



TO: John McDonough, City Manager

FROM: Noah Reiter, Assistant City Manager

DATE: February 10, 2011, for Submission onto the Agenda of the February 15, 2011 City Council Meeting

ITEM: January 2011 Winter Storm Debriefing & Recommendations for Future Response

City Manager's Office (CMO) Recommendation:

The CMO recommends that the Council authorize staff recommendations for enhancing response to future winter storms.

Background:

During the week of January 9, 2011 City staff prepared for and responded to a winter storm that dropped significant frozen precipitation that remained on the ground for several days due to prolonged sub-freezing temperatures, presenting significant challenges to jurisdictions in the Metro Atlanta area. The tireless efforts of the City's Public Safety and Public Works staff, as well as its partners in ChatComm, Rural/Metro, and public works field services kept the primary routes of travel passable and facilitated uninterrupted emergency services response to its citizens and business community.

As with any emergency response, actual or exercised, key staff performs an analysis of the City's response to the incident and identifies those areas that can be improved. Senior leadership from Fire, Police, Finance / Procurement, Public Works, and Communications met numerous times in the weeks since the January storm and has prepared an After Action Report, which contains several opportunities for improvement, many of which were incorporated into the City's response to the snowfall received overnight on February 9th.

Discussion:

The emergency management team's After Action Report and recommendations for enhancing the preparedness for and response to future winter storms will be presented to the Council.

Financial Impact:

The financial impact will be outlined in the presentation and is dependent upon the level of response and service desired, as well as the severity of future storms.

Attachments:

- I. January 2011 Winter Storm Response Debriefing & Recommendations Presentation
- II. January 2011 Winter Storm Response After Action Report
- III. Annex R: Winter Storm Response to the City's Emergency Operations Plan



January 2011 Winter Storm Debriefing & Recommendations

February 15, 2011

Timeline of January 2011 Winter Storm

- January 6th & 7th: Emergency Planning Staff Meetings
- January 7th : NWS Winter Storm Warning Issued
- January 9th
 - 18:00 hours: Public Works stages salt/sanding equipment
 - 19:00 hours: EOC operational
 - 20:30 hours: Light sleet begins to fall
 - 21:45 hours: Precipitation changes to snow with accumulation
 - 22:00 hours Stranded motorist calls begin and continue for hours
 - 22:30 hours: CM announces City Hall closed for Monday 1/10/11
 - 22:30 hours: SSPD calls in day shift to stage at Sheraton



Timeline of January 2011 Storm

- January 10th
 - 00:30 hours: Standby motor-graders begin clearing Roswell Rd.
 - 00:45 hours: Close Johnson Ferry @ Abernathy & 9-1-1 calls drop
 - 03:00 – 05:00 hours: SSPD searches for occupants in abandoned vehicles
 - 1/2" freezing rain/ice accumulation on top of snow
- January 10th – 14th
 - Roads re-treated as re-freezing occurs daily; EOC operational throughout
- January 14th
 - 19:00 hours: EOC deactivated



Storm Response Highlights

- Total of 10, 12-hour EOC operational periods
- 267 requests for road condition assistance handled
- SSPD transported ~9 employees to Northside Hospital
- No major incidents, no citizen storm-related fatalities, no injuries to City staff
- Moderate damage to City-owned or contracted equipment (1 parked patrol car totaled, minor damage to a 2nd patrol car, damage to Rural/Metro ambulance)



Successes

- Adequate supply of road treatment materials
- Good situational awareness through TMC camera network
- Excellent Public Safety & Public Works staffing plans
- Excellent communications with external partners (AFCEMA, GEMA, Northside Hospital, GDOT, fuel vendors)



Successes

- Staff housing and sustenance
- Good use of list of priority roadways, and other on-demand locations (field reports to the EOC)
- Excellent communications from field to EOC; 911 to EOC; Public Works to EOC
- Finance, Logistics, and Liaison NIMS components successfully utilized



Opportunities for Improvement

- IT support in EOC, data connections, phones
- Physical layout and setup of EOC (i.e. furniture, telephones)
- Capture more detailed information on WebEOC
- Provide WebEOC access to more external partners
- Utilize CERT and Police volunteers
- Real-time communications with the public through web, social media, and other tools



Opportunities for Improvement

- More focus on long-range planning activities for extended operations
- Update critical facilities / special population contact lists
- ***Ensuring adequate, dedicated resources to meet City's road treatment and clearing objectives***





Considerations / Recommendations for Future Response

Winter Storm Concept of Operations

- CoSS' Winter Storm Response (Annex R to the Emergency Operations Plan)
- Annex R declares the City's mission as follows:

“To protect the public health and safety in the event of a winter storm affecting the City of Sandy Springs.”



