Agenda

1. Introductions
2. Project Overview
3. Role of Working Group
4. Climate Change Parameters
5. Citizen Participation Plan
6. Stakeholder Meetings
1 PROJECT OVERVIEW
Overview

- Project funded by $175,000 Community Development Block Grant for Disaster Recovery (CDBG-DR) in response to Hurricane Sandy

- US Dept. of Housing & Urban Development
- CT Dept. of Housing
- Waterford Planning & Development Dept.
Phase I

Establish Study Parameters

Phase II

Identify Vulnerable Assets, Infrastructure & Resources

Phase III

Develop Adaptation Strategies & Regulatory Recommendations

STAKEHOLDER ENGAGEMENT
Phase I: Establish Parameters

- Goal: Develop appropriate climate change scenarios for:
  - Heavy rainfall
  - Sea level rise
  - Storm surge
Climate Change Scenarios

1. Key Variables
2. Data Sources
3. Modeling & Mapping Methods
4. Time Horizons

Climate Change Scenarios
Phase II: Risk Assessment

- Goal: Assess the vulnerability and risk of public infrastructure and natural resources
Phase II: Risk Assessment

- Produce flood maps and graphics for climate scenarios
Phase III: Adaptation Strategies

- Goal: Develop regulatory recommendations, and priority adaptation strategies and costs
Public Outreach & Education

- Goal: Educate and engage the public on flooding risks and adaptation strategies
# Project Schedule

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- ▲ Working Group Meeting
- ▲ Public Officials Meeting
- △ Public Workshop/Meeting
2 PROJECT WORKING GROUP
# Working Group Members

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<tr>
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<tr>
<td>Maureen Fitzgerald</td>
<td>Environmental Planner</td>
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<tr>
<td>Kristin Zawacki</td>
<td>Public Works Director</td>
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<td>Neftali Soto</td>
<td>Utilities Director</td>
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<td>Jeff Sims</td>
<td>Conservation Commission Chair</td>
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<td>Bert Cenard</td>
<td>Planning &amp; Zoning Commission</td>
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**Also welcome:**

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<th>Name</th>
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<tr>
<td>Steve Bellos</td>
<td>Emergency Management</td>
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<td>Dave Benvenuti</td>
<td>Flood &amp; Erosion Control Board Chair</td>
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Role of the Working Group

- Provide information resources
- Review results and provide feedback
- Make decisions:
  - Citizen Participation Plan and public outreach
  - Climate change parameters
  - Risk assessment methods
  - Locations for flood renderings
  - Adaptation strategies and priorities
Contributors to Public Outreach

- **Work Group**
  - Key messengers
  - Know your constituents
  - Control messaging
  - Demonstrate ownership

- **Kleinfelder Team**
  - Provide outreach tools and strategies
  - Facilitate engagement forums
  - Serve as experts
3 CLIMATE CHANGE PARAMETERS
Sea Level Rise & Storm Surge – Coastal Flooding

Key Decisions:
- Which sea level rise curve(s)?
- Which time horizon(s)?
- Which storm probabilities to model and map?

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Rainfall – Riverine Flooding

Key Decisions:
- Which storm probability to model and map?
- Time horizons should be the same as for sea level rise and storm surge.

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Drainage Flooding (Pilot-Scale)

Key Decisions:
- Culverts or Piped Drainage service areas?
- Which locations (specific culverts, service areas)?
- Which rainfall probability to model?
- What time horizon?

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Least likely → Most likely
4  CITIZEN PARTICIPATION PLAN
Citizen Participation Plan Goals

1) Participation, emphasis on LMI residents;
2) Access to local meetings, information, and records relating to the Project;
3) Minimum 2 public meetings:
   a) Adequate notice
   b) Convenient time/locations for LMI/affected
   c) Accommodations for persons with disabilities
4) Meet needs of non-English speaking citizens to participate, if needed;
Citizen Participation Plan Goals

1) Reasonable time for public to review and submit comments;
2) Technical assistance to LMI groups, if requested;
3) Timely written answer to complaints and grievances, within 15 working days, where practical; and
4) Provide reasonable notice of, and opportunity to comment on, any proposed amendments to the Project scope.
Required Documentation

