Recommended Alternative Improvements Summary Meeting

Water Oak Storm Drainage Improvement Project

Phalanx #31 Masonic Lodge

December 5, 2013

Charlotte-Mecklenburg STORM WATER Services

MULKEY ENGINEERS & CONSULTANTS

Introduction of Staff

- **Charlotte-Mecklenburg Storm Water Services (CMSWS)**
  - **Adrian Cardenas, PE – Project Manager**
    - **Phone - 704-336-4682**
    - **E-mail - acardenas@charlottenc.gov**
  - **Doug Lozner, PE – Watershed Area Manager**

- **Mulkey Engineers & Consultants**
  - **David Bocker, PE – Project Manager**
  - **Andrea Hayden, PE – Project Engineer**
  - **J.R. Hopson, EI – Hydraulic Designer**

Housekeeping Items

- **Sign-In**
- **Agenda, and other handouts**
- **Customer Service Comment Cards**
- **Question and Answer period after presentation**

Meeting Purpose and Agenda

- Purpose
  - Provide a summary of the Recommended Alternative Improvements
  - Request input from property owners/residents on the Recommended Alternative Improvements

- Agenda
  - Project Progress and Current Status
  - Recommended Alternative Improvements Summary
  - Future project milestones - path forward
  - General Questions and Comments
  - Small group break-out sessions

Why the Water Oak Storm Drainage Improvements Project (SDIP) was chosen as an Engineering project

- **Requests for Service from Property Owners (115 request for service within watershed)**
  - **Inadequate Infrastructure**
    - **Road flooding**
    - **Structure flooding (House, buildings, sheds, etc.)**
  - **Deteriorating Infrastructure**
    - **Old culverts, pipes, inlets**
    - **Sink holes**
    - **Erosion, blockages in streams**
- **CMSWS watershed ranking**
- **Larger watershed-wide issues that cannot be managed by spot repairs or without potentially impacting downstream properties**

What we need from you

- **Feedback on the Recommended Alternative Improvements**
- **Support for the project's future phases**

Storm Drainage Improvement Project Phases

***PLANNING* (Typically 16 to 23 months)**

- ***Existing Conditions Analysis – Finding the Problems (Started early 2012)***
- ***Alternative Analysis – Finding the Solutions***

***DESIGN* (Typically 21 to 34 months)**

- ***Designing the Solutions***

***PERMITTING* (Typically 3 to 9 months, but usually overlaps the design phase)**

***EASEMENT ACQUISITION* (Typically 12 months, overlaps with the design phase)**

***BID* (Typically 4 to 5 months)**

***CONSTRUCTION* (3 months to over 2 years)**

Planning Phase
(began February 2012)

- **Survey, Public Input & Questionnaires**
  - Original questionnaires were sent out in December of 2011
- **Existing Conditions Analysis**
  - 1st Public Meeting – Held on January 24, 2013
- **City Design Standards Alternative**
- **Alternative Analyses**
- **Recommended Alternative**
  - 2nd Public Meeting – December 5, 2013