Roadway Prioritization

- The City has prioritized its road treatment and clearing activities by road priority:
 - Priority 1: bridges, overpasses, arterials, and other known problem locations
 - 1.6 miles of surface street bridges (one passable lane each direction)
 - 95.1 miles of primary roadways, one passable lane each direction (exclusive of bridges, freeways, and off-ramps)
 - Freeway off-ramps & overpasses add 13.7 miles
 - Freeways add 61.2 miles to provide one passable lane each direction
 - Priority 2: collector streets (84.4 miles, one passable lane each direction)
 - Priority 3: residential streets (521.4 miles one passable lane each direction)



Decision Points: Priority 1 Roadways

- What is an acceptable timeframe for pre-treating all bridges, overpasses, and off-ramps?
 - Factors: Rock / salt / sand versus liquid pre-treatment, time of day / day of week, weather / driving conditions
 - ***Bridges & Overpass / Off-Ramp Hot-Spots: < 2 hours***
- What is an acceptable timeframe for treating and clearing the Priority 1 roadways?
 - ***< 12 hours for first pass***



Decision Points: Priority 1 Roadways

- Is one passable lane of travel in each direction acceptable for all roadways (i.e. Roswell Road, PDR, Abernathy, Johnson Ferry)?
 - Ensuring two passable lanes on Roswell Road in each direction adds an additional 19.4 miles on lane miles to the previously identified 95.1 miles of primary roads)
 - ***At a minimum, a second passable lane in each direction should be maintained on Roswell Road (public safety “lifeline”); evaluate the necessity for a second lane on other large, primary roadways***



Decision Points: Priority 2 Roadways

- What is an acceptable timeframe for treating and clearing the Priority 2 roadways?
 - *< 24 hours, event dependent (i.e. sustained precip)*
- In a sustained event, do we divert a portion of the resources from the Pri 1 roadways to start working on the Pri 2 roadways, while the other resources begin a second pass on the Pri 1 roadways?
 - *Event dependent, but divert a portion of resources to Pri 2 roadways as conditions on Pri 1 roadways permit*



Equipment Capabilities & Cost (*Primary*)

Vehicle Type	Capacity (cu. yards)	Est. Lane Miles	Spread Time	Travel Time for Reload	Reload Time	Approx. Total Time (hrs)	Hourly Cost	Hourly Cost x Load Time	Material Cost (~ 0.75 ton / yd)	Cost per Load	Cost Per Mile
2500 pickup	2	1.33	30 - 40 mins	30 mins	15 mins	1.25	\$228.58	\$285.73	\$174.76	\$460.49	\$346.23
9 Ton Dump Truck	4	2.67	40 mins - 1 hr	30 mins	15 mins	1.5	\$232.75	\$349.13	\$349.52	\$698.65	\$261.66
9 Ton Dump Truck	6	3.99	40 mins - 1 hr	30 mins	15 mins	1.5	\$234.83	\$352.25	\$524.28	\$876.53	\$219.68
Tandem Axle	10	6.65	1 - 1.5 hrs	30 mins	15 mins	2.5	\$500.00	\$1,250.00	\$873.80	\$2,123.80	\$319.37

Adding a plow to the vehicle adds \$150 / hour to the above rates

Roadway	Priority	Miles	Equipment	Time (hrs)	Cost	Cost w/ Plow	Plus Clean-Up ³
Surface Bridges ^{1,2}	1	1.6	1 - 6yd	2.6	\$1,147.82	N/A	\$1,227.75
Primary Surface ¹	1	95.1	4 - 6yd & 4 - 2yd	6.4	\$26,120.76	\$33,800.76	\$38,556.76
Roswell Rd., Addt'l Lane in Each Direction	1 or 2	19.4	4 - 6yd & 4 - 2yd	1.3	\$5,327.40	\$6,887.40	\$7,857.40
All Primary, one lane each direction		96.7		9.0	\$27,268.57	\$34,948.57	\$39,784.51
All 1° one lane each direction + 2 on Roswell Rd.		116.1		10.3	\$32,595.98	\$41,835.98	\$47,641.91

¹ Number of miles to provide one passable lane of travel in each direction
² Assumes one 6 yd spreader with a 4-hour minimum charge
³ Street sweeping at \$50 per curb line mile



Equipment Capabilities & Cost (Secondary)

Vehicle Type	Capacity (cu. yards)	Est. Lane Miles	Spread Time	Travel Time for Reload	Reload Time	Approx. Total Time (hrs)	Hourly Cost	Hourly Cost x Load Time	Material Cost (~ 0.75 ton / yd)	Cost per Load	Cost Per Mile
2500 pickup	2	1.33	30 - 40 mins	30 mins	15 mins	1.25	\$228.58	\$285.73	\$174.76	\$460.49	\$346.23
9 Ton Dump Truck	4	2.67	40 mins - 1 hr	30 mins	15 mins	1.5	\$232.75	\$349.13	\$349.52	\$698.65	\$261.66
9 Ton Dump Truck	6	3.99	40 mins - 1 hr	30 mins	15 mins	1.5	\$234.83	\$352.25	\$524.28	\$876.53	\$219.68
Tandem Axle	10	6.65	1 - 1.5 hrs	30 mins	15 mins	2.5	\$500.00	\$1,250.00	\$873.80	\$2,123.80	\$319.37

Adding a plow to the vehicle adds \$150 / hour to the above rates

Roadway	Priority	Miles	Equipment	Time (hrs)	Cost	Cost w/ Plow	Plus Clean-Up ²
Freeway Ramps & Overpasses ¹	1 or 2	13.7	4 - 6yd & 4 - 2yd	0.9	\$3,762.39	\$4,842.39	\$5,527.43
Freeways ¹	2	61.2	4 - 6yd & 4 - 2yd	4.1	\$16,817.02	\$21,737.02	\$24,799.02
2° Collectors ¹	2	84.4	4 - 6yd & 4 - 2yd	5.7	\$23,171.46	\$30,011.46	\$34,230.46
All Secondary, one lane in each direction		159.3		10.7	\$43,750.87	\$56,590.87	\$64,556.92

