

Meeting Myrtle Beach's Goals for Stormwater Improvements and Bacterial Removal

PLANNING WITH A PURPOSE

Stormwater management in Myrtle Beach requires a complex balancing act among multiple competing objectives

- Economic development and tourism
- Natural resource preservation
- Water quality improvement
- Flood control



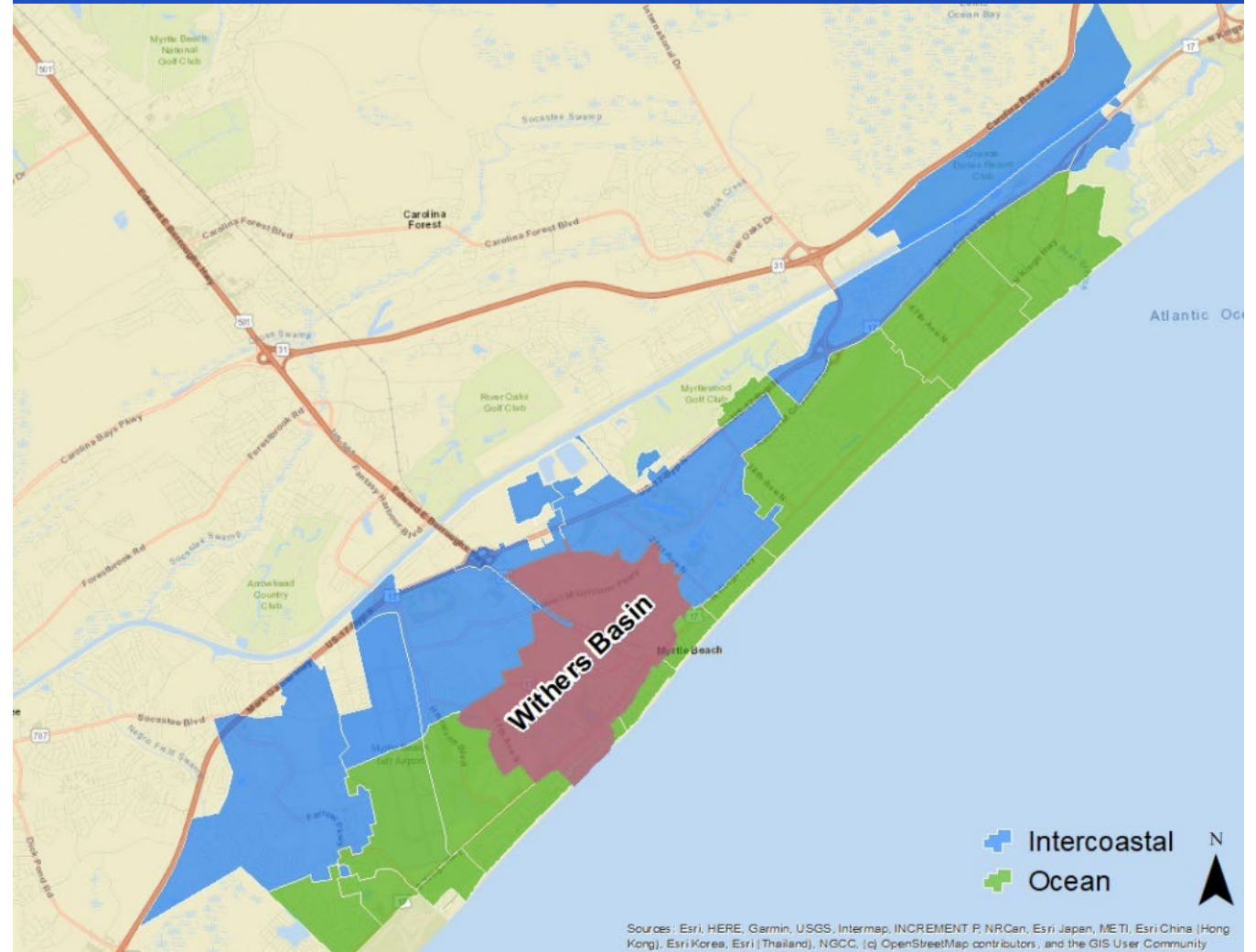
Master Plan Goals

- **Create a watershed-based planning document**
- Evaluate existing conveyance system - modeling
- Recommend potential projects to mitigate flooding and improve water quality