EVALUATING ALTERNATIVES

Coming up with the "BEST" solutions

1. Public Safety

2. Private Property Impact

3. Public Cost

EVALUATING ALTERNATIVES
Types of Alternatives Considered

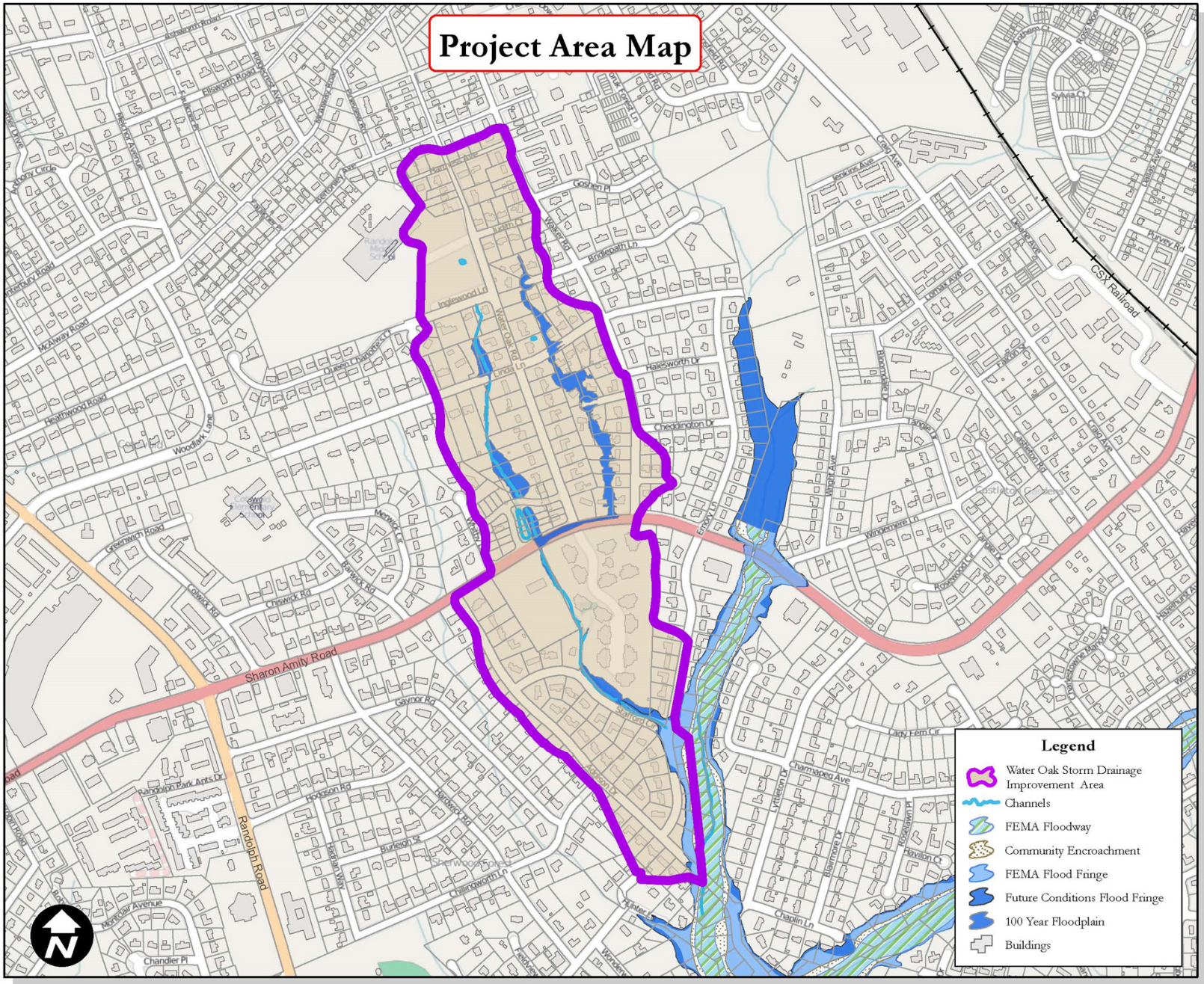
- Replacement of failing pipes
- Different culvert and pipe sizes
- Different culvert/pipe shapes and materials
- Additional pipes and inlets
- New Alignments
- Detaining Water to Reduce Flow
- Stream Stabilization
- Changing stream profiles

