Existing Conditions Analysis Summary Meeting

Water Oak Storm Drainage Improvement Project

Phalanx #31 Masonic Lodge

January 24, 2013

Charlotte-Mecklenburg STORM WATER Services

MULKEY ENGINEERS & CONSULTANTS

Introduction of Staff

- **Charlotte-Mecklenburg Storm Water Services (CMSWS) Staff**
  - David Perry, PE – Project Manager
  - Adrian Cardenas, PE – Project Manager
    - Phone - 704-336-4682
    - E-mail - acardenas@charlottenc.gov
  - Matt Gustis, PE – Program Manager
- **Mulkey Engineers & Consultants**
  - David Bocker, PE – Project Manager
  - Andrea Hayden, PE – Project Engineer
  - J.R. Hopson, EI – Hydraulic Designer

Housekeeping Items

- Sign-In
- Fill out a Questionnaire if you did not previously
- Customer Service Comment Cards
- Question and Answer period after presentation

Meeting Purpose and Agenda

- Purpose
  - Provide a summary of the Existing Conditions analysis
  - Request input from property owners/residents on the Existing Conditions analysis results
  - Obtain additional information from property owners/residents on perceived drainage issues
- Agenda
  - Charlotte-Mecklenburg Storm Water Services Summary
  - Project Selection and Citizen Involvement
  - Existing Conditions Analysis Summary
  - Alternatives Analysis and future project milestones
  - General Questions and Comments

CMSWS Summary

Storm Water Program Roots:

- **1911 – Mecklenburg County Drainage Commission created**
- **1993 – Charlotte obtained and begin to comply with a NPDES Phase I permit**
  - **Charlotte established a storm water fee to fund NPDES required measures and to address drainage issues**

What the program includes:

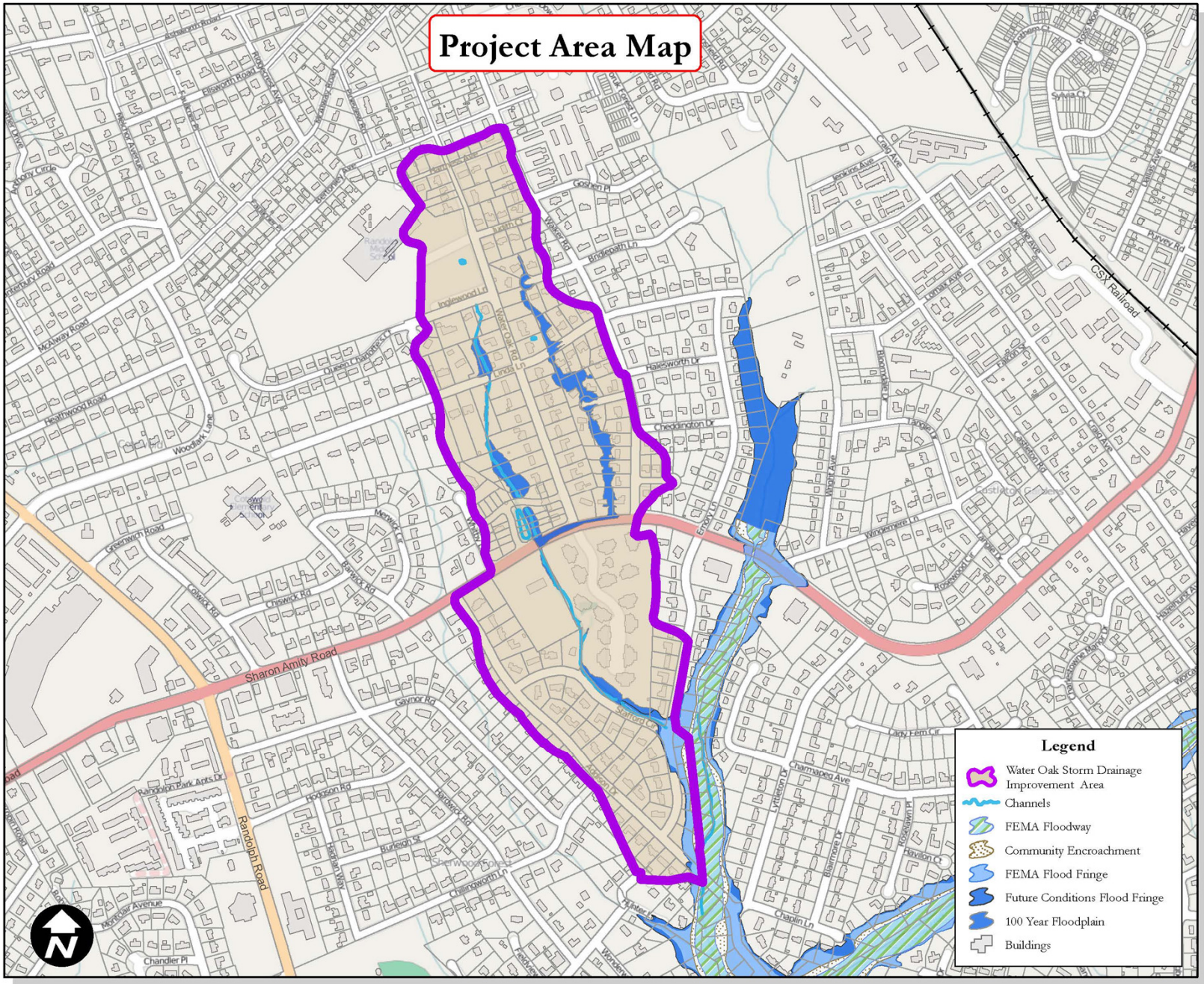
- **Administration and Technology**
- ***Water Quality***
- ***Design Management***
- ***Engineering***

