STORMWATER MANAGEMENT

Protecting Our Water Quality

With a Planned Infrastructure Investment

OVERALL STORMWATER MANAGEMENT STRATEGY

- Stormwater Management essentially focuses on 2 issues:
  - Quantity – how to deal with flooding events after significant rainstorms.
  - Quality – improving the cleanliness of the stormwater, & ultimately the Ocean & ICW.

- Progress over the last 20 years:
  - Quantity – primary focus of the last 20 years – the regular neighborhood flooding of 20 years ago has been virtually eliminated. Some problem areas.
  - Quality – taken ~20 pipes off the beach, installed 4 ocean outfalls, per DHEC significant progress has been made in specific areas.

- Strategy for the next 20 Years: A Needs Based Approach
  - Quantity – Continued focus on the remaining flood-prone areas.
  - Quality – broader strategies to include additional outfalls treating upland sources, & adoption of other best management practices (consultant study underway).

STORMWATER MANAGEMENT - CAPITAL IMPROVEMENT PLAN

FY 2018 Projects

- Maintenance of ocean outfalls
  - 53rd Avenue N
  - 14th Avenue N
  - 25th Avenue N
- Yaupon Drainage Improvement Project
  - Design Phase – Complete
  - Land Acquisition
  - Construction of Phase I and II
- **5th Avenue N Drainage Improvements**
- Watershed-Based Stormwater Master Plan – **Pilot Study and Citywide Gap Analysis**
- Emergency Stormwater Utility Repairs
- Hazard Mitigation Grant Program (HMGP)
  - **Hwy 501/Balsam St Drainage Improvements** – Under Review by FEMA
  - 75% Federal/25% Local with local cost-share request of SCDOT (12.5%) and City of Myrtle Beach (12.5%)

FORWARD… FOCUSED

- Comprehensive Planning
  - Address water conveyance and water quality issues in our community
  - Potential to strengthen our Community Rating System (CRS) Class
  - Contribute towards Hazard Mitigation Planning & Grant Opportunities
  - Two-Phase Project Development Standard (Plan/Design → Construct)
  - Integrate incentives and standards for implementing Low Impact Development (LID) /Green Infrastructure practices into our Code of Ordinances

