 25-yr event. Ditch improvements for ALTS 1 and 2 are located between Pamela Cr and Hickory St and at the ultimate outfall of the subbasin. Backyard flooding due to ditch banks overtopping can be expected in these areas during storm events larger than the 25-yr event. However, existing ditches on the most eastern side of PA 2 and along the western loop of Pamela Cr are able to contain flow from the 100-yr event. ALT 3 improvements are located solely along Pamela Cr and therefore, flooding along Pamela Cr can be expected for storm events larger than the 25-yr event. Backyard flooding due to overtopping ditch banks can be expected between Pamela Cr and Hickory St during events larger than the 10-yr event and the existing closed system located at Hickory St, similarly to the upsized system at Pamela Cr, is expected to surcharge during event larger than the 25-yr storm. ALT 3 also includes keeping the existing ditches at the eastern and western extents that achieve 100-yr LOS.

3.3 Priority Area 3

3.3.1 PA 3 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. Additionally, a defined channel is proposed to convey drainage from E 1st Ave to Barfields Old Mill Creek, located south of PA3. PA 3 – ALT 1 shown on **Exhibit 6** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.8
Project Performance Criteria (PPC):	1
Opinion of Probable Construction Cost (OPCC):	$174,200
Priority Area Location	**Priority Area Description**
	Priority Area 3 (PA 3) extends roughly from S Elm St to the west and the terminus of both E 2nd Ave and E 1st Ave to the east. There are no official documented flooding issues, but it is understood there's frustration within the PA due to a lack of flow path and outlet along the southern shoulder of E 1st Ave and standing water at the intersection of E 1st Ave and E 2nd Ave in the northeast corner of PA 3.

3.3.2 PA 3 – ALT 2

Description and Scope	
Project Type:	Pipe Installation
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. Additionally, the previously ditched system along E 1st Ave is replaced with a closed system with sizes varying from 15" to 24" and redirects the drainage southeast of the PA to a new outfall south of River Rd. Should this project be constructed in tandem with PA 5 – ALT 3, the pipes adjacent to S Pine St will have to be upsized. PA 3 – ALT 2 shown on **Exhibit 6** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.85
Project Performance Criteria (PPC):	1
Opinion of Probable Construction Cost (OPCC):	$789,900
Priority Area Location	**Priority Area Description**
	Priority Area 3 (PA 3) extends roughly from S Elm St to the west and the terminus of both E 2nd Ave and E 1st Ave to the east. There are no official documented flooding issues, but it is understood there's frustration within the PA due to a lack of flow path and outlet along the southern shoulder of E 1st Ave and standing water at the intersection of E 1st Ave and E 2nd Ave in the northeast corner of PA 3.

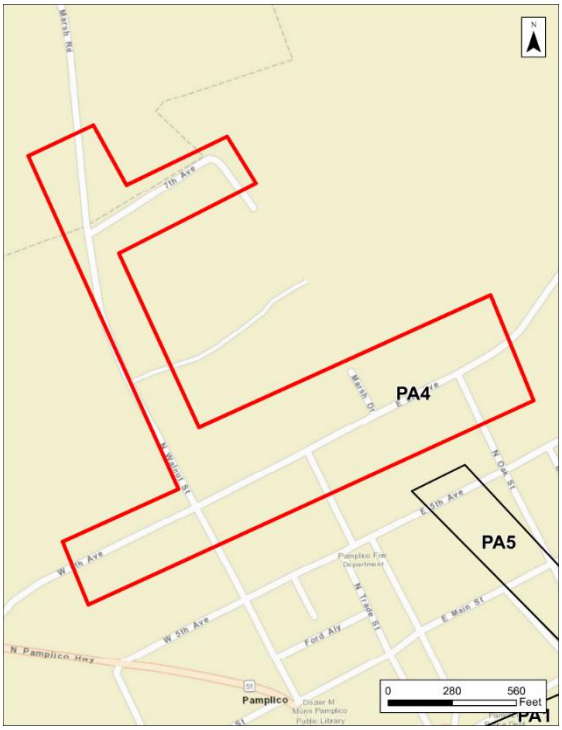
3.3.3 PA 3 – Alternatives Sensitivity Analysis

ALT 1 upsizes all existing insufficient infrastructure so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. ALT 1 includes 50% of the pipes, all crossings with the majority traversing E 1st Ave, therefore, street flooding can be expected on storm events larger than the 25-yr event. Ditch improvements for ALT 1 are confined to E 1st Ave and can be expected to contribute to street flooding due to overtopping banks during events

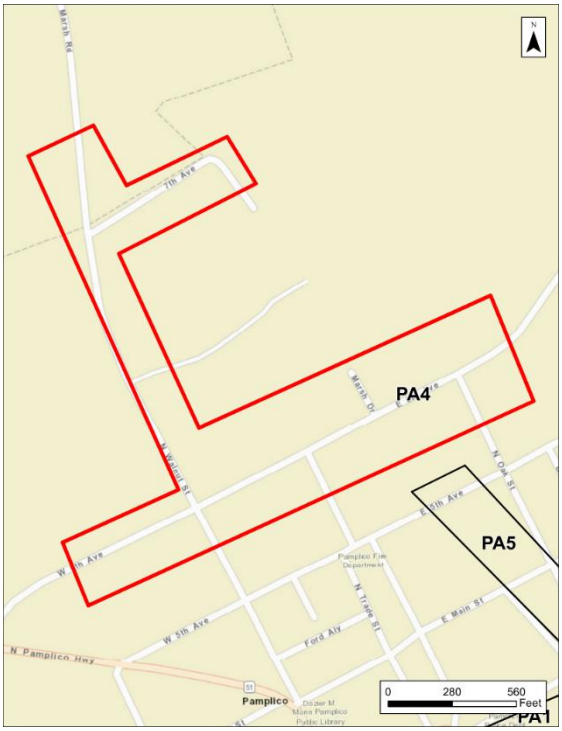
larger than the 25-yr storm. ALT 2 improvements include the ALT 1 crossings along E 1st Ave and swap the roadside ditches for a closed system directed towards a new outfall south of River Rd. This new mainline, designed to convey the 25-yr event, can be expected to surcharge during larger events and likely cause street flooding along E 1st Ave, similarly to ALT 1.

3.4 Priority Area 4

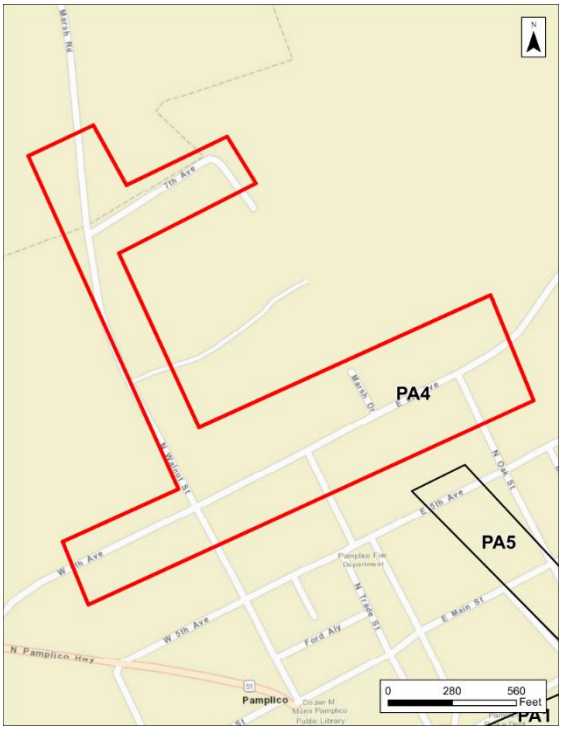
3.4.1 PA 4 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. The design for the mainline of the closed system on the lumber property is 7'x7' RCBC to achieve LOS. PA 4 – ALT 1 shown on **Exhibit 7** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.2
Project Performance Criteria (PPC):	0
Opinion of Probable Construction Cost (OPCC):	$4,715,100
Priority Area Location	**Priority Area Description**
	Priority Area 4 (PA 4) extends roughly from E 6th Ave to 7th Ave. The PA is primarily composed of infrastructure located on the lumber processing plant. PA 4 has the most hydrologic loading out of any PA, it being downstream of PA 5 and receiving an additional ~200 acres of off-site drainage to the east.

3.4.2 PA 4 – ALT 2

Description and Scope	
Project Type:	Pipe Installation
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. Additionally, the alignment of the lumber plant's closed system mainline (7'x7' RCBC) is adjusted to extend along E 6th Ave to a new outfall into the Big Swamp Branch Floodplain. This updated alignment reduces drainage previously directed towards downstream infrastructure along N Walnut St and results in a majority of the existing pipes and ditches to achieve LOS. PA 4 – ALT 2 shown on **Exhibit 7** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.35
Project Performance Criteria (PPC):	0
Opinion of Probable Construction Cost (OPCC):	$6,262,100
Priority Area Location	**Priority Area Description**
	Priority Area 4 (PA 4) extends roughly from E 6th Ave to 7th Ave. The PA is primarily composed of infrastructure located on the lumber processing plant. PA 4 has the most hydrologic loading out of any PA, it being downstream of PA 5 and receiving an additional ~200 acres of off-site drainage to the east.

3.4.3 PA 4 – ALT 3

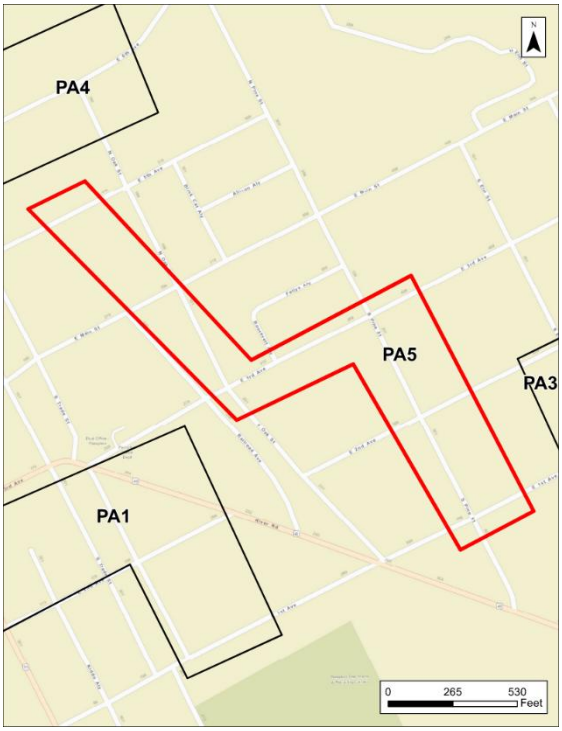
Description and Scope	
Project Type:	Pipe Installation
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved with the exception of the lumber plant's closed system mainline, upsizing to 60" RCP. ALT 3 should only be considered if PA 5 – ALT 3 is chosen as a project. PA 5 – ALT 3 includes a bypass line that redirects drainage away from PA 4 and towards a new outfall on River Rd. The 60" RCP system will achieve a reduced LOS when compared to ALTS 1 and 2, but is still an improvement on existing sufficiency. The alignment of the 60" RCP line matches ALT 2 with the proposed outfall into the Big Swamp Branch Floodplain. This updated alignment reduces drainage previously directed towards downstream infrastructure along N Walnut St and results in a majority of the existing pipes and ditches to achieve LOS. PA 4 – ALT 3 shown on **Exhibit 7** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.95
Project Performance Criteria (PPC):	0
Opinion of Probable Construction Cost (OPCC):	$2,534,300
Priority Area Location	**Priority Area Description**
	Priority Area 4 (PA 4) extends roughly from E 6th Ave to 7th Ave. The PA is primarily composed of infrastructure located on the lumber processing plant. PA 4 has the most hydrologic loading out of any PA, it being downstream of PA 5 and receiving an additional ~200 acres of off-site drainage to the east.

3.4.4 PA 4 – Alternatives Sensitivity Analysis

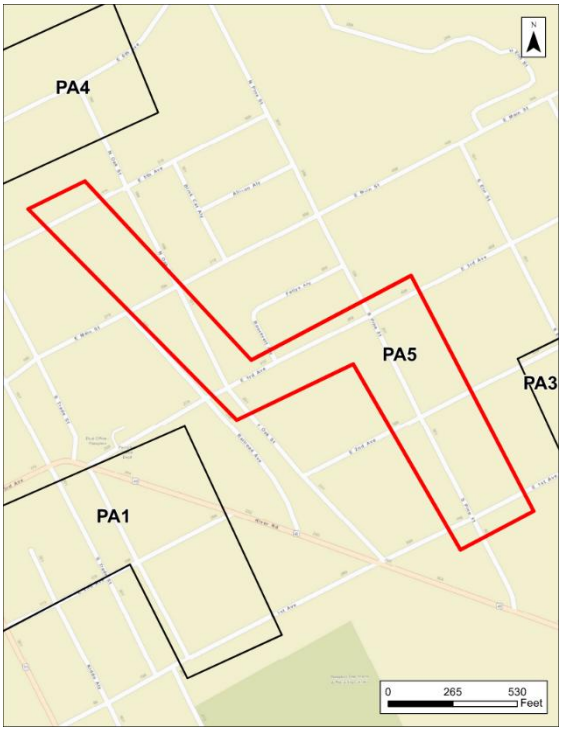
ALT 1 upsizes all existing insufficient infrastructure in place so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. A majority of the pipes (~80%), both closed system and crossings, in PA 4 are included in ALT 1 improvements, and based on their proximity to roads and driveways, street and driveway flooding can be expected during storm events larger than the 25-yr event. The ditch improvements for ALT 1 are located adjacent to N Walnut St and at the ultimate outfall of the subbasin into Big Swamp Branch Tributary 1 floodplain. N Walnut St flooding due to ditch banks overtopping can be expected during storm events larger than the 25-yr event. ALT 2 improvements include the crossings included majority of the closed systems included in ALT 1, however, the ALT 2 design provides a revised alignment for the lumber plant's closed system that receives roughly 280 acres of drainage. The new alignment extends the system along E 6th Ave and proposes a new outlet into the Big Swamp Branch Tributary 1 floodplain. The revised closed system is designed for the 25-yr storm, therefore, surcharging and E 6th St flooding can be expected during storm events larger than the 25-yr event. However, with the drainage diversion proposed in ALT 2, existing downstream infrastructure adjacent to N Walnut St is expected to be sufficient during larger events (50-yr/100-yr) due to a reduction in flow. ALT 3 improvements include the alignment revisions specified in ALT 2, but opt for a smaller lumber plant closed system, 60" as opposed to 7'x7'. This size reduction can be expected to result in surcharging and street flooding during events larger than the 10-yr event. ALT 3, similarly to ALT 2, redirects the drainage and permits existing infrastructure along N Walnut St to provide capacity for events larger than the 25-yr storm.

3.5 Priority Area 5

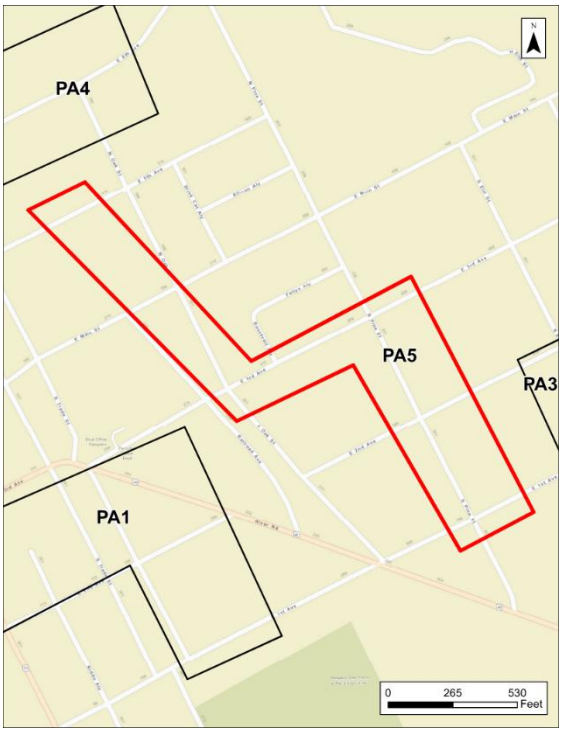
3.5.1 PA 5 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. PA 5 – ALT 1 shown on **Exhibit 8** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.75
Project Performance Criteria (PPC):	9.5
Opinion of Probable Construction Cost (OPCC):	$651,300
Priority Area Location	**Priority Area Description**
	Priority Area 5 (PA 5) extends roughly from E 1st Ave to E 5th Ave. 4 parcels have reported flooding issues within PA 5 along S Pine St and E 3rd Ave and involve street, yard, and habitable structure flooding. The "midpoint" of PA 5, intersection of E 3rd Ave and S Pine St, functions as a bowl based on 2020 LiDAR and when coupled with a lack of defined, sloping ditches and clogged infrastructure along E 3rd Ave results in ditch/driveway overtopping and ultimately street and structure flooding.

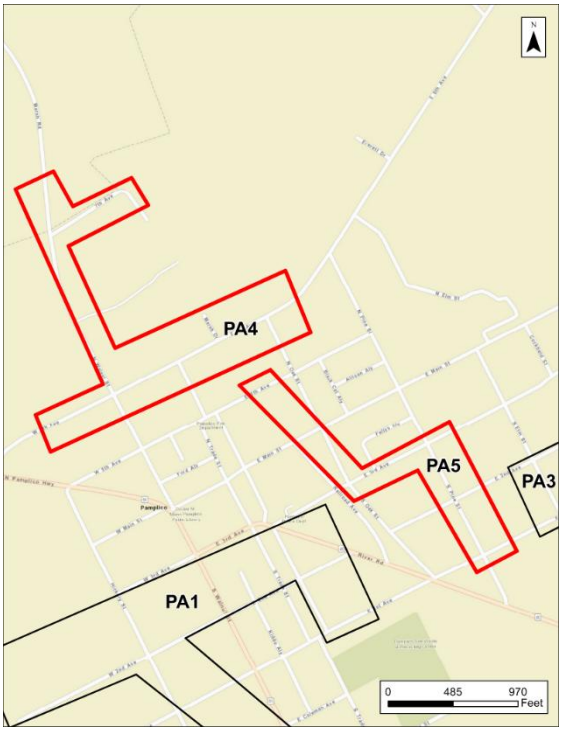
3.5.2 PA 5 – ALT 2

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. However, ALT 2 opts for a 48" closed system parallel to E 3rd Ave as opposed to a mixed closed/open system with ditches and driveway culverts. PA 5 – ALT 2 shown on **Exhibit 8** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.4
Project Performance Criteria (PPC):	9.5
Opinion of Probable Construction Cost (OPCC):	$966,000
Priority Area Location	**Priority Area Description**
	Priority Area 5 (PA 5) extends roughly from E 1st Ave to E 5th Ave. 4 parcels have reported flooding issues within PA 5 along S Pine St and E 3rd Ave and involve street, yard, and structure flooding. The "midpoint" of PA 5, intersection of E 3rd Ave and S Pine St, functions as a bowl based on 2020 LiDAR and when coupled with a lack of defined, sloping ditches and clogged infrastructure along E 3rd Ave results in ditch/driveway overtopping and ultimately street and structure flooding.

3.5.3 PA 5 – ALT 3

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. However, ALT 2 includes a bypass closed system ranging in size from 18" to 42" RCP that redirects roughly 30 acres of drainage away from E 3rd Ave and towards a new outfall into the defined, existing channel parallel to River Rd. This flow reduction felt by the infrastructure along E 3rd Ave results in smaller pipe sizes/ditch typical sections to achieve design LOS when compared to ALTS 1 and 2. The bypass system also reduces hydrologic loading on PA 4 provided PA 5 drains to PA 4 through the existing channel between E 5th Ave and E 6th Ave. PA 5 – ALT 3 shown on **Exhibit 8** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	6.3
Project Performance Criteria (PPC):	10
Opinion of Probable Construction Cost (OPCC):	$1,022,300
Priority Area Location	**Priority Area Description**
	Priority Area 5 (PA 5) extends roughly from E 1st Ave to E 5th Ave. 4 parcels have reported flooding issues within PA 5 along S Pine St and E 3rd Ave and involve street, yard, and structure flooding. The "midpoint" of PA 5, intersection of E 3rd Ave and S Pine St, functions as a bowl based on 2020 LiDAR and when coupled with a lack of defined, sloping ditches and clogged infrastructure along E 3rd Ave results in ditch/driveway overtopping and ultimately street and structure flooding.

3.5.4 PA 4 & 5 – ALT 4

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. However, ALT 4 includes a bypass closed system ranging in size from 42" to 54" RCP that redirects roughly 25 acres of drainage away from E 3rd Ave and towards a new outfall into the defined, existing channel north of the intersection of N Pine St and E 5th Ave. This flow reduction felt by the infrastructure along E 3rd Ave results in smaller pipe sizes/ditch typical sections to achieve design LOS when compared to ALTS 1 and 2. Provided ALT 4 establishes an additional drainage connection point to PA 4 upstream of the lumber plant's main closed system, improvements were included from PA 4 – ALT 1 to achieve design LOS. ALT 4 includes slightly upsized upstream infrastructure within PA 4 when compared to ALT 1 due to increased flow from the bypass outfall. PA 4 & 5 – ALT 4 shown on **Exhibit 9** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	4.45
Project Performance Criteria (PPC):	9.5
Opinion of Probable Construction Cost (OPCC):	$6,036,300
Priority Area Location	**Priority Area Description**
	Priority Area 4 (PA 4) extends roughly from E 6th Ave to 7th Ave. The PA is primarily composed of infrastructure located on the lumber processing plant. PA 4 has the most hydrologic loading out of any PA, it being downstream of PA 5 and receiving an additional ~200 acres of off-site drainage to the east. Priority Area 5 (PA 5) extends roughly from E 1st Ave to E 5th Ave. 4 parcels have reported flooding issues within PA 5 along S Pine St and E 3rd Ave and involve street, yard, and structure flooding. The "midpoint" of PA 5, intersection of E 3rd Ave and S Pine St, functions as a bowl based on 2020 LiDAR and when coupled with a lack of defined, sloping ditches and clogged infrastructure along E 3rd Ave results in ditch/driveway overtopping and ultimately street and structure flooding.