Citywide Stormwater Masterplan

- Total area: 24 sq mi
- Identifies opportunities for:
 - Improving water quality
 - Reducing flood risks
 - Incorporating resiliency
- Completed in 2023



City Drainage Infrastructure

4 Swashes

4 Deep Ocean Outfalls

40 Beachfront Pipes

11,000 Drainage Structures

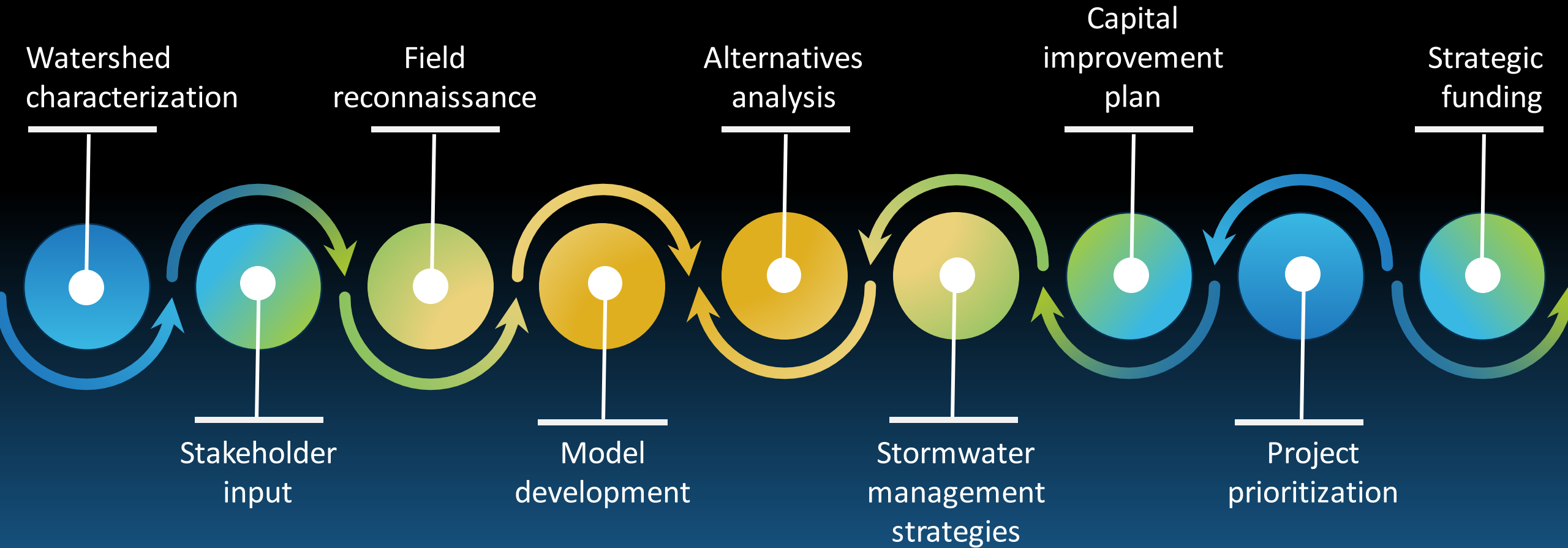
188 miles of Drainage Pipe

68 miles of Ditches/Open Channels



Cane Patch Swash at 68th Ave N

Master Planning Process



Identified Concerns



Beach outfalls (surface)



