City of Keene, NH

Towards a Climate Resilient Community

NH Office of Energy and Planning
2016 Spring Planning and Zoning Conference
June 4, 2016

Rhett Lamb, ACM/Planning Director
City of Keene, NH
Weekend Rain Forecasted

Heavy rains are predicted for Keene and the Monadnock Region tonight and through this weekend. The Public Works Department, Highway Division, will be inspecting the City drainage system today, as well as brooks and waterways to clear any debris and ensure proper drainage.

The Public Works Department would like to remind residents that they can help ensure proper drainage in their neighborhoods by clearing any leaves or debris from catch basins. We also request that drivers do not attempt to drive on a roadway if it appears to be flooded. This can send water onto properties and can flood basements.

Please contact the Public Works Department at 603-352-6550 with questions or concerns.
How We Got Started...

- Partnered with ICLEI in 2000 as part of CCP Mitigation program
- GHG Emissions Inventory 2000
- Established GHG reduction target Adopted Climate Change Action Plan in 2004
- Implementing projects since 2000
- Climate Resiliency (Adaptation) Plan 2007
- Comprehensive Master Plan 2010
Reduction Measures

• Biodiesel & Hybrid vehicles in city fleet
• Geothermal system at DPW
• Methane to energy system
• Micro Hydro energy generation at WTF
• Climate Showcase Community Recipient
• ESCO contract
• LED streetlights, traffic signals
The Preparedness Planning Process

- Make Commitment
  - Milestone 1: Conduct a Climate Resiliency Study
  - Milestone 2: Set Preparedness Goals
  - Milestone 4: Implement Preparedness Plan
  - Milestone 5: Measure Progress & Evaluate Plan
- Milestone 3: Develop Preparedness Plan
Climate Impacts - Keene

- Floods
- Changes in snowfall
- Changes in plant and animal species
- Hotter days
- Air Quality Impacts
- More dynamic weather pattern

Keene 2005
“CAFFEINATED CLIMATE”

2005 October* 11.2 inches in 24 hrs

2012 May* 4.8 - 6.9 inches in 5 hrs

2013 September 4.6 inches in 5 hrs

* Federal disaster declaration
Resiliency in Keene

- Energy efficiency and sustainable design standards
- Decrease runoff
- Enhance ability of Stormwater systems to handle large storms
- Create migratory pathways for animals
- Promote renewable energy resources
- Increase local food production
- Improve reliability of emergency communications
- Set the stage for a community conversation about sustainability
2010 Comprehensive Master Plan

- Written through the filter of a changing climate

- Emphasis on Community Sustainability

- Sets goals and actions for future land use, capital projects, and operating budget
CMP Implementation

- Hillside Development Ordinance
- Surface Water Ordinance
- Incentive Zoning
- LID Regulations
- Culvert and Stormdrain study
**Capital Improvement Program Project Form**

**General Project Data**
- Project Name:
- Department:
- Financial Limitation:
- Financial Narrative:
- Phase Requirement:
- Project Contact:
- Project Manager:
- Project Title:
- Project Description:
- Project Justification:
- Project Description:
- Project Justification:

**Project Description Justification**

Severe weather events are occurring on a higher frequency, in particular severe weather conditions have led to increased flooding events in the City. The City’s storm water system has been struggling to handle these events due to its age and design standards. As a result, the City has experienced more frequent and severe flooding events which is impacting the ecosystem and individual properties. The City is addressing the changing climate and redeveloping its storm water system through a mix of short term and long-term solutions. The project includes improving maintenance and inspection of the storm water system, identification of areas of need, and watershed analysis. The City has identified areas that have repetitive localized flooding issues.

**Financial Plan & Project Schedule**

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<th>FY 2018</th>
<th>FY 2019</th>
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**Annual Department Operating Budget Impact:**

- None (0-2,000)

**Project Status:**

- Complete
### Operating Budget Form

#### FY 2016/2017 Objectives

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#### Metrics

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**DEPARTMENT**: Planning

**DIVISION**: Land Development

**MISSION**: To provide economic, social, and technical assistance to the City of X in areas such as urban planning, land use, and sustainability.
Resiliency Implementation

- Watershed H&H Study
- Bridge Replacement
- Drain Cleaning & Repair
- Stormwater System Projects
- Dam Studies and Repairs
- Vulnerability Study update
Observations

• Fixing Big Problems takes a Long Time
• Find a Way to Help affected Residents & Businesses
• Make sure New Development Doesn’t Make Things Worse
• FEMA Programs Need to be Recalibrated
• The Cumulative Effect of Small Decisions
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www.ci.keene.nh.us/planning/climateprotection.htm