3.5.5 PA 5 – Alternatives Sensitivity Analysis

ALT 1 upsizes all existing insufficient infrastructure in place so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. A majority of the pipes (~90%), all crossings, in PA 5 are included in ALT 1 improvements, and based on their location, can be expected to cause street and driveway flooding during storm events larger than the 25-yr event. The ditch improvements for ALT 1 are located adjacent to Pine St, E 3rd Ave, and between E 3rd Ave and E 5th Ave. Street and backyard flooding can be expected in these areas due to ditch banks overtopping during storm events larger than the 25-yr event. ALT 2 improvements include the majority of ALT 1 crossings and ditches, but instead proposes a closed system along the south side of E 3rd Ave as opposed to a mixed open/closed system. The closed system is designed for the 25-yr event, therefore, flooding can be expected in similar areas outlined in ALT 1 during events larger than the 25-yr storm. ALT 3 proposes a closed bypass system along S Pine St that redirects roughly 30 acres of drainage away from E 3rd Ave and towards a new outlet south of River Rd. The bypass system is designed for the 25-yr event, therefore, surcharging and resulting street and driveway flooding along S Pine St can be expected during larger storm events. However, with the additional flow path introduced in the form of the bypass system in ALT 3, the upsized infrastructure proposed along E 3rd Ave and further downstream have the potential to achieve sufficiency greater than the 25-yr storm. ALT 4 includes a majority of the improvements specified in PA 4 – ALT 1 and PA 5 – ALT with the addition of a bypass line from E 3rd Ave to E 5th Ave, flowing parallel to N Pine St. Due to the majority of shared design with PA 4 – ALT 1 and PA 5 – ALT 1, flooding in similar areas as well as additional area along N Pine St can be expected during events larger than the 25-yr storm. ALT 4, however, provides drainage relief on infrastructure along E 3rd Ave and downstream infrastructure within PA 5, and the proposed increased pipe/ditch sizes have the potential to convey events larger than the 25-yr storm, similarly to ALT 3.

3.5.6 PA 5 – Buyout Alternative

A buyout alternative is proposed for PA 5. The buyout properties are concentrated along S Pine St and E 3rd Ave, where there are reports of standing water and structure flooding due to roughly 30 acres of drainage flowing to the area with no clearly defined drain towards downstream PA 4. **Figure 3** below shows the parcels proposed for buyout and a list is provided next to the figure identifying each of the 12 properties with their site address and tax parcel number. If an address is not provided, that indicates that there is no assigned site address associated with the parcel.

3.6 Priority Area 6

3.6.1 PA 6 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. PA 6 – ALT 1 shown on **Exhibit 10** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.65
Project Performance Criteria (PPC):	0
Opinion of Probable Construction Cost (OPCC):	$536,700
Priority Area Location	**Priority Area Description**
	Priority Area 6 (PA 6) extends roughly from the terminus of Heidi Dr to the west and Cedarbrook Dr to the east. PA 6 primarily consists of a closed system flowing down Vivian Dr before ultimately outfalling into the Big Swamp Branch floodplain.

3.6.2 PA 6 – ALT 2

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. However, ALT 2 includes an extension of the closed system along Vivian Dr to run parallel to Quail Dr and Heidi Dr before ultimately outfalling into the Big Swamp Branch floodplain. This extended closed system reduces the flow directed towards the properties on Quail Dr and allows existing infrastructure to achieve design LOS. PA 6 – ALT 2 shown on **Exhibit 10** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.5
Project Performance Criteria (PPC):	0
Opinion of Probable Construction Cost (OPCC):	$954,600
Priority Area Location	**Priority Area Description**
	Priority Area 6 (PA 6) extends roughly from the terminus of Heidi Dr to the west and Cedarbrook Dr to the east. PA 6 primarily consists of a closed system flowing down Vivian Dr before ultimately out falling into the Big Swamp Branch floodplain.

3.6.3 PA 6 – Alternatives Sensitivity Analysis

ALT 1 upsizes all existing insufficient infrastructure in place so that 25-yr LOS, based on future conditions, is achieved across all pipes, nodes and ditches. ALT 1 includes all pipes and ditches within PA 6 and based on their location, street flooding along Vivian Rd and Quail Dr and backyard flooding can be expected to occur during events larger than the 25-yr storm. ALT 2 improvements include roughly half of the ALT 1 improvements, but instead opts for an extended

closed system, designed for the 25-yr storm, that follows the Heidi Dr alignment before outfalling into the forested area located west of PA 6. Flooding can be expected upstream of the Vivian Rd and Quail Dr intersection and along Heidi Dr during events larger than the 25-yr storm. However, the extended system proposed in ALT 2 alleviates flow directed towards the properties between Quail Dr and Heidi Dr and existing infrastructure in place achieves design LOS and has the potential to convey larger events (50-yr/100-yr).

3.7 Priority Area 7

3.7.1 PA 7 – ALT 1

Description and Scope	
Project Type:	Pipe Installation/Channel Grading
Project Description:	The proposed project will upsize all infrastructure within the PA so that design LOS (25-yr) is achieved. PA 7 – ALT 1 shown on **Exhibit 11** included in **Appendix C**.
Preliminary Selection Criteria (PSC):	7.65
Project Performance Criteria (PPC):	3
Opinion of Probable Construction Cost (OPCC):	$162,400
Priority Area Location	**Priority Area Description**
	Priority Area 7 (PA 7) covers the entirety of properties located along Forest Acres Dr. 2 properties have reported flooding issues within PA 7 and involve backyard flooding from an insufficient channel and flooding attributed to Big Swamp Branch. The southernmost properties along Forest Acres Dr lie within the 100-yr floodplain of Big Swamp Branch.

4.0 Low to Moderate Income (LMI) Communities Assessment

Communities, as defined by the Department of Housing and Urban Development (HUD), are smaller zones within a county determined by the Census Bureau and commonly referred to as tracts. Tracts are typically made up of about 1,200 to 8,000 people. The boundaries are set and can be found on many government maps. The Community Reinvestment Act (CRA) establishes a “low-income community” to be a tract where the median family income is of less than 50 percent of the area median income. A moderate-income community means that the median family income is at least 50 percent and less than 80 percent of the area median income. The “area” as it refers to Pamplico’s location is specified as the “Florence, SC HUD Metro FMR Area” and has a median family income of $66,400, estimated for FY 2022. The Town of Pamplico resides in Census Tract 18 and has an estimated 2021 median family income of $56,599 as determined by the Federal Financial Institutions Examination Council (FFIEC), which classifies the community as “middle-income”, meaning the median family income is at least 80 percent and less than 120 percent of the area income. Tract 18 has an estimated population of 3,298 as determined by 2020 census results, therefore Pamplico makes up roughly a third of the community. A more specific look into only the town limits of Pamplico reveals the median household income to be roughly $38,300 based on 2020 census data, which is 57% of the area income. By this metric, Pamplico may be considered a low-to-moderate income town. However, it’s worth noting that recent median family income was not available specifically for Pamplico. And, median family income is typically higher than median household income because of the composition of households.

5.0 Recommended Projects and Benefit-Cost Analysis (BCA)

5.1 Recommended Projects

Kimley-Horn identified 5 alternatives to recommend as projects. One alternative was selected for each PA, with the exception of PA 6 and PA 7. A 6 does not have any reported flooding issues, either by survey, survey accompaniment, or public meeting input. And, the primary issue associated with PA 7 involves flooding attributed to Big Swamp Branch's floodplain, as opposed to failing storm water infrastructure. The alternative's score played the largest factor in project recommendation, however, the OPCC also played a role. Alternatives were given less priority if a large percentage of costs were associated with upsizing existing infrastructure to achieve design LOS in areas where flooding issues aren't known or reported, evidenced in the recommendations for PA 1 and PA 2. Additionally, project connectivity factored into project recommendations. The recommended projects for PA 3, 4, and 5 all communicate with each other either directly or indirectly. PA 3 and PA 5 share an outfall at River Rd and PA 4 receives less hydrologic loading when compared to existing conditions due to the bypass line included in PA 3 and PA 5. Summaries of the recommended project are included in **Table 2** below and detailed concept plans for each recommended project are included in **Appendix D**.

5.2 Benefit-Cost Analysis (BCA)

A BCA was performed on the 5 recommended projects in order to determine their cost effectiveness. The FEMA BCA v6.0 toolkit was used for the BCA analysis.

5.2.1 Benefits

The benefits were calculated as the avoided future costs due to the completion of the recommended project. A benefit that was shared between all 5 recommended projects was the avoided road impacts cost per day during various recurrence storms (10yr -100 yr). The recommended projects for Priority Areas 1 through 4 also assumed complete infrastructure failure and washout during the 100-yr event and therefore included the cost to implement the recommended project. The severity of existing flooding in Priority Area 5 led to the assumed infrastructure failure/washout to occur within 10 years and the cost to buy out certain properties due to expected flood damage was also included. All recommended projects also shared an avoided loss of service cost attributed to expected obstructed access to the fire station due to flooding. Standard ecosystem benefits and additional social benefits were quantified for Priority Areas 1, 2, and 4. The ecosystem benefits stemmed from the expected benefit of reduced riverine flooding in the areas as a result of project improvements. Once ecosystem benefits are included in a project, additional social benefits can be applied that incorporate the number of affected residents and employed residents. For a complete BCA report of each recommended project that provides more details on the calculated benefits refer to **Appendix F**.

5.2.2 Costs

A large percentage of the total cost of the recommended project was the construction cost. Other costs included maintenance costs and road impact costs per day after implementation of the recommended project. The recommended projects do not provide LOS beyond the 25-yr storm, therefore, street/road flooding can be expected during larger storm events. However, it is assumed that completion of the project will not result in complete infrastructure failure/washout

during any storm event. For a complete BCA report of each recommended project that provides more details on the calculated costs refer to **Appendix F**.

Table 2. Pamplico Priority Area Project Alternatives Summary

		Project Score (out of 20)	OPCC	BCA	Project Description
PA 5	ALT 3	16.3	$ 1,022,300	2.10	Installation of bypass line, approximately 1,420 LF ranging in size from 18”-42” RCP, extending from E 3rd Ave to a new outfall south of River Rd. Reduces hydrologic loading on downstream infrastructure and permits 24” RCP driveway crossings along E 3rd Ave to meet LOS.
PA 1	ALT 2	12.45	$ 563,800	5.71	Upsize closed systems at intersection of W 2nd Ave and Hickory S to 24”-42” RCP, and upsize channels/crossings behind properties along W 2nd Ave.
PA 2	ALT 3	12.9	$ 305,700	2.11	Upsize and improve geometry of northmost closed system on Pamela Cr to 36”-42” RCP and replace southmost closed system on Pamela Cr with a 30” RCP crossing.
PA 4	ALT 3	6.95	$ 2,534,300	0.74	Upsize lumber plant closed system to 60” RCP and provide new alignment that extends down E 6th Ave approximately 1,000 LF and establish new outfall into Big Swamp Branch Tributary 1. Reduces hydrologic loading on infrastructure along N Walnut St.
PA 3	ALT 2	8.85	$ 789,900	0.14	Upsize insufficient crossings and install closed system of approximately 2,220 LF ranging in size from 15”-24” RCP from the intersection of E 1st Ave and E 2nd Ave to River Rd.

APPENDIX A

GENERAL EXHIBITS

Exhibit #2: Subcatchment Identification

1 inch = 350 feet

0 700 1,400 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Subcatchments

- 1
- 2
- 3
- 4A
- 4B
- 5
- 6
- Subcatchment Outfalls

Town of Pamplico Stormwater Study
09/29/22

Prepared By:

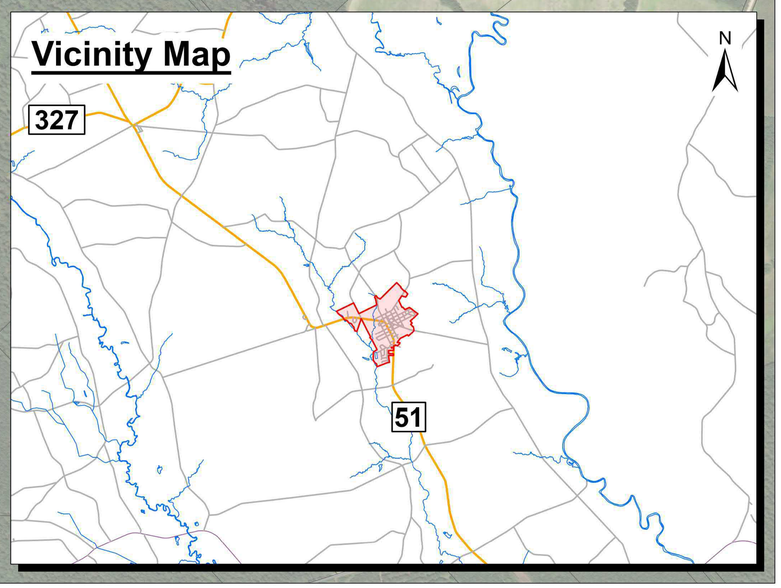
Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

Buck Branch
Big Swamp Branch
Big Swamp Branch Tributary 1
Barfields Old Mill Creek Tributary 1
Marsh Rd
E 6th Ave
Priority Area #4
N Oak St
E Main St
McElveen Cir
Priority Area #3
Priority Area #5
E 5th Ave
E 3rd Ave
E 1st Ave
Parkwood Ave
Priority Area #7
W Lynhurst Rd
N Pamplico Hwy
Hickory St
S Walnut St
River Rd
S Trade St
W 2nd Ave
Priority Area #1
W Coleman Ave
Priority Area #2
Iris Dr
Vivian Dr
Priority Area #6

Vicinity Map



APPENDIX B

INVENTORY TABLES AND SUFFICIENCY TABLES/EXHIBIT

Table 3. Inventory of Existing Nodes

NAME	TYPE	SOURCE	INV_ELEV	RIM_ELEV	DEPTH	ISSUES_Y_N	ISSUES_DES	ISSUES_SRC	INVEN_DATE
P1_BJB_1	Blind structure	Survey	78.30	81.57	3.27	Y	Assumed blind structure	Survey	Apr-22
P1_CB_1	Catch basin	Survey	77.20	81.15	3.95	Y	Recessed	Survey	Apr-22
P1_CB_3	Catch basin	Survey	77.31	80.73	3.42	Y	20% blockage	Survey	Apr-22
P1_CB_4	Catch basin	Survey	77.30	80.89	3.59	N			Apr-22
P1_CB_5	Catch basin	Survey	76.89	81.42	4.53	N			Apr-22
P1_CB_6	Catch basin	Survey	78.61	81.01	2.4	N			Apr-22
P1_CB_7	Catch basin	Survey	63.42	69.50	6.08	N			Apr-22
P1_CB_8	Open throat catch basin	Survey	66.68	70.14	3.46	Y	Recessed	Survey	Apr-22
P1_DI_1	Drop inlet	Survey	78.10	82.17	4.07	N			Apr-22
P1_DI_2	Drop inlet	Survey	78.27	82.16	3.89	N			Apr-22
P1_DI_3	Drop inlet	Survey	79.27	81.52		Y	Assumed inv. based on rim and 1 ft cover	Survey	Apr-22
P1_DI_4	Drop inlet	Survey	65.97	69.28	3.31	N			Apr-22
P1_DI_5	Drop inlet	Survey	80.66			N			Apr-22
P1_DI_6	Drop inlet	2021 SCDOT As-Built Plans (SC 51 - Phase 3)				Y	Not surveyed		Apr-22
P1_DI_7	Drop inlet	2021 SCDOT As-Built Plans (SC 51 - Phase 3)				Y	Not surveyed		Apr-22
P1_JB_1	Junction box	Survey	78.96	81.89	2.93	N			Apr-22
P1_MH_1	Manhole	Survey	78.63	81.68	3.05	N			Apr-22
P1_OEP_1	Open ended pipe	Survey	74.34			N			Apr-22
P1_OEP_10	Open ended pipe	Survey	70.50			N			Apr-22
P1_OEP_11	Open ended pipe	Survey	80.52	83.09	2.57	Y	Not confirmed in survey	Survey	Apr-22
P1_OEP_12	Open ended pipe	Survey		81.68		Y	Not confirmed in survey	Survey	Apr-22
P1_OEP_13	Open ended pipe	Survey	64.06			Y	Submerged	Survey	Apr-22
P1_OEP_14	Open ended pipe	Survey	74.68			Y	Not confirmed in survey	Survey	Apr-22
P1_OEP_15	Open ended pipe	Survey	70.66			N			Apr-22
P1_OEP_16	Open ended pipe	Survey		62.28		N			Apr-22
P1_OEP_17	Open ended pipe	Survey		70.77		Y	Not confirmed in survey	Survey	Apr-22
P1_OEP_18	Open ended pipe	2021 SCDOT As-Built Plans (SC 51 - Phase 3)				Y	Not surveyed		Apr-22
P1_OEP_19	Open ended pipe	2021 SCDOT As-Built Plans (SC 51 - Phase 3)				Y	Not surveyed		Apr-22
P1_OEP_2	Open ended pipe	Survey	74.62			N			Apr-22
P1_OEP_3	Open ended pipe	Survey	65.62			N			Apr-22
P1_OEP_4	Open ended pipe	Survey	64.53			N			Apr-22
P1_OEP_5	Open ended pipe	Survey	62.80			N			Apr-22
P1_OEP_6	Open ended pipe	Survey	64.14			Y	15% blockage	Survey	Apr-22
P1_OEP_7	Open ended pipe	Survey	65.37			Y	20% blockage	Survey	Apr-22
P1_OEP_8	Open ended pipe	Survey	57.89			N			Apr-22
P1_OEP_9	Open ended pipe	Survey	71.89			N			Apr-22
P2_BJB_1	Blind junction box	Survey	69.05	72.05		Y	Not conf. by survey, inv and rim from stormcad	Survey	Apr-22
P2_DI_1	Drop inlet	Survey	62.89	67.04	4.15	N			Apr-22
P2_DI_2	Drop inlet	Survey	63.20	67.18	3.98	Y	5% cement blockage?	Survey	Apr-22
P2_DI_3	Drop inlet	Survey	63.39	67.43	4.04	N			Apr-22
P2_DI_4	Drop inlet	Survey	63.95	68.35	4.40	N			Apr-22
P2_DI_5	Drop inlet	Survey	65.25	70.13	4.88	N			Apr-22
P2_DI_6	Drop inlet	Survey	76.33			N			Apr-22
P2_MH_1	Manhole	Survey	72.13	73.24	1.11	N			Apr-22
P2_OEP_1	Open ended pipe	Survey	62.09			N			Apr-22
P2_OEP_10	Open ended pipe	Survey	69.71			N			Apr-22
P2_OEP_11	Open ended pipe	Survey	?			Y	Not confirmed by survey	Survey	Apr-22
P2_OEP_2	Open ended pipe	Survey	63.56			N			Apr-22
P2_OEP_3	Open ended pipe	Survey	75.74			N			Apr-22
P2_OEP_4	Open ended pipe	Survey	77.00			N			Apr-22
P2_OEP_5	Open ended pipe	Survey	76.57			Y	10% fill	Survey	Apr-22
P2_OEP_6	Open ended pipe	Survey	64.08			N			Apr-22
P2_OEP_7	Open ended pipe	Survey	65.42			N			Apr-22
P2_OEP_8	Open ended pipe	Survey	68.44			N			Apr-22
P2_OEP_9	Open ended pipe	Survey	69.51			N			Apr-22