See “Citizen Participation Checklist” in CT CDBG-DR Action Plan:
- Timetable for citizen participation
- Evidence of effort to secure low- and middle-income participation
- Direct mailing/email list
- Date and location of posted notices
- Sign-in sheets for all meetings and events
- Minutes of all meetings
- Interpretation for non-English speakers
- Copies of citizen complaints/comments
- Responses to written complaints and grievances within 15 days of receipt
- Public availability of draft documents for comment
Targets for Public Outreach

1. Live or work in flood zones

2. Vulnerable populations:
   • Low- and moderate-income
   • Minorities and non-English speakers
   • Elderly, living alone
   • Single head of household w/ young children
   • Disabled, health impaired

3. Affected by critical infrastructure impacts

4. Affected by natural resource impacts
5  STAKEHOLDER MEETINGS
WG Meeting #1: Sept. 28, 2016

- Introductions
- Project overview
- Role of Working Group
- Introduce climate change parameters
- Introduce Citizen Participation Plan
WG Meeting #2: Oct.18, 2016
(proposed date, to be confirmed)

- Finalize climate change parameters
- Finalize Citizen Participation Plan
- Analyze data gaps and how to fill them
BoS Meeting #1: Oct. 18, 2016
(proposed date, to be confirmed)

- Project overview
- Climate change scenarios
- Citizen Participation Plan
- Schedule of public events

Outreach:
- Town to post notice seven (7) days ahead of time
- Town to coordinate for local news attendance
WG Meeting #3: Oct. 24, 2016
(proposed date, to be confirmed)

- Phase II Kick-off: Vulnerability and Risk Assessment
- Infrastructure and natural resources inventory
- Vulnerability and risk assessment methods
(proposed date, to be confirmed)

- Project overview
- Preliminary ideas for regulatory changes
- Best practices from elsewhere

**Outreach:**
- Town to post notice seven (7) days ahead of time
- Town to invite Conservation Commission members
WG Meeting #3: Jan 2017

- Review flood modeling results and maps
- Preview vulnerability assessment results
- Select locations for flood renderings
WG Meeting #4: Mar-Apr 2017

- Finalize vulnerability and risk assessment
- Review flood renderings
- Prepare for Public Workshop
- Phase III Kick-off: Adaptation Strategies
Public Workshop: Apr-May 2017

- Overview
- Flood maps and renderings
- Vulnerable assets
- Interactive adaptation workshop
- Next steps

Outreach:
- Town to post notice seven (7) days ahead of time
- Town to coordinate for local news attendance
WG Meeting #4: Jun-Jul 2017

- Adaptation strategies and priorities
- Regulatory and policy recommendations
- Draft Summary Report review timeline and process
- Prepare for Public Meeting
BoS Meeting #2: Jun-Jul 2017

- Recap of Public Workshop
- Highlight key findings, recommendations
- Upcoming Public Meeting and public comment period on Summary Report

Outreach:
- Town to post notice seven (7) days ahead of time
- Town to coordinate for local news attendance
Public Meeting: August 2017

- Findings
- Recommendations
- Educational materials
- Publicize draft Summary Report
- Public comment period

Outreach:
- Town to post notice seven (7) days ahead of time
- Town to coordinate for local news attendance
We are looking forward to working with you!

Thank you

Neil Kulikauskas: Principal-in-Charge (nkulikauskas@kleinfelder.com)
Andre Martecchini: Project Manager (amartecchini@kleinfelder.com)
Nasser Brahim: Senior Planner (nbrahim@kleinfelder.com)
Flooding from Rainfall

- Most of Waterford’s FEMA flood zones are riverine

Design storm rainfall projections from Phase I

FEMA Flood Insurance Study regression equations

Estimated design storm peak discharge & flood elevations for scenarios

Estimated & mapped riverine floodplain for scenarios

Figure 2-3. Defining sketch of overbanks and the method to estimate the change of the SFHA. See text for explanation of symbols.
Rainfall and Drainage Capacity

March 2010 extreme rainfall (100-year) overwhelmed culverts

Evaluate existing hydrologic & hydraulic models
Select "pilot" system & culverts
Run model using 2030 & 2070 design storm peak discharge.
Assess hydraulic adequacy based on CTDOT design criteria

Bloomingdale Road at Hunts Brook

Rainfall and Drainage Capacity
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Bloomingdale Road at Hunts Brook
Drainage Outfalls and Collection Systems

- Skeleton hydraulic model of drainage systems discharging to coast (e.g., 1st Ave – 10th Ave)
- Assess vulnerability to backflow from sea level rise alone
- Sea level rise plus projected rainfall