Water Oak Storm Drainage Improvement Project

Recommended Alternative Improvements

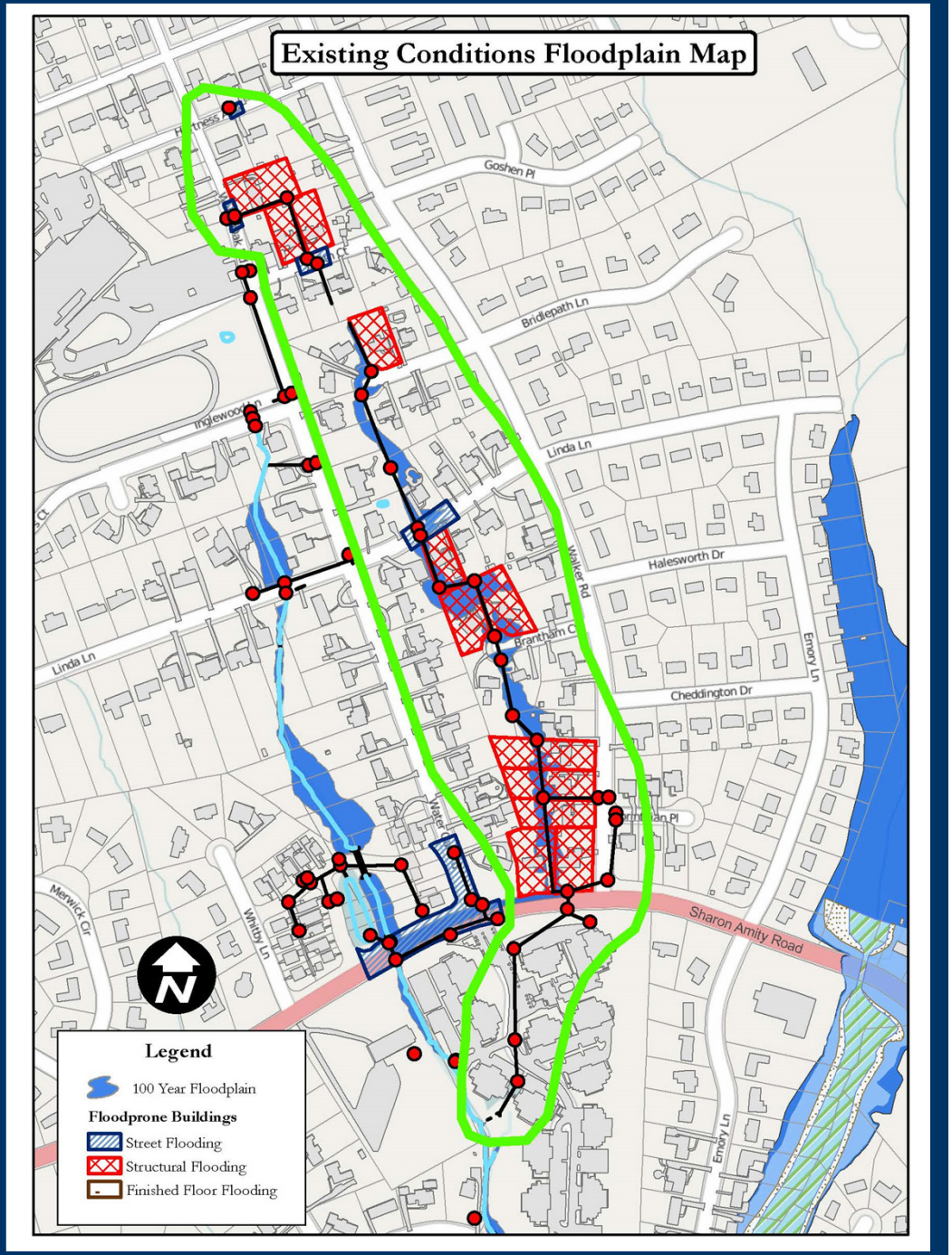
Charlotte-Mecklenburg STORM WATER Services

MULKEY ENGINEERS & CONSULTANTS


Project Area Map
Sharon Amity Road
Randolph Road
CSX Railroad
Legend
Water Oak Storm Drainage Improvement Area
Channels
FEMA Floodway
Community Encroachment
FEMA Flood Fringe
Future Conditions Flood Fringe
100 Year Floodplain
Buildings