Table 3. Inventory of Existing Nodes

P3_DI_1	Drop inlet	Survey	80.95	83.23		Y	25% fill	Survey	Apr-22
P3_DI_2	Drop inlet	Survey	81.31	84.78	3.47	Y	10% fill	Survey	Apr-22
P3_FES_1	Flared end section	Survey	81.61			Y	25% fill	Survey	Apr-22
P3_FES_2	Flared end section	Survey	81.14			Y	50% fill	Survey	Apr-22
P3_FES_3	Flared end section	Survey	80.20			Y	50% fill	Survey	Apr-22
P3_FES_4	Flared end section	Survey	82.08			Y	10% fill	Survey	Apr-22
P3_FES_5	Flared end section	Survey	82.73			N			Apr-22
P3_HW_1	Headwall	Survey	81.79			N			Apr-22
P3_HW_2	Headwall	Survey	81.33			Y	75% fill	Survey	Apr-22
P3_HW_3	Headwall	Survey	80.87			Y	70% fill	Survey	Apr-22
P3_HW_4	Headwall	Survey	81.34			Y	75% fill	Survey	Apr-22
P3_OEP_1	Open ended pipe	Survey	81.65			Y	40% fill	Survey	Apr-22
P3_OEP_10	Open ended pipe	Survey	82.01			Y	50% fill	Survey	Apr-22
P3_OEP_11	Open ended pipe	Survey	82.17			Y	30% fill	Survey	Apr-22
P3_OEP_12	Open ended pipe	Survey	82.61			N			Apr-22
P3_OEP_2	Open ended pipe	Survey	81.60			Y	40% fill	Survey	Apr-22
P3_OEP_3	Open ended pipe	Survey	81.47			Y	50% fill	Survey	Apr-22
P3_OEP_4	Open ended pipe	Survey	81.14			Y	50% fill	Survey	Apr-22
P3_OEP_6	Open ended pipe	Survey	81.46			Y	50% fill	Survey	Apr-22
P3_OEP_7	Open ended pipe	Survey	81.64			N			Apr-22
P3_OEP_8	Open ended pipe	Survey	81.32			Y	50% fill	Survey	Apr-22
P3_OEP_9	Open ended pipe	Survey	81.70			N			Apr-22
P4_CB_1	Open throat catch basin	Survey	71.66	76.77	5.11	N			Apr-22
P4_CB_2	Open throat catch basin	Survey	74.63	79.52	4.89	N			Apr-22
P4_CB_3	Open throat catch basin	Survey	73.10	78.65	5.55	N			Apr-22
P4_CB_4	Open throat catch basin	Survey	70.89	76.51	5.62	N			Apr-22
P4_DI_1	Drop inlet	Survey	76.54	81.04	4.5	N			Apr-22
P4_DI_10	Open throat drop inlet	Survey	71.21	81.34	10.13	N			Apr-22
P4_DI_11	Drop inlet	Survey	70.18	74.66	4.48	N			Apr-22
P4_DI_12	Drop inlet	Survey	71.06			N			Apr-22
P4_DI_13	Drop inlet	Survey		79.31		Y	Clogged	Survey	Apr-22
P4_DI_14	Drop inlet	Survey	77.06			N			Apr-22
P4_DI_2	Drop inlet	Survey	75.76	79.45	3.69	N			Apr-22
P4_DI_3	Open throat drop inlet	Survey	74.62	79.27	4.65	N			Apr-22
P4_DI_4	Drop inlet	Survey	74.26	78.47	4.21	N			Apr-22
P4_DI_5	Drop inlet	Survey	74.09	78.13	4.04	N			Apr-22
P4_DI_6	Drop inlet	Survey	73.62	79.04	5.42	N			Apr-22
P4_DI_7	Open throat drop inlet	Survey	73.90	80.05	6.15	N			Apr-22
P4_DI_8	Drop inlet	Survey	73.24	79.27	6.03	N			Apr-22
P4_DI_9	Open throat drop inlet	Survey	71.64	82.05	10.41	N			Apr-22
P4_JB_1	Junction box	Survey	77.58	80.42	2.84	N			Apr-22
P4_OEP_1	Open ended pipe	Survey	78.16			N			Apr-22
P4_OEP_10	Open ended pipe	Survey	68.95			N			Apr-22
P4_OEP_11	Open ended pipe	Survey	74.16			N			Apr-22
P4_OEP_12	Open ended pipe	Survey	75.28			N			Apr-22
P4_OEP_14	Open ended pipe	Survey	76.98			N			Apr-22
P4_OEP_15	Open ended pipe	Survey	77.40	78.40	1	N			Apr-22
P4_OEP_16	Open ended pipe	Survey	77.17			N			Apr-22
P4_OEP_17	Open ended pipe	Survey	70.52			N			Apr-22
P4_OEP_18	Open ended pipe	Survey	66.66			N			Apr-22
P4_OEP_19	Open ended pipe	Survey	67.73			N			Apr-22
P4_OEP_2	Open ended pipe	Survey	85.57			Y	20% full	Survey	Apr-22
P4_OEP_20	Open ended pipe	Survey	70.66			Y	Not confirmed by survey	Survey	Apr-22
P4_OEP_3	Open ended pipe	Survey	83.27			Y	20% full	Survey	Apr-22
P4_OEP_4	Open ended pipe	Survey	80.93			Y	100% full	Survey	Apr-22
P4_OEP_5	Open ended pipe	Survey	84.10			Y	75% full	Survey	Apr-22

Table 3. Inventory of Existing Nodes

P4_OEP_6	Open ended pipe	Survey	80.93			Y	100% full	Survey	Apr-22
P4_OEP_7	Open ended pipe	Survey	81.47			Y	100% full	Survey	Apr-22
P4_OEP_8	Open ended pipe	Survey	75.86			N			Apr-22
P4_OEP_9	Open ended pipe	Survey	69.37			N			Apr-22
P5_DI_1	Drop inlet	Survey	80.57	82.75	2.18	Y	Recessed	Survey	Apr-22
P5_OEP_1	Open ended pipe	Survey	81.32			Y	25% fill	Survey	Apr-22
P5_OEP_10	Open ended pipe	Survey	80.52			Y	80% fill	Survey	Apr-22
P5_OEP_11	Open ended pipe	Survey	80.73			Y	50% fill	Survey	Apr-22
P5_OEP_12	Open ended pipe	Survey	80.92			Y	10% fill	Survey	Apr-22
P5_OEP_13	Open ended pipe	Survey	80.39			Y	50% fill	Survey	Apr-22
P5_OEP_14	Open ended pipe	Survey	80.84			N			Apr-22
P5_OEP_15	Open ended pipe	Survey	80.85			Y	40% fill	Survey	Apr-22
P5_OEP_16	Open ended pipe	Survey	81.28			Y	40% fill	Survey	Apr-22
P5_OEP_17	Open ended pipe	Survey	80.50			Y	100% fill	Survey	Apr-22
P5_OEP_18	Open ended pipe	Survey	80.29			Y	100% fill	Survey	Apr-22
P5_OEP_19	Open ended pipe	Survey	82.77			N			Apr-22
P5_OEP_2	Open ended pipe	Survey	81.44			Y	25% fill	Survey	Apr-22
P5_OEP_20	Open ended pipe	Survey	83.11			N			Apr-22
P5_OEP_21	Open ended pipe	Survey	80.44			Y	100% blockage	Survey	Apr-22
P5_OEP_22	Open ended pipe	Survey	80.61			Y	100% blockage	Survey	Apr-22
P5_OEP_23	Open ended pipe	Survey	80.45			Y	100% blockage	Survey	Apr-22
P5_OEP_24	Open ended pipe	Survey	80.55			Y	100% blockage	Survey	Apr-22
P5_OEP_25	Open ended pipe	Survey	80.42			Y	100% blockage	Survey	Apr-22
P5_OEP_26	Open ended pipe	Survey	81.05			Y	100% blockage	Survey	Apr-22
P5_OEP_27	Open ended pipe	Survey	80.65			Y	100% blockage	Survey	Apr-22
P5_OEP_28	Open ended pipe	Survey	80.95			Y	100% blockage	Survey	Apr-22
P5_OEP_29	Open ended pipe	Survey	80.86			Y	70% submerged	Survey	Apr-22
P5_OEP_3	Open ended pipe	Survey	81.52			N			Apr-22
P5_OEP_30	Open ended pipe	Survey	80.91			Y	70% submerged	Survey	Apr-22
P5_OEP_31	Open ended pipe	Survey	81.28			Y	90% blockage	Survey	Apr-22
P5_OEP_32	Open ended pipe	Survey	81.24			Y	90% blockage	Survey	Apr-22
P5_OEP_33	Open ended pipe	Survey	82.33			N			Apr-22
P5_OEP_34	Open ended pipe	Survey	81.77			Y	90% blockage	Survey	Apr-22
P5_OEP_35	Open ended pipe	Survey	81.06			Y	50% fill	Survey	Apr-22
P5_OEP_36	Open ended pipe	Survey	83.47			Y	70% fill	Survey	Apr-22
P5_OEP_37	Open ended pipe	Survey	82.75			Y	70% fill	Survey	Apr-22
P5_OEP_38	Open ended pipe	Survey	82.24			Y	100% fill	Survey	Apr-22
P5_OEP_39	Open ended pipe	Survey	83.12			Y	100% debris	Survey	Apr-22
P5_OEP_4	Open ended pipe	Survey	81.15			N			Apr-22
P5_OEP_40	Open ended pipe	Survey	82.28			Y	50% fill	Survey	Apr-22
P5_OEP_41	Open ended pipe	Survey	83.16			N			Apr-22
P5_OEP_42	Open ended pipe	Survey	83.50			Y	50% fill	Survey	Apr-22
P5_OEP_43	Open ended pipe	Survey	83.68			Y	25% fill	Survey	Apr-22
P5_OEP_44	Open ended pipe	Survey	83.62			Y	20% fill	Survey	Apr-22
P5_OEP_45	Open ended pipe	Survey	84.59			N			Apr-22
P5_OEP_46	Open ended pipe	Survey	84.02			Y	75% fill	Survey	Apr-22
P5_OEP_47	Open ended pipe	Survey	84.14			Y	75% fill	Survey	Apr-22
P5_OEP_48	Open ended pipe	Survey	84.26			Y	75% fill	Survey	Apr-22
P5_OEP_49	Open ended pipe	Survey	84.10			Y	75% fill	Survey	Apr-22
P5_OEP_5	Open ended pipe	Survey	80.43			Y	10% fill	Survey	Apr-22
P5_OEP_50	Open ended pipe	Survey	84.06			Y	50% fill	Survey	Apr-22
P5_OEP_51	Open ended pipe	Survey	83.30			Y	75% fill	Survey	Apr-22
P5_OEP_52	Open ended pipe	Survey	80.63			N			Apr-22
P5_OEP_53	Open ended pipe	Survey	81.23			Y	90% blockage	Survey	Apr-22
P5_OEP_54	Open ended pipe	Survey	81.19			N			Apr-22
P5_OEP_55	Open ended pipe	Survey	80.49			N			Apr-22

Table 3. Inventory of Existing Nodes

P5_OEP_56	Open ended pipe	Survey	82.33			N			Apr-22
P5_OEP_57	Open ended pipe	Survey	80.65			Y	Completely submerged	Survey	Apr-22
P5_OEP_6	Open ended pipe	Survey	80.32			N			Apr-22
P5_OEP_7	Open ended pipe	Survey	80.05			Y	50% fill	Survey	Apr-22
P5_OEP_8	Open ended pipe	Survey	80.20			Y	50% fill	Survey	Apr-22
P5_OEP_9	Open ended pipe	Survey	80.04			Y	50% fill	Survey	Apr-22
P6_CB_1	Open throat catch basin	Survey	75.65	78.81	3.16	N			Apr-22
P6_CB_2	Open throat catch basin	Survey	75.79	78.72	2.93	N			Apr-22
P6_CB_3	Open throat catch basin	Survey	75.03	78.35	3.32	Y	10% blockage	Survey	Apr-22
P6_DI_1	Drop inlet	Survey		78.73		Y	Clogged	Survey	Apr-22
P6_DI_2	Drop inlet	Survey	75.30	77.48	2.18	Y	BB edge of grate pipe recessed	Survey	Apr-22
P6_DI_3	Drop inlet	Survey	74.74	76.89	2.15	N			Apr-22
P6_JB_1	Junction box	Survey	74.99	76.49	1.5	Y	Inaccessible, assumed location	Survey	Apr-22
P6_OEP_1	Open ended pipe	Survey	77.49			N			Apr-22
P6_OEP_2	Open ended pipe	Survey	74.51			N			Apr-22
P6_OEP_3	Open ended pipe	Survey	70.80			Y	10% blockage	Survey	Apr-22
P6_OEP_4	Open ended pipe	Survey	70.52			Y	25% blockage	Survey	Apr-22
P7_CB_1	Open throat catch basin	Survey	57.69	61.36	3.67	Y	20% blockage	Survey	Apr-22
P7_CB_2	Open throat catch basin	Survey	57.47	61.49	4.02	N			Apr-22
P7_DI_1	Open throat drop inlet	Survey	59.78	63.16	3.38	N			Apr-22
P7_DI_2	Open throat drop inlet	Survey	60.01	63.49	3.48	Y	Collapsed 40% clogged	Survey	Apr-22
P7_OEP_1	Open ended pipe	Survey	60.39			N			Apr-22
P7_OEP_2	Open ended pipe	Survey	57.22			Y	50+% blockage	Survey	Apr-22

Table 4. Inventory of Existing Pipes

INVEN_BY	TYPE	PIPE_SHAPE	DIAMETER	DIAM_OTHER	PIPE_RISE	PIPE_SPAN	MATERIAL	US_INVERT	DS_INVERT	ISSUES	ISSUES_DES	ISSUES_SRC	ISSUES_DAT	SUFFIC_Y_N
SURVEY	PIPE	CIRCULAR						83.11	82.77					N
SURVEY	PIPE	CIRCULAR						83.12	82.24	YES	100% DEBRIS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR						83.47	82.75	YES	70% FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR						83.16	82.28	YES	50 FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	12"		12"	12"	HDPE	75.28	74.16	YES	DIRECTIONAL	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	12"		12"	12"	RCP	80.52	78.10	YES	DIRECTIONAL	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	12"		12"	12"	CMP	62.28	61.92	YES	SMALL YARD DRAINAGE	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	12"		12"	12"	RCP	77.40		YES	GRI CLOGGED DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	12"		12"	12"	HDPE	80.66	79.23					Y
SURVEY	PIPE	CIRCULAR	12"/15"		12"/15"	12"/15"	HDPE/RCP/CLAY	70.80	70.52	YES	10% FILL US/25% FILL DS - 12" CLAY ALSO NOTED			N
SURVEY	PIPE	CIRCULAR	12"/18"		12"/18"	12"/18"	CMP	63.53		YES	SMALL YARD DRAINAGE	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP		62.89	YES	FROM SILT FIELD	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.27	78.10 (Double Points)					N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.42	77.85 (Double Points)					N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.66 (Double Points)	77.20	YES	RECESSED NO EL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.61						N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.50	80.29	YES	100 FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	82.33	81.77	YES	90% BLOCKAGE DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.91	80.86	YES	70% SUBMERGED	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.06	80.92	YES	50 FILL US/10% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.73	80.52	YES	50 FILL US/80 FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.20	80.04	YES	50% FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.84	80.39	YES	50% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.28	80.85	YES	40 FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.64	81.14	YES	50% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.61	81.46	YES	25" FILL US/ 50% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.32	80.20	YES	50% FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	82.17	82.01	YES	30% FILL US/50% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.95	80.65	YES	100% BLOACKAGE	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.05	80.42	YES	100% BLOCKAGE	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.55	80.45	YES	100% BLOCKAGE	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.61	80.44	YES	100% BLOCKAGE	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.52	79.01					N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	HDPE	77.17						N
SURVEY	PIPE	CIRCULAR	15"		15"	15"		84.06	83.30	YES	50 FILL US/75 FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"		84.10	83.12	YES	75 FULL US/50 FULL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.16	77.76					N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	80.63	81.28	YES	90% BLOCKAGE DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.24	81.23	YES	90% BLOCKAGE	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.19	80.65	YES	SUBMERGED	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	78.96	78.63 (Double Points)					Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.79	81.33	YES	75% FILL DS	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.34	81.12 (Double Points)	YES	75% FILL US/25% FILL DS	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.47	81.14	YES	50% FILL	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.65	81.60	YES	40% FILL	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	82.08	81.70	YES	10" FILL US	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	82.73	82.61					Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"		83.68	83.50	YES	25 FILL US/50 FILL DS	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP	81.31	80.95					Y
SURVEY	PIPE	CIRCULAR	15"		15"	15"	RCP		65.37	YES	20% BLOCKAGE DS	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	15" US/24" DS		15" US/24" DS	15" US/24" DS	RCP	77.70	75.78					N
SURVEY	PIPE	CIRCULAR	15"/18"		15"/18"	15"/18"	HDPE/RCP	82.33	80.49					N
SURVEY	PIPE	CIRCULAR	15"/18"		15"/18"	15"/18"	RCP	80.95 (Double Points)	80.87	YES	25% FILL US/70% FILL DS	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	73.98	73.10	YES	DIRECTIONAL	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	65.97	65.62					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	65.99	64.53					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	80.32	80.05	YES	50% FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	81.44	81.32	YES	25% FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	74.74	74.51					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP		74.90					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	75.03		YES	10% BLOCKAGE US	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	75.30	75.16	YES	10% BLOCKAGE DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	75.79	75.36					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	75.84	75.83					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP		75.65	YES	DI CLOGGED US	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"		84.59	83.62	YES	20 FILL DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"		81.47	80.93	YES	100 FULL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	CMP	77.06	76.05					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP		75.51	YES	GRI CLOGGED US	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	77.58	76.85					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	76.54	74.89					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	74.63	73.94 (Multiple Points)					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	73.83 (Multiple Points)	71.90					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	59.78 (Double Points)	57.89					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	60.03	59.94					N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	60.39	60.01	YES	COLLAPSED 40% CLOGGED INLET DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	64.08	63.56					Y
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP		66.10 (Double Points)					Y
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	81.52	81.15					Y
SURVEY	PIPE	CIRCULAR	18"		18"	18"	RCP	57.84 (Double Points)	57.69	YES	20% BLOCKAGE DS	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	62.94	62.09					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP		68.44					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	72.22	69.71					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	77.60	77.57					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	77.30	77.09					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	71.89	70.50					N

Table 4. Inventory of Existing Pipes

SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP US/HDPE DS	74.62	74.34					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDP US/RCP DS	65.54	65.42					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDP US/HDPE DS	65.25	64.18					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	63.95	63.46					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE US/RCP DS	63.39	63.20	YES	22.5" 5% CEMENT BLOCKAGE DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	63.24	63.14					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	72.13	69.51					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	72.16						N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	77.49		YES	DI CLOGGED DS	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	24"		24"	24"		84.26	84.10	YES	75 FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	24"		24"	24"		84.14	84.02	YES	75 FILL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	76.96	76.16					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	67.73	66.66					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	76.89	74.68					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	71.66	71.17					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	70.89	70.66					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	HDPE	77.09	76.94 (Double Points)					N
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	77.00	76.56					Y
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	76.42	75.74					Y
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	76.57	76.33	YES	10% FILL US	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	24"		24"	24"	RCP	57.72	57.22	YES	50+% BLOCKAGE	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	24"		24"	24"		80.57	80.43	YES	RECESSED - 10% FILL	SURVEY	2022-04	Y
SURVEY	PIPE	CIRCULAR	30"		30"	30"		85.57	83.27	YES	20 FULL	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	30"		30"	30"	HDPE	75.93	75.86					N
SURVEY	PIPE	CIRCULAR	30"/36"		30"/36"	30"/36"	RCP	75.76	74.77					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	71.06	70.91	YES	DIRECTIONAL	SURVEY	2022-04	
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	64.06	57.89 (Multiple Points)	YES	SUBMERGED US	SURVEY	2022-04	N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	HDPE	74.62	74.50					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	74.26	74.17					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	74.29	73.62					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	73.90	73.36					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	HDPE	73.24	71.73					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	HDPE	71.64	71.37					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	HDPE	71.21	70.50					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	70.52	70.18					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	74.09	73.64					N
SURVEY	PIPE	CIRCULAR	36"		36"	36"	RCP	69.37	68.95					N
2021 SCDOT As-Built Plans (SC 51 - Phase 3)	PIPE	CIRCULAR	36"		36"	36"	RCP			YES	NOT SURVEYED			
2021 SCDOT As-Built Plans (SC 51 - Phase 3)	PIPE	CIRCULAR	36"		36"	36"	RCP			YES	NOT SURVEYED			
2021 SCDOT As-Built Plans (SC 51 - Phase 3)	PIPE	CIRCULAR	36"		36"	36"	RCP			YES	NOT SURVEYED			
SURVEY	PIPE	CIRCULAR	42"		42"	42"	RCP	64.14	62.80	YES	15" BLOCKAGE US	SURVEY	2022-04	Y

Table 5. Inventory of Existing Ditches

NAME	SOURCE	LENGTH	SUFFIC_Y_N
P1_D_1	LiDAR	90.7	Y
P1_D_10	LiDAR	64.7	Y
P1_D_2	LiDAR	285.3	Y
P1_D_3	LiDAR	464.0	Y
P1_D_4	LiDAR	459.9	Y
P1_D_5	LiDAR	836.3	N
P1_D_6	LiDAR	187.0	Y
P1_D_7	LiDAR	764.7	Y
P1_D_8	LiDAR	503.0	N
P1_D_9	LiDAR	94.7	Y
P2_D_1	LiDAR	184.2	Y
P2_D_10	LiDAR	650.1	N
P2_D_11	LiDAR	122.5	Y
P2_D_12	LiDAR	218.8	N
P2_D_2	LiDAR	195.6	Y
P2_D_3	LiDAR	305.9	Y
P2_D_4	LiDAR	234.8	Y
P2_D_5	LiDAR	241.1	Y
P2_D_6	LiDAR	886.0	Y
P2_D_7	LiDAR	486.2	N
P2_D_8	LiDAR	290.5	Y
P2_D_9	LiDAR	384.3	Y
P3_D_1	LiDAR	75.8	Y
P3_D_2	LiDAR	70.8	Y
P3_D_3	LiDAR	657.2	N
P3_D_4	LiDAR	61.1	N
P3_D_5	LiDAR	159.2	N
P3_D_6	LiDAR	82.1	Y
P4_D_1	LiDAR	415.0	Y
P4_D_2	LiDAR	140.5	Y
P4_D_3	LiDAR	230.9	Y
P4_D_4	LiDAR	634.9	N
P4_D_5	LiDAR	951.9	Y
P4_D_6	LiDAR	66.7	N
P5_D_1	LiDAR	326.7	Y
P5_D_10	LiDAR	63.3	N
P5_D_11	LiDAR	496.5	N
P5_D_12	LiDAR	424.6	N
P5_D_13	LiDAR	12.4	Y
P5_D_14	LiDAR	22.5	N
P5_D_2	LiDAR	82.4	Y
P5_D_3	LiDAR	57.5	N
P5_D_4	LiDAR	194.3	N
P5_D_5	LiDAR	133.7	Y
P5_D_6	LiDAR	45.1	N
P5_D_7	LiDAR	72.1	N
P5_D_8	LiDAR	68.8	N
P5_D_9	LiDAR	217.1	N
P6_D_1	LiDAR	389.4	N
P6_D_2	LiDAR	155.6	Y
P6_D_3	LiDAR	723.3	Y
P6_D_4	LiDAR	452.3	Y
P6_D_5	LiDAR	342.9	N
P7_D_1	LiDAR	227.9	Y
P7_D_2	LiDAR	204.9	Y

Table 6. Pipe Crossings Sufficiency **(Refer to Exhibit 3)**

UPSTREAM NODE	DOWNSTREAM NODE	SUFFICIENT EXISTING (Y/N)	EXISTING SUFFICIENCY NOTE	SUFFICIENT FUTURE (Y/N)	FUTURE SUFFICIENCY NOTE
P1_OEP_1	P1_OEP_2	N	Overtops 25-YR	N	Overtops 10-YR
P1_OEP_13	P1_OEP_8	N	Overtops 10-YR	N	Overtops 5-YR
P1_OEP_9	P1_OEP_10	N	Overtops 25-YR	N	Overtops 10-YR
P2_OEP_6	P2_OEP_2	Y	Passing 100-YR	Y	Passing 100-YR
P3_FES_1	P3_OEP_6	N	Overtops 5-YR	N	Overtops 2-YR
P3_FES_2	P3_OEP_7	N	Overtops 10-YR	N	Overtops 5-YR
P3_FES_3	P3_OEP_8	N	Overtops 5-YR	N	Overtops 2-YR
P3_FES_4	P3_OEP_9	Y	Passing 100-YR	Y	Overtops 100-YR
P3_FES_5	P3_OEP_12	Y	Passing 100-YR	Y	Passing 100-YR
P3_HW_1	P3_HW_2	Y	Overtops 100-YR	Y	Overtops 50-YR
P3_OEP_1	P3_OEP_2	Y	Passing 100-YR	Y	Overtops 100-YR
P3_OEP_11	P3_OEP_10	N	Overtops 2-YR	N	Overtops 2-YR
P3_OEP_3	P3_OEP_4	Y	Overtops 50-YR	N	Overtops 25-YR
P4_OEP_19	P4_OEP_18	N	Overtops 2-YR	N	Overtops 2-YR
P4_OEP_2	P4_OEP_3	N	Overtops 2-YR	N	Overtops 2-YR
P4_OEP_4	P4_OEP_5	N	Overtops 2-YR	N	Overtops 2-YR
P4_OEP_9	P4_OEP_10	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_1	P5_OEP_2	N	Overtops 10-YR	N	Overtops 5-YR
P5_OEP_10	P5_OEP_11	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_13	P5_OEP_14	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_15	P5_OEP_16	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_17	P5_OEP_18	N	100% filled	N	100% filled
P5_OEP_20	P5_OEP_19	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_21	P5_OEP_22	N	100% filled	N	100% filled
P5_OEP_24	P5_OEP_23	N	100% filled	N	100% filled
P5_OEP_26	P5_OEP_25	N	100% filled	N	100% filled
P5_OEP_28	P5_OEP_27	N	100% filled	N	100% filled
P5_OEP_3	P5_OEP_4	Y	Passing 100-YR	Y	Passing 100-YR
P5_OEP_30	P5_OEP_29	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_32	P5_OEP_53	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_34	P5_OEP_33	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_35	P5_OEP_12	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_37	P5_OEP_36	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_38	P5_OEP_39	N	100% filled	N	100% filled
P5_OEP_40	P5_OEP_41	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_42	P5_OEP_43	Y	Passing 100-YR	Y	Overtops 100-YR
P5_OEP_44	P5_OEP_45	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_47	P5_OEP_46	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_49	P5_OEP_48	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_51	P5_OEP_50	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_52	P5_OEP_31	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_54	P5_OEP_57	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_56	P5_OEP_55	N	Overtops 5-YR	N	Overtops 5-YR
P5_OEP_6	P5_OEP_7	N	Overtops 2-YR	N	Overtops 2-YR
P5_OEP_8	P5_OEP_9	N	Overtops 2-YR	N	Overtops 2-YR
P6_OEP_3	P6_OEP_4	N	Overtops 2-YR	N	Overtops 2-YR

Note: LOS guidelines for crossings under multi-lane collector roadways is conveying the 50-year storm event without overtopping the roadway. LOS for crossings under local roadways and driveways is conveying the 25-year event without overtopping.