¹ Number of miles to provide one passable lane of travel in each direction

² Street sweeping at \$50 per curb line mile



Equipment Capabilities & Cost (*Residential*)

Vehicle Type	Capacity (cu. yards)	Est. Lane Miles	Spread Time	Travel Time for Reload	Reload Time	Approx. Total Time (hrs)	Hourly Cost	Hourly Cost x Load Time	Material Cost (~ 0.75 ton / yd)	Cost per Load	Cost Per Mile
2500 pickup	2	1.33	30 - 40 mins	30 mins	15 mins	1.25	\$228.58	\$285.73	\$174.76	\$460.49	\$346.23
9 Ton Dump Truck	4	2.67	40 mins - 1 hr	30 mins	15 mins	1.5	\$232.75	\$349.13	\$349.52	\$698.65	\$261.66
9 Ton Dump Truck	6	3.99	40 mins - 1 hr	30 mins	15 mins	1.5	\$234.83	\$352.25	\$524.28	\$876.53	\$219.68
Tandem Axle	10	6.65	1 - 1.5 hrs	30 mins	15 mins	2.5	\$500.00	\$1,250.00	\$873.80	\$2,123.80	\$319.37

Adding a plow to the vehicle adds \$150 / hour to the above rates

Roadway	Priority	Miles	Equipment	Time (hrs)	Cost	Cost w/ Plow	Plus Clean-Up ²
Residential ¹	3	521.4	4 - 6yd & 4 - 2yd	35.0	\$143,180.86	\$150,020.86	\$176,090.86

¹ Number of miles to provide one passable lane of travel in each direction

² Street sweeping at \$50 per curb line mile



Next Steps

- Determine appropriate service level standards
- Incorporate these service levels into EOP Annex R for different levels of storm response
- Execute contracts with multiple vendors to provide City with desired level of service with dedicated equipment



Other Enhancements in Process

- IT Support for EOC
- Communications (internal & external)
- Update of Winter Storm Response: Annex R



After Action Report (AAR)

This After Action Report documents the performance and preparedness of City staff and related tasks. It also makes recommendations for any improvements. This AAR format is suggested by U.S. Homeland Security (U.S. Homeland Security Exercise and Evaluation Program - Volume 2).

Incident Name: January 2011 Winter Storm

Incident Type: Winter Storm, Snow/Ice

Incident Start/End Date: 1/9/2011 –1/14/2011

I. EXECUTIVE SUMMARY:

The information contained in this report is a summary of the events surrounding the "January 2011 Winter Storm" that occurred in Sandy Springs on January 9-14, 2011. The purpose of this report is to assist City departments in striving for preparedness excellence.

On January 7, 2011 the National Weather Service issued a Winter Weather Advisory for North Fulton County including Sandy Springs. The weather service predicted accumulation of 3-5 inches of snow and ice. Situational awareness was maintained from 1900 hours on January 9, 2011 through 1900 hours on January 14, 2011. An expanded EOC operation was implemented during the second of ten 12-hour operational periods.

A pre-treatment plan for bridges and the hospital areas was completed prior to the heavy snowfall. After pre-treatment, crews immediately began treatment of roads as listed on the priority list maintained in the EOC. Deviations from that list were made when requests for specifically hazardous areas were received.

Strengths that were demonstrated during these events included:

1. Good use of City web site to share preparedness with citizens
2. Good use of Sandy Springs traffic camera's to monitor road conditions
3. A ready supply of salt/sand was maintained
4. Barricades were effectively used to close streets
5. Police Department/Public Works/Fire Department/ChatComm staffing plans
6. Good communications and cooperation between City Departments
7. Established contacts with City partners like hospitals, AFCEMA, GDOT, etc.
8. Effective use of priority road clearing plan
9. Staging of equipment prior to event
10. Good use of logistics to feed and house staff
11. Effective use of NIMS components: Logistics, Admin/Finance/Liaison/PIO

Opportunities for improvement were identified as follows:

1. ChatComm inclusion in pre-planning EOC activation.
2. IT support of EOC, both ChatComm and City.

3. Better defined EOC setup based on preplanned diagrams.
4. All functional positions should have backup personnel.
5. Clerical support staff should be available.
6. WebEOC should be better utilized to record more detail.
7. "Crash cart" should be developed for IT connections.
8. Continue expansion of WebEOC sharing with City partners.
9. Better real time information shared with public through web, social media, etc.
10. Create an analytic component to collate detail on road status, etc.
11. Ensure adequate, dedicated resources are in place to meet City's road clearing objectives.
12. Update critical facilities and special needs population contact information.

II. EVENT OVERVIEW:

The National Weather Service (NWS) issued a winter storm warning for the area including the City of Sandy Springs on 1/7/2011. The event was expected to begin around 2000 hours on Sunday, 1/9/2011, with an expected snow accumulation of 3-5". The storm had been predicted for several days prior to the issued warning.

On 1/6/2011, preparations were being made, including the planned staging of contracted snow equipment and crews, placing Police units on standby, and planning for additional Fire personnel and equipment.