Pipes under structures



Localized flooding

Identified Concerns



Sediment deposits

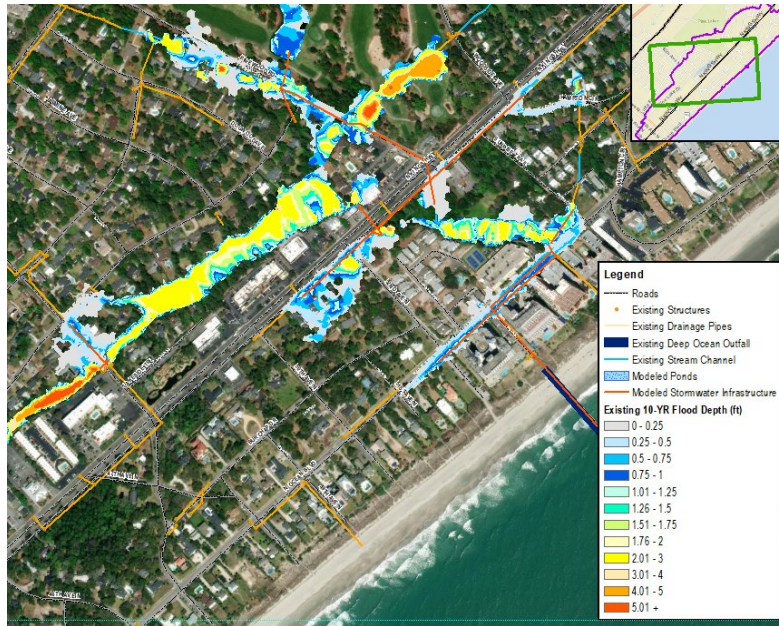


Limited vegetative buffers
and direct connections



Animal waste
(pets and waterfowl)

Modeling Integration



- 2D- PCSWMM and Watershed Treatment Model (WTM)
- Evaluate a suite of options for implementation to provide water quality treatment and reduce flood risk
- Intersect risk areas to develop integrative stormwater solutions

Stormwater Management Solutions



Non-structural
strategies



Infrastructure
upgrades



Integration with
redevelopment



Infiltration



Nature-based solutions



Ocean outfalls

Non-Structural Strategies

- Pet waste clean-up
- Enhance stream and pond buffers
- Modify design guidelines for ponds and wetlands
- Maintenance of ponds, wetlands, and infrastructure



Redevelopment Opportunities

Design integration

- Incorporate green infrastructure with other projects
- Arts and innovation district