Table 7. Closed System Sufficiency **(Refer to Exhibit 3)**

UPSTREAM NODE	DOWNSTREAM NODE	SUFFICIENT EXISTING (Y/N)	EXISTING SUFFICIENCY NOTE	SUFFICIENT FUTURE (Y/N)	FUTURE SUFFICIENCY NOTE
P1_BJB_1	P1_CB_5	N	Both nodes surcharge	N	Both nodes surcharge
P1_CB_1	P1_CB_3	N	Both nodes surcharge	N	Both nodes surcharge
P1_CB_3	P1_CB_4	N	Both nodes surcharge	N	Both nodes surcharge
P1_CB_4	P1_BJB_1	N	Both nodes surcharge	N	Both nodes surcharge
P1_CB_5	P1_OEP_14	N	Upstream node surcharges	N	Upstream node surcharges
P1_CB_6	P1_BJB_1	N	Both nodes surcharge	N	Both nodes surcharge
P1_CB_7	P1_OEP_5	Y		Y	
P1_CB_8	P1_CB_7	Y		N	Upstream node surcharges
P1_DI_1	P1_DI_2	N	Both nodes surcharge	N	Both nodes surcharge
P1_DI_2	P1_CB_3	N	Both nodes surcharge	N	Both nodes surcharge
P1_DI_3	P1_CB_6	N	Both nodes surcharge	N	Both nodes surcharge
P1_DI_4	P1_OEP_4	N	Upstream node surcharges	N	Upstream node surcharges
P1_DI_5	P1_JB_1	Y		Y	
P1_JB_1	P1_MH_1	Y		Y	
P1_MH_1	P1_CB_1	N	Downstream node surcharges	N	Downstream node surcharges
P1_OEP_3	P1_DI_4	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P1_OEP_6	P1_CB_7	Y		N	Upstream node surcharges
P2_BJB_1	P2_OEP_8	N	Upstream node surcharges	N	Upstream node surcharges
P2_DI_1	P2_OEP_1	N	Upstream node surcharges	N	Upstream node surcharges
P2_DI_2	P2_DI_1	N	Both nodes surcharge	N	Both nodes surcharge
P2_DI_3	P2_DI_2	N	Both nodes surcharge	N	Both nodes surcharge
P2_DI_4	P2_DI_3	N	Both nodes surcharge	N	Both nodes surcharge
P2_DI_5	P2_DI_4	N	Both nodes surcharge	N	Both nodes surcharge
P2_DI_6	P2_OEP_3	Y		Y	
P2_MH_1	P2_BJB_1	N	Both nodes surcharge	N	Both nodes surcharge
P2_OEP_10	P2_MH_1	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P2_OEP_4	P2_DI_6	Y		Y	
P2_OEP_5	P2_DI_6	Y		Y	
P2_OEP_7	P2_DI_5	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P2_OEP_9	P2_MH_1	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P3_DI_1	P3_HW_3	Y		Y	
P3_DI_2	P3_DI_1	Y		Y	
P3_HW_2	P3_DI_1	Y		Y	
P4_CB_1	P4_CB_4	N	Both nodes surcharge	N	Both nodes surcharge
P4_CB_2	P4_CB_3	N	Both nodes surcharge	N	Both nodes surcharge
P4_CB_3	P4_CB_1	N	Both nodes surcharge	N	Both nodes surcharge
P4_CB_4	P4_OEP_20	N	Upstream node surcharges	N	Upstream node surcharges
P4_DI_1	P4_CB_2	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_10	P4_DI_11	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_11	P4_OEP_17	N	Upstream node surcharges	N	Upstream node surcharges
P4_DI_13	P4_DI_4	N	Downstream node surcharges	N	Downstream node surcharges
P4_DI_14	P4_DI_2	N	Downstream node surcharges	N	Downstream node surcharges
P4_DI_2	P4_DI_3	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_3	P4_DI_4	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_4	P4_DI_5	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_5	P4_DI_6	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_6	P4_DI_7	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_7	P4_DI_8	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_8	P4_DI_9	N	Both nodes surcharge	N	Both nodes surcharge
P4_DI_9	P4_DI_10	N	Both nodes surcharge	N	Both nodes surcharge
P4_JB_1	P4_DI_1	N	Both nodes surcharge	N	Both nodes surcharge
P4_OEP_1	P4_JB_1	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P4_OEP_14	P4_DI_2	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P4_OEP_15	P4_DI_13	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P4_OEP_16	P4_DI_7	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P4_OEP_8	P4_DI_2	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P5_DI_1	P5_OEP_5	Y		Y	
P6_CB_1	P6_CB_2	N	Both nodes surcharge	N	Both nodes surcharge
P6_CB_2	P6_DI_2	N	Both nodes surcharge	N	Both nodes surcharge
P6_CB_3	P6_JB_1	N	Both nodes surcharge	N	Both nodes surcharge
P6_DI_1	P6_CB_1	N	Both nodes surcharge	N	Both nodes surcharge
P6_DI_2	P6_CB_3	N	Both nodes surcharge	N	Both nodes surcharge
P6_DI_3	P6_OEP_2	N	Upstream node surcharges	N	Upstream node surcharges
P6_JB_1	P6_DI_3	N	Both nodes surcharge	N	Both nodes surcharge
P6_OEP_1	P6_DI_1	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges
P7_CB_1	P7_OEP_2	Y		Y	
P7_CB_2	P7_CB_1	Y		Y	
P7_DI_1	P7_CB_1	N	Upstream node surcharges	N	Upstream node surcharges
P7_DI_2	P7_DI_1	N	Both nodes surcharge	N	Both nodes surcharge
P7_OEP_1	P7_DI_2	N	Upstream node overtops/downstream node surcharges	N	Upstream node overtops/downstream node surcharges

Note: LOS guidelines for closed storm sewer systems is conveying the 25-year storm event under non-surcharged conditions at each node.

Table 8. Open Channels Sufficiency **(Refer to Exhibit 3)**

NAME	SUFFICIENT EXISTING (Y/N)	EXISTING SUFFICENCY NOTE	SUFFICIENT FUTURE (Y/N)	FUTURE SUFFICENCY NOTE
P1_D_1	Y	Conveys 100-YR	Y	Conveys 100-YR
P1_D_10	Y	Conveys 100-YR	Y	Overtops 100-YR
P1_D_2	Y	Conveys 100-YR	Y	Conveys 100-YR
P1_D_3	Y	Conveys 100-YR	Y	Overtops 100-YR
P1_D_4	Y	Conveys 100-YR	Y	Conveys 100-YR
P1_D_5	N	Overtops 25-YR	N	Overtops 10-YR
P1_D_6	Y	Overtops 50-YR	N	Overtops 25-YR
P1_D_7	Y	Conveys 100-YR	Y	Conveys 100-YR
P1_D_8	N	Overtops 10-YR	N	Overtops 5-YR
P1_D_9	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_1	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_10	N	Overtops 10-YR	N	Overtops 5-YR
P2_D_11	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_12	N	Overtops 25-YR	N	Overtops 10-YR
P2_D_2	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_3	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_4	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_5	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_6	Y	Overtops 50-YR	N	Overtops 25-YR
P2_D_7	N	Overtops 5-YR	N	Overtops 2-YR
P2_D_8	Y	Conveys 100-YR	Y	Conveys 100-YR
P2_D_9	Y	Conveys 100-YR	Y	Conveys 100-YR
P3_D_1	Y	Conveys 100-YR	Y	Conveys 100-YR
P3_D_2	Y	Conveys 100-YR	Y	Conveys 100-YR
P3_D_3	N	Overtops 10-YR	N	Overtops 5-YR
P3_D_4	N	Overtops 5-YR	N	Overtops 2-YR
P3_D_5	N	Overtops 2-YR	N	Overtops 2-YR
P3_D_6	Y	Conveys 100-YR	Y	Overtops 100-YR
P4_D_1	Y	Conveys 100-YR	Y	Overtops 100-YR
P4_D_2	Y	Conveys 100-YR	Y	Overtops 100-YR
P4_D_3	Y	Overtops 50-YR	N	Overtops 25-YR
P4_D_4	N	Overtops 2-YR	N	Overtops 2-YR
P4_D_5	Y	Conveys 100-YR	Y	Conveys 100-YR
P4_D_6	N	Overtops 25-YR	N	Overtops 10-YR
P5_D_1	Y	Conveys 100-YR	Y	Overtops 100-YR
P5_D_10	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_11	N	Overtops 25-YR	N	Overtops 10-YR
P5_D_12	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_13	Y	Conveys 100-YR	Y	Conveys 100-YR
P5_D_14	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_2	Y	Overtops 50-YR	N	Overtops 25-YR
P5_D_3	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_4	N	Overtops 25-YR	N	Overtops 25-YR
P5_D_5	Y	Overtops 50-YR	N	Overtops 25-YR
P5_D_6	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_7	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_8	N	Overtops 2-YR	N	Overtops 2-YR
P5_D_9	N	Overtops 2-YR	N	Overtops 2-YR
P6_D_1	N	Overtops 25-YR	N	Overtops 10-YR
P6_D_2	Y	Conveys 100-YR	Y	Overtops 100-YR
P6_D_3	Y	Conveys 100-YR	Y	Conveys 100-YR
P6_D_4	Y	Conveys 100-YR	Y	Conveys 100-YR
P6_D_5	N	Overtops 5-YR	N	Overtops 5-YR
P7_D_1	Y	Overtops 50-YR	N	Overtops 25-YR
P7_D_2	Y	Conveys 100-YR	Y	Conveys 100-YR

Note: LOS guidelines for open channel systems is conveying the 25-year storm event without overtopping.

Table 9. Closed System Node Sufficiency **(Refer to Exhibit 3)**

NAME	SUFFICIENT EXISTING (Y/N)	SUFFICIENT FUTURE (Y/N)
P1_BJB_1	N	N
P1_CB_1	N	N
P1_CB_3	N	N
P1_CB_4	N	N
P1_CB_5	N	N
P1_CB_6	N	N
P1_CB_7	Y	Y
P1_CB_8	Y	N
P1_DI_1	N	N
P1_DI_2	N	N
P1_DI_3	N	N
P1_DI_4	N	N
P1_DI_5	Y	Y
P1_JB_1	Y	Y
P1_MH_1	Y	Y
P2_BJB_1	N	N
P2_DI_1	N	N
P2_DI_2	N	N
P2_DI_3	N	N
P2_DI_4	N	N
P2_DI_5	N	N
P2_DI_6	Y	Y
P2_MH_1	N	N
P3_DI_1	Y	Y
P3_DI_2	Y	Y
P4_CB_1	N	N
P4_CB_2	N	N
P4_CB_3	N	N
P4_CB_4	N	N
P4_DI_1	N	N
P4_DI_10	N	N
P4_DI_11	N	N
P4_DI_13	Y	Y
P4_DI_14	Y	Y
P4_DI_2	N	N
P4_DI_3	N	N
P4_DI_4	N	N
P4_DI_5	N	N
P4_DI_6	N	N
P4_DI_7	N	N
P4_DI_8	N	N
P4_DI_9	N	N
P4_JB_1	N	N
P5_DI_1	Y	Y
P6_CB_1	N	N
P6_CB_2	N	N
P6_CB_3	N	N
P6_DI_1	N	N
P6_DI_2	N	N
P6_DI_3	N	N
P6_JB_1	N	N
P7_CB_1	Y	Y
P7_CB_2	Y	Y
P7_DI_1	N	N
P7_DI_2	N	N

Note: LOS guidelines for nodes is conveying the 25-year storm event without surcharging.

Exhibit #3: Sufficiency Analysis Results

1 inch = 350 feet

0 700 1,400 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Node Sufficiency

- Y
- N

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

Pipe Sufficiency

- Sufficient
- Insufficient

Ditch Sufficiency

- Sufficient
- Insufficient

Town of Pamplico Stormwater Study
09/29/22

Prepared By:

Kimley»Horn

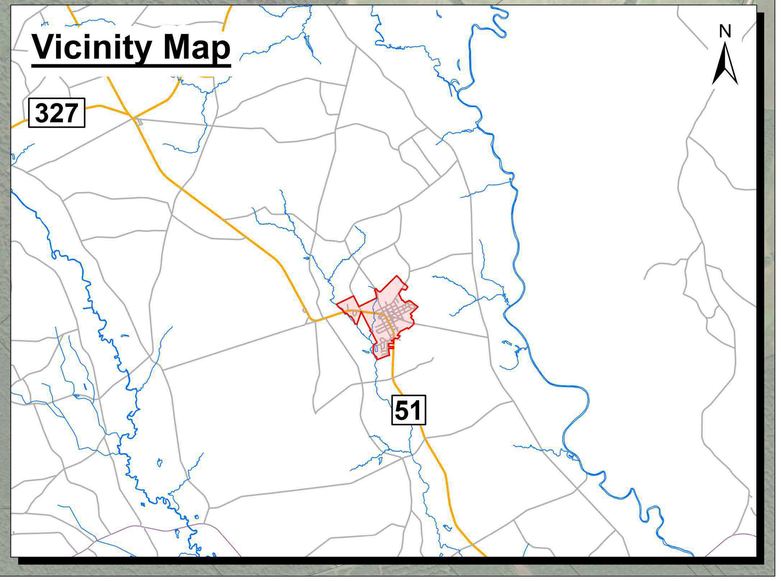
Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

Buck Branch
Big Swamp Branch
Big Swamp Branch Tributary 1
Barfields Old Mill Creek Tributary 1
Marsh Rd
E 6th Ave
E Main St
McElveen Cir
E 5th Ave
E 3rd Ave
E 1st Ave
N Oak St
Parkwood Ave
W Lynhurst Rd
N Pamplico Hwy
Hickory St
S Walnut St
River Rd
S Trade St
W 2nd Ave
W Coleman Ave
Iris Dr
Vivian Dr
Priority Area #1
Priority Area #2
Priority Area #3
Priority Area #4
Priority Area #5
Priority Area #6
Priority Area #7

Type	Total Length (LF)	Sufficient Length (LF)	Sufficiency Percentage
Pipe	7,824	1,139	15%
Ditch	16,210	9,542	59%

Vicinity Map



APPENDIX C

PROJECT ALTERNATIVES EXHIBITS

Kimley»Horn

SOUTH CAROLINA OFFICE OF RESILIENCE

Exhibit #4:
Priority Area #1

1 inch = 100 feet

0 200 400 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 1

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Ditch Improvements
- Pipe Improvements

Alternative 2

- Ditch Improvements
- Pipe Improvements

Town of Pamplico Stormwater Study
9/29/2022

Prepared By:

Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

ALT 1 & 2: Upsize closed system to 42" RCP

ALT 1 & 2: Upsize closed system to 24"-42" RCP

ALT 1 & 2: Upsize closed system to 30"-36"RCP

ALT 1 & 2: Upsize culvert to 54" RCP and grade more defined tailwater channel to connect to Big Swamp Branch Tributary 1 floodplain

ALT 1: Upsize closed system to 15"-36" RCP

NOTE: ALT 2 does not achieve design LOS throughout the priority area but focuses on areas with reported flooding.

Big Swamp Branch Tributary 1

W 2nd Ave

W Coleman Ave

Hickory St

S Walnut St

S Trade St

E 1st Ave

River Rd

Vicinity Map

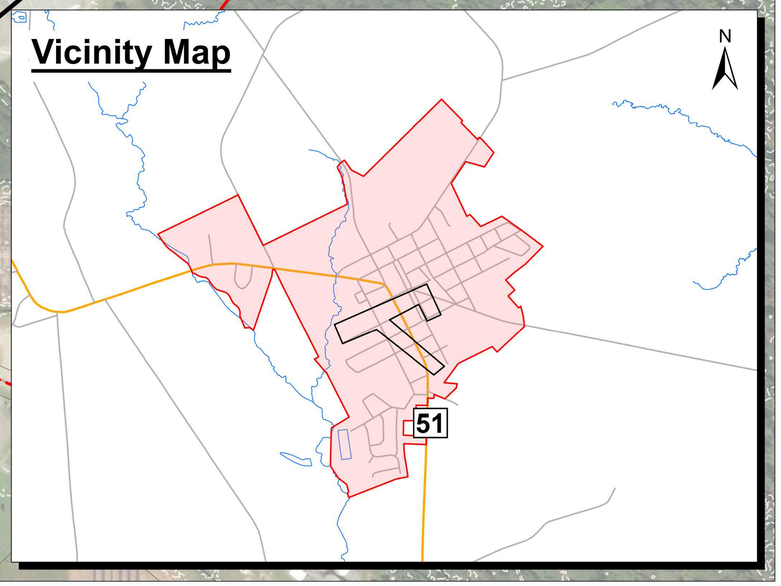


Exhibit #5:
Priority Area #2

1 inch = 75 feet

0 150 300 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 2

Roadways
- State Road
- Street

FEMA Flood Hazard Area
- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues
- Issue Reported (Survey Response/By Others)
- Survey Response Recieved
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box
- Ditch Inventory
- Pipe Inventory

Alternative 1
- Ditch Improvements
- Pipe Improvements

Alternative 2
- Ditch Improvements
- Pipe Improvements

Alternative 3
- Ditch Improvements
- Pipe Improvements

Town of Pamplico Stormwater Study
9/29/2022

Prepared By:

Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

Big Swamp Branch Tributary 1

Hickory St

S Walnut St

Iris Dr

Vivian Dr

ALT 2: Improve closed system geometry

P2_OEP_3
P2_OEP_4
P2_OEP_5
P2_DI_6
P2_D_8
P2_D_9

ALT 1/2/3: Upsize closed system to 36"-42" RCP

P2_DI_5
P2_OEP_7
P2_DI_4
P2_OEP_11
P2_DI_3
P2_DI_1
P2_DI_2
P2_OEP_1
P2_D_12
P2_OEP_2
P2_OEP_6
P2_D_3
P2_D_6
P2_D_7
P2_D_10

ALT 2 & 3: Improve closed system geometry

ALT 1 & 2: Upsize closed system to 30" RCP

ALT 2: Improve closed system geometry

ALT 3: Remove closed system and install 30" RCP crossing

P2_OEP_8
P2_OEP_9
P2_BJB_1
P2_D_4
P2_D_5
P2_D_2
P2_D_11
P2_D_1

NOTE: ALT 3 does not achieve design LOS throughout the priority area but focuses on areas with reported flooding.

Vicinity Map

N

51

Exhibit #6:
Priority Area #3

1 inch = 50 feet

0 100 200 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 3

Roadways

- Street
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Ditch Improvements
- Pipe Improvements

Alternative 2

- Pipe Improvements

Priority Area 5 Alternative 3

- Pipe Improvements

Town of Pamplico Stormwater Study
9/29/2022

Prepared By:

Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

PA5 ALT 3: Approximately 1,420 of 18"-42" RCP bypass within the right-of-way to redirect drainage towards an established channel parallel to River Rd and alleviate hydrologic loading on E 3rd Ave and downstream infrastructure

ALT 1: Install cross pipe to convey drainage from forested area north of E 2nd Ave to existing channels parallel to E 1st Ave and reduce ponding between E 2nd Ave and McElveen St.

ALT 2: Begin 15"-24" RCP closed system

ALT 1: Grade stable outlet channel that connects to Barfields Old Mill Creek.