WATERSHED-BASED STORMWATER MASTER PLAN

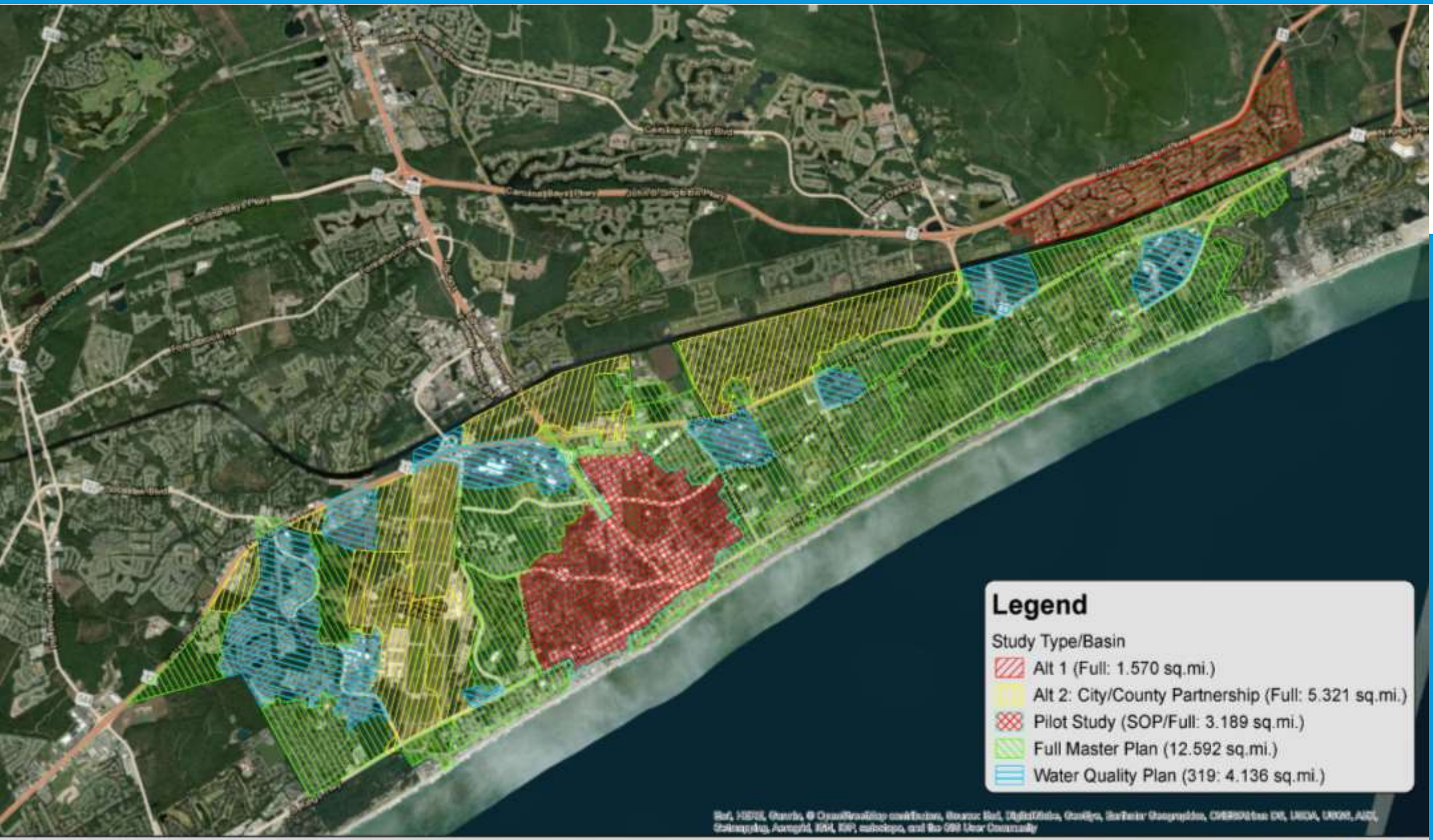
OUR ROADMAP: WATERSHED-BASED STORMWATER MASTER PLAN

Our City has completed a significant amount of infrastructure projects in recent years and is ready to develop a roadmap for future proactive stormwater management, for both water quantity and quality.

Key Objectives of the Master Plan

- Evaluate the conveyance capacity of our existing drainage infrastructure
- Preserve, improve, and protect existing stormwater flow paths
- Develop a citywide water quality model
- Identify and prioritize capital projects
- Integrate relevant portions of CRS, NPDES, and EPA 319 programs/protocols into the master plan

STUDY AREAS



WK DICKSON
community infrastructure consultants

1 inch = 5,000 feet

Exhibit 1: Stormwater Master Plan: Study Areas & Types

City of Myrtle Beach, SC

July 11, 2018

PILOT STUDY AREA APPROACH: WITHERS BASIN

To optimize the balance between cost and value the approach is to first select a pilot watershed to determine what is needed, what is wanted, and what can be afforded.

