Pedestrian Improvements
Duck Town Council Update
November 18, 2015
Project Summary

- Four Seasons to Ship’s Watch
- Sidewalks
- Bike lanes
- Three new crosswalks
- Four pedestrian refuge islands
- Crosswalk illumination
- Two raised medians
- Shared use paths
Data Collection

- Survey
- Utilities
- Geotechnical
Preliminary Layout

- Design Criteria
- NCDOT coordination
- Identify property impacts
- Identify conflicts
# Owner Meetings

<table>
<thead>
<tr>
<th>TIME</th>
<th>MON 9/21</th>
<th>TUES 9/22</th>
<th>WED 9/23</th>
<th>THURS 9/24</th>
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<td>9:30</td>
<td>Jim McNulty</td>
<td>Blake Buchert</td>
<td>Mark Copeland</td>
<td>John White</td>
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<td>Osprey Landing Shops</td>
<td>Ocean Atlantic Rentals</td>
<td>Roadside Bar &amp; Grill</td>
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<td>1190 Duck Road</td>
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<td>10:00</td>
<td>Ellen Davidson, Chair</td>
<td>Ken Flatt, Director</td>
<td>Myra Ladd-Bone</td>
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<td>Duck United Methodist</td>
<td>Dare County Water Dept.</td>
<td>Atlantic Realty</td>
<td>Super Wings</td>
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<td>Jim Braithwaite</td>
<td>Judy Fisher, Manager</td>
<td>Tom Wright, Owner</td>
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<td>Waterfront Shops</td>
<td>Aqua 5 Restaurant</td>
<td>Cotton Gin</td>
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<td>1174 Duck Road</td>
<td>1183 &amp; 1185 Duck Road</td>
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<td>Jerry Davis</td>
<td>Clark Twiddy</td>
<td>Rick Fagersten</td>
<td>Jessica Magnus, Manager</td>
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<td>Wee Winks Square</td>
<td>Twiddy Real Estate</td>
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<td>Nags Head Hammocks</td>
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Owner Letters

- Narrative description
- Graphic
- Identify impacts
Schematic Design

- Reduce sidewalk to stay in R/W
- Replace wooden walk, meet new sidewalk
- Avoid drains
- Avoid utility pedestals
- Relocate utility cabinet
- Remove existing retaining wall, build new wall
Remove existing retaining walls, build new walls

New retaining wall with railing

Meet path circle

New retaining wall

Relocate pedestal

Schematic Design
- Remove existing retaining walls, build new walls
- Rework driveway
- Remove existing retaining wall, build new wall
- Remove drive aisle, regrade slope
- Remove drive aisle, regrade slope
Schematic Design

- Remove existing retaining wall, regrade area
- New retaining wall with railing
- Align crosswalk with existing walkway
- Rework driveway
Schematic Design

Remove existing retaining wall, build new wall

Avoid drain, connect to site walks

Water Dept. to move fence
Bridge ditch with boardwalk

Replace existing steps

Remove existing retaining walls, build new wall

Integrate walk into driveway
Schematic Design

New retaining wall

New retaining wall
Schematic Design

New retaining wall
Avoid utility pole and pedestals

Avoid utility poles

New retaining wall and railing

Ramp or stairs to parking

New retaining wall and railing

Schematic Design
Operations Simulation

- July 2013 counts
  - Vehicles
  - Bicycles
  - Pedestrians
- Sept 2015 observations
- Two-stage crossings
- Christopher Drive turns
Next Steps

- Plan review meetings
- Permitting
- Final Plans
Questions
Side Street Trail Crossings Assessment – Project Summary

- Side Street Assessment
  - Improve Safety through Visibility
  - Clear Sight Lines
  - Uniformity
Trail Crossings Assessment
Trail Crossings Assessment
Trail Crossings Assessment
Trail Crossings Assessment – Typical Intersection

