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Northeast GAS ASSOCIATION

Flood Planning for Natural Gas Utilities:

Lessons Learned and Industry Practices

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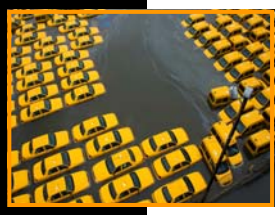
TABLE OF CONTENTS



Introduction 1

Background 2

I. Focus Areas 4

A. Risk Management 4

B. Design Element Practices and Considerations 5

C. Flood Emergency Preparation and Coordination 6

D. Post Flood Recovery Issues 7

II. Topics for Future Consideration 8

III. Appendix 9

IV. Acknowledgements 15

Report on Industry Practices for Flood Planning and Recovery for Natural Gas Transmission and Distribution Systems in the Eastern United States

INTRODUCTION

Flood emergency planning is an increasingly important part of a natural gas utility's emergency planning strategy. The Northeast U.S. in just the last few years has experienced significant challenges to utility systems arising from water or flood emergencies – from tropical storms to winter Nor'easters to local water main breaks that flood major urban downtown areas. Dealing with these emergencies, and planning for the next ones on the horizon, are essential and immediate planning responsibilities.

Natural gas utilities in the region, recognizing this challenge and the value of sharing operational experiences and best practices, organized a workshop on the topic of flood emergencies through their trade association, the Northeast Gas Association (NGA). Also partnering were the Southern Gas Association (SGA) and the American Gas Association (AGA). The workshop, held in New Jersey in March 2013, brought together experts in the field to share experiences and lessons learned. This topic was also featured in the Pipeline Safety Seminar convened by the New York State Public Service Commission in fall 2013.

This document summarizes the discussions from these workshops and other industry forums. It is hoped that it will serve as a resource for utilities in the Northeast and throughout the U.S. as they work to increase their risk assessment as well as planning and response capabilities. It includes recommended best practices and a "Flood Emergency Preparation and Coordination Checklist."

The report was prepared by Dan Dessanti of NGA and Allen Peterson of New York State Electric & Gas (NYSEG). Thanks to all the utility members and to SGA and AGA for participating and sharing industry knowledge and experience.

REPORT ORGANIZATION

First, the participants of the NGA Flood Emergency Planning Best Practices Workshop developed recommendations for flood planning in four main areas:

- Risk Assessment
- Design Element Practices and Considerations
- Flood Emergency Preparation and Coordination
- Post Flood Recovery Issues.

Second, the Report reviews several topics for future industry discussion and analysis.
Finally, the appendices feature further details on each of the main focus areas as well as a one-page "Flood Emergency Preparation and Coordination Checklist."

Flood Emergency Planning by Natural Gas Utilities

BACKGROUND

In the last decade, severe storms have brought devastation to coastal areas and river communities throughout the U.S. with a range of impacts to human health and infrastructure, from Hurricane Katrina in 2005 to Superstorm Sandy in 2012. One of the major impacts has been flooding, and one of the major impacts of flooding has been on local natural gas utility distribution systems.

This report deals with natural gas utility planning and response to flood emergencies.

Natural gas utilities in the Northeast have always had to deal with storm and water impacts, but the last few years in particular have brought a series of high-impact storms that has elevated concern over utility system security. Flooding risks are fast becoming a high priority issue, and utilities are responding.

In 2010, NYSEARCH, a research and development group of NGA, sponsored and managed a study completed by URS on the potential impacts of global warming on the natural gas industry.
Key results from this study are the following:

- Between 2005 and 2025, some climate change effects and impacts will occur but at modest levels, and within ranges of change experienced already over the past several decades. Based primarily on the United Nation's Intergovernmental Panel on Climate Change modeling projections, the degree of change will begin to accelerate but will probably remain moderate in its impacts on most of the local gas distribution companies (LDCs).

- From this study, a relative ranking of the four categories of effects and associated impacts, in terms of potential adverse risk for the LDCs, appears to be the following:

  - Increased precipitation and associated flood damage to assets and related operational effects;

  - Increased storm severity and associated heavy rain, wind, and flooding damage to assets and related operational effects;

  - Sea level rise and its multiplier effect on storm surges causing more damage to assets in coastal communities and affecting customer bases by temporary and in some cases permanent relocations; and

  - Temperature change and its impacts primarily related to supply and demand and field operations with some minor impacts on asset integrity.