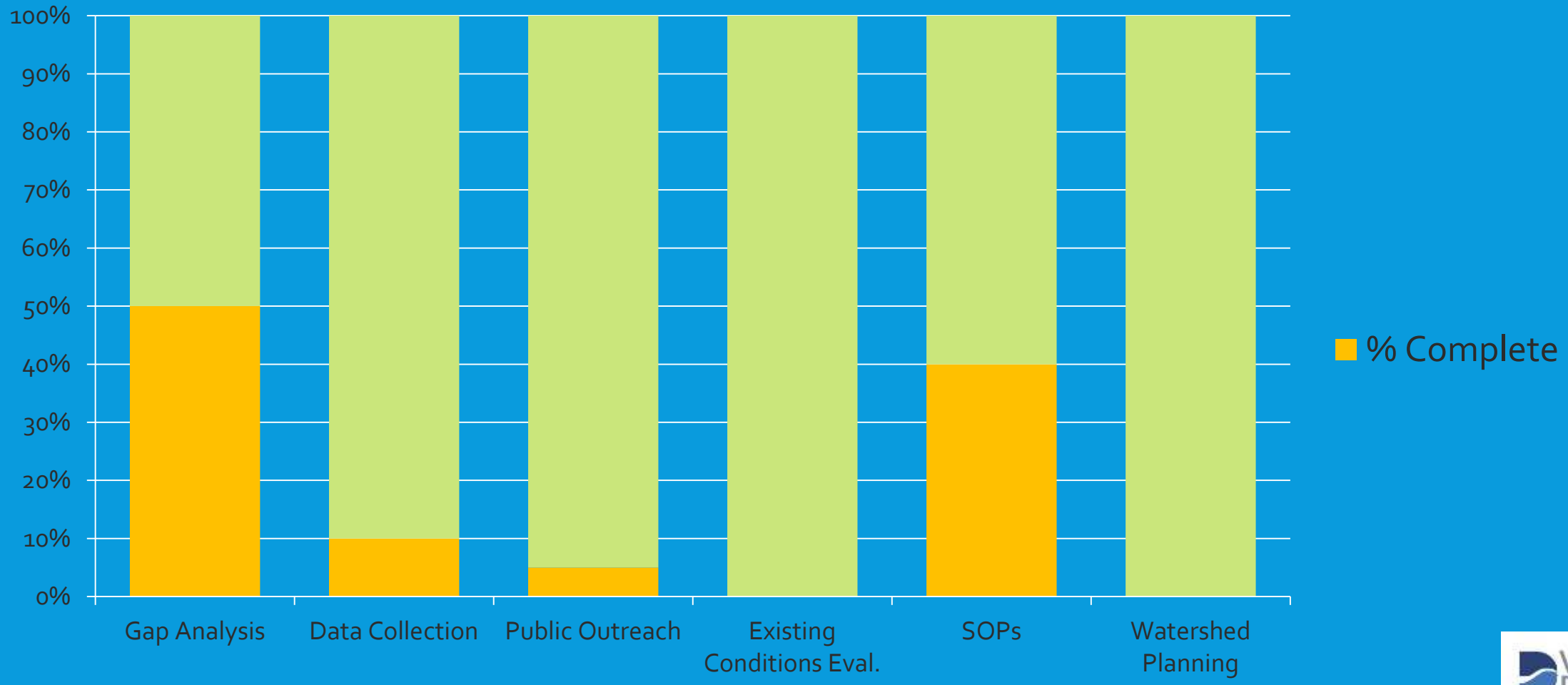
- Withers Basin Pilot Study Area
  - Mixture of open/closed drainage systems
  - Varying land use, development patterns, and infrastructure
- Develop standard operating procedures (SOPs) for completing watershed plans
  - Provides consistency throughout the citywide planning process
  - Creates the opportunity for key stakeholders to provide input into the planning process

PILOT STUDY AREA APPROACH: WITHERS BASIN

The successful watershed plan will merge project specific goals and challenges, community input, and regulatory compliance.

- Develop a Scalable Public Involvement Plan within the Pilot Study Area
  - Build awareness of the project and educational opportunities for stormwater management
  - Solicit feedback from residents and business owners in areas of flooding, erosion, or pollutant concerns
  - Host a series of public forums, stakeholder, and neighborhood meetings
- Modeling Solutions
  - Flood Hazard Mitigation Alternatives
  - Water Quality Retrofit Alternatives

PILOT STUDY AREA: PROGRESS



PUBLIC OUTREACH

Soliciting Feedback

- Identifies localized concerns in watershed
- Model validation
- Onsite resident interviews
- Public forums
  - November 15, 2018
  - Location & Time (TBD)

The City of Myrtle Beach would like your input and assistance with Stormwater Master Planning. Our purpose is to obtain information about drainage problems and stormwater quality concerns. Please take a few minutes to check the appropriate answer and write comments where needed.

