

District of Columbia
Snow Season 2009-2010

Snowmageddon

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District Department of Transportation (DDOT)



AASHTO Extreme Weather Event Symposium

May 21, 2013



Topics

- Overview of Season
- Successes
- February Blizzard
- How we responded
- On-the-fly changes
- Media
- Lessons Learned/Improvements



Snow Plan Scope

The District Department of Transportation (DDOT) and the Department of Public Works (DPW) jointly coordinate the snow and ice removal for the District of Columbia. For a full deployment major snow/ice event the scope of operations is significant.

1. 1,100 miles of roadways and 241 bridges to be cleared excluding National Highway System (NHS)
2. Zones 1-14 = 71 primary and secondary routes, 82 residential routes, approximately 336 pieces of equipment for snow up to 6 inches and 561 pieces equipment for snow over 6+ inches.
 - DPW= 66 Heavy plows needed for 45 heavy routes(some requiring 2 trucks)
 - DPW= 53 Light Plow Trucks needed for 53 Light Plow Routes
 - DDOT= 40 Heavy Plows needed for 27 heavy routes (some requiring 2 trucks)
 - DDOT=29 Light Plow needed for 29 Light Plow Routes
3. Contract Plow Program supplements our municipal trucks for snow events over 6 inches.
 - Not reliable
 - District owned plows