On 1/7/2011, the decision was made to activate the Emergency Operations Center (EOC) at 1900 hours on 1/9/2011, to be staffed by personnel from Public Works, Police, and Fire. Weather briefings were conducted by the NWS and GEMA over the weekend, with the predictions remaining the same or worsening.

At 1630 hours on 1/9/2011, Governor Sonny Purdue issued an executive order declaring a state of emergency due to the storm event. The EOC was activated at 1900 hrs. Because of the worsening forecast, the EOC operations were set up in the ChatComm Training room, which also serves as the EOC. IT personnel from Police and ChatComm were called in to facilitate the setup. This deviated from the two previous winter event operations, in that those were set up in the supervisors' office of ChatComm, with only three personnel activated.

Public Works staged contractor equipment and crews in the City at 1800 hours. The equipment included two sand spreaders and crews, and two hand crews in pickup trucks. Additionally, there were two motor-graders and two tree crews on standby. The tree crews remained on standby throughout the event, although they were not used. The spreaders and hand crews began pre-treating bridges and the area around the hospitals, completing this before the heavy snows began to accumulate.

The precipitation in the City began as light sleet around 2030 hours, and changed to light snow at 2100 hours. It became heavy snow around 2130 hours, with some accumulation. Between 2130 and 2200 hours, the accumulation increased dramatically, affecting all roads.

By 2230 hours the City Manager announced the closing of City offices for the following day. Numerous reports of stranded vehicles were being received. PD started a call to all officers on the following day shift to report to the Sheraton on Barfield Rd. to stay overnight. A call to Eddie's Garage was made, requesting assistance with snow chains on police vehicles. The standby motor- graders were called in and were working on Roswell Road by 0015 hours.

Call volume was heavy between 2130 and 0030 hours, due to stranded vehicles and impassable roads, with Johnson Ferry being closed at Abernathy. The call volume decreased after midnight, although numerous vehicles were abandoned throughout the City. Between 0300 and 0500 hours, officers were directed to check vehicles on the roadway for stranded persons.

The morning of 1/10/2011 brought sleet and freezing rain, creating a top ½” layer of ice on top of the 5-6” of snow. This ice remained throughout the event, and was in addition to the compacted snow from vehicular traffic. There was not enough freezing rain, however, to seriously affect power lines or trees.

The following days involved responding to and treating roads and bridges for ice. Roads remained hazardous due to some melting during the day and re-freezing during the night. This pattern continued through the morning of Friday, 1/14/2011.

The event contained 10 twelve hour operational periods, concluding at 1900 hours, on 1/14/2011. The City responded with sand/salt crews to 267 requests during the storm event.

III. EVENT GOALS & OBJECTIVES:

Goal 1: Determine the appropriate level of EOC activation.

- Objective A: Identify credible sources of information for situational awareness
- Objective B: Seek information regularly from identified credible sources
- Objective C: Determine potential impact on City to make EOC activation decision

Goal 2: Determine need for additional staffing during storm period.

- Objective A: FD determine increased staffing needs & activation steps
- Objective B: PD determine increased staffing needs & activation steps
- Objective C: Public Works determine increased staffing needs & activation steps
- Objective D: ChatComm determine increased staffing needs & activation steps
- Objective E: EOC determine staffing needs & activation steps

Goal 3: Assess critical equipment/supplies on hand for winter storm response.

- Objective A: Determine if enough salt/sand/gravel mixture on hand
- Objective B: Determine quantity of barricades, cones on hand
- Objective C: Determine number of salt/sand trucks, graders, etc. needed

Goal 4: Identify any facilities within the City that might need support

- Objective A: Check with Hospitals to ask if they need any support
- Objective B: Check with Sr. Citizen group-housing to ask if any support needed

- Goal 5: Develop vehicle fueling alternatives for extended power outages
 Objective A: Finish research of emergency fueling options for power outage
 Objective B: Make report to City Manager for decision on options available
- Goal 6: Equip emergency vehicles with tire cables for snow travel
 Objective A: FD evaluate vehicles cables status
 Objective B: PD evaluate vehicles cables status
 Objective C: Rural Metro Ambulance evaluate vehicle cables status
- Goal 7: Evaluate ChatComm/EOC emergency power generator status
 Objective A: Determine last test date & what test consisted of
 Objective B: Determine natural gas supply status
- Goal 8: Evaluate City Hall/Backup EOC emergency power generator status
 Objective A: Determine last test date & what test consisted of
 Objective B: Determine how much fuel is in generator tank (how long will it last)
- Goal 9: Establish communications with and determine mechanism for requesting emergency assistance from partner organizations:
 Objective A: AFCEMA
 Objective B: Georgia Power
 Objective C: GDOT
 Objective D: Senior Citizen Housing
 Objective E: Hospitals and other healthcare organizations
 Objective F: Fulton County Schools and private schools
 Objective G: Road clearing equipment vendors
- Goal 10: Assure readiness of EOC
 Objective A: Confirm location & quantity of emergency EOC food & water
 Objective B: Confirm EOC room setup; based on EOC layout plan
 Objective C: Confirm EOC infrastructure: electrical outlets, data ports, cables
 Objective C: Confirm EOC location & readiness
 Objective D: Confirm other EOC resources: phone books, maps, ER Guidebooks
 Objective E: Confirm hotel/motel availability based on MOU with area hotels
- Goal 11: Establish & utilize communications tree for the emergency events
 Objective A: Determine primary, secondary method of communications
 Objective B: Determine City Department contacts
 Objective C: Confirm critical information is received by contacts