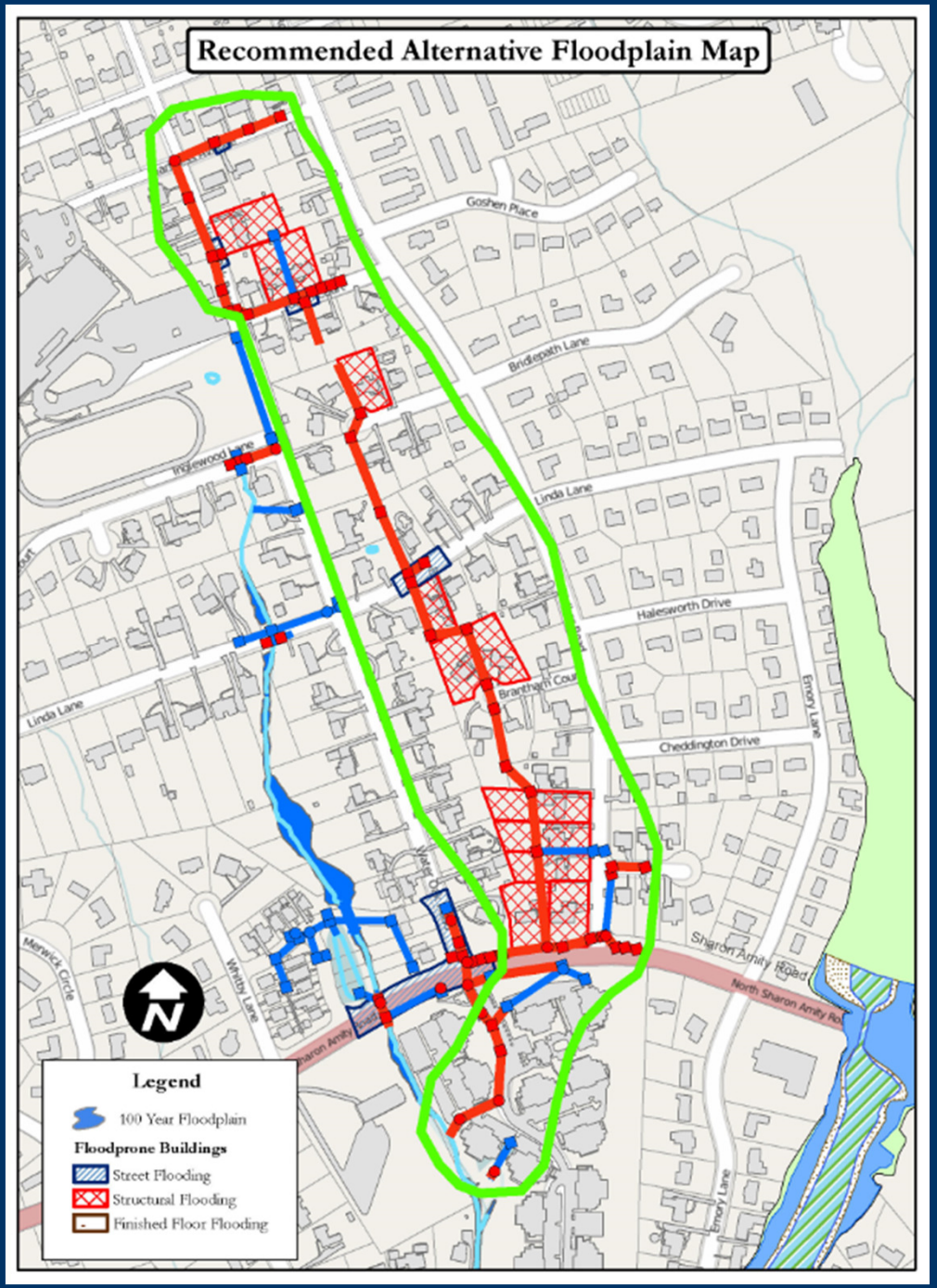
Existing Conditions Results East Outfall:

- Linda Lane and Sharon Amity Road experience street flooding during 100-yr storm
- Eighteen (18) buildings including storage buildings experience flooding