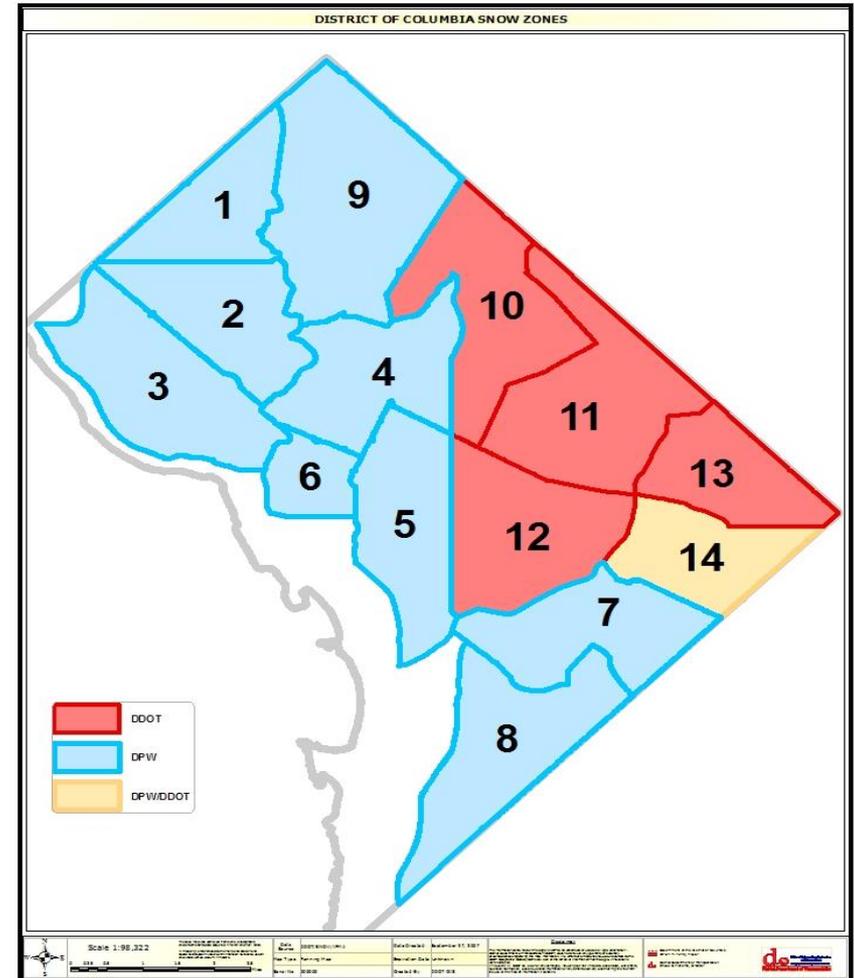
Deployment

Joint effort between DDOT & DPW

DPW responsible for zones 1-9

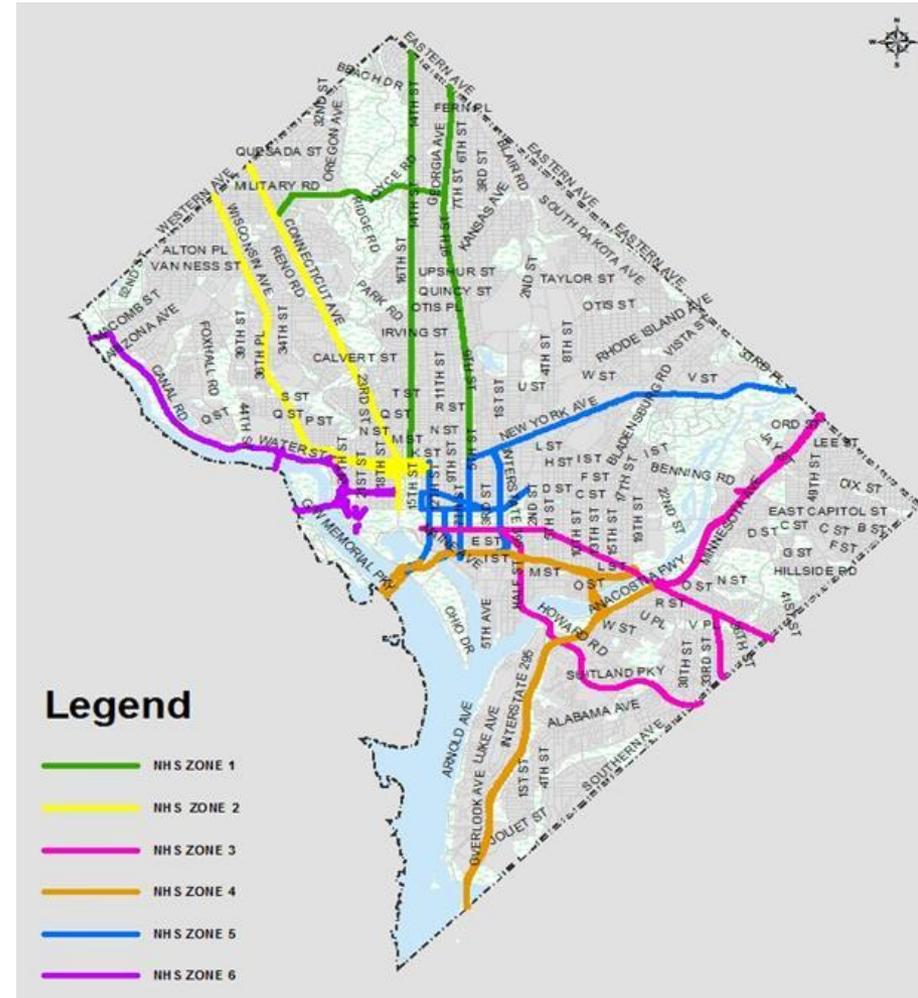
DDOT responsible for 10-14

DDOT contractor responsible for NHS routes