The Risks of Flooding to a Natural Gas Distribution System

The impacts of flooding on a natural gas distribution system include water intrusion and infiltration into the system; submergence of customers' gas meters, which have to be shut off, and then eventually relighted; possible dislocation and exposure of sections of a distribution main via road destruction and earth-shifting; and damage to other facilities such as regulator stations. Utility control centers can also be directly impacted by flooding.

BACKGROUND, *continued*

In August 2011, Hurricane/Tropical Storm Irene brought flash flooding to eastern New York State, western Massachusetts and southwestern Vermont. Washouts happened in minutes, followed by wide-ranging devastation to roads and homes.

About a week later, in early September 2011, Tropical Storm Lee also hit New York State and parts of New England, with repeated devastating results. An immediate challenge for utility workers was gaining access to the area to address impacted facilities and flooded homes and businesses.

The utilities have long conducted emergency planning and mutual aid practices with utilities in the tri-state area of New York, New Jersey and Connecticut. Through the Northeast Gas Association (NGA), the utilities in the eight -state region of New York, New Jersey and New England have conducted annual mutual aid planning to build a foundation for coordinating emergency response to situations such as flooding.

As one example of that type of planning, NGA – in conjunction with the Southern Gas Association and the American Gas Association - was organizing a major workshop on flood emergency planning for New Jersey scheduled for mid-November 2012. However, that workshop had to be rescheduled when Superstorm Sandy hit the region in late October 2012. (The workshop was later held in March 2013.)

Superstorm Sandy made landfall in southern New Jersey, with its impact felt across more than a dozen states. The storm battered the East Coast, particularly the densely-populated New York and New Jersey coasts, with heavy rain, strong winds, and record storm surges. During Sandy's immediate aftermath, more than 23,000 people sought refuge in temporary shelters, and more than 8.5 million customers lost electricity. The storm flooded numerous roads and tunnels, blocked transportation corridors, and deposited extensive debris along the coastline. Approximately 240,000 natural gas customers were impacted. NGA enacted its mutual aid plan just prior to the storm's landfall, and coordinated a response involving more than 800 personnel from 50 utilities from throughout the U.S. and Canada, to assist natural gas utilities in New Jersey and New York. Equipment was also provided to replace components damaged from flooding (especially service regulators).

With this recent experience, it is understandable why flood emergency planning has become an increasingly important part of a natural gas utility's emergency planning strategy. Dealing with these emergencies, and planning for the next ones on the horizon, are essential and immediate planning responsibilities.

As noted, NGA, SGA and AGA convened a flood workshop in New Jersey in March 2013, which brought together experts in the field to share experiences and lessons learned. This report documents findings from that workshop and from a separate discussion led by the New York State Public Service Commission (NYS PSC).

I. FOCUS AREAS

A. Risk Management

Flash Flooding
River Flooding
Coastal Surge Flooding
Water Main Break

Flash Flooding

Flash or rapid flooding occurs in low lying areas when heavy rains or other sources of water are suddenly introduced. This is a phenomenon that is well known in normally arid areas, but can occur anywhere. Unfortunately, while FEMA has maps for flooding near waterways, flash flood mapping is not readily available, particularly in the Eastern U.S.

Identifying flash-flood prone areas based upon topography/hydrology, technical specialists' input and past experience is critical for utilities. Also important is identifying gas facilities in hazard areas within flash flood areas (i.e., erosion, washout and landslide zones).
Rapid snowmelt areas in the north should be considered as a factor as well.

Identifying flash-flood prone roads that can hinder access to facilities, even if the facilities themselves are not in a flood-prone area, is equally important. Integrating flash flood risk assessment into a formal Distribution Integrity Management Plan (DIMP) is recommended.

River Flooding

River, waterway, stream or lake flooding occur when water levels rise in one of the aforementioned bodies of water and exceed the banks. These types of flood risks are often documented in maps and can be cross referenced with existing gas infrastructure and flood prone roads that may hinder access.

It is also important to identify upstream supply feeds that may be impacted by floods – their loss can drop system pressure even if the system is not flooded.

Coastal Surge Flooding

Coastal Surge Flooding was the predominant experience that occurred during Sandy, where storm surges during high tides overwhelmed many coastal areas, causing major destruction to buildings and infrastructure, including gas, electric, water and sewer.

A key issue to consider with respect to coastal flooding includes mapping areas of varying building integrity (i.e., those at risk to being significantly damaged by a surge).