IV. ANALYSIS OF EVENT OUTCOMES:

<i>Goal</i>	<i>Description</i>	<i>% Complete</i>
1	Determine the appropriate level of EOC activation	100%
2	Determine need for additional staffing during storm period	100%
3	Assess critical supplies/equipment on hand for winter storm response	90%
4	Identify any facilities within the City that might need support	75%

5	Develop vehicle fueling alternatives for extended power outages	95%
6	Equip emergency vehicles with tire cables for snow travel	100%
7	Evaluate Chatcomm/EOC emergency power generator status	100%
8	Evaluate City Hall/Backup EOC emergency power generator status	100%
9	Establish communications for requesting assistance	75%
10	Assure readiness of EOC	100%
11	Establish/utilize communications for storm events via COOP	90%

EMERGENCY MANAGEMENT MISSIONS

Overall Emergency Management

EOC readiness & activation

It was established that the EOC was in a state of readiness. The COOP will address the mechanisms to rapidly disseminate information to City employees (i.e. declaration of an emergency, staff recall instructions, etc.).

The primary EOC is located at ChatComm 911 center. The emergency generator at ChatComm 911 is maintained through monthly testing by ChatComm 911 and is fueled by natural gas.

The emergency generator at City Hall (backup EOC) is scheduled to be tested monthly and once a year a full load test is conducted. Facilities staff also monitors the fuel tank to assure there is adequate fuel. In the first quarter of 2011 the emergency generator at City Hall should be due for an annual load test.

Coordination of situational awareness

The sharing of situational awareness information went well according to participants. The department lead handoffs in the EOC were made with no known break in communications.

Coordination of assistance

The assistance requested from Public Works by SSPD and SSFR for road freezing was coordinated through the EOC.

Public Protection

Emergency fueling plan

Research is almost complete into alternatives by Sandy Springs Police and Fire, with some clear solutions that will be submitted to the City Manager in February 2011 as of the writing of this report. This CRITICAL matter needs prompt attention and a clear workable solution to assure continuity of operations of emergency responders in the event of a widespread power outage or fuel shortage over an extended period of time.

Closing of roads

A few City roads had to be closed during the events due to multiple minor vehicle crashes as a result of road conditions. This public protection mission was achieved but there needs to be ongoing communications between emergency responders in the field and the EOC. The "Roads Closed" board in Web EOC needs to be consistently maintained by EOC staff.

City bridges kept open

All City bridges were monitored by field staff and kept open during the storm event.

Recovery/Remediation

Clean up of salt/sand after event

The EOC needs to assign and follow up on salt/sand clean up of roads after a snow/ice event. The contract with street sweeping contractor should be reviewed by the Logistics Chief and contact made to schedule street sweeping as the winter storm event begins to deescalate. This will need to be coordinated with the Admin/Finance section Chief in the EOC.

VI. CONCLUSIONS:

Participants demonstrated the following capabilities during the winter weather events:

- Sufficient salt/sand/gravel mixture available
- Adequate barricades in place for closing streets
- Fire Department staffing/vehicle plan for storm type responses
- Police Department staffing/vehicle plan for storm type responses
- ChatComm staffing plan for storm type event
- Good communications between City Departments
- Good use of City web site to prepare residents for storm event
- Good use of City traffic cameras to monitor road conditions
- Teamwork and cooperation between Departments
- Good use of established contacts with Fulton EMA, Hospitals, GDOT, equipment contractors

Opportunities for improvement:

- Need to finalize back up fuel plan for sustained power outage or fuel shortage at gas stations where City fuels emergency vehicles; make recommendation to City Manager on fuel options
- Need approved EOC room setup diagram
- Need road clearing equipment scalable plan with associated costs for winter storms
- Need to continue adding City partners on Web EOC system
- Need revised contacts with Senior Citizen Housing Facilities, and schools
- Need on-going training on Web EOC software based on Emergency Operations Plan (EOP) and regular use opportunities
- Need to revise and adopt Emergency Operations Plan
- Need better IT support in EOC from City and ChatComm
- Need to utilize CERT and VIP volunteers
- Need better real-time storm event communications with the public

Improvement Plan

- Recommendation # 1
 - Action: Finalize and submit emergency fuel plan for emergency responders to the City Manager for implementation
 - Responsible Departments: PD, FD, Finance, Purchasing

- Recommendation # 2
 - Action: Draft and adopt EOC room setup diagram to be included in EOP
 - Responsible Departments: FD, PD

- Recommendation # 3
 - Action: Develop scalable road clearing equipment plan for winter storm with associated costs to be approved by the City Manager
 - Responsible Departments: FD, PD, Finance, Purchasing

- Recommendation # 4
 - Action: Recruit and train additional City partners to use Web EOC
 - Responsible Department: FD, PD, Emergency Operations Planning Committee

- Recommendation # 5
 - Action: Make contact with senior citizen centers and schools to update contact information
 - Responsible Department: FD, Emergency Operations Planning Committee

- Recommendation # 6
 - Action: Conduct Web EOC use training based on EOP in 2011 with staff responsible to work in EOC
 - Responsible Department: FD(teach), All Departments (attend)

- Recommendation # 7
 - Action: Revise and adopt emergency operations plan
 - Responsible Departments: FD, PD, Emergency Operations Planning Committee, City Manager

- Recommendation # 8
 - Action: Improve IT support in EOC
 - Responsible Departments: FD, PD, City IT, ChatComm IT

- Recommendation # 9
 - Action: Develop plans to utilize CERT and VIP volunteers during storm events
 - Responsible Departments: FD, PD, Emergency Operations Planning Committee

- Recommendation # 10
 - Action: Improve ability of EOC public information officers to communicate real-time storm events with the public
 - Responsible Departments: FD, PD, Communications

Annex R: Winter Storm Response

I. MISSION

To protect the public health and safety in the event of a winter storm affecting the City of Sandy Springs.