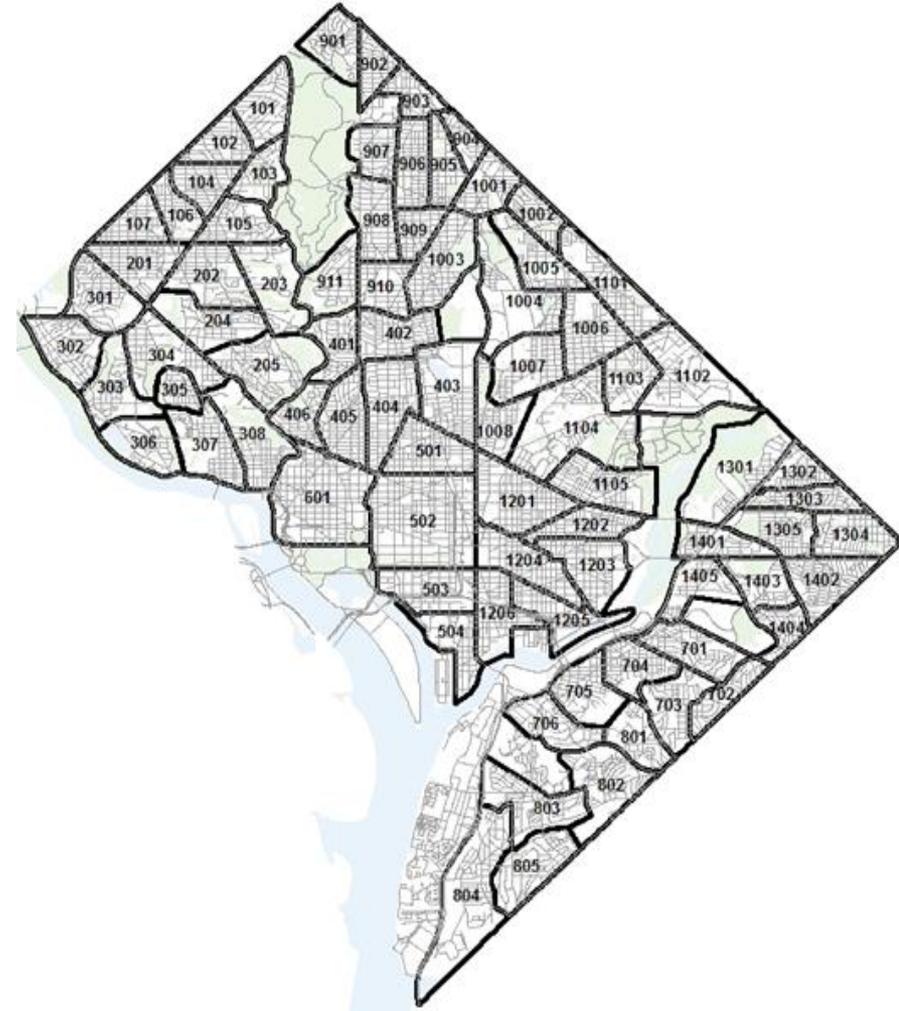
NHS Contract

- Snow removal for the 75 miles of NHS routes
- 55 heavy 10 wheel dump truck
- 4 spray trucks
- 3 pick-up trucks for ramps
- Contract managed by DDOT

