Climate Smart Communities Webinar

Telephone call-in number

• 1-866-394-2346
• Code: 1982360347#
• No audio signal will be transmitted over the Internet
Welcome

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Climate Smart Communities Webinar

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Storm Recovery and Preparation
Climate Smart Communities

The Role of the National Flood Insurance Program
and the Community Rating System

David Berg, AICP, LEED AP, Cameron Engineering & Associates, LLP
Climate Smart Community Coordinator for Long Island
CSC and Climate Change

- More flooding from climate change
  - More intense rain storms
  - More frequent and severe coastal storms
  - Sea level rise of up to several feet by 2100
- One key goal of CSC – increase local climate resilience
  - Identify local assets and vulnerabilities
  - Take actions to reduce flood damage
- Key goal of the NFIP’s Community Rating System
  - Reduce flood damage to insurable property
Community Reconstruction Zones

- State program to assist communities impacted by Hurricanes Sandy and Irene and Tropical Storm Lee
  - $25M in planning grants to many affected communities
  - Develop strategies to repair, reconstruct, relocate and protect assets
- NFIP’s Community Rating System could be an important component of all CRZ plans
The CRS could be an important component of many Climate Smart Communities’ Climate Action Plans

All communities, especially those subject to flooding, should consider taking the CSC pledge

- CSC coordinators available to assist CSC communities engage with FEMA and DEC to participate in CRS
- Info:  http://www.dec.ny.gov/energy/84508.html
- Long Island:  David Berg, AICP, LEED AP  dberg@cameronengineering.com  516-224-5206
Coming Events


Climate Smart Community Webinars

- June 13, 10:30 a.m. Beta Testing the Land-use, Transportation and Building Code Toolkit.

Do you have ideas for the 2013/14 Climate Smart Communities webinar season? Send them to Kim Farrow, kxfarrow@gw.dec.state.ny.us.
Average Precipitation: 1900-2100 (in.)

- Slightly more precipitation
  - 5-10% by 2080s
- More summer downpours
- More extreme snow/ice events
- More short-term droughts
  - Exacerbated by heat
Intense Precipitation and Flooding

- Observed and projected increases in heavy rainfall, especially in winter
- Potential increase in sub-daily rainfall intensity
  - Most likely to cause floods
- Change in maximum flows uncertain

Source: Tryhorn and DeGaetano, 2010
**Water Effects**

- Less frequent summer rainfall may affect water supply
  - Primarily on smaller water systems and wells

- Reduced flows on larger rivers
  - Possible water conflicts (e.g., agriculture vs. domestic)

- Increased water temperatures
  - Affect aquatic health and ability to assimilate wastewater effluent

- Flooding has potential to increase water pollution
  - WWTPs in floodplains
  - Toxics

- Changes in accretion/scour likely with changes in maximum stream flows, velocity

- Landslides
### NYS Sea-level Rise Projections

<table>
<thead>
<tr>
<th></th>
<th>Mid-Hudson and Capital Region</th>
<th>Lower Hudson Valley, Long Island, New York City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline (1971 – 2000)</td>
<td></td>
</tr>
<tr>
<td>Sea Level Rise¹</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2020s</td>
<td>1 to 4</td>
<td>2 to 5 in</td>
</tr>
<tr>
<td>2050s</td>
<td>5 to 9</td>
<td>7 to 12 in</td>
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<tr>
<td>2080s</td>
<td>8 to 18</td>
<td>12 to 23 in</td>
</tr>
<tr>
<td>2100</td>
<td>11 to 26</td>
<td>15 to 30 in</td>
</tr>
<tr>
<td>Sea Level Rise²</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Rapid Ice Melt</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>2020s</td>
<td>4 to 9</td>
<td>5 to 10 in</td>
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<tr>
<td>2050s</td>
<td>17 to 26</td>
<td>19 to 29 in</td>
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<tr>
<td>2080s</td>
<td>37 to 50</td>
<td>41 to 55 in</td>
</tr>
<tr>
<td>2100</td>
<td>52 to 68</td>
<td>56 to 72 in</td>
</tr>
</tbody>
</table>

¹ Shown is the central range (middle 67%) of values from model-based probabilities rounded to the nearest inch.

² The rapid ice melt scenario is based on acceleration of recent rates of ice melt in the Greenland and West Antarctic Ice sheets and paleoclimate studies.

- 100-yr coastal flood to 25-yr, by 2100 (SLR alone)
- Enhanced storm surge
- More severe storms
Coastal Effects

- Alteration of barrier islands
  - Strong coastal storm surge
  - Beach erosion, dune overwash, new inlet creation

- Inundation of coastal populations due to sea level rise
  - More frequent flooding in areas now near sea level

- Loss of coastal wetlands and salt marsh stress
  - Reduced species diversity

- Migration of cold water species
  - Blue claw crabs replace lobster

- Salt water intrusion on the Hudson
  - Tides, storm surge and salt water propagate upriver
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NYS Department of Environmental Conservation
What Is the Special Flood Hazard Area?

It is the blue shaded area on the Flood Insurance Rate Map, commonly known as the 100-year flood plain, but more accurately thought of as the area that has a 1% chance or greater of experiencing a flood in any given year. This flood is called the “base flood.”
The Base Flood

- 1% chance of being equaled or exceeded each year.
- Same Probability Every Year
- 26% chance of occurring in a 30-yr period
- 63% chance of occurring in a 100-yr period
- Chance of Fire is under 5% over 30 years
- Chance of ‘500-Year Flood’ is 6% over 30 years
- Is often erroneously called the 100-year flood
The Base Flood Elevation

• The elevation of the 1 percent chance flood
Floodplain 101 in Two Slides

- NO BASEMENTS
- Studied Floodplains: Lowest floor at least 2 ft above BFE (R324.1.3.3, R324.2.1)
- Coastal V Zones: Lowest structural member at least 2 ft above BFE (R324.3.2)
- Unstudied Floodplains: Lowest floor at least 3 ft above highest adjacent grade
- Almost all Development Requires Permits
- Floodway Development Requires Study
Slide Two

- Storage of Materials may Require Permit
- Stuff FLOATS…Anchor Everything!
- New Structures Require Elevation Certificates (R324.1.9)
- Floodplain Residence May Need Rescue!
- Keep the Bulldozer out of the Creek!
- Call DEC with Questions