II. ORGANIZATION

The City Manager or his/her designee is responsible for coordinating a response to a winter storm.

III. CONCEPT OF OPERATIONS

During the winter months, the City of Sandy Springs is vulnerable to winter storms on a regular basis. The primary hazards associated with winter storms includes: extended power outages, and transportation problems. The City Manager or his/her designee will contact various departments in the days leading up to a winter storm, to coordinate readiness of these agencies. If possible, a meeting of the various departments should be held 24 hours prior to the projected arrival of a winter storm. During this meeting, readiness of each department will be discussed, as well as any coordination of resources. During this meeting, the current projected problems associated with the storm will also be discussed.

In the event of a projected significant winter storm event in Sandy Springs, a local emergency will be declared prior to the strike. The EOC will be activated and staffed based on information from the National Weather Service (NWS) in Peachtree City, the AFCEMA, and local weather forecasters information.

All aspects of emergency response to a winter storm are addressed in other Annexes and Appendices.

IV. GENERAL INFORMATION

Winter storms present a number of problems for local governments. Winter storms vary in intensity, size, and impact. Generally, wide areas are affected similarly, so mutual aid is not usually available from neighboring communities. The common threats of winter storms come from the cold temperatures and precipitation. Cold temperatures effect the type of precipitation that will occur, namely snow or ice.

A. **Accumulation**

As the moisture from snow or freezing rain reaches surfaces such as streets, trees, or power lines, it freezes and accumulates. Ice accumulation can be very heavy and damaging. It is estimated that an evergreen tree at a height of 50 ft. and an average width of 20 ft. may be coated with as much as 5 tons of ice during a severe ice storm. Roof cave-ins are not uncommon under the strain of a heavy accumulation of ice and snow. The most susceptible roofs are those with wide expanses most commonly found in large stores and shopping malls.

When ice accumulates on buildings two different problems can occur. Heavy sheet ice builds up on flat roofed buildings and can overtax the supporting structure, thus causing the roof to fail. Icicles hanging from eaves can threaten pedestrians and vehicles that may pass beneath them. In some instances, safety considerations might suggest that icicles be broken off as they accumulate to prevent potential injuries.

B. Utility Disruptions

Perhaps the most serious ice accumulation, other than highway icing, is the burden placed on tree branches and wires. The weight of the ice can cause direct problems for power lines and telephone lines. Tree limbs can be loaded to the point that they come in contact with lines and create similar problems. Preventative efforts are undertaken by most electrical utilities as they endeavor to keep limbs around wires well trimmed during the summer months. There is little that can be done about the freezing effects on the wires themselves.

Not all the impact of winter storms are out in the open where it can be seen. Extreme low temperatures of any duration will freeze the ground and buried water pipes. This may present some challenging problems for water utilities that may experience widespread line freezing. Residential and commercial structures can experience the same difficulties with pipes freezing from the extreme cold and then bursting when the temperatures warm back up.

As the frost line goes deeper into the ground during a cold winter, water lines may freeze. Most of the problems will occur with the ¾ inch or 1 inch service lines that carry water from the main to the user's property. The thinner, smaller lines (usually copper) will freeze if there is no movement of water through them. Mains usually don't freeze because the number of users on the system assures that water is constantly moving inside the pipes.

Preventative measures are possible in the early stages of ice accumulation or freezing temperatures. Basically, the public needs to be told to keep the water running in their homes/places of work. A steady drip or a very small stream (pencil lead size) of water will maintain enough movement to reduce or eliminate the possibility of freezing.

C. Transportation

Winter storms cause mobility problems for the public and local government. Both motorists and pedestrians will encounter difficulties and parking can become a real problem. Abandoned cars, stalled by ice or mechanical problems, may block streets and highways.

D. Shelters

Some winter storm situations may leave motorist stranded and/or residents without electricity. Coordination with AFCEMA for assistance from the

American Red Cross to establish shelters will be necessary at the onset of the winter storm depending on the predicted severity.

E. Weather Information

Close contact with the NWS office is necessary as the severe winter storm approaches the area. Periodic briefings by NWS meteorologists will help provide the latest information to local government officials. Keep in mind the following NWS terminology when preparing for a severe winter storm:

1. Winter Storm Watch: Severe winter weather conditions may affect the area.
2. Winter Storm Warning: Severe winter weather conditions are imminent.
3. Ice Storm Warning: Significant, possibly damaging, ice accumulation is expected. Freezing rain (or drizzle) means precipitation is expected to freeze when it hits exposed surfaces.