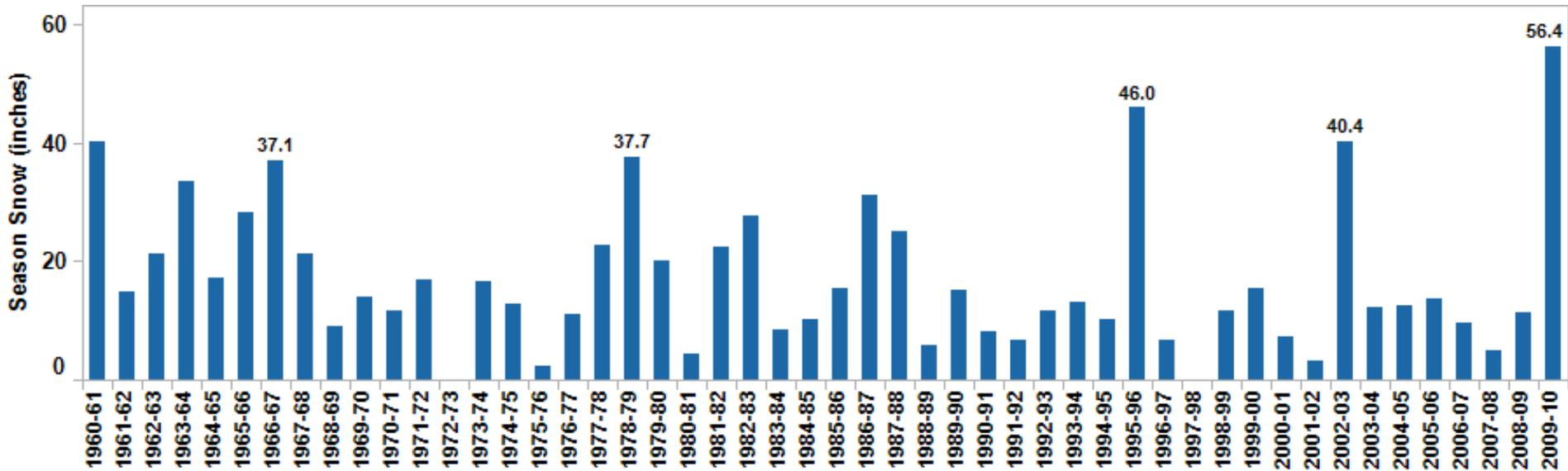


Residential Routes

- 82 new light plow routes – doubles the snow plows providing residential treatments



Record Annual Snowfall – 1960 - 2010



- Reagan National totals are usually lower
- Among top 5 snowfalls recorded in Washington DC
- Total of 56.4 inches for season is highest ever recorded in Washington DC

What happened?

- December 18-19, 2009 Storm
 - 18 inches of accumulation
 - Largest snow event since 2003
 - Average precipitation for the month of December: 3.1 inches*
 - Winter average for the District 15.2 inches
 - DPW/DDOT resources adequately cleared roadways
 - District snow team effort was outstanding
 - No closures necessary for Monday, December 21, 2009



* Measurements taken at DCA

Feedback from December Storm

The Washington Post

“The District was leading in the street-clearing effort, reporting that most of the major work had been done and that crews would tackle missed streets and revisit some that had been plowed early in the storm. [Montgomery County](#) plows were tackling neighborhoods in the most densely populated areas. It might be Wednesday before the first path is opened into some Northern Virginia neighborhoods, and [Prince George's County](#) was bedeviled by ice.” – **WashingtonPost.com** , 12/22/2009

The Washington Post

"Arlington has the worst snow-removal plan I've seen," said Kendall Church, who lives near the Ballston Metro station. "I've yet to see any snowplows come through any of the streets in my neighborhood, but Arlington will not take removal requests like D.C. will, nor do they have a [handy map](#) that shows what streets have been cleared already." -- **WashingtonPost.com**, 12/22/29



“And the Fenty administration deserves kudos thus far for its communications efforts. Fenty has held a number of press conferences already on the storm, and has provided constant updates to the press ... The city even [has a nifty map](#) showing where its snow equipment is located....” -- **NBCWashington.com**



“I still want to give Mayor Adrian Fenty a high-five for handling snow removal -- especially on major roadways -- like a champ. Thinking back to the blizzard of '03, it took the better part of the week to even get out of the house safely.” – **DCist.com**

Snow Performance Measure – Penguin Chart

Storm Type	Accumulation	Major Streets		Residential Streets	
		Time from storm end	Percent of streets passable	Time from storm end	Percent of streets passable
Freezing rain/ice	Coating	12 hours	85%	12 hours	85%
Snow	0 to 2 inches	4 hours ★	85%	8 hours ★	85%
	2 to 4 inches	6 hours	85%	8 hours ★	85%
	4 to 8 inches	12 hours	85%	24 hours ★	85%
	8 to 12 inches	18 hours ★	85%	36 hours ★	85%
	12 to 18 inches	36 hours	75%	48 hours ★	75%
	over 18 inches	36 hours ★	75%	60 hours ★	75%

★ More aggressive timeline

★ Residential deployment starts at same time; bare pavement policy (vs. passable in previous standard)

DDOT/DPW met the performance measures last year for all the storms

What happened?

- **January 30, 2010 Storm**
 - 6.4 inches of accumulation on Jan 30, 2010
 - Temperatures remained below freezing
 - DDOT/DPW resources adequately cleared roadways
 - Feb 2, 2010 3.5 inches fell
 - Feb 5-7, 2010= 28 inch forecast



What Happened?