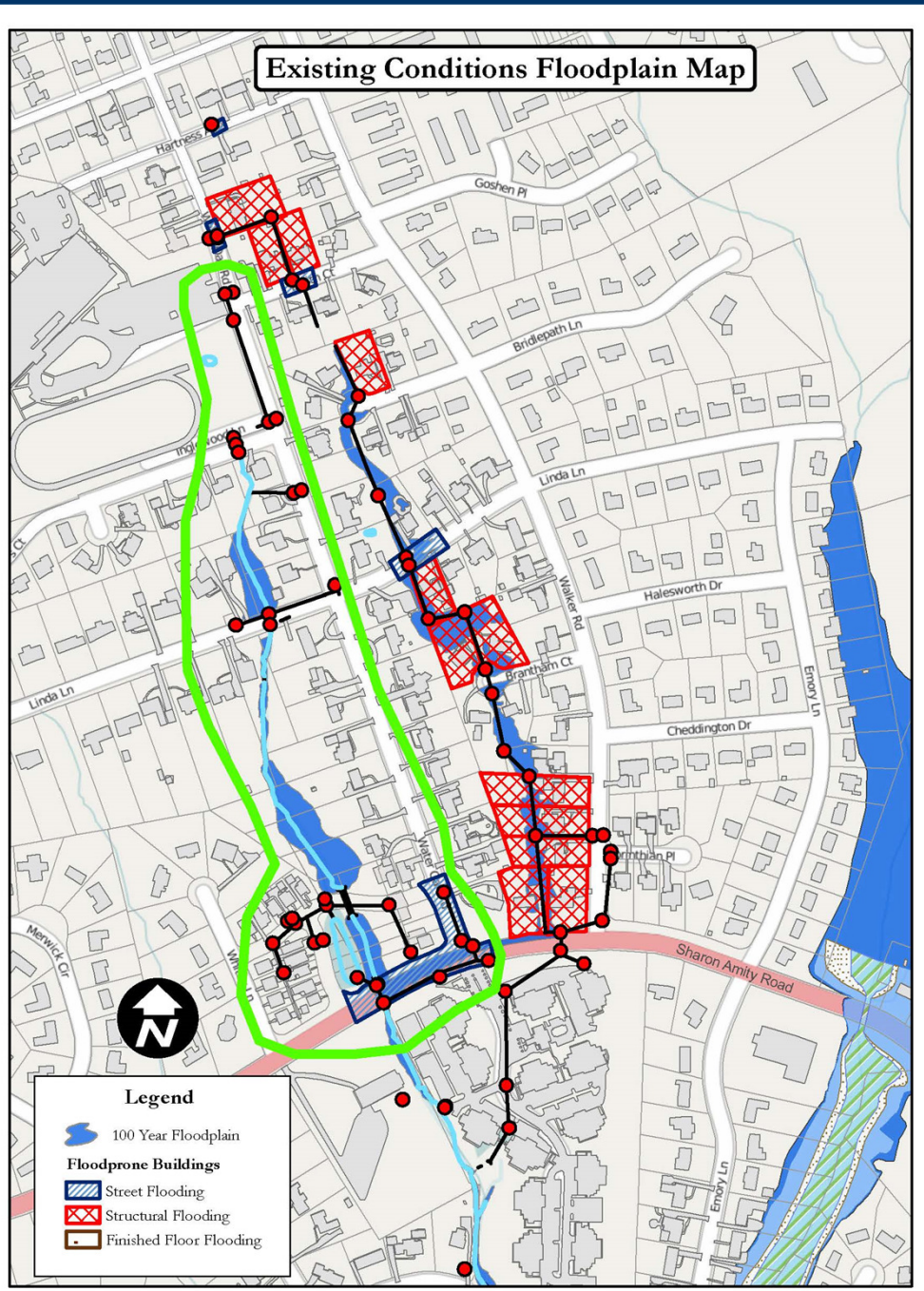
Recommended Alternative Improvements East Outfall:

- System upgrade & realignment at Hartness Avenue / Water Oak Road to Judith Court
- System upgrade on existing alignment from Bridlepath Lane to Linda Lane to Brantham Court to Sharon Amity Road to Regency Apartment Complex