V. EMERGENCY OPERATIONS CENTER (EOC) GUIDELINES

A. Winter Storm Watch

1. The best way to assure an adequate response to a winter storm is to prepare in advance. Consideration must be made for problems associated with the following activities when snow or ice storms occur:
 - a. Firefighting & law enforcement measures and emergency responses.
 - b. Rescue, search for stranded motorist and other victims.
 - c. Ice control (sanding/salting of streets and bridges).
 - d. Water line maintenance.
 - e. Power and/or telephone outages.
 - f. Fueling resource plan for emergency vehicles for wide-spread power outage in the City.
 - g. Diminished local resources (such as supplies of food and other commodities).
 - h. Limited public transportation modes and routes.
2. City resources should be coordinated to deal with these anticipated problems such as emergency generators, alternate communications systems, shelters (Red Cross), ice melting salt, transportation support, etc.
3. There are several categories of actions to be taken when a winter storm watch goes into effect such as notification of the public, alert of response organizations and monitoring of situation. Specific EOC duties should include:
 - a. Monitor weather conditions. Collect current weather data from NWS, The Weather Channel, local television affiliates, computer

- weather programs and other sources providing recent weather information.
 - b. Prepare and fax/email weather updates to all city departments.
 - c. Update staff/volunteers on situation.
 - d. Prepare Emergency Operations Center (EOC) to assure readiness. If weather becomes worse, partial activation of the EOC may be necessary.
 - e. Each city department should make appropriate preparations in case weather becomes worse such as “top off” fuel tanks, check initial response equipment, monitor changing weather conditions, etc.
 - f. Notification of the public is a joint responsibility of the NWS office and local government. The weather service will disseminate information through NOAA Weather Radio and the Emergency Alert System (EAS). The City Sandy Springs City Manager’s Office will utilize fax, telephone and e-mail to notify local response organizations of winter storm watch/warning conditions as the situation warrants. If there is reason to believe that there will definitely be severe winter weather, the notification should be stronger than merely advising people that there might be some problems. Circumstances will guide actions.
4. Local emergency services and support groups (such as public works) should consider taking the following actions when a winter storm watch is issued:
- a. Review winter storm disaster response plans.
 - b. Check equipment and supplies that might be needed, including emergency generators.
 - c. Move equipment and supplies to a safe location (covered awning, an inside location, heated building, etc.).
 - d. Top off fuel tanks of vehicles and equipment.
 - e. Check accuracy of contact information used to reach employees when not on duty.
 - f. Prepare tire chains, deicing equipment, ice scrapers, etc.
 - g. Arrange for transportation of essential personnel if road conditions deteriorate.
 - h. Arrange for temporary housing of essential personnel at place of employment, if necessary. Have items on hand such as cots, blankets, toiletries, food, change of clothes, etc.

B. Winter/Ice Storm Warning

Winter/ice storms are usually slow developing with enough lead-time to allow local governments to prepare for worst-case scenarios. Close contact with the National Weather Service Office in Peachtree City is necessary any time a winter storm warning is issued for the local area.

EOC personnel should take the following actions when a snow/ice storm warning is issued for the local area:

1. Continue to monitor weather conditions. Activate EOC on limited basis as conditions warrant.
2. Confirm winter weather forecasts with National Weather Service Office in Peachtree City or the Atlanta-Fulton County Emergency Management Agency (AFCEMA) by telephone
3. Inform public to take appropriate actions. Provide public service announcements to local news media. The NWS will activate Emergency Alert System (EAS) with winter storm updates as conditions warrant. The local television and radio stations will provide winter storm warnings, travel conditions, school/government/business closings and other storm related information for the local area.
4. Fax and/or email winter/ice storm warning message to city departments.
5. Coordinate with AFCEMA about the possibility of needing support for the use of generators, water trucks, transport and other equipment.
6. Contact Fulton County Emergency Management Agency to check with the American Red Cross (Atlanta Chapter) about the possibility of needing shelters depending on the severity of the winter snow/ice storm.

C. Response and Recovery

Response to winter storms will involve police, fire, and emergency medical services in some challenging situations. The Public Works Department and Georgia Department of Transportation will be busy keeping roads open to provide emergency access. Public and private utilities will also be confronted with a number of problems as a result of cold and ice.

Ice accumulation could seriously disrupt electrical and telephone service for days or weeks depending on the duration of the storm. The Public Works Department will support the effort of keeping at least the main highway arteries open for local emergency services. Our three-tiered approach includes:

1. Priority I – Bridges/Artery Streets/Highways
 - a. Bridges:
 - i. Abernathy Road Bridge
 - ii. Brandon Mill Road Bridge
 - iii. Dunwoody Club Drive Bridge
 - iv. Glenridge Connector Overpass
 - v. Glenridge Drive Bridge
 - vi. Hammond Drive Bridge
 - vii. I-285 Bridge (GDOT)
 - viii. Johnson Ferry Road Bridge
 - ix. Lake Forest Drive Bridge