Forecasted Precipitation for First Storm Feb 5-7, 2010

<u><i>Date of Forecast</i></u>	<u><i>Amt of Snow</i></u>	<u><i>Predicted Storm Duration</i></u>
<i>Feb 3, 1pm</i>	<i>8-16 inches</i>	<i>18 hours beginning Fri</i>
<i>Feb 4, noon</i>	<i>10-16 inches</i>	<i>Fri Afternoon-Saturday eve</i>
<i>Feb 5, 6am*</i>	<i>16 inches</i>	<i>Fri afternoon- Saturday eve</i>
<i>Feb 5, 2pm</i>	<i>16-24 inches</i>	<i>Fri eve- Saturday eve</i>
<i>Feb 6, 5am</i>	<i>16-24 inches</i>	<i>Fri eve- Saturday eve</i>

Actual Accumulation for first storm: 28 inches

Temps in the 20s-Winds up to 30MPH

Trees down-Power Outages

Salt Shortages

What Happened?

More Snow February 9 and 10, 2010

- Temperatures remained below freezing between storms
- 10-14 more inches of snow added to the first storm's accumulations-50MPH W
- Back to back storms left little time for crews and equipment to recover
- Trees down
- 4 snow events in 10 days



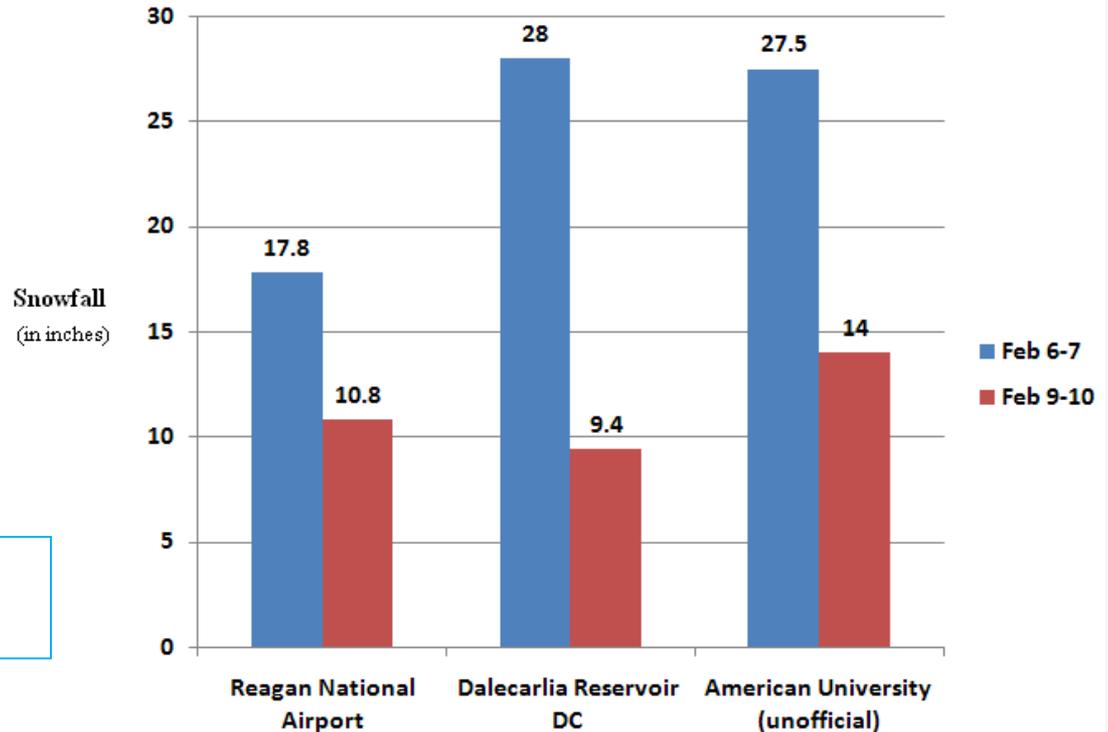
Snowmageddon Comes to DC

Note –
Reagan National
understated the
total for most of the
District

Totals in DC closer to 65-70 inches for
the year

Snowfall Totals - Washington DC

February 2010



- Among top 5 snowfalls recorded in Washington DC
- Total of 56.4 inches for season is highest ever recorded in Washington DC
- Two storms back to back meant crews had no time to recharge
- Snow totals in northwest are much higher than Reagan National