Utilities should consider mapping areas of varying risk, such as tree, vegetation, rock and debris deposition, as well as areas of sand erosion and sand deposition. It is prudent to locate and map salt-sensitive above-ground infrastructure and equipment, including storage yards.

Water Main Break

A water main break can have the same effect as a flash flood. Some unique recommended actions include plotting locations of gas facilities near or parallel to major water mains and color coding them both by conditions and importance (e.g., large diameter old water main with leak history near large diameter cast iron gas mains).

Also, map the topography and direction of water flows in the event of a water main break. Be alert for areas of narrowing topography that can channel water into a small area.

Plot locations of downstream exposures (e.g., valves, vaults, regulators.)

Identify locations for sectionalizing valve locations near high-risk areas.

Identify underground electric facilities that may pose an electrocution hazard.

I. FOCUS AREAS

B. Design Element Practices and Considerations

Pressure Regulating Facilities
Water Intrusion/Infiltration
Bridge Crossings
Leak Prone Pipe Replacement
(Cast Iron/Bare Steel)
Critical Facilities Design and Review

Many flood risk threats can be mitigated by incorporating flood risk into the design of gas system infrastructure in key high risk geographic areas. The assets listed above were determined to require special attention and focus.

Pressure Regulating Facilities

Pressure regulating stations are critical infrastructure feeding gas distribution systems. Pressure regulating stations in or near flood-prone area should undergo a criticality rating based on such criteria as:

* How many customers are supplied by the facility?
* Can the station be isolated (i.e. shut-off), and under what temperatures?
* Is the station a single feed to an area?

Water Intrusion/Infiltration

Important considerations related to water intrusion and infiltration of gas systems include attention to areas where the gas system pressure may be less and there is potential head pressure of flood waters.

For low pressure systems, consider using check valves with float switches activated by water to protect the distribution system. For high-pressure systems, consider utilizing excess flow valves (EFVs) on an expanded basis in flood areas. New technology allows live insertion of EFVs in high-pressure services.

Bridge Crossings

Gas systems located on bridges are especially vulnerable during flooding episodes.

Utilities should consider having valves on both sides of a bridge located a sufficient distance away from each other to allow for safe isolation of a high pressure main crossing a bridge. Also consider locating a pipe on the downstream side of the flow of water; and considering HDD (horizontal directional drilling) for new installations.

Leak-Prone Pipe Replacement

Leak-prone pipe, such as cast-iron or bare steel pipe, are an increased risk factor during a flood event, with a higher potential of allowing water intrusion into the system.

Recommendations include accelerated replacement plans for flood prone areas. Also, system upgrades are recommended where possible, as well as the elimination of low pressure facilities in flood zones. Consider DIMP (Distribution Integrity Management Program) algorithm (risk tool) reviews, to place a higher priority on mains located in flood zones, with additional criticality for low pressure vs. high pressure.

Critical Facilities Design and Review

Critical facilities such as odorization equipment, boilers, generators, controls, and electric components should be assessed for flood risk. Contain and secure tanks and other critical components to prevent damage due to water intrusion and buoyancy.

I. FOCUS AREAS

C. Flood Emergency Preparation and Coordination

Incident Command System
Resource Allotment
Response Plan
Preparation and Coordination Checklist

There are several important areas companies need to address in order to prepare for an oncoming weather event. The primary issues are:

Incident Command System (ICS)

ICS planning and implementation is critical. This is the predominant process utilized by the Federal government, most states and emergency providers. Employee training, role assignment, integration into workforce management and drills with emergency management officials are required to ensure success.

Resource Allotment

Organizations must be prepared to participate in mutual aid programs organized by regional and national trade associations such as NGA, SGA and AGA as well as participate in drills and in actual events as both requesting and responding companies.

An important mutual aid resource is the involvement of contractor support using OQ qualified contractors.

Also, be sure to identify specific material and equipment needs, as well as staging locations, and putting the "right" people in the right position during incidents.

Response Plan

It is essential to have a formalized plan developed in advance of an event. The plan must cover a general emergency response as well as responses specific to events like floods. Triggers to activate the plan should be specified.

The industry, needs to be more proactive and less reactive with "pulling the trigger" on initiating an ER plan as well as mutual aid. Communication is essential with town officials and emergency responders concerning restoration plans.

Flood Emergency Preparation and Coordination Checklist

This checklist is provided in the Appendix.