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

- **Requests for Service from Property Owners (115 - 311 requests 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 our consultant's modeled results**
- **Additional information on drainage related concerns (previously 39 questionnaires were returned)**
- **Support for the project's future phases**


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

Water Oak Storm Drainage Improvement Project

Existing Conditions Analysis Results

Charlotte-Mecklenburg STORM WATER Services

MULKEY ENGINEERS & CONSULTANTS

Existing Conditions Floodplain Map

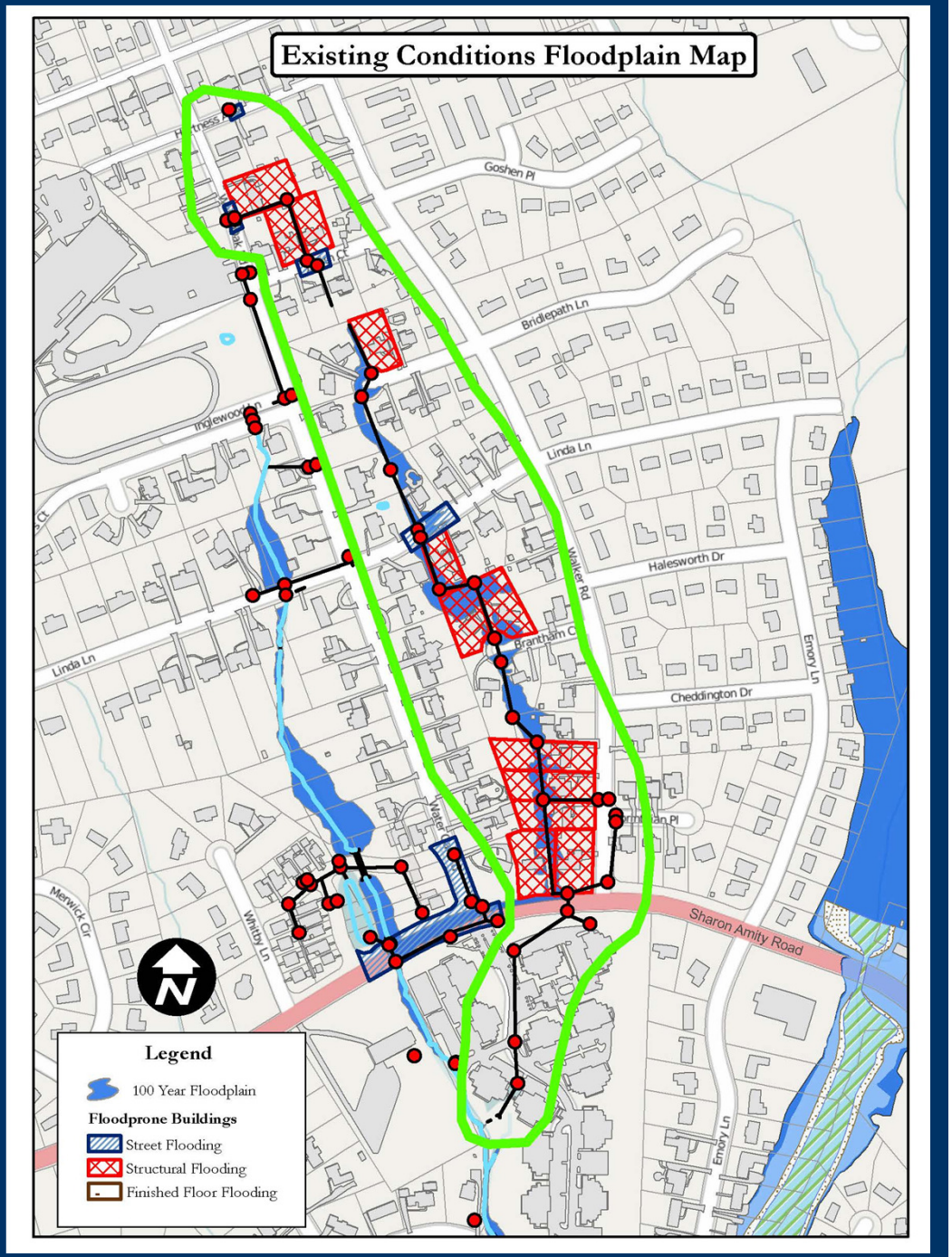
- Illustrates Predicted Extent of Flooding
- 100-Year Storm Event
  - 1 percent chance of storm occurring in any given year