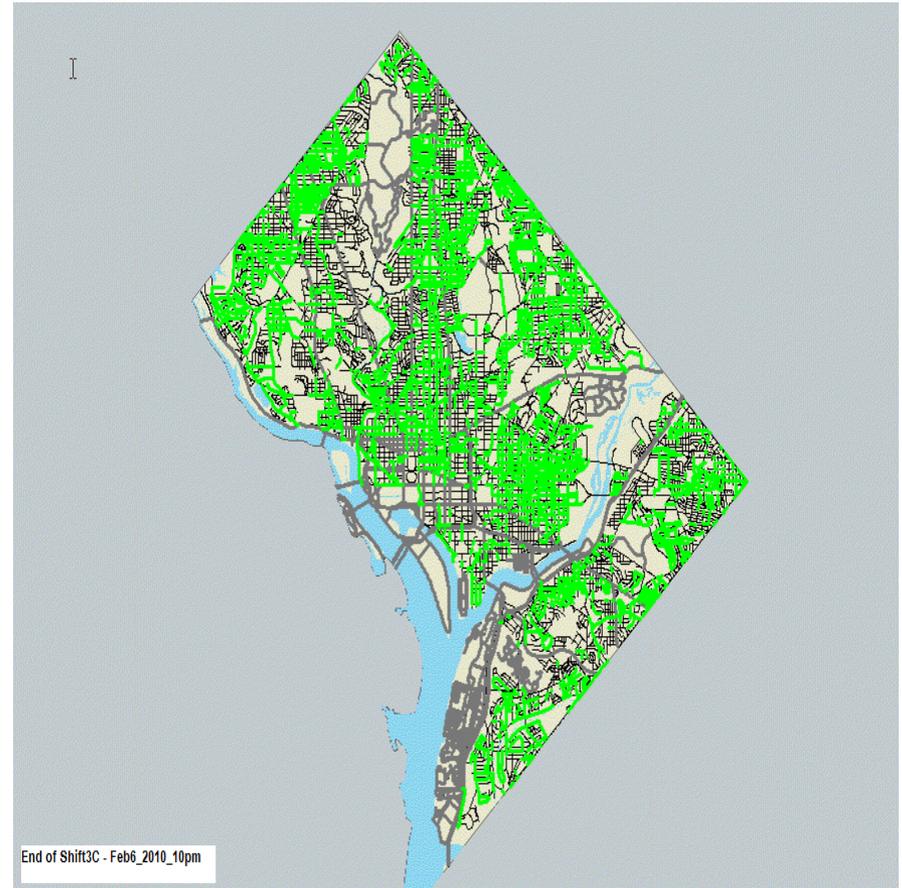
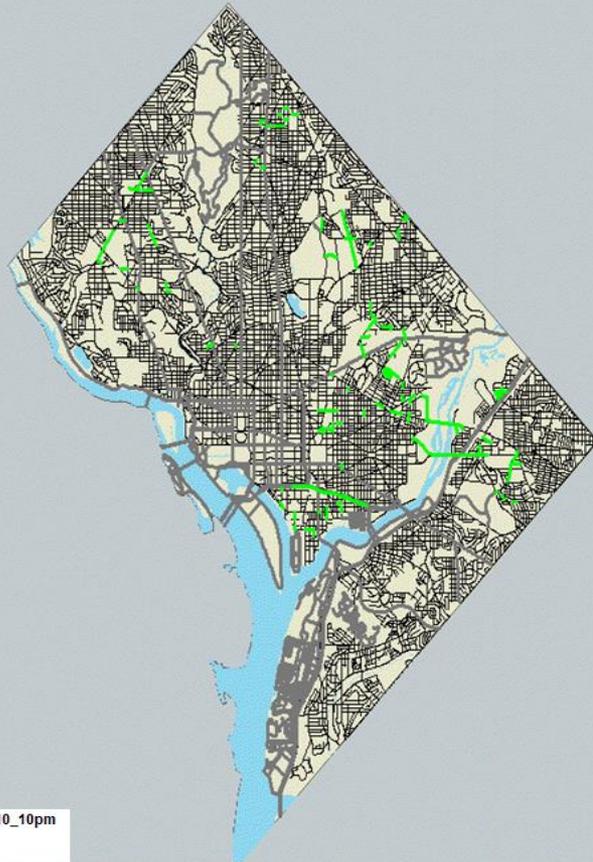
Recap