- x. Long Island Drive Bridge
- xi. Mount Vernon Highway Bridge
- xii. Northridge Road Bridge
- xiii. Northside Drive Bridge
- xiv. Peachtree Dunwoody Bridge
- xv. Powers Ferry Road Bridge
- xvi. Riverside Drive Bridge between Old Riverside Drives
- xvii. Riverside Drive Bridge north of Johnson Ferry Road
- xviii. Roswell Road Bridge
- xix. Spalding Drive Bridge
- xx. Windsor Parkway Bridge
- b. Artery Streets/Highways:
 - i. Abernathy Road
 - ii. Barfield Road at Hammond
 - iii. Dalrymple Road at Roswell Road (hill)
 - iv. GA 400 & I-285 (GDOT)
 - v. Glenridge Connector
 - vi. Glenridge Drive
 - vii. Heard's Ferry Road
 - viii. Hollis Cobb Drive
 - ix. Johnson Ferry Road
 - x. Meridian Mark Drive
 - xi. Mont Vernon Highway
 - xii. Morgan Falls Road
 - xiii. Northridge Road at Roswell Road (hill)
 - xiv. Northside Drive
 - xv. Peachtree Dunwoody Road
 - xvi. Powers Ferry Road
 - xvii. Roswell Road
 - xviii. Spalding Drive
 - xix. Windsor Parkway
- c. Critical Facilities (ramps, driveways)
 - i. Sandy Springs Fire Station 1, *1425 Spalding Drive*
 - ii. Sandy Springs Fire Station 2, *135 Johnson Ferry Road*
 - iii. Sandy Springs Fire Station 3, *6025 Heards Road*
 - iv. Sandy Springs Fire Station 4, *4697 Wieuca Road*
 - v. Sandy Springs Police Dept. Headquarters, *5995 Barfield Rd.*
 - vi. ChatComm 911 Center, *859 Mount Vernon Highway*
 - vii. City Hall, *7840 Roswell Road, Bldg 500*
- 2. Priority II - Collector Streets
 - a. Barfield Road
 - b. Crest Valley Drive
 - c. Dunwoody Place
 - d. Glenridge Drive

- e. Grogan's Ferry Road
- f. Hammond Drive
- g. Heard's Ferry Road
- h. High Point Road
- i. Hightower Trail
- j. Huntcliff Trace
- k. Huntcliff Trail
- l. Jett Road
- m. Long Island Drive
- n. Mount Vernon Highway
- o. North River Parkway
- p. Northside Drive
- q. Pitts Road
- r. Riverside Drive
- s. Robert's Drive
- t. Windsor Parkway

3. Priority III - Residential Streets

All residential streets will be responded to in the order the requests are received and the City has the staff and equipment available to respond.

The Georgia Department of Transportation and the Sandy Springs Public Works Department will use salts or other de-icing compounds on heavily traveled bridges, overpasses and underpasses.

Specific EOC activities to be performed during and after a winter/ice storm should include:

- a. Activate EOC.
- b. Notify EOC staff as appropriate (law enforcement, fire services, public works, American Red Cross, etc.).
- c. Identify special populations (schools, hospitals, nursing homes, etc.) in especially hard hit areas of winter/ice storm. Contact these facilities to determine if emergency assistance is needed (i.e., generators, alternate heating sources, shelters, etc.) and gather damage assessment information. It may be necessary to dispatch field units to these locations if phone lines are out of service.
- d. Contact AFCEMA if emergency generators, water trucks or other emergency assistance is needed.
- e. Begin receiving damage assessment reports from field units. Proper documentation and record keeping is essential. Update status boards in EOC.

- f. Provide communications relay between incident sites and EOC. Provide all available information to the EOC as soon as possible. Advise of any known injuries and damage assessment.
- g. If telephone lines or radio communication systems are down, consider using amateur radio operators report to hospital(s), shelter(s) or other key facilities to provide backup communications support.
- h. Locate affected area(s) on hard copy and computerized maps in EOC.
- i. Coordinate relief effort with American Red Cross. Determine if and where emergency shelters are needed. Shelters may be needed for weeks or months depending on the amount of winter/ice storm damage to the community.
- j. Keep EOC personnel updated with field unit activities. Field units will be concentrating on debris clearance to provide emergency vehicle access, search and rescue operations, triage, medical treatment and transportation, and minimization of hazards such as live electric wires, water line breaks, etc.
- k. Notify area news media with update on situation. Have a designated Public Information Officer coordinate with local and national news media. The news media can assist to disseminate status of emergency, road closures, shelter information, etc.
- l. Coordinate overall EOC information gathering and decision-making effort. Determine need for and locate resources as required. Update status boards. Maintain proper records.
- m. Have Mayor or designed representative declare a local State of Emergency if needed. An emergency declaration at the local level will free up county state and state resources to aid in the disaster relief effort (i.e., National Guard assistance).
- n. Conduct periodic updates at the EOC to update the Mayor, City Manager, City Departments and the public concerning response and recovery efforts.
- o. Designate a member of the EOC staff to coordinate volunteers relief efforts and donated goods. This information should be coordinated with emergency services and the American Red Cross.
- p. Staffing of the EOC may be necessary for several days. A shift schedule should be developed to allow personnel time off for rest.
- q. The overall recovery effort may take several weeks to several months depending on the amount of damage sustained from the winter storm. Periodic updates and briefings of recovery efforts, response procedures, and lessons learned will be necessary.
- r. Deactivate EOC after local response is no longer needed and operations resume normal activity. Periodic briefings and updates

from the EOC may be necessary for the duration of the recovery effort.

- s. Perform after-action meeting for local emergency services and related departments/agencies. Look for areas that can be improved upon in order to prepare for the next winter storm. An after-action report for local agencies should be completed.

D. Administrative Support

Each city agency will have to develop internal staffs and guidelines for administrative support of the appendix.