Introductions

City of Raleigh Staff
- David Kiker, PE, Engineering Services
- Veronica High, PE, Engineering Services
- Sarah Beth Gentry, Real Estate
- Kristin Freeman, Engineering Services

WK Dickson Staff
- Scott Sigmon, PE
- Marc Horstman, PE
Overview

- Project Goals
- Recommended Drainage Improvements
- Permitting
- Construction Expectations and Challenges
- Proposed Schedule
- Easement Acquisition Process
- Questions & Answers
- Break Out Sessions
Project Goals

- Eliminate roadway flooding
- Minimize crawl space & first floor flooding of homes
- Improve access to homes
- Stabilize banks of main channel
Recommended Improvements

Phase 1 Drainage Improvements

Phase 2 Drainage Improvements

No Work Proposed

Dade Street Stream Bank Stabilization

Varnell Avenue Culvert

3618 Swann St. Driveway Culvert

3614 Swann St. Driveway Culvert

3614/3618 Swann St. Driveway Culvert

3606 Swann St. Driveway Bridge

Manuel Street Culvert
Recommended Improvements

Optimized Inlet Installation

Before

After
Recommended Improvements

Varnell Avenue Upsizing (60” RCP to a 72” RCP)
Recommended Improvements

Concrete Culvert and Headwall
Recommended Improvements

Double Catch Basins
Recommended Improvements

Boulder Cross Vane
Recommended Improvements

3618 Swann St.
Recommended Improvements

3618 Swann St. Driveway Culvert Upgrades (48”/60” to 72” RCPs)
Recommended Improvements

3614 Swann St.
3606 Swann St.
Recommended Improvements

3614 Swann St. Driveway Bridge Replacement and Boulder Walls

3606 Swann St. Driveway Bridge Replacement and Boulder Walls
Recommended Improvements

3-Sided Bridge
Recommended Improvements

Boulder Wall
Recommended Improvements

Coir Fiber Liner & Live Stakes
Construction Examples

Prior to Culvert Installation
Construction Examples

Road Closed
Varnell Road (Phase I) Closure

PHASE I
VARNELL AVENUE CLOSURE
Swann Street (Phase II) Closure

PHASE II
SWANN STREET CLOSURE
Swann Street (Phase III) Lane Closure

**SOUTH SWANN STREET LANE CLOSURE**
PHASE III A
SCALE: 1” = 150’

**SWANN STREET NORTH-BOUND LANE CLOSURE**
PHASE III B
SCALE: 1” = 200’

**SWANN STREET SOUTH-BOUND LANE CLOSURE**
PHASE III C
SCALE: 1” = 200’
<table>
<thead>
<tr>
<th>Task</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete 70% Design Plans</td>
<td>February 2017</td>
</tr>
<tr>
<td>Acquire Easements</td>
<td>April – June 2017</td>
</tr>
<tr>
<td>Secure Environmental Permits</td>
<td>June 2017</td>
</tr>
<tr>
<td>Finalize Design Plans</td>
<td>October 2017</td>
</tr>
<tr>
<td>Relocate Private Utilities</td>
<td>Nov 2017 – April 2018</td>
</tr>
<tr>
<td>Prepare Project For Bid</td>
<td>December 2017</td>
</tr>
<tr>
<td>Council Approval of Bid</td>
<td>July 2018</td>
</tr>
<tr>
<td>Begin Construction</td>
<td>August 2018</td>
</tr>
</tbody>
</table>
Easement Acquisition Process

- Easement Definition:
  - Right granted from a property owner to another for a specific use of a portion of the owner’s land.
  - Utility operators (gas, electric, sewer, etc.) often have easements for the purpose of installing and maintaining the utility lines and structures.
  - As with most utility easements, storm drainage easements are permanent and run with the land (i.e. survive any sale of the property).
  - Generally requires the property owner to give up certain rights, such as building permanent structures within the easement to allow for proper function of the system and maintenance access.
  - Allows projects to be cost effective and maximizes flood reduction benefits.
Questions?

David Kiker, PE
City of Raleigh Stormwater Management Division
Main Phone: 919-996-3940
Direct Line: 919-996-4074
E-mail: David.Kiker@raleighnc.gov

Raleighnc.gov
Search: “Swann Street Drainage Improvements”