- **20 Snow Events for season**
- **56.4 inches-70 inches NW**
- **750 employees/nonstop for 10 days 12 hour shifts**
- **78,000 tons of salt**
- **200,000 gal. of brine**
- **Worked snow all February**

On The Fly Changes

- As storm worsened, mobilized specialized equipment and operator assistance from contractors throughout the mid-Atlantic and Northeast- Residential Plows could not push the snow-Bobcats, backhoes, loaders
- Inspection/Monitoring team for additional equipment was a challenge
- Whiteout situations-Never seen in DC
- Salt Shortages in region required us to haul from Depot in Baltimore
- Hauling Snow- Areas to dump snow

Progress (Shifts 1&3 of first storm)



Green color represents streets that have been treated

Media

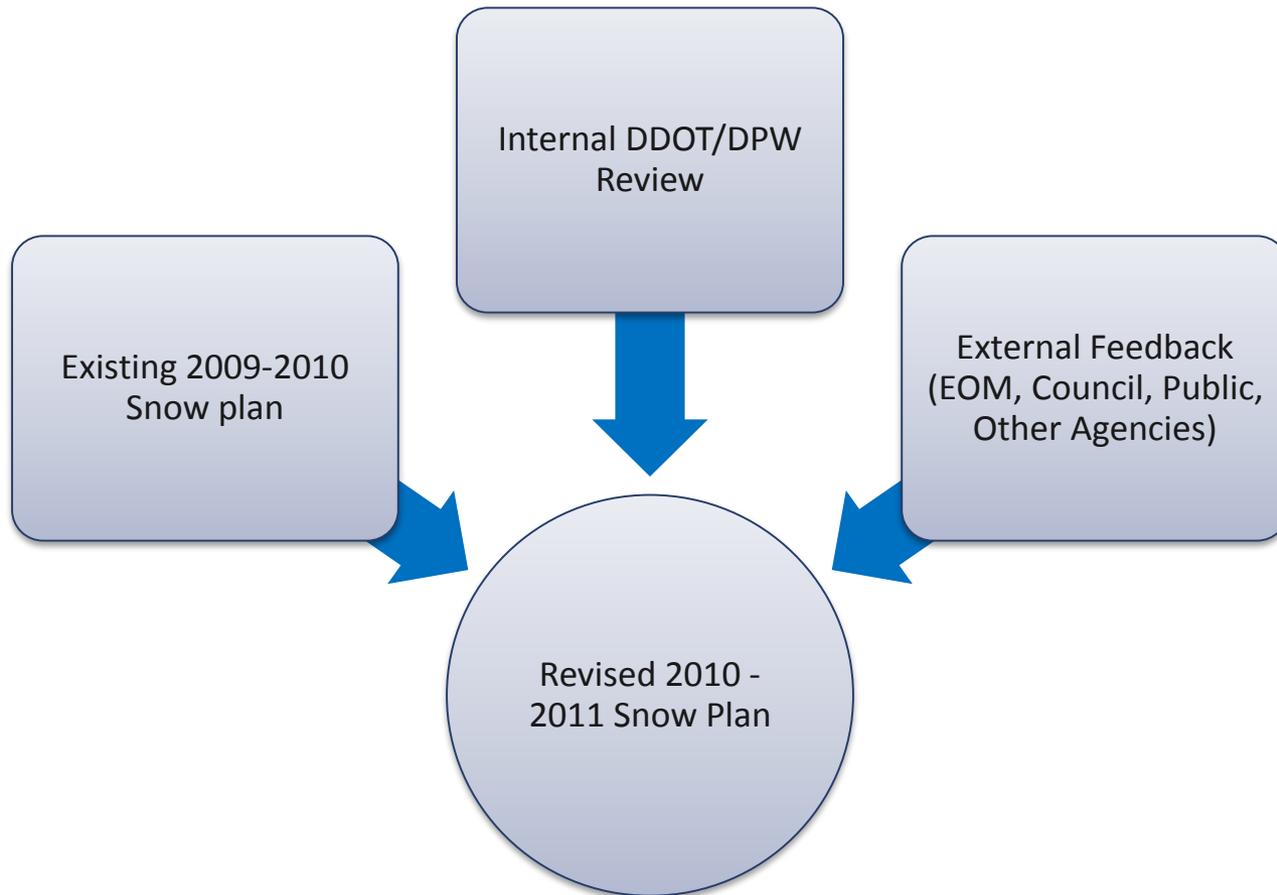
- Mayor held 24 press conferences in 10 days to update public from various locations around the city
 - Press releases – writing, editing, posting, e-mail,
 - Twitter, Facebook
 - Location changes
 - Coordination with Mayor's office