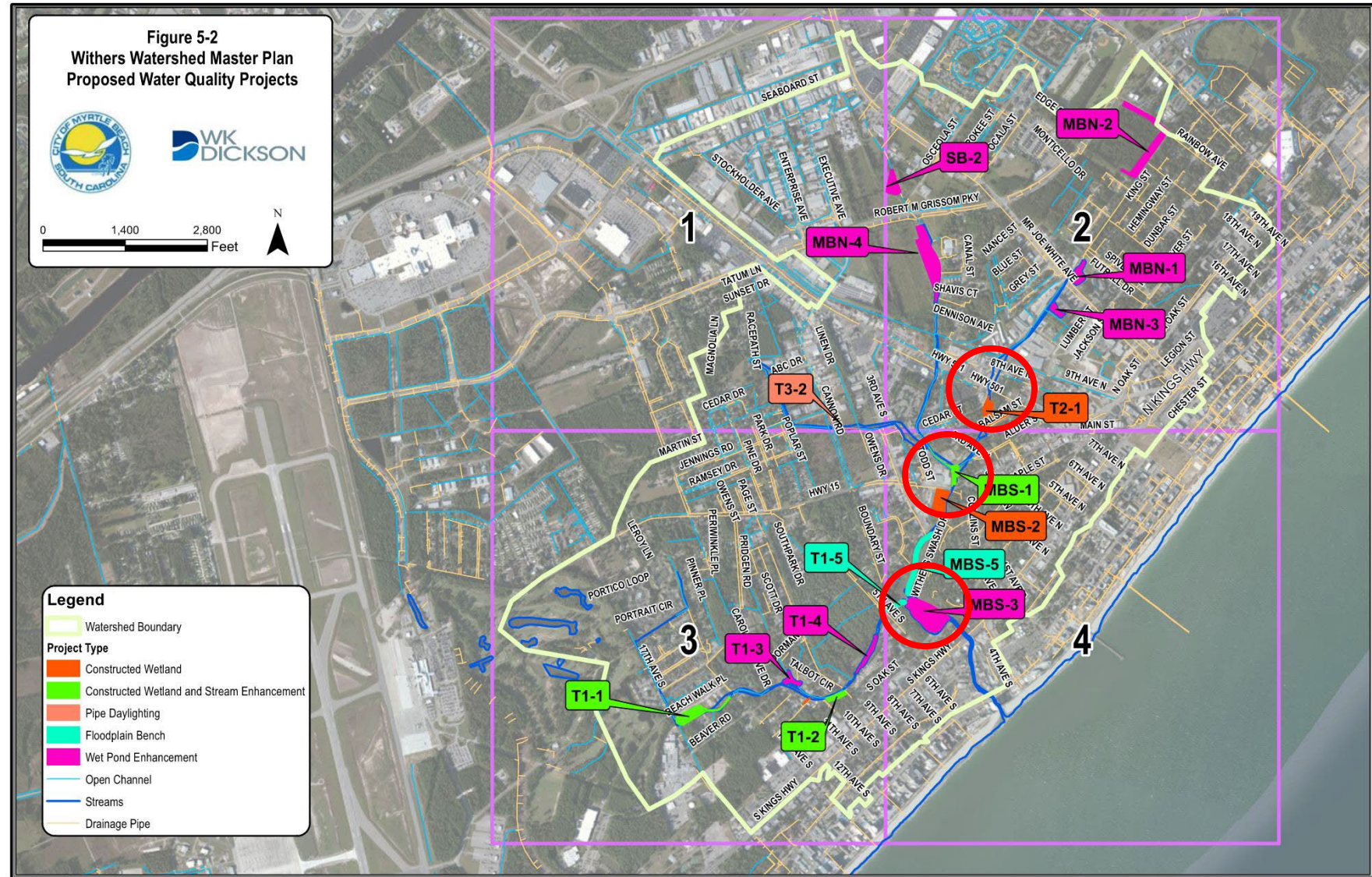
Nature-Based Solutions

- Enhancement of existing facilities to improve resiliency and increase water quality treatment effectiveness
- Sediment removal
- Wetland enhancement
- Floodplain protection



Treatment Train Impacts

- Cumulative benefits
- Varied removal mechanisms
 - Infiltration
 - Sedimentation
 - Plant uptake
 - UV Radiation
- Improved resiliency