Pavement Markings
1. Install high visibility crosswalk in white
2. Install or refresh existing 6" white crosswalk lines
3. Install or refresh existing 24" white stop line
4. Install 6" edge line extension with 2" marking and 6" gap
5. Remove and install stop line in new location

Signage
6. Remove and replace existing STOP sign in new location (MUTCD Std R1-1)
7. Install Bike and Pedestrian Crossing sign in new location (MUTCD Std W11-15)

Landscaping
1. Trim vegetation to clear sight lines
2. Limb up existing trees
3. Remove existing shrubs/bushes
4. Remove/locate obstacles to provide minimum sight distance
5. Remove existing trees
6. Line train and plant with trees that can be trimmed up

Other
7. Relocate existing neighbor cool monument sign

High-visibility Crosswalk Marking Details:
The longitudinal line should be 12 to 24 inches wide and separated by gaps of 12 to 20 inches. The design of the lines and gaps should avoid the wheel paths if possible, and the gap between the lines should not exceed 2.5 times the width of the longitudinal line.
Trail Crossings Assessment – Plover Drive Intersection

Pavement Markings
1. Install high-visibility crosswalk in white
2. Install or refresh existing 6” white crosswalk lines
3. Install 6” edge line extension with 2” marking and 6” gap
4. Remove and install stop line in new location with “STOP” legend
5. Install or refresh existing 4” double yellow centerline
6. Install new 4” white edge lines
7. Install 24” white diagonal crosshatch markings

Signage
1. Remove and replace existing STOP sign in new location (MUTCD Std R1-1)
2. Install Bike and Pedestrian Crossing sign in new location (MUTCD Std W11-15)
3. Install Stop Ahead sign in new location (MUTCD Std W3-1)

Landscaping
1. Lower berm and replant with trees that can be limbed up

High-visibility Crosswalk Marking Detail
The longitudinal lines should be 12 to 24 inches wide and separated by gaps of 12 to 60 inches. The design of the lines and gaps should avoid the wheel paths if possible, and the gap between the lines should not exceed 25 times the width of the longitudinal lines.
Trail Crossings Assessment – Four Seasons Ln Intersection
Alternative A

Pavement Markings
1. Install high-visibility crosswalk in white
2. Install or refresh existing 6" white crosswalk lines
3. Install or refresh existing 24" white stop line
4. Install 6" edge line extension with 2" marking and 6" gap
5. Install Yield Line

Signage
1. Remove and replace existing STOP sign in new location (MUTCD Std R1-1)
2. Install Bike and Pedestrian Crossing sign in new location (MUTCD Std W11-15)
3. Install Yield Here to Pedestrian sign in new location (MUTCD Std R1-5)

Other
1. Modify trail approach to side street
2. Modify median to account for crosswalk relocation

High-visibility Crosswalk Marking Detail:
The longitudinal lines should be 12 to 24 inches wide and separated by gaps of 12 to 60 inches. The design of the lines and gaps should avoid the wheel paths if possible, and the gap between the lines should not exceed 2.5 times the width of the longitudinal lines.
Trail Crossings Assessment – Four Seasons Ln Intersection
Alternative B

Pavement Markings
1. Install high-visibility crosswalk in white
2. Install or refresh existing 6" white crosswalk lines
3. Install or refresh existing 24" white stop line
4. Install 6" edge line extension with 2" marking and 6" gap

Signage
1. Remove and replace existing STOP sign in new location (MUTCD Std R1-1)
2. Install Bike and Pedestrian Crossing sign in new location (MUTCD Std W11-15)

Other
3. Modify trail approach to side street

High-visibility Crosswalk Marking Detail:
The longitudinal lines should be 12 to 24 inches wide and separated by gaps of 12 to 60 inches. The design of the lines and gaps should avoid the wheel paths if possible, and the gap between the lines should not exceed 2.5 times the width of the longitudinal lines.
Funding Schedule

- FY 2016
- FY 2017
- Leveraging Repaving
  - FY 2017
  - Future
Questions