ALT 2: Approximately 2,220 LF of 15"-24" RCP closed system within the right-of-way to collect drainage within PA #3 and redirect to an established channel parallel to River Rd.

ALT 2 proposed closed system may upsize to 36"/42" RCP along S Pine St to proposed outfall at River Rd. should both ALT 2 and PA5 - ALT 3 be chosen as projects.

ALT 2: Tie outlet of closed system to existing channel parallel to River Rd.

E 3rd Ave
S Elm St
McElveen St
E 2nd Ave
E 1st Ave
River Rd

P3_D_6
P3_D_5
P3_D_4
P3_D_3
P3_D_2
P3_D_1
P3_DI_1
P3_DI_2
P3_FES_1
P3_FES_2
P3_FES_3
P3_FES_4
P3_FES_5
P3_OEP_1
P3_OEP_2
P3_OEP_3
P3_OEP_4
P3_OEP_6
P3_OEP_7
P3_OEP_8
P3_OEP_9
P3_OEP_10
P3_OEP_11
P3_OEP_12
P3_HW_1
P3_HW_2
P3_HW_3
P3_HW_4

Vicinity Map

N

51

Exhibit #7:
Priority Area #4

1 inch = 75 feet

0 150 300 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 4

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Ditch Improvements
- Pipe Improvements

Alternative 2

- Pipe Improvements

Alternative 3

- Pipe Improvements

Town of Pamplico Stormwater Study
9/29/2022

Prepared By:

Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

ALT 1: Upsize N Walnut St crossing to 7'x7' RCBC

ALT 2 & 3: Upsize N Walnut St crossing to 42" RCP

ALT 1/2/3: Upsize E 6th Ave crossing to 54" RCP

ALT 1 & 2: Upsize mainline of closed system to 7'x7' RCBC

ALT 3: Upsize mainline of closed system to 60" RCP

ALT 2/3: Approximately 1,000 LF of 7'x7' RCBC/60" RCP closed system within the right-of-way to direct drainage towards Big Swamp Branch Floodplain and alleviate hydrologic loading on N Walnut St.

ALT 1/2/3: Upsize closed system to 24"-30" RCP

NOTE: ALT 3 should only be considered if PA5 - ALT 3 is chosen as a project.
PA5 - ALT 3 includes a bypass line that redirects drainage away from PA4 and towards a new outfall on River Rd.
PA4 - ALT 3 achieves a reduced design LOS when compared to ALTS 1 & 2 but is still an improvement on existing sufficiency.

Vicinity Map

N

51

7th Ave
E 6th Ave
E 5th Ave
N Walnut St
N Pamplico Hwy
Big Swamp Branch Tributary 1

P4_D_5 P4_D_6 P4_D_4 P4_D_3 P4_D_2 P4_D_1

P4_OEP_19 P4_OEP_18 P4_OEP_10 P4_OEP_9 P4_OEP_12 P4_OEP_11 P4_OEP_17 P4_DI_12 P4_DI_11 P4_DI_10 P4_DI_9 P4_DI_1 P4_OEP_1 P4_CB_1 P4_CB_2 P4_CB_3 P4_OEP_20 P4_CB_4

P4_OEP_3 P4_OEP_2 P4_OEP_7 P4_OEP_6 P4_OEP_5 P4_OEP_4 P4_DI_14 P4_OEP_8 P4_DI_2 P4_DI_3 P4_OEP_14 P4_DI_4 P4_DI_6 P4_DI_5 P4_DI_13 P4_DI_7 P4_OEP_15 P4_DI_8 P4_OEP_16

ALT 4: Upsize N Walnut St crossing to 7'x7' RCBC

ALT 4: Upsize mainline of closed system to 60"/66" RCP

ALT 4: Approximately 900 LF of 42"-54" RCP bypass within the right-of-way to redirect drainage towards an established channel and alleviate hydrologic loading on E 3rd Ave and downstream infrastructure. Upsize N Pine St crossing to to 54"/60" RCP to sufficiently convey additional drainage

ALT 4: Upsize E 5th Ave crossing to 42"/48" RCP to convey drainage towards PA #4

ALT 4: Upsize mainline of closed system to 7'x7' RCBC

ALT 4: Upsize driveway culverts to 24" RCP along E 3rd Ave

Big Swamp Branch Tributary 1

Big Swamp Branch

N Pine St

E 3rd Ave

E 5th Ave

E Main St

E 1st Ave

S Walnut St

River Rd

Exhibit #9:
Priority Areas 4 and 5 - Bypass

1 inch = 125 feet

0 250 500 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Areas 4 and 5

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 4

- Ditch Improvements
- Pipe Improvements

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9/29/2022

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Kimley»Horn

Prepared For:

SOUTH CAROLINA OFFICE OF RESILIENCE

Vicinity Map

N

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Exhibit #8:
Priority Area #5

1 inch = 75 feet

0 150 300 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 5

Roadways

- State Road
- Street
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Ditch Improvements
- Pipe Improvements

Alternative 2

- Ditch Improvements
- Pipe Improvements

Alternative 3

- Ditch Improvements
- Pipe Improvements

Buyout Alternative

- Property Buyouts

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9/29/2022

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E 5th Ave

E Main St

E 3rd Ave

E 2nd Ave

River Rd

ALT 1 & 2: Upsize E 5th Ave crossing to 54" RCP to convey drainage towards PA #4

ALT 3: Upsize E 5th Ave crossing to 42"/48" RCP to convey drainage towards PA #4

Buyout Alternative: Buy out properties in low-lying areas within Priority Area #5 where drainage from the South and East is routed

ALT 1 & 2: Upsize E 3rd Ave crossing to 24" RCP

ALT 1 & 2: Upsize E 2nd Ave crossing to 42" RCP

ALT 1: Upsize driveway culverts to 48" RCP along E 3rd Ave

ALT 2: Approximately 660 LF of 48" RCP closed system within the right-of-way to collect drainage within PA #5 along E 3rd Ave

ALT 3: Upsize driveway culverts to 24" RCP along E 3rd Ave

ALT 1 & 2: E 1st Ave 18" RCP crossing sufficient once sediment in pipe is removed

ALT 3: Approximately 1,420 of 18"-42" RCP bypass within the right-of-way to redirect drainage towards an established channel parallel to River Rd and alleviate hydrologic loading on E 3rd Ave and downstream infrastructure

P5_OEP_47
P5_OEP_48
P5_OEP_51
P5_OEP_46
P5_OEP_45
P5_OEP_49
P5_OEP_42
P5_OEP_43
P5_OEP_50
P5_OEP_44
P5_D_12
P5_OEP_41
P5_OEP_40
P5_OEP_38
P5_OEP_37
P5_OEP_36
P5_D_11
P5_OEP_39
P5_OEP_22
P5_D_9
P5_OEP_19
P5_D_10
P5_OEP_23
P5_OEP_24
P5_OEP_21
P5_OEP_20
P5_OEP_53
P5_OEP_34
P5_OEP_32
P5_OEP_55
P5_OEP_56
P5_OEP_33
P5_OEP_31
P5_OEP_57
P5_OEP_29
P5_D_5
P5_OEP_27
P5_D_1
P5_OEP_18
P5_OEP_17
P5_OEP_54
P5_OEP_25
P5_OEP_30
P5_OEP_52
P5_OEP_28
P5_OEP_26
P5_D_4
P5_OEP_16
P5_OEP_15
P5_OEP_14
P5_OEP_35
P5_OEP_11
P5_OEP_13
P5_D_2
P5_OEP_10
P5_OEP_12
P5_OEP_9
P5_OEP_8
P5_D_1
P5_DI_1
P5_OEP_7
P5_OEP_2
P5_OEP_3
P5_OEP_5
P5_OEP_6
P5_OEP_1
P5_OEP_4

Vicinity Map

N

51

Exhibit #10:
Priority Area #6

1 inch = 40 feet

0 80 160 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Areas

Roadways

- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Pipe Improvements
- Ditch Improvements

Alternatives 2

- Pipe Improvements
- Ditch Improvements

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Prepared For:

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Quail Dr

Heidi Dr

P6_D_4

P6_D_3

P6_D_5

P6_D_1

P6_D_2

P6_OEP_1

P6_CB_1

P6_DI_1

P6_CB_2

P6_DI_2

P6_DI_3

P6_CB_3

P6_JB_1

P6_OEP_2

P6_OEP_3

P6_OEP_4

ALT 1 & 2: Upsize closed system to 42" RCP

ALT 1: Upsize crossing to 48" RCP

ALT 2: Install approximately 850 LF of 42"/48" RCP closed system to divert majority of flow within Priority Area #6 to right-of-way and outfall into floodplain of Big Swamp Branch.

ALT 2: Grade channel to connect proposed closed system outfall to existing ditch.

Vicinity Map

N

51

N Pamplico Hwy

Forest Acres Dr

Big Swamp Branch

Buyout Alternative: Buy out properties inundated by the Big Swamp Branch floodplain

ALT 1: Upsize closed system to 24" RCP

ALT 1: Grade more defined channel to convey drainage towards Big Swamp Branch floodplain.

P7_DI_2
P7_OEP_1
P7_DI_1
P7_D_1
P7_CB_2
P7_CB_1
P7_OEP_2
P7_D_2

Exhibit #11:
Priority Area #7

1 inch = 50 feet

0 100 200 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 7

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 1

- Sufficient Ditches
- Sufficient Pipes

Buyout Alternative

- Property Buyouts

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Vicinity Map

N

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ID	Location	Proposed Low Impact Retrofit Project
1	Hannah-Pamplico Elementary School	Dry detention and/or rain garden educational opportunity
2	Pamplico Volunteer Fire Department	Cistern (for washing trucks)
3	Park area behind Florence County Magistrate	Dry detention
4	Marsh Lumber	Cistern (for washing equipment)

Exhibit #12: Low Impact Retrofit Opportunities

1 inch = 150 feet

0 300 600 Feet

N

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory
- Parcels with Low Impact Opportunities

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9/29/2022

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Vicinity Map

N

327

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APPENDIX D

RECOMMENDED PROJEXTS EXHIBITS

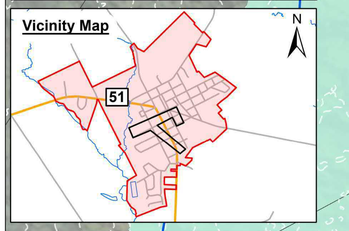
Exhibit #13:
PA 1 Recommended Alternative (ALT 2)

1 inch = 55 feet

0 110 220 Feet

N

Vicinity Map



Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 1

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 2

- Ditch Improvements
- Pipe Improvements

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23' Wide Triangular Channel

16' Wide Triangular Channel

21' Wide Trapezoidal Channel

42"

54"

24"

36"

30"

Hickory St

S Walnut St

W 2nd Ave

W Coleman Ave

P1_OEP_17
P1_OEP_7
P1_OEP_6
P1_CB_9
P1_OEP_8
P1_OEP_4
P1_CB_8
P1_DI_4
P1_OEP_5
P1_OEP_13
P1_OEP_15
P1_OEP_16
P1_OEP_10
P1_OEP_9
P1_OEP_2
P1_OEP_1
P1_D_5
P1_D_6
P1_D_7
P1_D_8
P1_D_9
P1_D_3
P1_D_2

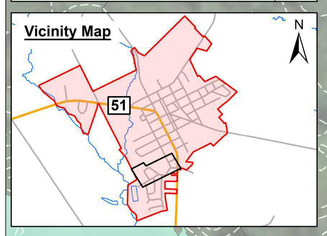
Exhibit #14:
PA2 Recommended Alternative (ALT 2)

1 inch = 25 feet

0 50 100 Feet

N

Vicinity Map



Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 2

Roadways

- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 3

- Ditch Improvements
- Pipe Improvements

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9/29/2022

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Prepared For:

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P2_DI_5
P2_OEP_7
36"
P2_DI_4
P2_OEP_11
36"
P2_DI_3
P2_DI_1
36"
P2_OEP_1
P2_DI_2
42"
P2_D_12
16' Wide Trapezoidal Channel
42"
P2_OEP_2
P2_OEP_6
P2_D_3
P2_D_6
P2_BJB_1
P2_OEP_8
P2_OEP_9
P2_MH_1
P2_OEP_10
30"
P2_D_5
P2_D_4
P2_D_2
Virginia Dr
P2_D_11
P2_D_1
Iris Dr

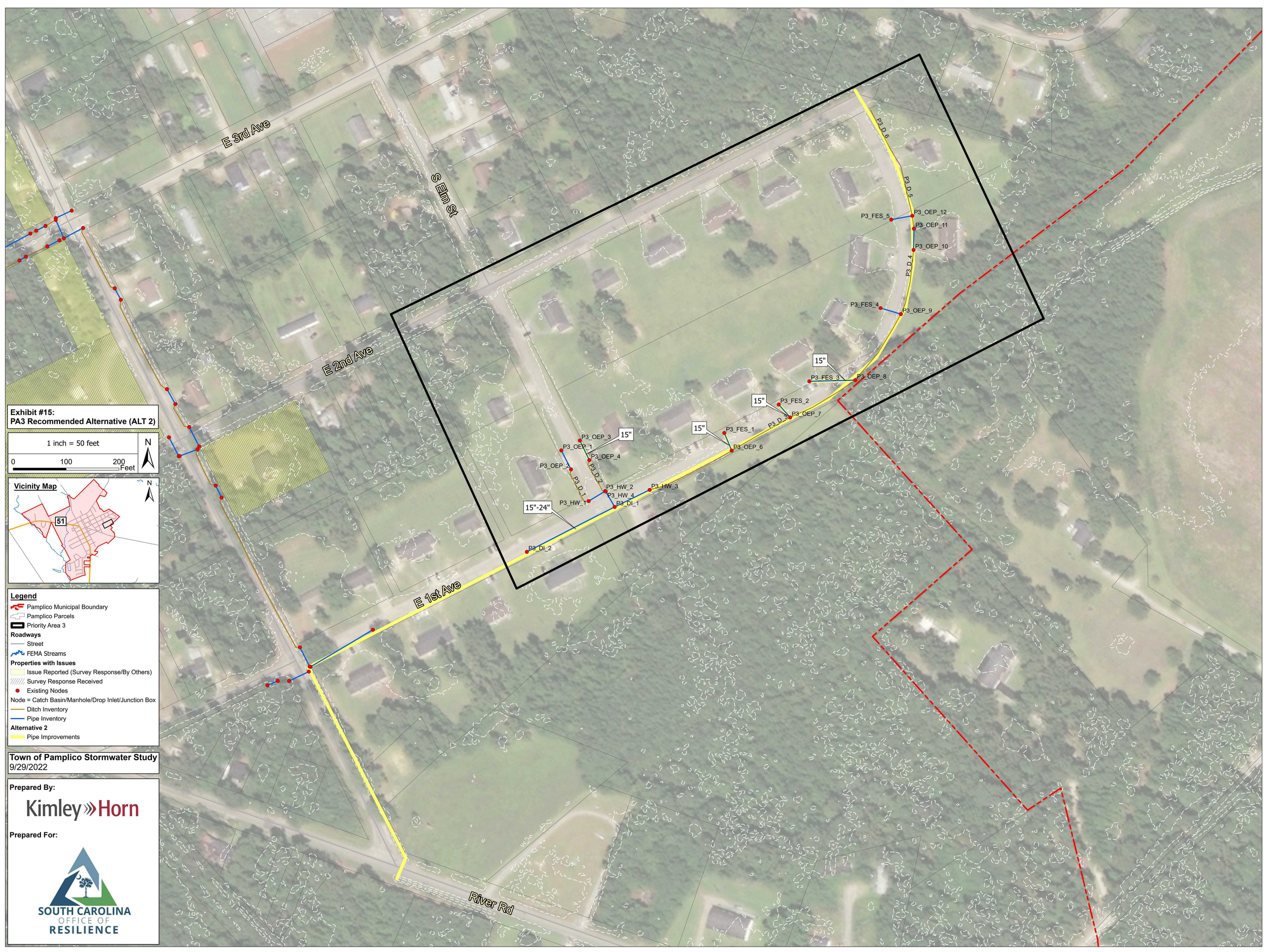

Exhibit #15:
PA3 Recommended Alternative (ALT 2)

1 inch = 50 feet

0 100 200 Feet

N

Vicinity Map

51

Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 3

Roadways

- Street
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 2

- Pipe Improvements

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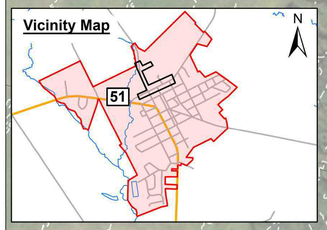
Exhibit #16:
PA4 Recommended Alternative (ALT 3)

1 inch = 75 feet

0 150 300 Feet

N

Vicinity Map



Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 4

Roadways

- State Road
- Street

FEMA Flood Hazard Area

- 100 Year FEMA Floodplain (Zone A)
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 3

- Pipe Improvements

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9/29/2022

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Prepared For:

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Big Swamp Branch Tributary 1

7th Ave

N Walnut St

E 6th Ave

E 5th Ave

N Pamplico Hwy

P4_D_5

P4_D_6

P4_D_4

P4_D_3

P4_D_2

P4_D_1

42" P4_OEP_19 P4_OEP_18

P4_OEP_10 P4_OEP_9 P4_OEP_12

P4_OEP_17 P4_DI_12 P4_DI_11

P4_DI_10 P4_DI_9

P4_OEP_20 P4_CB_4 P4_CB_1

P4_CB_2 P4_CB_3

P4_DI_1 24" P4_JB_1 P4_OEP_1 24"

30" 30" 30" 30"

60" 60" 60" 60" 60" 60" 60" 60"

P4_DI_14 54" P4_OEP_8

P4_DI_2 42" P4_DI_3 P4_OEP_14

P4_DI_4 P4_DI_6 P4_DI_5 P4_DI_13

P4_DI_7 P4_OEP_15

P4_DI_8 P4_OEP_16

54" P4_OEP_3 P4_OEP_2

P4_OEP_7 P4_OEP_6 P4_OEP_5 P4_OEP_4

15"

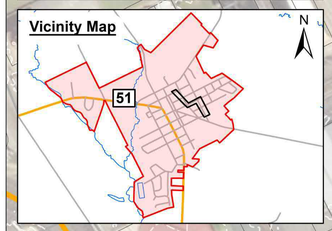
Exhibit #17:
PA 5 Recommended Alternative (ALT 3)

1 inch = 75 feet

0 150 300 Feet

N

Vicinity Map



Legend

- Pamplico Municipal Boundary
- Pamplico Parcels
- Priority Area 5

Roadways

- State Road
- Street
- FEMA Streams

Properties with Issues

- Issue Reported (Survey Response/By Others)
- Survey Response Received
- Existing Nodes

Node = Catch Basin/Manhole/Drop Inlet/Junction Box

- Ditch Inventory
- Pipe Inventory

Alternative 3

- Ditch Improvements
- Pipe Improvements

Town of Pamplico Stormwater Study
9/29/2022

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Prepared For:

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E 5th Ave
E Main St
E 3rd Ave
E 2nd Ave
River Rd

42"-48""
42"-48""
15"
18"
19' Wide Trapezoidal Ditch
36-42"
18' Wide Trapezoidal Ditch
15"
15"
24"-36"
14' Wide Trapezoidal Ditch
24"
14' Wide Trapezoidal Ditch
7' Wide Triangular Ditch
15"
18"
14' Wide Trapezoidal Ditch
24"
24"
24"
24"
14' Wide Trapezoidal Ditch
24"
48"
15"
30"
18"

P5_OEP_49
P5_OEP_47
P5_OEP_44
P5_OEP_46
P5_OEP_45
P5_OEP_50
P5_OEP_51
P5_OEP_42
P5_OEP_43
P5_OEP_49
P5_D_12
P5_OEP_41
P5_OEP_40
P5_OEP_38
P5_OEP_37
P5_OEP_36
P5_OEP_39
P5_D_11
P5_OEP_21
P5_OEP_24
P5_D_9
P5_OEP_23
P5_D_10
P5_OEP_22
P5_OEP_19
P5_OEP_20
P5_OEP_33
P5_OEP_34
P5_OEP_57
P5_OEP_54
P5_OEP_32
P5_OEP_28
P5_OEP_31
P5_OEP_52
P5_OEP_55
P5_OEP_56
P5_OEP_26
P5_D_7
P5_D_8
P5_OEP_53
P5_OEP_30
P5_OEP_29
P5_OEP_27
P5_OEP_25
P5_OEP_18
P5_OEP_17
P5_D_6
P5_D_4
P5_OEP_16
P5_OEP_15
P5_OEP_14
P5_OEP_11
P5_OEP_35
P5_OEP_13
P5_OEP_10
P5_OEP_12
P5_D_2
P5_OEP_9
P5_OEP_8
P5_D_1
P5_DI_1
P5_OEP_5
P5_OEP_7
P5_OEP_6
P5_OEP_4
P5_OEP_3
P5_OEP_1
P5_OEP_2

APPENDIX E

INDIVIDUAL PROJECT SCORING MATRICES AND OPCCs

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PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	6	0.9	Temporarily impacts access to residential areas along Hickory St, W 2nd Ave, W 1st Ave, and W Coleman Ave through 4 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	6	0.6	Temporarily impacts access to businesses along S Walnut St and the elementary school along Hickory St.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	5	1.5	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.5/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

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PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 1

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along W 2nd Ave.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Resolves flooding reported in backyard by properties along W 2nd Ave.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**11/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