Moving Towards Implementation

Interconnected Ponds at
Robert Shelley Park



In Construction

Broadway
Wetland



In Construction

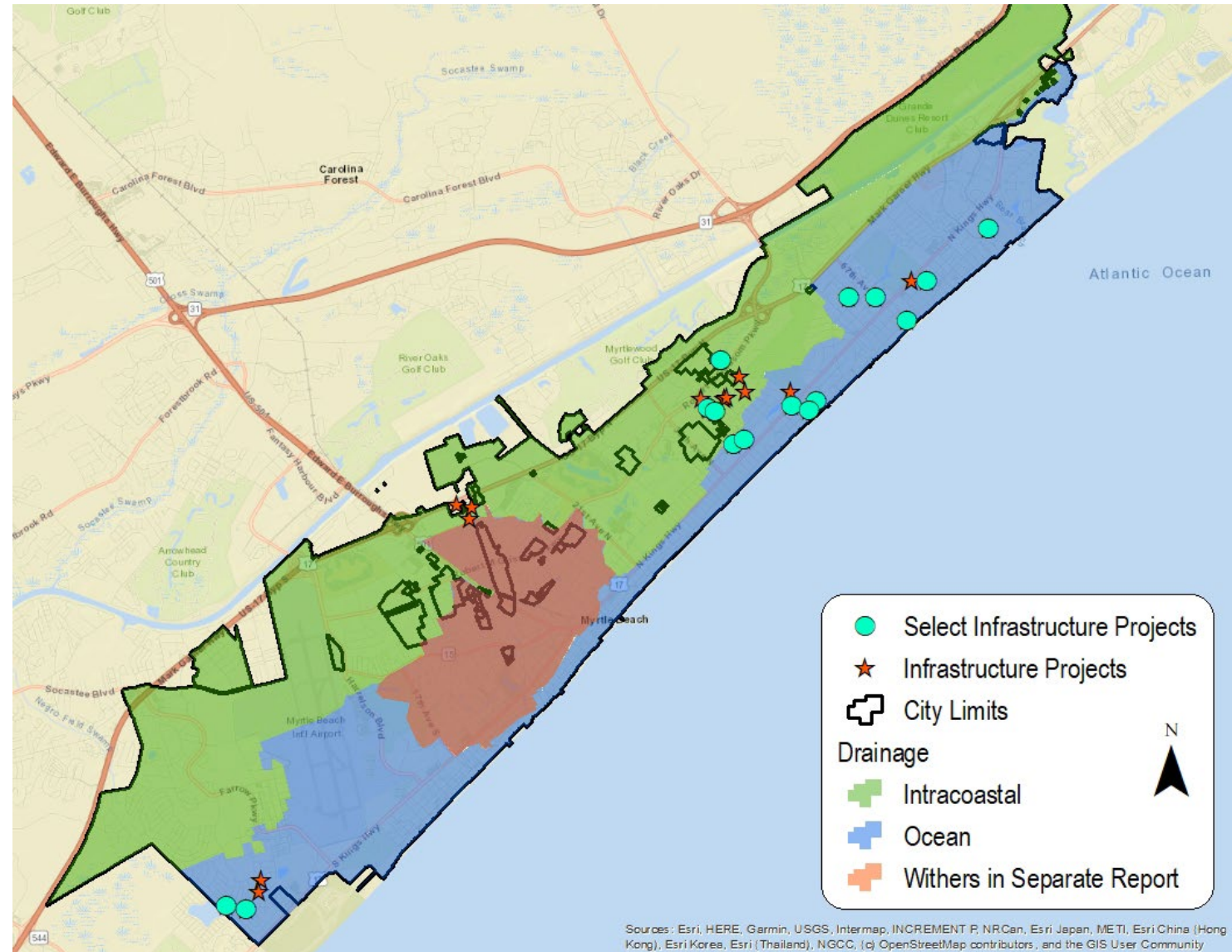
Withers Pond
Watershed Outlet



Preliminary Design in 2024

Infrastructure Upgrades

- Project Components
 - Increase capacity
 - Pipe/culvert upgrades
 - New ponds
 - Re-grading open channels
 - Re-routing stormwater runoff
- Implementation Considerations
 - Construction by city crews
 - Repair needs
 - Redevelopment



Infiltration



Ocean Outfalls

- Remove as part of deepwater ocean outfall
- Combine with adjacent outfall
- Replace with infiltration
- No action



Project Prioritization

- Water quality structural control measures
- Infrastructure improvements
- Beachfront pipe improvements

PRIORITIZATION CRITERIA BY PROJECT TYPE

PRIORITIZATION CRITERIA	WATER QUALITY	INFRASTRUCTURE	BEACHFRONT PIPES
Land Ownership	√	√	√
Effect of Improvements	√	√	√
Cost Effectiveness	√	√	√
City Construction			√
Drainage Area	√		
Bacterial Removal	√		
Land Use	√		
Utility Conflicts		√	
Street Flooding		√	





Strategic Funding

- Incorporate into other City infrastructure projects – Arts & Innovation District
- Leverage external grants and loans
 - HMGP – Interconnected ponds at Robert Shelley Park
 - CWSRF loan – Broadway wetland
- Stormwater utility revenue bonds to advance design and construction – Withers Pond

PLANNING WITH A PURPOSE

Thank you!

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