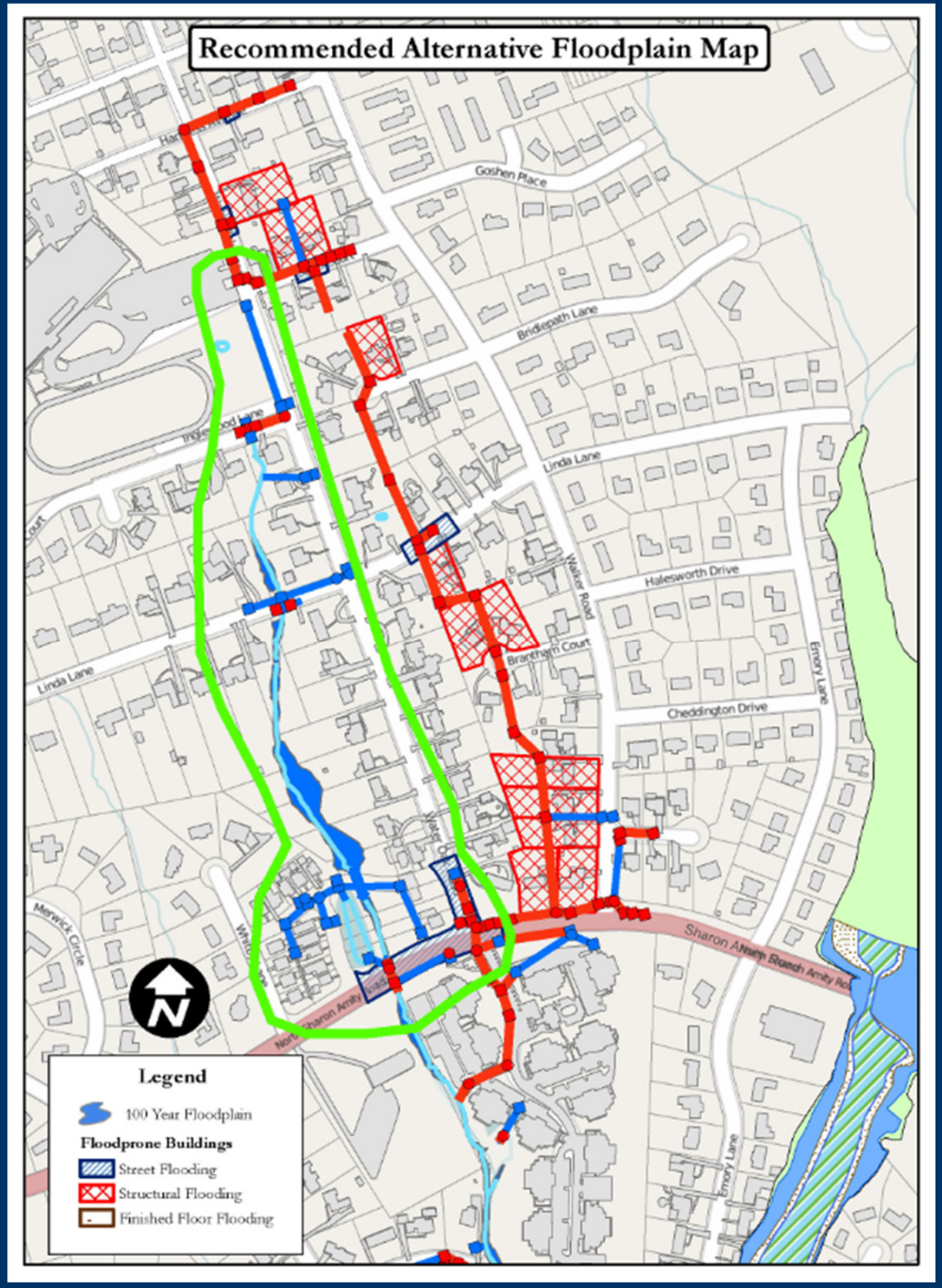
Existing Conditions Results West Outfall:

- **Sharon Amity Road (Ex. 30" pipe crossing) experiences street flooding during 10-yr storm**
- **No building flooding**