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OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #1 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$90,500**
	MOBILIZATION	1	LS	$11,000	$11,000
	CONSTRUCTION SURVEYING	1	LS	$16,000	$16,000
	PIPE REMOVAL	1,550	LF	$30	$46,500
	REMOVE EXISTING STRUCTURE	17	EA	$1,000	$17,000
DRAINAGE					**$456,675**
	15" CONC. PIPE	95	LF	$135	$12,825
	18" CONC. PIPE	100	LF	$140	$14,000
	24" CONC. PIPE	95	LF	$145	$13,775
	30" CONC. PIPE	680	LF	$175	$119,000
	36" CONC. PIPE	215	LF	$215	$46,225
	42" CONC. PIPE	145	LF	$290	$42,050
	54" CONC. PIPE	230	LF	$420	$96,600
	DRAINAGE STRUCTURES	17	EA	$3,000	$51,000
	DITCH EXCAVATION	1,530	LF	$40	$61,200
CONSTRUCTION SUBTOTAL					**$547,200**
INCIDENTALS					**$164,300**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$54,800	$54,800
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$43,800	$43,800
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$65,700	$65,700
PROPERTY ACQUISITION					**$54,800**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$54,800	$54,800
DESIGN & CONSTRUCTION SERVICES					**$109,500**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$82,100	$82,100
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$27,400	$27,400
CONTINGENCY					**$164,200**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$164,200	$164,200
TOTAL CONSTRUCTION COST					**$1,040,000**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	8	1.2	Temporarily impacts access to residential areas along Hickory St and W 2nd Ave through 2 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	8	0.8	Temporarily impacts access to the elementary school along Hickory St.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	9	3.15	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.95/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #1 - ALT 2

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along W 2nd Ave.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Resolves flooding reported in backyard by properties along W 2nd Ave.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**12.45/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #1 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$38,150**
	MOBILIZATION	1	LS	$6,000	$6,000
	CONSTRUCTION SURVEYING	1	LS	$9,000	$9,000
	PIPE REMOVAL	605	LF	$30	$18,150
	REMOVE EXISTING STRUCTURE	5	EA	$1,000	$5,000
DRAINAGE					**$258,400**
	24" CONC. PIPE	95	LF	$145	$13,775
	30" CONC. PIPE	35	LF	$175	$6,125
	36" CONC. PIPE	110	LF	$215	$23,650
	42" CONC. PIPE	145	LF	$290	$42,050
	54" CONC. PIPE	230	LF	$420	$96,600
	DRAINAGE STRUCTURES	5	EA	$3,000	$15,000
	DITCH EXCAVATION	1,530	LF	$40	$61,200
CONSTRUCTION SUBTOTAL					**$296,600**
INCIDENTALS					**$89,100**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$29,700	$29,700
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$23,800	$23,800
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$35,600	$35,600
PROPERTY ACQUISITION					**$29,700**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$29,700	$29,700
DESIGN & CONSTRUCTION SERVICES					**$59,400**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$44,500	$44,500
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$14,900	$14,900
CONTINGENCY					**$89,000**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$89,000	$89,000
TOTAL CONSTRUCTION COST					**$563,800**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access along Pamela Cr through 2 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.65/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pamela Cr.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**12.15/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #2 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$36,150**
	MOBILIZATION	1	LS	$6,000	$6,000
	CONSTRUCTION SURVEYING	1	LS	$8,000	$8,000
	PIPE REMOVAL	505	LF	$30	$15,150
	REMOVE EXISTING STRUCTURE	7	EA	$1,000	$7,000
DRAINAGE					**$231,950**
	24" CONC. PIPE	10	LF	$145	$1,450
	30" CONC. PIPE	70	LF	$175	$12,250
	36" CONC. PIPE	230	LF	$215	$49,450
	42" CONC. PIPE	200	LF	$290	$58,000
	DRAINAGE STRUCTURES	7	EA	$3,000	$21,000
	DITCH EXCAVATION	2,245	LF	$40	$89,800
CONSTRUCTION SUBTOTAL					**$268,100**
INCIDENTALS					**$80,600**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$26,900	$26,900
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$21,500	$21,500
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$32,200	$32,200
PROPERTY ACQUISITION					**$26,900**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$26,900	$26,900
DESIGN & CONSTRUCTION SERVICES					**$53,800**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$40,300	$40,300
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$13,500	$13,500
CONTINGENCY					**$80,500**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$80,500	$80,500
TOTAL CONSTRUCTION COST					**$509,900**

Notes:

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SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	6	0.9	Temporarily impacts access to residential areas along Hickory St, Pamela Cr, and Munn Ave through 4 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.5/10**		

Kimley»Horn

SOUTH CAROLINA OFFICE OF RESILIENCE

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pamela Cr.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**12/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #2 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$37,100**
	MOBILIZATION	1	LS	$5,000	$5,000
	CONSTRUCTION SURVEYING	1	LS	$8,000	$8,000
	PIPE REMOVAL	570	LF	$30	$17,100
	REMOVE EXISTING STRUCTURE	7	EA	$1,000	$7,000
DRAINAGE					**$231,550**
	24" CONC. PIPE	70	LF	$145	$10,150
	30" CONC. PIPE	60	LF	$175	$10,500
	36" CONC. PIPE	230	LF	$215	$49,450
	42" CONC. PIPE	185	LF	$290	$53,650
	DRAINAGE STRUCTURES	6	EA	$3,000	$18,000
	DITCH EXCAVATION	2,245	LF	$40	$89,800
CONSTRUCTION SUBTOTAL					**$268,700**
INCIDENTALS					**$80,700**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$26,900	$26,900
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$21,500	$21,500
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$32,300	$32,300
PROPERTY ACQUISITION					**$26,900**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$26,900	$26,900
DESIGN & CONSTRUCTION SERVICES					**$53,900**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$40,400	$40,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$13,500	$13,500
CONTINGENCY					**$80,700**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$80,700	$80,700
TOTAL CONSTRUCTION COST					**$510,900**

Notes:

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SOUTH CAROLINA OFFICE OF RESILIENCE

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 3

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	8	0.8	It is anticipated that moderate effort will be required for impacting wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access along Pamela Cr through 2 crossings.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	9	3.15	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	8	2.4	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**8.4/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #2 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pamela Cr.
FLOOD MITIGATION		**80%**			**2.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**4.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**12.9/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #2 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$31,150**
	MOBILIZATION	1	LS	$4,000	$4,000
	CONSTRUCTION SURVEYING	1	LS	$5,000	$5,000
	PIPE REMOVAL	505	LF	$30	$15,150
	REMOVE EXISTING STRUCTURE	7	EA	$1,000	$7,000
DRAINAGE					**$129,500**
	30" CONC. PIPE	32	LF	$175	$5,600
	36" CONC. PIPE	230	LF	$215	$49,450
	42" CONC. PIPE	185	LF	$290	$53,650
	DRAINAGE STRUCTURES	4	EA	$3,000	$12,000
	DITCH EXCAVATION	220	LF	$40	$8,800
CONSTRUCTION SUBTOTAL					**$160,700**
INCIDENTALS					**$48,300**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$16,100	$16,100
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$12,900	$12,900
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$19,300	$19,300
PROPERTY ACQUISITION					**$16,100**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$16,100	$16,100
DESIGN & CONSTRUCTION SERVICES					**$32,300**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$24,200	$24,200
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$8,100	$8,100
CONTINGENCY					**$48,300**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$48,300	$48,300
TOTAL CONSTRUCTION COST					**$305,700**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #3 - ALT 1

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	6	0.9	Temporarily impacts access to residential areas along E 1st Ave through 3 crossings and obstructs driveway access along E 1st Ave.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	8	2.4	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.8/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #3 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**1**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Flooding alleviated in forested area north of E 2nd Ave.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**1/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**8.8/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #3 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$12,200**
	MOBILIZATION	1	LS	$2,000	$2,000
	CONSTRUCTION SURVEYING	1	LS	$3,000	$3,000
	PIPE REMOVAL	240	LF	$30	$7,200
DRAINAGE					**$79,300**
	15" CONC. PIPE	200	LF	$135	$27,000
	18" CONC. PIPE	45	LF	$140	$6,300
	DITCH EXCAVATION	1,150	LF	$40	$46,000
CONSTRUCTION SUBTOTAL					**$91,500**
INCIDENTALS					**$27,600**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$9,200	$9,200
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$7,400	$7,400
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$11,000	$11,000
PROPERTY ACQUISITION					**$9,200**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT	10%	% OF CN SUBTOTAL	$9,200	$9,200
DESIGN & CONSTRUCTION SERVICES					**$18,400**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$13,800	$13,800
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$4,600	$4,600
CONTINGENCY					**$27,500**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$27,500	$27,500
TOTAL CONSTRUCTION COST					**$174,200**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #3 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	9	0.9	Improvements will require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	4	0.6	Temporarily impacts access to residential areas along the majority of E 1st Ave and part of Pine St.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	9	0.9	Temporarily impacts access along River Rd through one crossing.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	7	2.45	Involves extensive new pipe installation which is a potential maintenance item. Pipes involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	10	3	Work to be containted in right-of-way.
TOTAL PSC SCORE		**100%**				**7.85/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #3 - ALT 2

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**1**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Flooding alleviated in forested area north of E 2nd Ave.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**1/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**8.85/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #3 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$27,200**
	MOBILIZATION	1	LS	$8,000	$8,000
	CONSTRUCTION SURVEYING	1	LS	$12,000	$12,000
	PIPE REMOVAL	240	LF	$30	$7,200
DRAINAGE					**$388,350**
	15" CONC. PIPE	200	LF	$135	$27,000
	18" CONC. PIPE	1,110	LF	$140	$155,400
	24" CONC. PIPE	1,110	LF	$145	$160,950
	DRAINAGE STRUCTURES	15	EA	$3,000	$45,000
CONSTRUCTION SUBTOTAL					**$415,600**
INCIDENTALS					**$124,800**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$41,600	$41,600
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$33,300	$33,300
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$49,900	$49,900
PROPERTY ACQUISITION					**$41,600**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$41,600	$41,600
DESIGN & CONSTRUCTION SERVICES					**$83,200**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$62,400	$62,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$20,800	$20,800
CONTINGENCY					**$124,700**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$124,700	$124,700
TOTAL CONSTRUCTION COST					**$789,900**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access to residential properites along E 6th Ave.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	6	0.6	Temporarily impacts access to/through lumber processing facility located along E 6th Ave and non-residential section of N Walnut St for extended period of time with large box culvert installation and other non-residential sections of E 6th Ave and N Walnut St through smaller crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	5	1.75	Involves extensive box culvert installation and open channel improvements. Box culverts and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.2/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**0**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	0	0	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**0/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**6.2/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #4 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$201,750**
	MOBILIZATION	1	LS	$48,000	$48,000
	CONSTRUCTION SURVEYING	1	LS	$71,000	$71,000
	PIPE REMOVAL	2,225	LF	$30	$66,750
	REMOVE EXISTING STRUCTURE	16	EA	$1,000	$16,000
DRAINAGE					**$2,279,600**
	15" CONC. PIPE	20	LF	$135	$2,700
	24" CONC. PIPE	115	LF	$145	$16,675
	30" CONC. PIPE	535	LF	$175	$93,625
	42" CONC. PIPE	80	LF	$290	$23,200
	54" CONC. PIPE	150	LF	$420	$63,000
	7' x 7' CONC. BOX CULVERT	1,330	LF	$1,500	$1,995,000
	DRAINAGE STRUCTURES	16	EA	$3,000	$48,000
	DITCH EXCAVATION	935	LF	$40	$37,400
CONSTRUCTION SUBTOTAL					**$2,481,400**
INCIDENTALS					**$744,600**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$248,200	$248,200
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$198,600	$198,600
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$297,800	$297,800
PROPERTY ACQUISITION					**$248,200**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$248,200	$248,200
DESIGN & CONSTRUCTION SERVICES					**$496,400**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$372,300	$372,300
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$124,100	$124,100
CONTINGENCY					**$744,500**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$744,500	$744,500
TOTAL CONSTRUCTION COST					**$4,715,100**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 2

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access to residential properites along E 6th Ave.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	4	0.4	Temporarily impacts access to/through lumber processing facility located along E 6th Ave and addtitional length of E 6th Ave from N Walnut St to S Pamplico Hightway for extended period of time with large box culvert system installation other non-residential sections of E 6th Ave and N Walnut St through smaller crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	6	2.1	Involves extensive box culvert installation. Box culverts and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.35/10**		

Kimley»Horn

SOUTH CAROLINA OFFICE OF RESILIENCE

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**0**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	0	0	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**0/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**6.35/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #4 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$230,600**
	MOBILIZATION	1	LS	$65,000	$65,000
	CONSTRUCTION SURVEYING	1	LS	$97,000	$97,000
	PIPE REMOVAL	1,820	LF	$30	$54,600
	REMOVE EXISTING STRUCTURE	14	EA	$1,000	$14,000
DRAINAGE					**$3,065,075**
	15" CONC. PIPE	20	LF	$135	$2,700
	24" CONC. PIPE	115	LF	$145	$16,675
	30" CONC. PIPE	500	LF	$175	$87,500
	42" CONC. PIPE	130	LF	$290	$37,700
	54" CONC. PIPE	150	LF	$420	$63,000
	7' x 7' CONC. BOX CULVERT	1,865	LF	$1,500	$2,797,500
	DRAINAGE STRUCTURES	20	EA	$3,000	$60,000
CONSTRUCTION SUBTOTAL					**$3,295,700**
INCIDENTALS					**$988,800**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$329,600	$329,600
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$263,700	$263,700
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$395,500	$395,500
PROPERTY ACQUISITION					**$329,600**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$329,600	$329,600
DESIGN & CONSTRUCTION SERVICES					**$659,200**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$494,400	$494,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$164,800	$164,800
CONTINGENCY					**$988,800**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$988,800	$988,800
TOTAL CONSTRUCTION COST					**$6,262,100**

Notes:

The Consultant has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Consultant at this time and represent only the Consultant's judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	8	1.2	Temporarily impacts access to residential properites along E 6th Ave.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	5	0.5	Temporarily impacts access to/through lumber processing facility located along E 6th Ave and addtitional length of E 6th Ave from N Walnut St to S Pamplico Hightway for extended period of time with large box culvert system installation other non-residential sections of E 6th Ave and N Walnut St through smaller crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	7	2.5	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.95/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**0**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	0	0	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**0/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**6.95/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #4 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$133,600**
	MOBILIZATION	1	LS	$26,000	$26,000
	CONSTRUCTION SURVEYING	1	LS	$39,000	$39,000
	PIPE REMOVAL	1,820	LF	$30	$54,600
	REMOVE EXISTING STRUCTURE	14	EA	$1,000	$14,000
DRAINAGE					**$1,200,075**
	15" CONC. PIPE	20	LF	$135	$2,700
	24" CONC. PIPE	115	LF	$145	$16,675
	30" CONC. PIPE	500	LF	$175	$87,500
	42" CONC. PIPE	130	LF	$290	$37,700
	54" CONC. PIPE	150	LF	$420	$63,000
	60" CONC. PIPE	1,865	LF	$500	$932,500
	DRAINAGE STRUCTURES	20	EA	$3,000	$60,000
CONSTRUCTION SUBTOTAL					**$1,333,700**
INCIDENTALS					**$400,200**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$133,400	$133,400
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$106,700	$106,700
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$160,100	$160,100
PROPERTY ACQUISITION					**$133,400**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$133,400	$133,400
DESIGN & CONSTRUCTION SERVICES					**$266,800**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$200,100	$200,100
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$66,700	$66,700
CONTINGENCY					**$400,200**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$400,200	$400,200
TOTAL CONSTRUCTION COST					**$2,534,300**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 1

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	9	0.9	Improvements will require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	5	0.75	Temporarily impacts access to residential areas along Pine St, E 3rd Ave, and S Oak St through crossings/driveway pipe installation and channel grading.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	8	0.8	Temporarily impacts access along non-residential sections of E Main St and E 5th Ave through 3 crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	5	1.5	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.75/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pine St.
FLOOD MITIGATION		**80%**			**7.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	10	5	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**9.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**16.25/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #5 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$44,300**
	MOBILIZATION	1	LS	$7,000	$7,000
	CONSTRUCTION SURVEYING	1	LS	$10,000	$10,000
	PIPE REMOVAL	910	LF	$30	$27,300
DRAINAGE					**$298,250**
	15" CONC. PIPE	145	LF	$135	$19,575
	18" CONC. PIPE	215	LF	$140	$30,100
	24" CONC. PIPE	65	LF	$145	$9,425
	30" CONC. PIPE	40	LF	$175	$7,000
	42" CONC. PIPE	140	LF	$290	$40,600
	48" CONC. PIPE	145	LF	$310	$44,950
	54" CONC. PIPE	170	LF	$420	$71,400
	DITCH EXCAVATION	1,880	LF	$40	$75,200
CONSTRUCTION SUBTOTAL					**$342,600**
INCIDENTALS					**$103,000**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$34,300	$34,300
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$27,500	$27,500
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$41,200	$41,200
PROPERTY ACQUISITION					**$34,300**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$34,300	$34,300
DESIGN & CONSTRUCTION SERVICES					**$68,600**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$51,400	$51,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$17,200	$17,200
CONTINGENCY					**$102,800**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$102,800	$102,800
TOTAL CONSTRUCTION COST					**$651,300**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	9	0.9	Improvements will require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	5	0.75	Temporarily impacts access to residential areas along Pine St, E 3rd Ave, and S Oak St through crossings/driveway pipe installation and channel grading.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	8	0.8	Temporarily impacts access along non-residential sections of E Main St and E 5th Ave through 3 crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	7	2.45	Involves pipe and open channel improvements and significant new pipe installation along E 3rd Ave, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	5	1.5	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.4/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pine St.
FLOOD MITIGATION		**80%**			**7.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	10	5	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**9.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**15.9/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #5 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$52,300**
	MOBILIZATION	1	LS	$10,000	$10,000
	CONSTRUCTION SURVEYING	1	LS	$15,000	$15,000
	PIPE REMOVAL	910	LF	$30	$27,300
DRAINAGE					**$455,850**
	15" CONC. PIPE	145	LF	$135	$19,575
	18" CONC. PIPE	215	LF	$140	$30,100
	24" CONC. PIPE	65	LF	$145	$9,425
	30" CONC. PIPE	40	LF	$175	$7,000
	42" CONC. PIPE	140	LF	$290	$40,600
	48" CONC. PIPE	665	LF	$310	$206,150
	54" CONC. PIPE	170	LF	$420	$71,400
	DRAINAGE STRUCTURES	5	EA	$3,000	$15,000
	DITCH EXCAVATION	1,415	LF	$40	$56,600
CONSTRUCTION SUBTOTAL					**$508,200**
INCIDENTALS					**$152,600**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$50,900	$50,900
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$40,700	$40,700
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$61,000	$61,000
PROPERTY ACQUISITION					**$50,900**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$50,900	$50,900
DESIGN & CONSTRUCTION SERVICES					**$101,800**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$76,300	$76,300
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$25,500	$25,500
CONTINGENCY					**$152,500**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$152,500	$152,500
TOTAL CONSTRUCTION COST					**$966,000**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	9	0.9	Improvements will require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	5	0.75	Temporarily impacts access to residential areas along Pine St, E 3rd Ave, and S Oak St through crossings/driveway pipe installation and channel grading.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	7	0.7	Temporarily impacts access along non-residential sections of E Main St and E 5th Ave through 3 crossings and River Rd through 1 crossing.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	7	2.45	Involves pipe and open channel improvements and significant new pipe installation along S Pine St, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	5	1.5	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**6.3/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #5 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pine St.
FLOOD MITIGATION		**80%**			**8**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	10	5	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	10	0.5	Alleviates flooding within downstream Priority Area #4 due to bypass line redirecting drainage down S Pine St towards River Rd.
TOTAL PPC SCORE		**100%**			**10/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**16.3/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #5 - ALT 3

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$54,300**
	MOBILIZATION	1	LS	$11,000	$11,000
	CONSTRUCTION SURVEYING	1	LS	$16,000	$16,000
	PIPE REMOVAL	910	LF	$30	$27,300
DRAINAGE					**$483,675**
	15" CONC. PIPE	145	LF	$135	$19,575
	18" CONC. PIPE	620	LF	$140	$86,800
	24" CONC. PIPE	145	LF	$145	$21,025
	30" CONC. PIPE	515	LF	$175	$90,125
	36" CONC. PIPE	40	LF	$215	$8,600
	42" CONC. PIPE	550	LF	$290	$159,500
	48" CONC. PIPE	95	LF	$310	$29,450
	DRAINAGE STRUCTURES	10	EA	$3,000	$30,000
	DITCH EXCAVATION	965	LF	$40	$38,600
CONSTRUCTION SUBTOTAL					**$538,000**
INCIDENTALS					**$161,500**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$53,800	$53,800
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$43,100	$43,100
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$64,600	$64,600
PROPERTY ACQUISITION					**$53,800**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$53,800	$53,800
DESIGN & CONSTRUCTION SERVICES					**$107,600**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$80,700	$80,700
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$26,900	$26,900
CONTINGENCY					**$161,400**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$161,400	$161,400
TOTAL CONSTRUCTION COST					**$1,022,300**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4&5 - ALT 4

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting intermittent stream/stream buffers and wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	4	0.6	Temporarily impacts access to residential areas along majority of Pine St, E 3rd Ave, S Oak St, and E 6th Ave through crossings/driveway pipe/closed system installation and channel grading.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	5	0.5	Temporarily impacts access to/through lumber processing facility located along E 6th Ave and non-residential section of N Walnut St for extended period of time with large box culvert installation and other non-residential sections of E Main St, E 5th Ave, E 6th Ave and N Walnut St through smaller crossings.
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	5	1.75	Involves extensive box culvert/pipes installation and open channel improvements. Box culverts/pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	3	0.9	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**4.45/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #4&5 - ALT 4

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves four documented flood reports along Pine St.
FLOOD MITIGATION		**80%**			**7.5**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	10	5	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	10	1.5	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**9.5/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**13.95/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

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OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #4 & 5 - ALT 4