I. FOCUS AREAS

D. Post Flood Recovery Issues

Tracking Impacted Customers
Meters and Regulators
Guidance to Customers
CGI Policy to Replace Meters
Post-Recovery

Tracking Impacted Customers

Although system-wide automated electric service outage systems have been successfully implemented by many electric utility operators, their use by gas operators has been limited. The recent major gas outage events following Sandy made the gas industry keenly aware of the consequences of not having such a system. In these cases, gas operators scrambled to keep track of outages and restoration efforts on paper, monitored asset maps posted on walls with markers, and used excel spreadsheets to keep track of outage and restoration updates.

This was happening as their electric utility counterparts were able to track outages automatically from incoming customer calls or customer reports via the internet. In turn, electric customers often had access to those companies' outage system maps posted on the service provider's website for near real-time updates on the status of restoration.

Regulatory post-flood audits, as well as many internal company reviews, consistently pointed to the need to provide more timely tracking of gas outages in the future. Some combination utilities are exploring the possibility of leveraging their electric outage systems to provide similar capabilities on the gas side. The challenges of doing so lie with integrating various company databases to accomplish outage and restoration tracking. Cost is a major challenge, since prior to the above noted recent events, major gas outages were considered a rarity, especially compared to the relative frequency of occurrence of electric outages.

NGA is evaluating the feasibility of developing a gas outage and restoration tracking system platform that can integrate the existing in-house systems of gas operators, such as GIS, CIS, work management systems and internet portals. Such a system would enable gas utility operators to license and deploy it in an operationally effective and cost effective manner, as opposed to developing their own in-house systems.

Meters and Regulators

An important policy issue concerns what to do with meters and regulators impacted by flood waters and what design configurations should be considered going forward.

Solutions for consideration include: replacing regulators & meters, replacing regulators only and/or replacing regulators with vents not pointing downward, as well as installing vent protection devices or vents that are higher than FEMA flood level for the area.

Guidance to Customers

Utilities should provide early, clear and consistent communications with customers. Utilities should develop policies and methods of communication regarding appliances and valves, and have prepared clear advice on appliances consistent with FEMA and other government agencies. Messages should include information on the extent of damage and locations where customers can receive assistance. Use of social media and other communication tools (e.g., Twitter/Facebook/phone blast/radio-TV and handouts) should be considered.

Be sure to coordinate with municipal inspectors regarding communication/messaging via signs/paint on structures, such as:

- *Green: ok to relight*
- *Yellow: some issues with relight possible*
- *Red: not habitable/ do not relight.*

Can't Get In (CGI) Policy

CGI policies to replace meters should be addressed. For example, after multiple attempts, the utility can follow-up with such actions as a fine, employ police and locksmiths, and cut and cap services in non-heating season.

Post Recovery

Develop post-emergency process, and determine criteria for when an emergency is over. Analyze your emergency response and lessons learned. Update records immediately and adjust your communication plan accordingly.

II. TOPICS FOR FUTURE DISCUSSION

The NGA member utilities identified a number of areas that warrant future discussion.

Mutual Aid Coordination

Agreements – National / SGA-NGA Agreement

Staff coordination among Trade Associations

Mutual Aid Personnel

Crews (definitions, Operator Qualification issues)

Engineering and Management Support (supplement and relieve requesting company personnel).

Logistics Planning

Lodging, Meals, Showers, Staging, Fuel, etc.

Equipment/Materials

Manufacturers, Distributors, Industry

Regulators, Meters, Meter Assembly, Meter Locks (ensure they meet company or industry specifications).

Communications/Public Relations

Media, Government Officials, Employees, Customers, Industry

Media Sources (Social Media, Videos, etc.)

State Utility Commission Interface and Collaboration

III. APPENDIX

Risk Assessment:

Flash Floods

This next section includes further details on the four main focus areas and the recommendations, as well as a one-page "Flood Emergency Preparation and Coordination Checklist." It is based on comments and suggestions from the workshops and seminars convened in the region during 2013.