Lessons Learned

- Snow team will conduct facilitated de-brief with stakeholders
- Should the District benchmark its snow plan on a historic storm event?
 - Remember performance for December 18 inch snowfall was successful
- Solutions likely involve some local capital investment in combination with the creation of a solid contingency plan for major snow events

Developing the New Snow Plan/Lessons Learned



Post Event Debriefing

- Meeting held March 4
- Document major categories/lessons learned
- 12 Committees established to review major items and implement recommendations
 1. Development of contingency plans for 12" snow
 2. Equipment Improvement-Aging Fleet
 3. Improved Training Program-Plowing Skills
 4. Logistics Improvement-Hotels/Food/Transp.
 5. Manual snow Clearing/Sidewalks
 6. Parking- Pilot plans in neighborhoods

Post Event Debriefing

- 7. IT Support-AVL /Mapping
- 9. Scrub Snow Plan-Update Plan 2010-2011
- 10. Safety Improvements
- 11. Administrative-Policies Reviewed
- 12. Coordination of Agency Resources-CDL

Contingency Plan for 12+ inch Snow Scenarios

- Contingency Plans for Specialized Equipment
 - Expanded NHS Contract (Capitol Paving) by 30% More Plows, Spray trucks and loaders
 - Regional resources (COG) Salt Contract as backup
 - Expanded BPA for Contract Plow Equipment and Trucks- Bobcats, Loaders, Backhoes
 - Improved Citywide Supervision and situational awareness---(DDOT Planners) (MSS Managers)
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Changes/Improvements from 2009-2010

- Increased Situation Awareness with AVL data to identify streets that were not serviced-Must utilize AVL data
- 1-Floating Plow Truck in every ward with captain as a backup to address quickly any concerns from Snow Command or Mayor
- Improved Training Program-Supervision/Drivers
- Simulator Training to enhance driver plowing skills
- Expanded anti-icing pre-treatment of residential streets using 4 small spray trucks procured last year
- Improved Cost Accounting with Storm Trak system

Issues /Areas for Improvement

1. Snow Fall > 12 inches-Contracts in place for resources
2. Training Program-Re-evaluate training program- Snow Plow Simulator
3. Coverage of Residential Streets- Increase situational awareness and supervision
4. Pedestrian Challenges- Property owners clean their sidewalks, Plowing techniques, communicate to contractors
5. Transit Access-Bus Stops cleared
6. Chain of Accountability
7. Increased oversight of cost tracking
8. Manage Expectations



Snow Plow Simulator- Enhanced Training Program



SnowPlow Training from the driver's perspective.



Simulator

QUESTIONS?

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THANK YOU!

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