SOUTH CAROLINA OFFICE OF RESILIENCE

	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$259,800**
	MOBILIZATION	1	LS	$61,000	$61,000
	CONSTRUCTION SURVEYING	1	LS	$91,000	$91,000
	PIPE REMOVAL	3,060	LF	$30	$91,800
	REMOVE EXISTING STRUCTURE	16	EA	$1,000	$16,000
DRAINAGE					**$2,916,975**
	15" CONC. PIPE	165	LF	$135	$22,275
	18" CONC. PIPE	185	LF	$140	$25,900
	24" CONC. PIPE	285	LF	$145	$41,325
	30" CONC. PIPE	575	LF	$175	$100,625
	36" CONC. PIPE	40	LF	$215	$8,600
	42" CONC. PIPE	140	LF	$290	$40,600
	48" CONC. PIPE	95	LF	$310	$29,450
	54" CONC. PIPE	1,000	LF	$420	$420,000
	60" CONC. PIPE	65	LF	$500	$32,500
	66" CONC. PIPE	50	LF	$50	$2,500
	7' x 7' CONC. BOX CULVERT	1,330	LF	$1,500	$1,995,000
	DRAINAGE STRUCTURES	20	EA	$3,000	$60,000
	DITCH EXCAVATION	3,455	LF	$40	$138,200
CONSTRUCTION SUBTOTAL					**$3,176,800**
INCIDENTALS					**$953,200**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$317,700	$317,700
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$254,200	$254,200
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$381,300	$381,300
PROPERTY ACQUISITION					**$317,700**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$317,700	$317,700
DESIGN & CONSTRUCTION SERVICES					**$635,500**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$476,600	$476,600
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$158,900	$158,900
CONTINGENCY					**$953,100**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$953,100	$953,100
TOTAL CONSTRUCTION COST					**$6,036,300**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #6 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access to residential areas along Vivian Rd and Quail Dr.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.65/10**		

Kimley»Horn

SOUTH CAROLINA OFFICE OF RESILIENCE

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #6 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**0**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	0	0	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**0/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**7.65/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #6 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$40,600**
	MOBILIZATION	1	LS	$6,000	$6,000
	CONSTRUCTION SURVEYING	1	LS	$9,000	$9,000
	PIPE REMOVAL	620	LF	$30	$18,600
	REMOVE EXISTING STRUCTURE	7	EA	$1,000	$7,000
DRAINAGE					**$241,650**
	42" CONC. PIPE	525	LF	$290	$152,250
	48" CONC. PIPE	100	LF	$310	$31,000
	DRAINAGE STRUCTURES	7	EA	$3,000	$21,000
	DITCH EXCAVATION	935	LF	$40	$37,400
CONSTRUCTION SUBTOTAL					**$282,300**
INCIDENTALS					**$84,800**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$28,300	$28,300
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$22,600	$22,600
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$33,900	$33,900
PROPERTY ACQUISITION					**$28,300**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$28,300	$28,300
DESIGN & CONSTRUCTION SERVICES					**$56,600**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$42,400	$42,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$14,200	$14,200
CONTINGENCY					**$84,700**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$84,700	$84,700
TOTAL CONSTRUCTION COST					**$536,700**

Notes:

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SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #6 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	6	0.9	Temporarily impacts access to residential areas along Vivian Rd, Quail Dr, and Heidi Dr.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.5/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #6 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**0**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	0	0	
FLOOD MITIGATION		**80%**			**0**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	0	0	
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**0/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**7.5/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #6 - ALT 2

SOUTH CAROLINA OFFICE OF RESILIENCE

.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$50,600**
	MOBILIZATION	1	LS	$10,000	$10,000
	CONSTRUCTION SURVEYING	1	LS	$15,000	$15,000
	PIPE REMOVAL	620	LF	$30	$18,600
	REMOVE EXISTING STRUCTURE	7	EA	$1,000	$7,000
DRAINAGE					**$451,550**
	42" CONC. PIPE	1,355	LF	$290	$392,950
	DRAINAGE STRUCTURES	10	EA	$3,000	$30,000
	DITCH EXCAVATION	715	LF	$40	$28,600
CONSTRUCTION SUBTOTAL					**$502,200**
INCIDENTALS					**$150,800**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$50,300	$50,300
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$40,200	$40,200
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$60,300	$60,300
PROPERTY ACQUISITION					**$50,300**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$50,300	$50,300
DESIGN & CONSTRUCTION SERVICES					**$100,600**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$75,400	$75,400
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$25,200	$25,200
CONTINGENCY					**$150,700**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$150,700	$150,700
TOTAL CONSTRUCTION COST					**$954,600**

Notes:

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*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PRELIMINARY SELECTION CRITERIA (PSC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #7 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS			SCORE	W*S	NOTES
			0-3	4-7	8-10			
Permitting and Compliance	Extent of environmental state/federal regulatory approvals that are required and from how many different agencies	10%	*Involves many and/or complex environmental state/federal agency approvals.*	*Involves some and/or less complex environmental state/federal agency approvals.*	*Involves few to no environmental state/federal agency approvals.*	7	0.7	It is anticipated that moderate effort will be required for impacting wetlands. Improvements will also require SCDOT encroachment permit.
Residential Community Disruption	Adverse impacts to citizens' access to their neighborhood or community assets -- includes the nature (temporary or permanent) and duration of impacts.	15%	*Causes permanent impacts to access of neighborhood or community facility (0 points).*	*Causes temporary impacts to access of neighborhood or community facility and/or has longer construction duration.*	*Does not inhibit access to neighborhood or community facility and/or has short construction duration.*	7	1.05	Temporarily impacts access to residential areas along Forest Acres Dr.
Non-Residential Community Disruption	Adverse impacts to non-residential streets as well as access to a place of business or other non-residential facility -- includes the nature (temporary or permanent) and duration of impacts.	10%	*Causes permanent impacts to non-residential streets, access of business, or non-residential facility (0 points).*	*Causes temporary impacts to non- residential streets, access of business, or non-residential facility and/or has longer construction duration.*	*Does not impact non-residential streets nor inhibits access of business or non- residential facility and/or has short construction duration.*	10	1	
Operation and Maintenance	O&M requirements of the alternative to maintain successful operation and extend longevity of the proposed infrastructure.	35%	*Involves significant maintenance procedures and/or difficult access.*		*Involves typical maintenance procedures and easy access.*	8	2.8	Involves pipe and open channel improvements, which are potential maintenance items. Pipes and open channels involve typical maintenance and easy access.
Land Acquisition/ Available Easements	The acquisition of land that is required for implementation of the alternative -- may require standard easements for infrastructure or entire parcels and could include public or private property.	30%	*Requires extensive acquisition (entire parcels) from private land owners.*	*Requires some land acquisition (easements) from public and/or private land owners.*	*Requires minimal land acquisition from publicly/privately owned land.*	7	2.1	Acquisistion from multiple private land owners for drainage easements.
TOTAL PSC SCORE		**100%**				**7.65/10**		

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

PROJECT PERFORMANCE CRITERIA (PPC)
PAMPLICO STORMWATER MASTER PLAN
PRIORITY AREA #7 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

CRITERIA	DEFINITION	WEIGHT	SCORING SCALE DESCRIPTIONS	SCORE	W*S	NOTES
CIVIC IMPACT		**20%**			**2**	
Flood Reports	Documented citizen complaints addressed by project. Reports occurring only during a major storm event (i.e. hurricane and/or nor'easter) will not be considered.	20%	*If the project resolves flood complaints, it receives 10 points. If the project does not resolve any flood reports, it receives 0 points.*	10	2	Resolves one documented Forest Acres Dr. Other documented report involves flooding attributed to Big Swamp Branch floodplain.
FLOOD MITIGATION		**80%**			**1**	
Non-Structural	Reduction in non-structural flooding experienced on private property. This will include flooding experienced by agricultural fields.	10%	*If the project is anticipated to reduce known non-structural flooding, it receives 10 points. If the project does not reduce non-structural flooding, it receives 0 points.*	10	1	Resolves flooding reported in backyard by properties along Forest Acres Dr.
Habitable Structure	Reduction in flooding experienced by habitable structures.	50%	*If the project is anticipated to reduce known flooding experienced by habitable structures, it receives 10 points. If the project does not reduce flooding experienced by habitable structures, it receives 0 points.*	0	0	
Streets	Reduction in flooding experienced by public streets.	15%	*If the project reduces known street flooding, it receives 10 points. If the project does not reduce street flooding, it receives 0 points.*	0	0	
Additional Benefits	Projects that provide improvements to upstream or downstream established Priority Areas.	5%	*If the project improves an upstream or downstream Priority Area, it receives 10 points. If the project does not improve any upstream or downstream Priority Area, it receives 0 points.*	0	0	
TOTAL PPC SCORE		**100%**			**3/10**	

TOTAL COMBINED SCORE (PSC + PPC)	**=**	**10.65/20**

SOUTH CAROLINA OFFICE OF RESILIENCE

Kimley»Horn

OPINION OF PROBABLE CONSTRUCTION COST (OPCC)

PAMPLICO STORMWATER MASTER PLAN

PRIORITY AREA #7 - ALT 1

SOUTH CAROLINA OFFICE OF RESILIENCE

.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
GENERAL					**$16,950**
	MOBILIZATION	1	LS	$2,000	$2,000
	CONSTRUCTION SURVEYING	1	LS	$3,000	$3,000
	PIPE REMOVAL	265	LF	$30	$7,950
	REMOVE EXISTING STRUCTURE	4	EA	$1,000	$4,000
DRAINAGE					**$68,350**
	18" CONC. PIPE	40	LF	$140	$5,600
	24" CONC. PIPE	230	LF	$145	$33,350
	DRAINAGE STRUCTURES	4	EA	$3,000	$12,000
	DITCH EXCAVATION	435	LF	$40	$17,400
CONSTRUCTION SUBTOTAL					**$85,300**
INCIDENTALS					**$25,800**
	EROSION AND SEDIMENT CONTROL	10%	% OF CN SUBTOTAL	$8,600	$8,600
	TRAFFIC CONTROL	8%	% OF CN SUBTOTAL	$6,900	$6,900
	UTILITY RELOCATION	12%	% OF CN SUBTOTAL	$10,300	$10,300
PROPERTY ACQUISITION					**$8,600**
	DRAINAGE/TEMPORARY CONSTRUCTION EASEMENT*	10%	% OF CN SUBTOTAL	$8,600	$8,600
DESIGN & CONSTRUCTION SERVICES					**$17,100**
	ENGINEERING DESIGN	15%	% OF CN SUBTOTAL	$12,800	$12,800
	CONSTRUCTION MANAGEMENT	5%	% OF CN SUBTOTAL	$4,300	$4,300
CONTINGENCY					**$25,600**
	CONTINGENCY	30%	% OF CN SUBTOTAL	$25,600	$25,600
TOTAL CONSTRUCTION COST					**$162,400**

Notes:

The Consultant has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Consultant at this time and represent only the Consultant's judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

*Cost of real estate acquisition assumes majority of required easements will be donated by the property owner.

ATTACHMENT

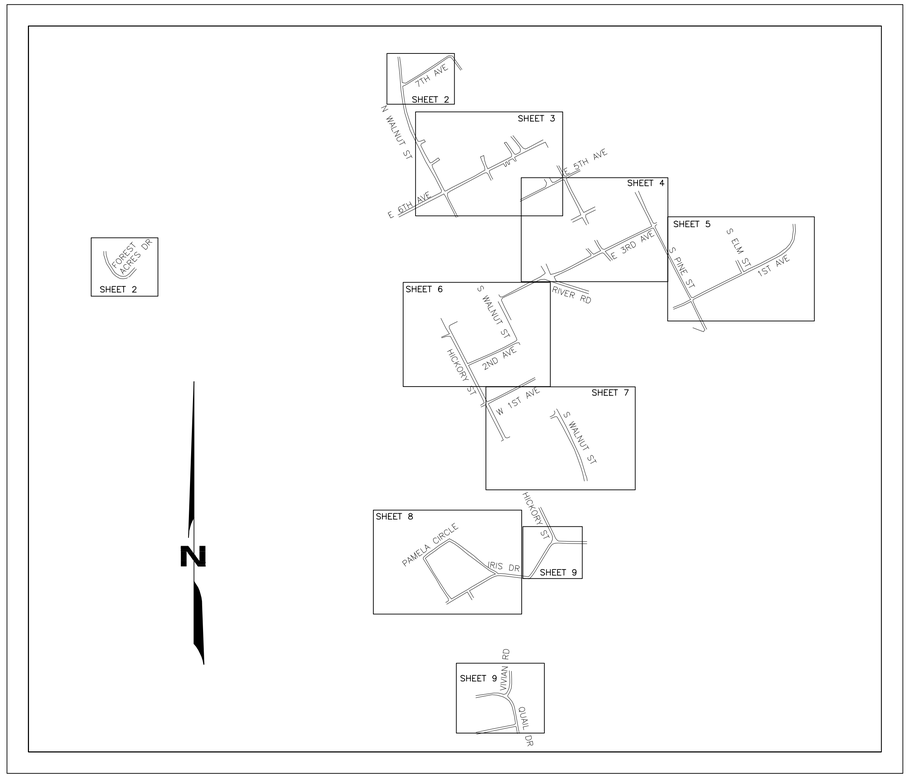
EXISTING CONDITIONS SURVEY

Kimley»Horn

SOUTH CAROLINA OFFICE OF RESILIENCE

STORM SURVEY PREPARED FOR KIMLEY-HORN PAMPLICO, SC

SITE MAP
NOT TO SCALE



LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

SURVEY NOTES

1. THIS MAP PREPARED FOR KIMLEY-HORN, REPRESENTS A SPECIFIC SCOPE OF SERVICES, THERE MAY BE OTHER MATTERS OF TITLE, BURDENING, OR FAVORING PARCELS THAT ARE SHOWN HEREON.
2. THE FIELD MEASUREMENTS FOR THE ESTABLISHMENT OF PROJECT CONTROL AND COLLECTION OF DATA POINTS IS BASED ON USING THE VRS NETWORK WITH A ROOT MEAN SQUARE ERROR OF 0.07 FEET AT A 95% CONFIDENCE INTERVAL.
3. THE HORIZONTAL DATUM FOR THIS PROJECT IS THE NORTH AMERICAN DATUM OF 1983, 2011 (NAD83 (2011), SOUTH CAROLINA.
4. UNITS OF MEASURE FOR THIS SURVEY ARE IN INTERNATIONAL FEET.
5. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR.
6. LAND SURVEYORS, AS LICENSED PROFESSIONALS BY THE STATE OF SOUTH CAROLINA, ARE NOT EXPERTS IN THE IDENTIFICATION OF WETLANDS, CEMETERIES OR BURIAL GROUNDS, ITEMS OF HISTORICAL OR CULTURAL SIGNIFICANCE; THEREFORE EXCEPTION IS TAKEN TO ANY SUCH MATTERS WHICH MAY EXIST ON THIS PROPERTY.
7. FIELD SURVEY DATA COLLECTED FEBRUARY 2022 THROUGH MAY 2022.
8. SURVEY IS VALID ONLY IF PRINT HAS ORIGINAL SEAL & SIGNATURE OF SURVEYOR.
9. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED IN THE TITLE BLOCK. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON, PERSONS, OR ENTITY WITH THE EXPRESS CERTIFICATION BY THE SURVEYOR NAMING SAID PERSON, PERSONS OR ENTITY.
10. NO EVIDENCE OF CEMETERIES, GRAVE SITES, OR BURIAL GROUNDS WERE DISCLOSED IN THE DOCUMENTS PROVIDED TO OR OBTAINED BY THE SURVEYOR OR OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
11. ANY ROADS SHOWN IN MAP ARE BASED FROM AERIAL VIEW WITHOUT ANY STATEMENT ON ACCURACY. SAID ROADS ARE NOT OF SURVEY QUALITY
12. THIS MAP IS NOT TO BE USED IN DETERMINING ANY BOUNDARY OR RIGHT OF WAY

To Kimley-Horn:

I hereby state that to the best of my professional knowledge, information, and belief, the survey shown herein was made in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the requirements for a Class B survey as specified therein;

James D Willson

Digitally signed by James D Willson
DN: C=US, E=den.willson@sam.biz, CN=James D Willson
Reason: I am the author of this document
Date: 2022.05.23 11:12:44-04'00'

JAMES D. WILLSON DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 17230 – STATE OF SOUTH CAROLINA

SHEET 1 OF 9

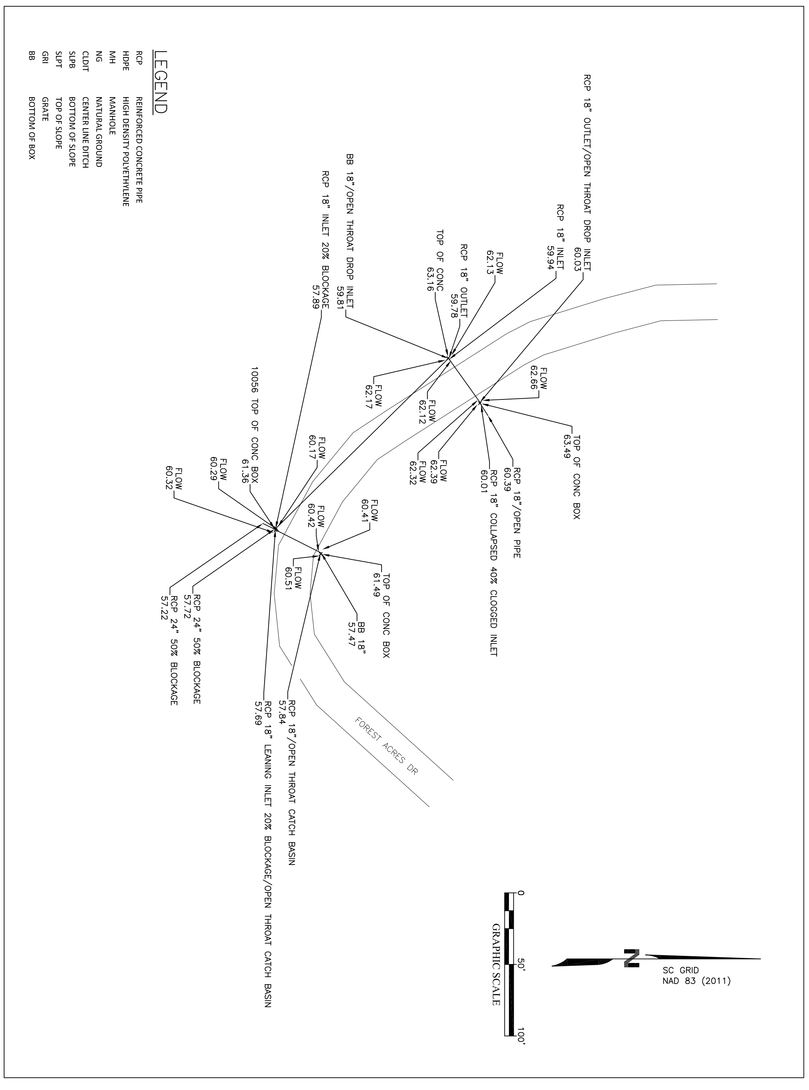
STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

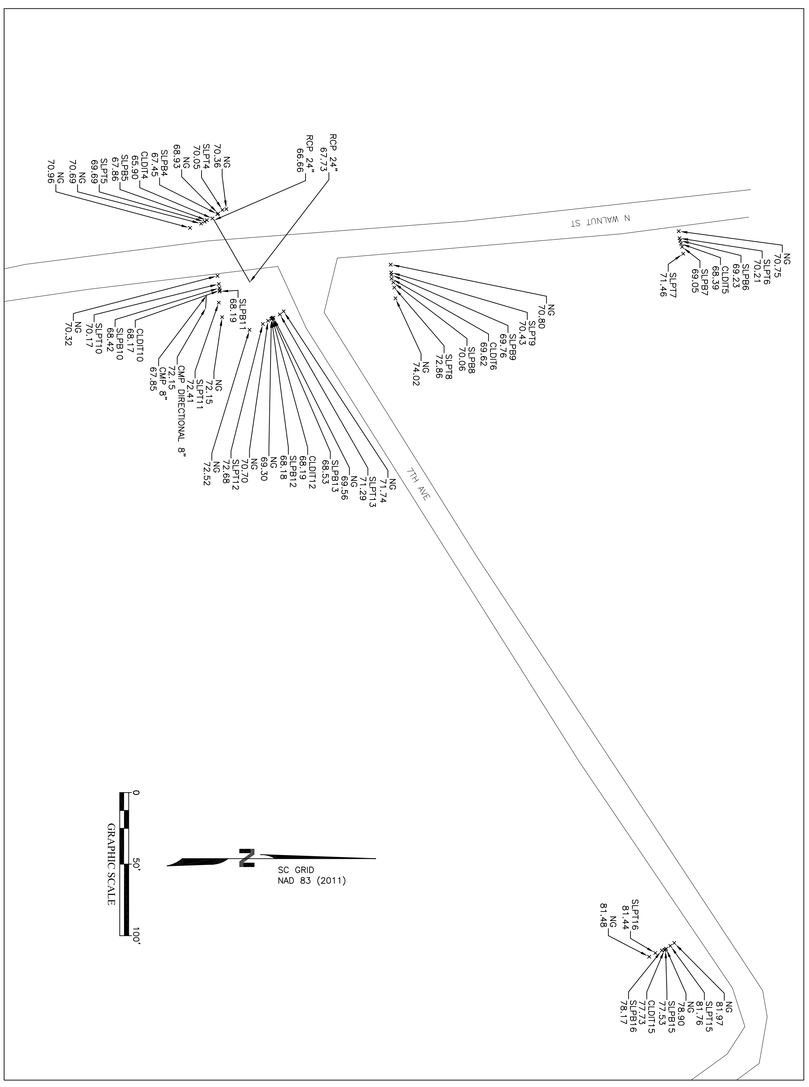
PROJECT: PAMPLICO
JOB NUMBER: 022068650
DATE: 5/23/2022
SCALE: 1"=50'
SURVEYOR: JAMES D. WILLSON
TECHNICIAN: CHRISTIAN D. CARSWELL
PARTYCHIEF: DAVID ROGERS

6904 N. Main Street
Suite 102
Columbia, SC 29203
Ofc: 803.764.1902
email: info@sam.biz

SAM TM

PATH:\\SAMINC\ATL\PROJECTS\1022068650\100\SURVEY\04SURVEYDATA\C3D PAMPLICO\PAMPLICO 5-19.DWG





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email: info@sam.biz

PROJECT: PAMPLICO

JOB NUMBER:	1022068650
DATE:	5-20-2022
SCALE:	1"=50'
SURVEYOR:	JAMES D. WILLSON
TECHNICIAN:	CHRISTIAN D. CARSWELL
PARTYCHIEF:	DAVID ROGERS