a. *Identify flash flood-prone areas based upon topography/hydrology, technical specialists' input and past experience.*

b. *Identify gas facilities in ground movement hazard areas within flash flood areas (i.e., erosion, washout and landslide zones).*

c. *Identify protected vs. unprotected gas facilities in these areas (e.g., cased, rip-rapped, reinforced, exposed).*

d. *Consider rapid snowmelt areas in the north.*

e. *Color code gas system by pressure and elevations (to determine head pressure of flood waters).*

f. *Develop CIS database of meters as being inside or outside the house/building.*

g. *Identify flash-flood prone roads that could hinder access to facilities, even if the facilities themselves are not in a flood-prone area.*

h. *Identify company-owned and third party telemetry in flash flood-prone areas.*

i. *Map drip locations and sizes in flash flood-prone area.*

j. *Map primary, secondary and above-ground valves in flash flood-prone areas.*

k. *Identify upstream supply feeds that may be impacted by flash floods – their loss can drop your system even if your system is not flooded.*

l. *Consider and map (if possible) loss of supply to un-flooded areas.*

m. *Assess all normal operations and maintenance policies and practices to see if they still make sense in a major flood emergency – create exceptions/waivers or alternate policies as needed.*

n. *Integrate flash flood risk assessment into a formal Distribution Integrity Management Plan.*

o. *Consider scale/magnitude effects; i.e., the risk presented by the flash-flooding of 10 different locations at once that would not exist if only 1 location were flooded.*

III. APPENDIX

Risk Assessment:

River Floods

a. *Identify flood-prone areas based on FEMA and other flood maps.*

b. *Color code system by pressure and elevations.*

c. *Develop CIS database of meters as being inside or outside the structure.*

d. *Identify flood-prone roads that can hinder access to facilities, even if the facilities themselves are not in a flood-prone area.*

e. *Identify company-owned and third party telemetry in flood-prone areas.*

f. *Map drip locations and sizes in flood-prone areas.*

g. *Map primary, secondary and above-ground valves in flood-prone areas.*

h. *Identify upstream supply feeds that may be impacted by floods – their loss can drop your system even if your system is not flooded.*

i. *Consider and map (if possible) loss of supply to un-flooded areas.*

j. *Assess all normal O&M policies and practices to see if they still make sense in a major flood emergency – create exceptions/waivers or alternate policies as needed.*

k *Integrate flood risk assessment into formal DIMP plan.*

l. *Consider scale/magnitude effects; for example, the risk presented by the flooding of 10 square miles as opposed to the flooding impact of 1 square mile.*

III. APPENDIX

Risk Assessment:

Coastal Surge

a. *Consider mapping areas of varying building integrity. Examples include flimsy old wood shacks vs. wood/stone residences on good foundations, or solid stone and steel buildings that are impervious to being knocked over by a surge, etc.*

b. *Consider mapping areas of varying risk, re: tree, vegetation, rock and debris deposition.*

c. *Consider mapping areas of sand erosion (blowouts/washouts) and sand deposition.*

d. *Locate and map salt-sensitive above-ground company infrastructure and equipment (including storage yards).*

e. *Identify flood-prone areas based on FEMA and other flood maps.*

f. *Color code system by pressure and elevations.*

g. *Develop CIS database of meters as being inside or outside a structure.*

h. *Identify flood-prone roads that can hinder access to facilities, even if the facilities themselves are not in flood-prone areas.*

i. *Identify company-owned and third party telemetry in flood prone areas.*

j. *Map drip locations and sizes in flood-prone areas.*

k. *Map primary, secondary and above-ground valves in flood-prone areas.*

l. *Identify upstream supply feeds that may be impacted by floods – their loss can drop your system even if your system is not flooded.*

m. *Consider and map (if possible) loss of supply to unflooded areas.*

n. *Assess all normal O&M policies and practices to see if they still make sense in a major flood emergency – create exceptions/waivers or alternate policies as needed.*

o. *Integrate flood risk assessment into formal DIMP plan.*

p. *Consider scale/magnitude effects; e.g., the risk presented by the flooding of 10 square miles as opposed to 1 square mile.*

III. APPENDIX

Risk Assessment:

Water Main Break

a. *Plot locations of gas facilities near or parallel to major water mains and color code both by conditions and importance (e.g., large diameter old water main with a leak history near large diameter cast-iron gas mains). Identify size, age, material, pressure, condition, etc.*

b. *Map topography and direction of water flows in event of water main break. Be alert for areas of narrowing topography that can channel water into a small area.*

c. *Plot locations of downstream exposures, e.g., valves, vaults, regulators.*

d. *Identify sectionalizing valve locations near worst-risk areas and see if you need to make any changes to your sectionalizing valves.*

e. *Safety – identify underground electric facilities that may pose an electrocution hazard.*

f. *Identify flood-prone roads that can hinder access to facilities, even if the facilities themselves are not in a flood-prone area.*

g. *Identify company-owned and third party telemetry in flood prone areas.*

h. *Map drip locations and sizes in flood-prone areas.*

i. *Map primary, secondary and above-ground valves in flood-prone areas.*

j. *Consider and map (if possible) loss of supply to un-flooded areas.*

k. *Assess all normal O&M policies and practices to ensure they are applicable for a major water main break emergency – create exceptions/waivers or alternate policies as needed.*

l. *Integrate water main break risk assessment into formal DIMP plan.*

Design Element Practices and Considerations

a. *Service Regulators*

- Consider new installation design criteria.
- Assess flood levels in areas of concern.
- Install/modify regulator vents to extend above flood levels.
- Research local codes and consider existing standards by jurisdiction.
- Review with local Building Department(s).
- Consider "historical" districts.
- Assess merits of employing remote control valves or float check valves. Consider application and installation of these devices.

b. *Water Intrusion/Infiltration Considerations*

- System Pressure.
- Company owned mains/services vs. customer owned piping considerations.
- Low Pressure - Consider check valve with float switch activated by water to protect distribution system.
- High Pressure – Consider excess flow valves (EFVs) on an expanded basis in flood areas. New technology allows live insertion of EFVs in HP services.

c. *Bridge Crossings*

- Consider placing valves at a safe distance from both ends of a high pressure main crossing a bridge to allow for the safe isolation of the main if necessary. Also consider this for large diameter low pressure mains (i.e., greater than 12 inch).
- Consider locating pipes in bridges on the downstream side of the flow of water.
- Consider installing pipe inside the structure of the bridge to allow for "protection" of the pipe.
- Consider HDD (horizontal directional drill) for new installations, replacements/renewals.

d. *Sectionalizing Districts*

- Consider developing flood isolation areas.
- Consider remote operating valves for low pressure systems to ensure timely and safe operation of valves.
- System network model analysis required to ensure operation of valves does not affect areas outside of flood zones.
- Locate valves.
- Evaluate GPS vs. marker ball for flood zones.

e. *Critical Facilities Design and Review*

- Odorization Equipment.
- Contain and secure tanks and other critical components to prevent damage due to a tank becoming buoyant.
- Consider proper elevation for boilers, generators, controls and electric components.

III. APPENDIX

Flood Emergency Preparation and Coordination Checklist

(Developed from discussions at the New York State Pipeline Safety Seminar—September 2013)

a. Make sure that provisions are in place for meeting the needs of employees and their families impacted by flood restoration efforts.

b. Supply GPS units for outside mutual aid (MA) crews.

c. Update GIS values in system, including valves, regulator stations, etc.

d. Secure locksmiths to gain access into properties for turnoff to reduce waiting time.

e. Use social media to maintain contact with customers.

f. Arrange for mutual assistance from further afield for large events to expedite restoration efforts.

g. Secure vehicles and equipment for crews without equipment.

h. Maintain call-out list of employees and recent retirees.

i. Preplan workforce issues, going to 12 hour shifts, 24 hours a day.

j. Set up prepackage for MA crews (e.g., hazards, EHS concerns, paperwork, maps, and reporting area) to administer set-up.

k. Conduct drills with external stakeholders and organizations as often as possible.

l. Ensure worksites are safe, secure and organized.

m. Establish pre-defined staging areas.

n. Secure fuel for vehicles, backup generators as needed, heaters. Ensure vehicles fueled in advance.

o. Move vehicles out of flood zones prior to event.

p. Obtain travel letters from appropriate authorities (state/local police).

q. Secure rental vehicles in advance of event including heavy equipment.

r. Respond with emergency crews for initial assessments.

s. Provide safety training for hazardous conditions.

t. Develop a response matrix – personnel needed to restore set number of services in set amount of time.

IV. ACKNOWLEDGEMENTS

The Northeast Gas Association wishes to thank its members, as well as natural gas utilities from across the United States, who participated in the Flood Planning Workshop and openly shared what they have learned. We also thank all the industry representatives that selflessly provided mutual aid during flood events.

We thank Andrew Lu and Kimberly Denbow of the American Gas Association, and Gary Hines and Kent Hobart of the Southern Gas Association, for their support of the Workshop effort and their roles in securing mutual aid support to organizations in need.

Photo credits: NOAA and natural gas utilities in the Northeast.