Existing Conditions Results:

- **Four (4) out of six (6) culverts/cross-drains show flooding impacts**
- **19 buildings including storage buildings experience flooding**
- **13 buildings experience Lowest Adjacent Grade (LAG) flooding**

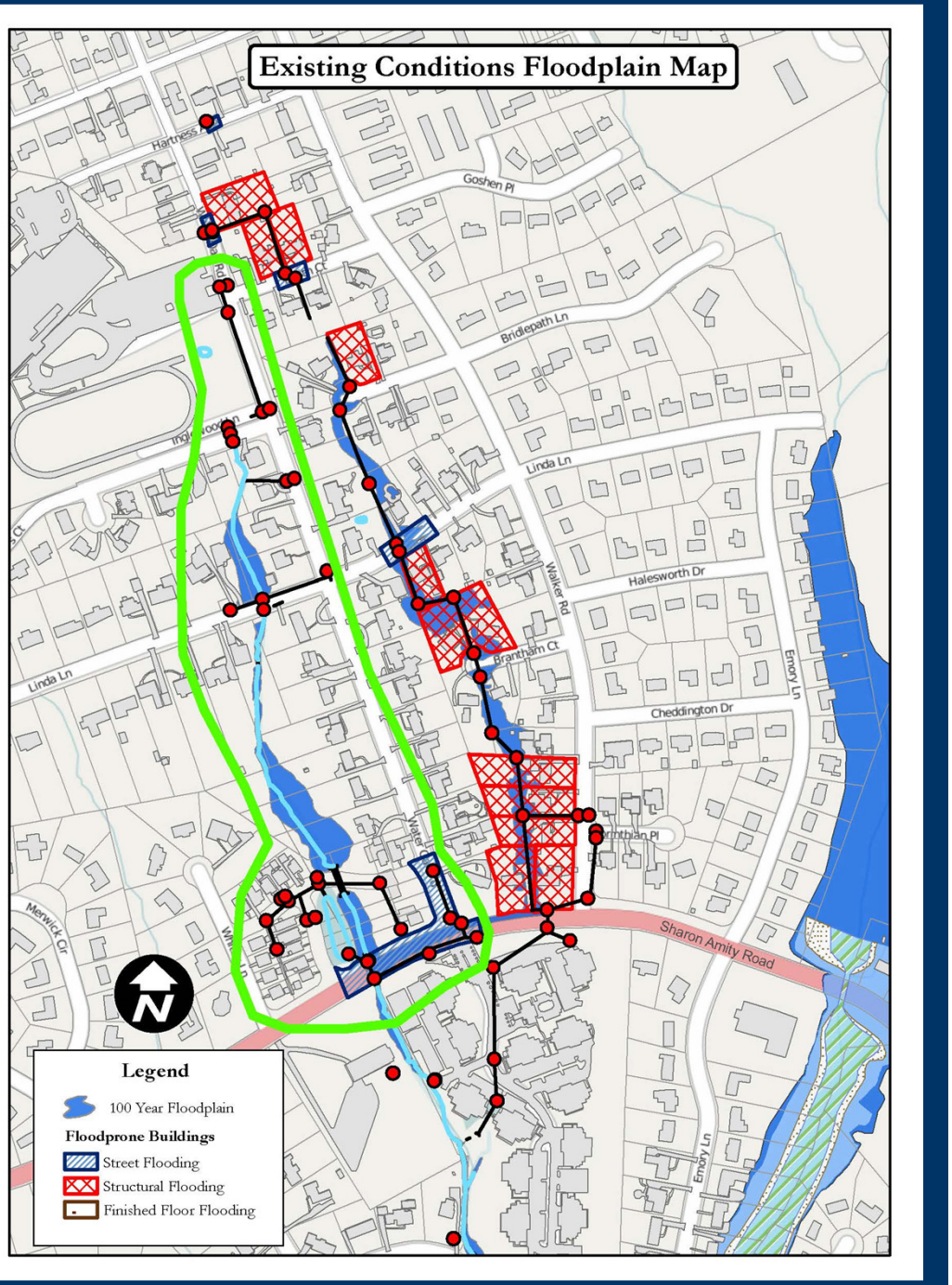
Existing Conditions Results East Outfall:

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



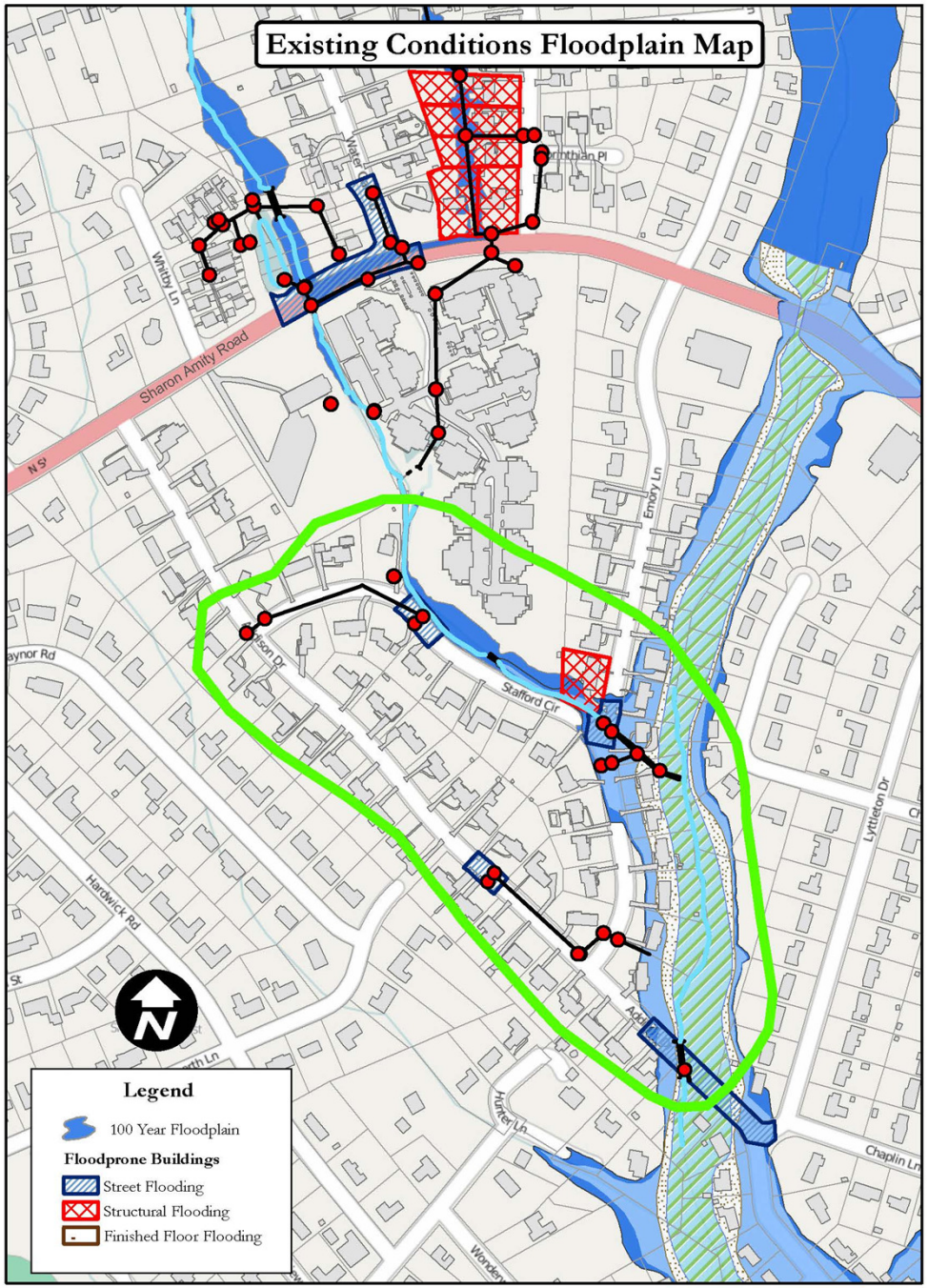
Existing Conditions Results West Outfall:

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



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**



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)

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

Path Forward

- Additional information obtained during this meeting will be considered and incorporated into the existing conditions analysis, where applicable.
- Alternatives will be evaluated, and a recommended alternative will be developed.
- CMSWS will then hold a second public meeting to present and obtain feedback on the recommended alternative.

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!