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

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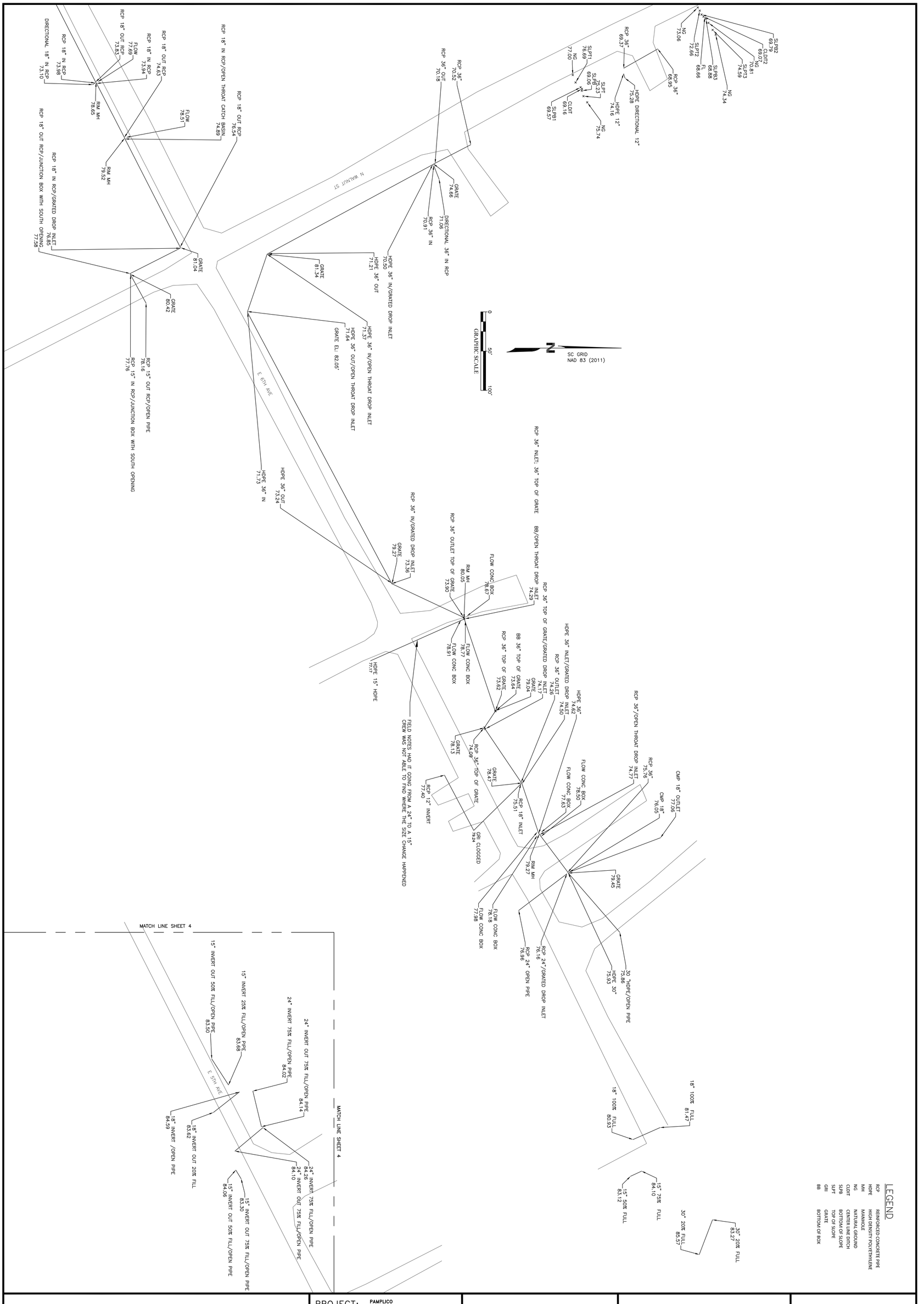

LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

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PROJECT: PAMPLICO

JOB NUMBER:	1022068650
DATE:	5-20-2022
SCALE:	1"=50'
SURVEYOR:	JAMES D. WILLSON
TECHNICIAN:	CHRISTIAN D. CARSWELL
PARTYCHIEF:	DAVID ROGERS

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

SC GRID
NAD 83 (2011)

N

0 50' 100'
GRAPHIC SCALE

24" INVERT OUT 75% FILL/OPEN PIPE
84.14

24" INVERT 75% FILL/OPEN PIPE
84.26

24" INVERT 75% FILL/OPEN PIPE
84.02

24" INVERT OUT 75% FILL/OPEN PIPE
84.10

15" INVERT 25% FILL/OPEN PIPE
83.68

15" INVERT OUT 75% FILL/OPEN PIPE
83.30

15" INVERT OUT 50% FILL/OPEN PIPE
84.06

15" INVERT OUT 50% FILL/OPEN PIPE
83.50

E 5TH AVE

18" INVERT OUT 20% FILL
83.62

18" INVERT /OPEN PIPE
84.59

MATCHLINE SHEET 3

MATCHLINE SHEET 3

DI FULL OF DEBRIS
82.84

MH FULL OF DEBRIS/OPEN THROAT CATCH BASIN
84.01

E MAIN ST

S OAK ST

INV OUT/OPEN PIPE
83.16

INV IN 50% FILL/OPEN PIPE
82.28

MH FULL OF DEBRIS? NO ACCESS/OPEN THROAT CATCH BASIN
83.99

DI FULL OF DEBRIS
83.04

INV IN 100% DEBRIS/OPEN PIPE
82.24

INV OUT 100% DEBRIS/OPEN PIPE
83.12

INV OUT 70% FILL/OPEN PIPE
82.75

INV IN 70% FILL/OPEN PIPE
83.47

INV OUT 70%FILL
83.11

INV IN 70% FILL/OPEN PIPE
82.72

UNABLE TO DETERMINE CONNECTIONS BASED ON CONDITIONS IN FIELD

INV OUT/OPEN PIPE
82.49

INV OUT/OPEN PIPE
82.77

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.44

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.61

INV IN/OPEN PIPE
83.11

E 3RD AVE

RCP 15 "/OPEN PIPE
82.33

RCP 15" 90% BLOCKAGE/OPEN PIPE
81.77

RCP 18" RUNS INTO HDPE?/OPEN PIPE
80.87

HDP 15" SUBMERGED/OPEN PIPE
80.49

RCP 15" 90% BLOCKAGE/OPEN PIPE
81.23

RCP 15" 90% BLOCKAGE/OPEN PIPE
81.24

RCP 15" 90% BLOCKAGE/OPEN PIPE
81.28

RCP 15" INVERT
80.63

RCP 15" INVERT
81.19

RCP 15" SUBMERGED/OPEN PIPE
80.65

RCP 15" 70% SUBMERGED/OPEN PIPE
80.91

RCP 15" 70% SUBMERGED/OPEN PIPE
80.86

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.95

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.65

RCP 15" 100% BLOCKAGE/OPEN PIPE
81.05

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.42

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.55

RCP 15" 100% BLOCKAGE/OPEN PIPE
80.45

RCP 15" 100% FILL/OPEN PIPE
80.29

RCP 15" 100% FILL/OPEN PIPE
80.50

S PINE ST

MATCHLINE SHEET 5

SHEET 4 OF 9

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

PROJECT: PAMPLICO
JOB NUMBER: 1022068650
DATE: 2/25/2022
SCALE: 1"=50'
SURVEYOR: JAMES D. WILLSON
TECHNICIAN: CHRISTIAN D. CARSWELL
PARTYCHIEF: DAVID ROGERS

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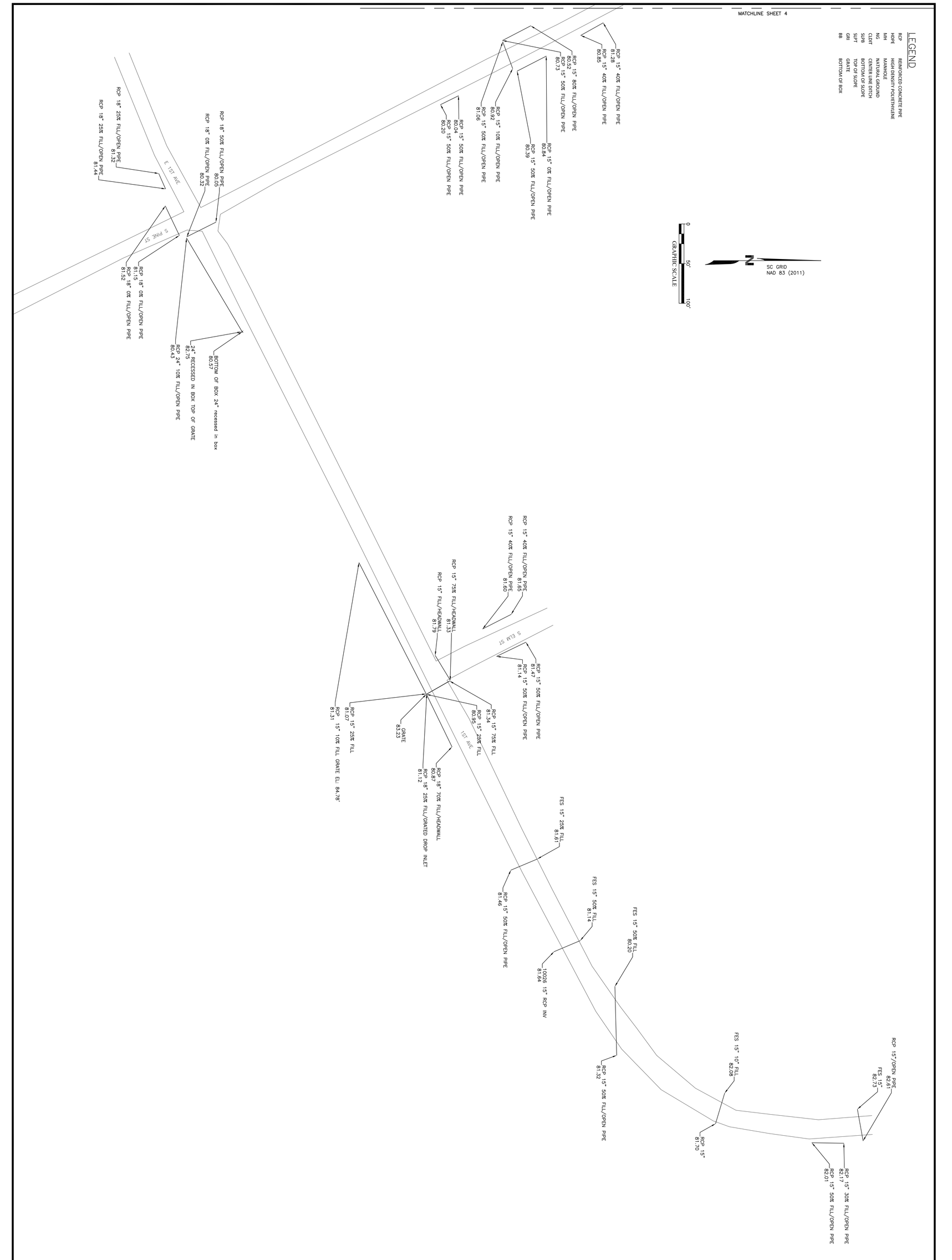

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PROJECT: PAMPLICO

JOB NUMBER:	1022068650
DATE:	5-20-2022
SCALE:	1"=50'
SURVEYOR:	JAMES D. WILLSON
TECHNICIAN:	CHRISTIAN D. CARSWELL
PARTYCHIEF:	DAVID ROGERS

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

MATCHLINE SHEET 5

E 3RD AVE

GS 79.38
TOP OF BANK 78.67
TOE OF BANK 75.60
BOTTOM OF DITCH 75.13
TOE OF BANK 75.72
TOP OF BANK 78.38
GS GROUND SHOT 78.56

GS 78.70
TOP OF BANK 77.46
TOE OF BANK 74.70

DITCH BOTTOM 73.40
TOE OF BANK 74.74
TOP OF BANK 76.25
GS 77.02

S WALNUT ST

SC GRID NAD 83 (2011)

N

0 50' 100'
GRAPHIC SCALE

NG 69.93
SLPT 69.51
SLPB 66.56
CLDIT 65.60

SLPB 66.01
SLPT 70.18
NG 70.73

DIRECTIONAL NO VISIBLE DI/CB 70.77
RCP 15" 20% BLOCKAGE/OPEN PIPE 65.37
RCP 42" 15% BLOCKAGE/OPEN PIPE 64.14
RCP 42"/OPEN PIPE 62.80
RCP 42" 63.47

RCP 18" 66.10
RCP 18" BOTTOM OF BOX RECESSED IN BOX 66.68
CBS/GRATED CATCH BASIN 69.50
RCP 18"/OPEN PIPE 64.53
RCP 18" 65.99
BOTTOM OF BOX OPEN CB 67.87
RIM MH OPEN CB 70.14
RIM MH 69.52
10023 GRATE 69.28
RCP 18"/GRATED DROP INLET 65.97
RCP 18"/OPEN PIPE 65.62

NG 66.54
SLPT 66.11
SLPB TOP OF WATER 65.64
NG SUBMERGED 64.62
NG SUBMERGED 63.84
NG SUBMERGED 63.83
SLPB TOP OF WATER 65.40
SLPT 65.86
NG 65.63

NG 66.47
NG 64.44
NG 65.76

RCP POSSIBLE 36" SUBMERGED 64.06

NG 65.80
SLPT 65.52
SLPB 58.78
CLDIT 58.34
SLPB 58.81
SLPT 63.06
NG 63.43

CMP 12" 63.53
CMP 18"/OPEN PIPE 61.77
RCP 36"/OPEN PIPE 57.89
CMP 12"/OPEN PIPE 61.92
CMP 12" 62.28

HICKORY ST

SLPB 70.32
SLPT 70.80
SLPB 70.63
CLDIT 70.23
SLPB 70.72
CLDIT 69.79
NG 70.35
SLPB 70.74
SLPT 71.65
NG 72.38

SLPT 72.84
NG 73.92

2ND AVE

MATCHLINE SHEET 7

SHEET 6 OF 9

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
Fflorence County, SC

PROJECT: PAMPLICO
JOB NUMBER: 1022068650
DATE: 5-20-2022
SCALE: 1"=50'
SURVEYOR: JAMES D. WILLSON
TECHNICIAN: CHRISTIAN D. CARSWELL
PARTYCHIEF: DAVID ROGERS

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MATCHLINE SHEET 6

W 1ST AVE

RCP 24"
70.50

RCP 24"
71.89

SLPB
74.23

CLDIT
73.32

SLPB
73.91

SLPT
75.10

NG
76.39

NG
76.57

SLPT
75.56

RCP 24"/OPEN PIPE
74.62

HDPE 24"/OPEN PIPE
74.34

S WALNUT ST

APPROXIMATE LOCATION
FIELD DID NOT FIND A VISABLE DI OR CB

NG
75.60

SLPT
80.68

SLPB
77.32

CLDIT
76.97

SLPB
77.38

SLPT
83.33

NG
82.76

DS CENTER
74.68

CENTER OF GRATE
81.42

GRATE FLOW
81.34

PIPE HDP 24"
76.89

24" DIRECTIONAL
81.75

PIPE HDP 24"/GRATED CATCH BASIN
76.94

GRATE
81.24

RCP 15"/GRATED DROP INLET
81.52

RCP 15"/GRATED CATCH BASIN
79.01

CENTER OF GRATE
81.01

GRATE FLOW
80.82

RCP 15"
78.61

PIPE HDP 24"/GRATED CATCH BASIN
77.30

CENTER OF GRATE
80.89

GRATE FLOW
80.83

PIPE HDP 24"
77.57

PIPE HDP 24"/GRATED CATCH BASIN
77.60

CENTER OF GRATE
80.73

RCP 24" 20% BLOCKAGE
77.31

RCP 15"/GRATED CATCH BASIN
77.70

RCP POSSIBLE 15" RECESSED NO EL
77.20

RCP 15"/MANHOLE
78.66

RCP 12"
78.63

12" RCP DIRECTIONAL
81.68

MH
81.68

HDPE 12" INLET DRY
79.23

PIPE 12" HDP
80.66

RCP 15"
77.85

RCP 15"
78.42

GRATE DI
82.16

RCP 15"/GRATED DROP INLET
78.27

RCP 15"/GRATED DROP INLET
78.10

GRATE FLOW
80.98

CENTER OF GRATE
81.15

GRATE
82.17

RCP 12"
79.84

12" RCP DIRECTIONAL
83.09

RCP 24"
80.52

RCP 15"
78.74

RCP 15" OUTLET DRY
78.96

EP
83.17

NG
83.22

SLPT
82.95

SLPB
81.01

NG
81.04

NG
81.04

NG
81.19

SLPB
81.29

SLPT
82.79

NG
82.79

SC GRID
NAD 83 (2011)

N

0 50' 100'
GRAPHIC SCALE

LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

SHEET 7 OF 9

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

PROJECT: PAMPLICO
JOB NUMBER: 022068650
DATE: 12-2-2022
SCALE: 1"=50'
SURVEYOR: JAMES D. WILSON
TECHNICIAN: CHRISTIAN D. CARSWELL
PARTYCHIEF: DAVID ROGERS

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Suite 102
Columbia, SC 29203
Ofc: 803.754.1902
email: info@sam.biz

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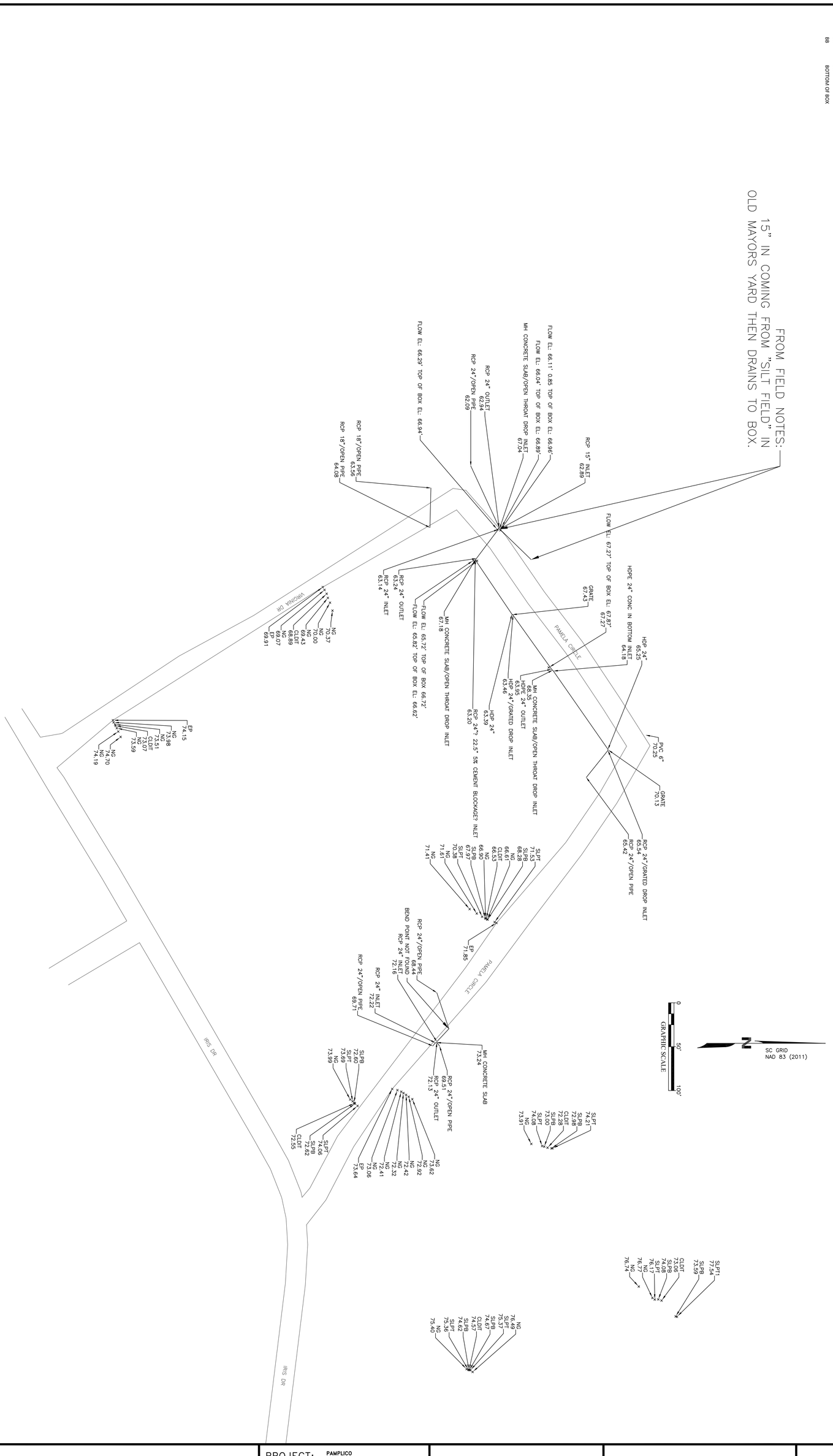

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email: info@sam.biz

PROJECT: PAMPLICO

JOB NUMBER:	1022068650
DATE:	5-20-2022
SCALE:	1"=50'
SURVEYOR:	JAMES D. WILLSON
TECHNICIAN:	CHRISTIAN D. CARSWELL
PARTYCHIEF:	DAVID ROGERS

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

LEGEND

RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
NG	NATURAL GROUND
CLDIT	CENTER LINE DITCH
SLPB	BOTTOM OF SLOPE
SLPT	TOP OF SLOPE
GRI	GRATE
BB	BOTTOM OF BOX

SHEET 9 OF 9

STORM SURVEY
PREPARED FOR
KIMLEY-HORN
FLORENCE COUNTY, SC

PROJECT: PAMPLICO
JOB NUMBER: 1022068650
DATE: 5/24/2022
SCALE: 1"=50'
SURVEYOR: JAMES D. WILLSON
TECHNICIAN: CHRISTIAN D. CARSWELL
PARTYCHIEF: DAVID ROGERS

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