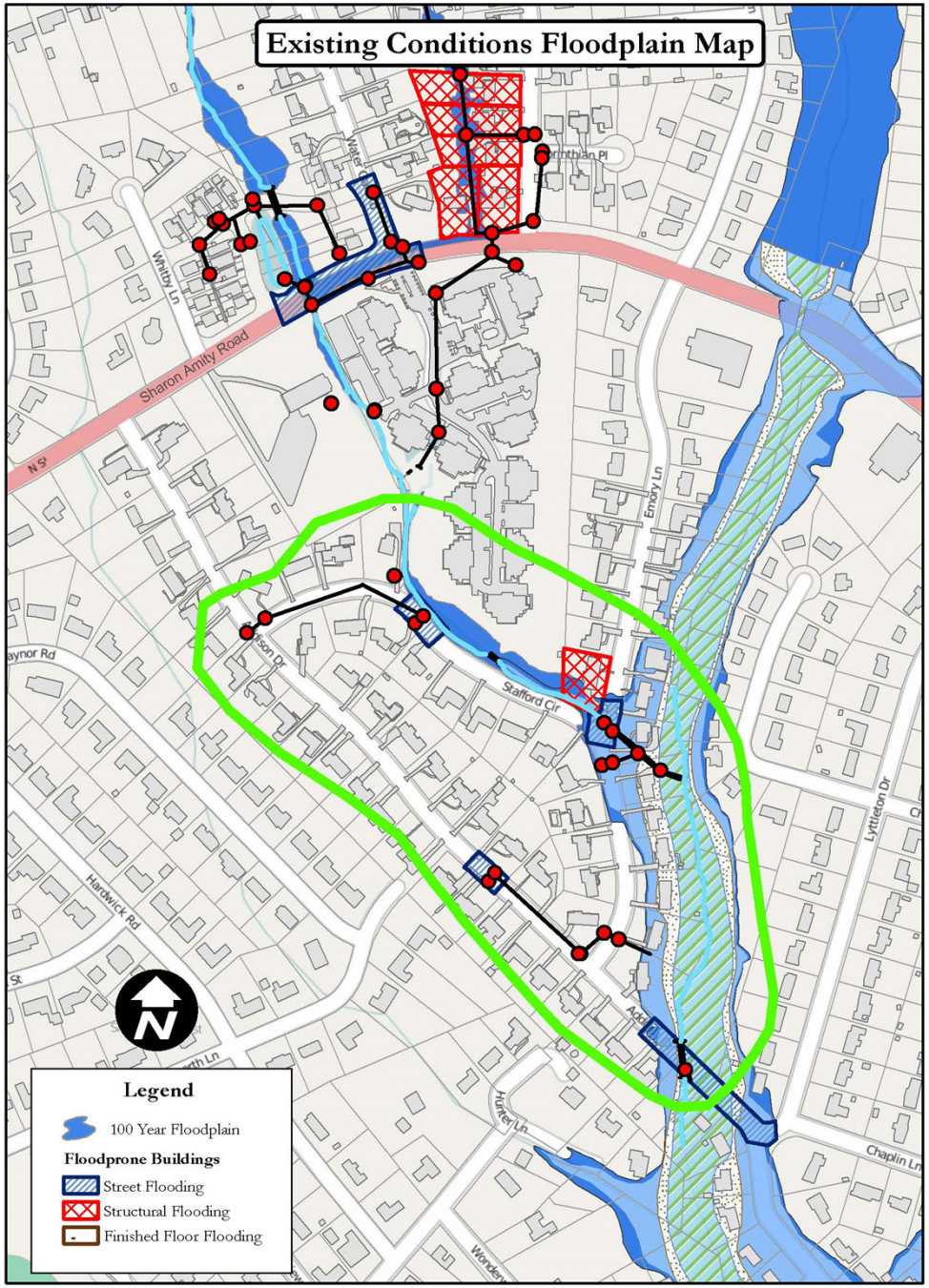
Recommended Alternative Improvements West Outfall:

- Realignment of system at Water Oak Road / Queen Charlotte Court intersection
- Addition of inlets on Linda Lane
- Upgrade of Sharon Amity Road (Ex. 30” pipe crossing) to 2 pipes (1 – 48” & 1 – 42”)
- Realignment of system at Water Oak Road / Sharon Amity Road intersection to tie to proposed system at Regency Apartments