Return This Comment Form To:

Myrtle Beach Stormwater Master Plan
c/o WK Dickson
720 Corporate Center Drive
Raleigh, NC 27607

Or complete survey on-line at
http://myrtlebeach.wkdickson.com

To E-Mail or with Questions:
Janet Curry @ (843) 918-2000
jcurry@cityofmyrtlebeach.com

Name: _____

Property Address: _____

_____

Phone #: _____

1. How long have you owned or lived at this location? _____

2. Have you had any erosion on your property associated with a stream or drainage ditch?
   ❑ Yes ❑ No

3. If yes, which of the following are impacted or threatened by erosion
   ❑ Street ❑ Yard
   ❑ Building/House ❑ Fence
   ❑ Other _____

4. Have you ever experienced flooding on your property during a (non-Hurricane) storm?
   ❑ Yes ❑ No

If yes, check all situations that apply and note the frequency by choosing the appropriate letter from legend.

Legend
- **A** Never experienced
- **B** Less than once per year
- **C** Once per year
- **D** 2-3 times per year
- **E** More than 3 times per year
- **F** Every time it rains

❑ Water in storage building _____
❑ Water on air condition units _____
❑ Water in crawl space _____
❑ Water up to, or in the living space _____
❑ Yard flooding from stream/ditch _____
❑ Yard flooding from street runoff _____
❑ Yard flooding from adjacent property _____

5. If flooding occurred, please list the approximate date(s), location, and indicate depth of flooding.
   Date _____
   Location _____
   Depth of water _____

   Date _____
   Location _____
   Depth of water _____
   (add additional occurrences on back of sheet)

6. Have you ever noticed flooded streets in your neighborhood?
   ❑ Yes ❑ No

7. If you noticed flooded streets, please provide the approximate date(s), location, and depth of flooding.
   Date _____
   Location _____
   Depth of water _____
   Date _____
   Location _____
   Depth of water _____
   (add additional occurrences on back of sheet)

8. Are there any other problems with the storm drainage system (e.g. pipes, drains, streams, or ditches) on your property or in your neighborhood?
   ❑ Yes ❑ No

   If yes, check all situations that apply.
   ❑ Corroded pipes
   ❑ Sink holes
   ❑ Pipe blockage
   ❑ Stream or ditch blockage
   ❑ Drains in need of repair
   ❑ Other

9. Do you have any photographs, videotape, or other records of flooding problems that occurred on your property or in your neighborhood?
   ❑ No ❑ Photos ❑ Video
   ❑ Written ❑ Other

10. Has flooding increased on your property due to the filling of lots adjacent to, or near, your property?
    ❑ Yes ❑ No

11. Do you know that homeowner's insurance does not cover flood damage?
    ❑ Yes ❑ No

12. Do you have flood insurance?
    ❑ Yes ❑ No

Other comments including stormwater quality concerns:

_____

_____

_____

_____

CAPITAL PLANNING: STRATEGIC APPROACH FOR PROJECT IMPLEMENTATION

Preparing for future flood hazard mitigation and water quality retrofit alternative project needs within our community.

- Establish a Stormwater Master Plan Project Reserve
  - Dedicated capital investment account that accrues over time
  - Provides available funds to launch a series of projects once the citywide watershed-based plan is complete
- Establish a Land Acquisition Bank Account
  - Dedicated capital investment account that accrues over time
  - Provides available funds to strategically acquire property in phases to advance projects forward

OVERALL GOAL: SUSTAINABLE SOLUTIONS TO IMPROVE WATER QUALITY

- Watershed Planning – Evaluate the existing stormwater system and determine what impairments exist within our watersheds
  - Modeling- Topography, rainfall data, soils, land use conditions and published pollutant loading rates, hydraulic information obtained during field analysis, review asset inventory data, review water quality monitoring data, aerial photos, and more…
- Pollution Control – Identify ways to reduce pollutants (bacteria, nutrients, and sediment, etc.) through implementation of best management practices.
  - Water quality retrofit projects such as vegetative conveyance and implementing stormwater runoff treatment practices such as infiltration, filtration, constructed basins, storage and reuse, and manufactured devices prior to discharging to nearby waterbodies.
- Stormwater Control Measures – Identify flooding problem areas and recommend structural modifications to open channels or pipelines to manage peak flows.
  - Enhance water quality while managing stormwater volume by considering potential use of stream stabilization, stream floodplain benching, constructed wetlands, and stormwater ponds. Supporting Low Impact Development/Green Infrastructure for new and redevelopment.


THANK
YOU