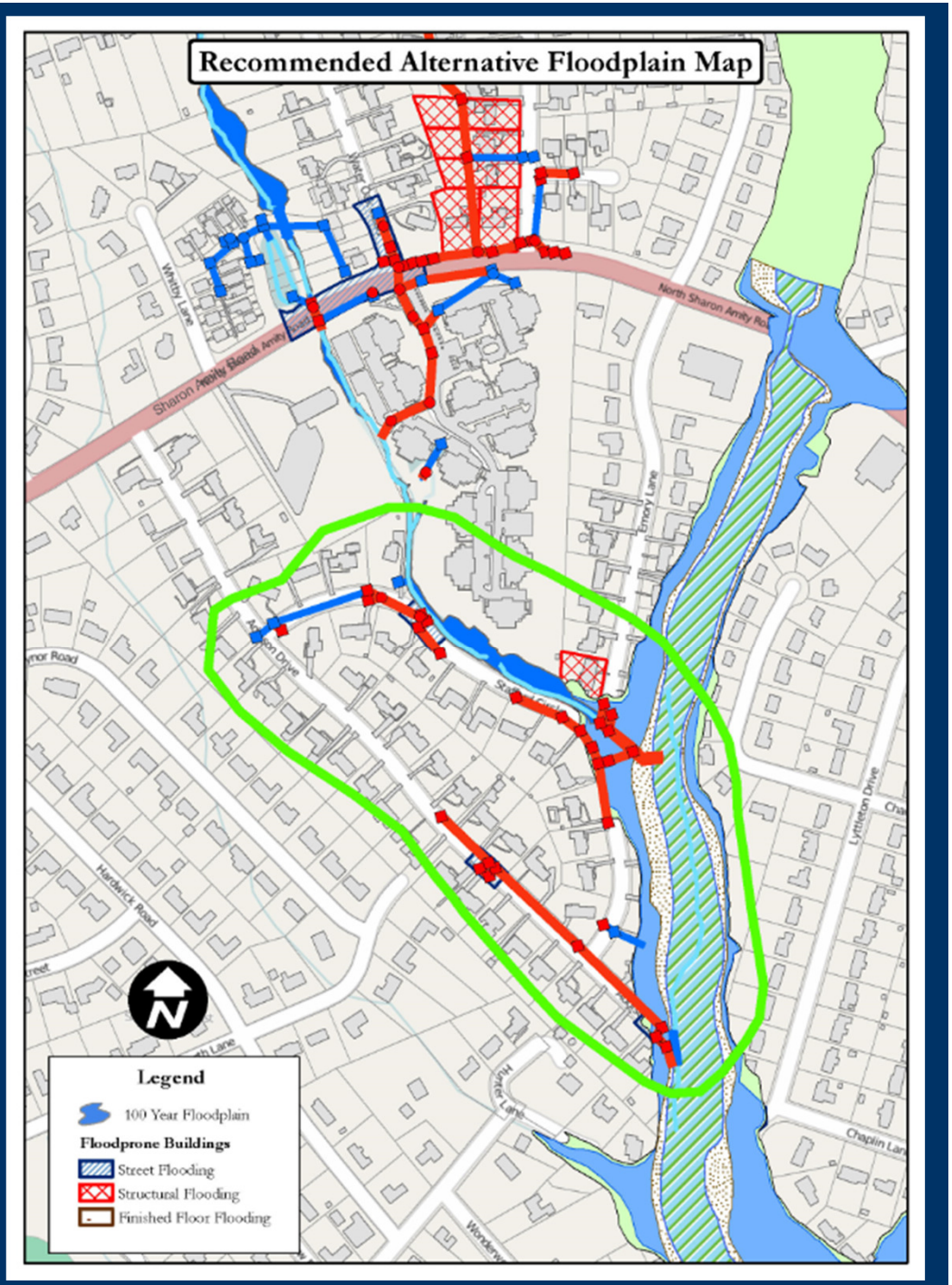
Existing Conditions Results
Central Outfall:

- **Stafford Circle, Emory Lane, and Addison Drive experience street flooding during 10-yr storm**
- **One building including storage buildings experiences flooding related to the Water Oak system**
- **Contains FEMA regulated floodplain (McMullen Creek Tributary)**



Recommended Alternative Improvements Central Outfall:

- System upgrade & realignment at Stafford Circle
- Upgrade & realignment of Emory Lane pipe crossing from 2 – 42” to 2 – 7’x5’ box culverts
- System upgrade & realignment on Addison Drive



Storm Drainage Improvement Project Phases

PLANNING *(Typically 16 to 23 months)*

- *Existing Conditions Analysis – Finding the Problems (Started early 2012)*
- *Alternative Analysis – Finding the Solutions*

DESIGN *(Typically 21 to 34 months)*

- *Designing the Solutions*

PERMITTING *(Typically 3 to 9 months, but usually overlaps the design phase)*

EASEMENT ACQUISITION *(Typically 12 months, overlaps with the design phase)*

BID *(Typically 4 to 5 months)*

CONSTRUCTION *(Approximately 12 to 24 months)*

Path Forward

- Additional information obtained during this meeting will be considered and incorporated into the Selected Alternative Improvements, where feasible.
- Design of the Selected Alternative Improvements.
- CMSWS will then hold a third public meeting to present and obtain feedback on the preliminary design.

Wrapping Up

- Please remember to sign-in and fill out a customer service card
- The City and our consultant will stay here to answer any specific questions you may have
- General Discussion

Thank you for coming to the meeting!

Special thank you to the Masonic Lodge for providing their facilities to our community.