

Extreme Storms in the Midwestern US: Case Studies

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1. INTRODUCTION

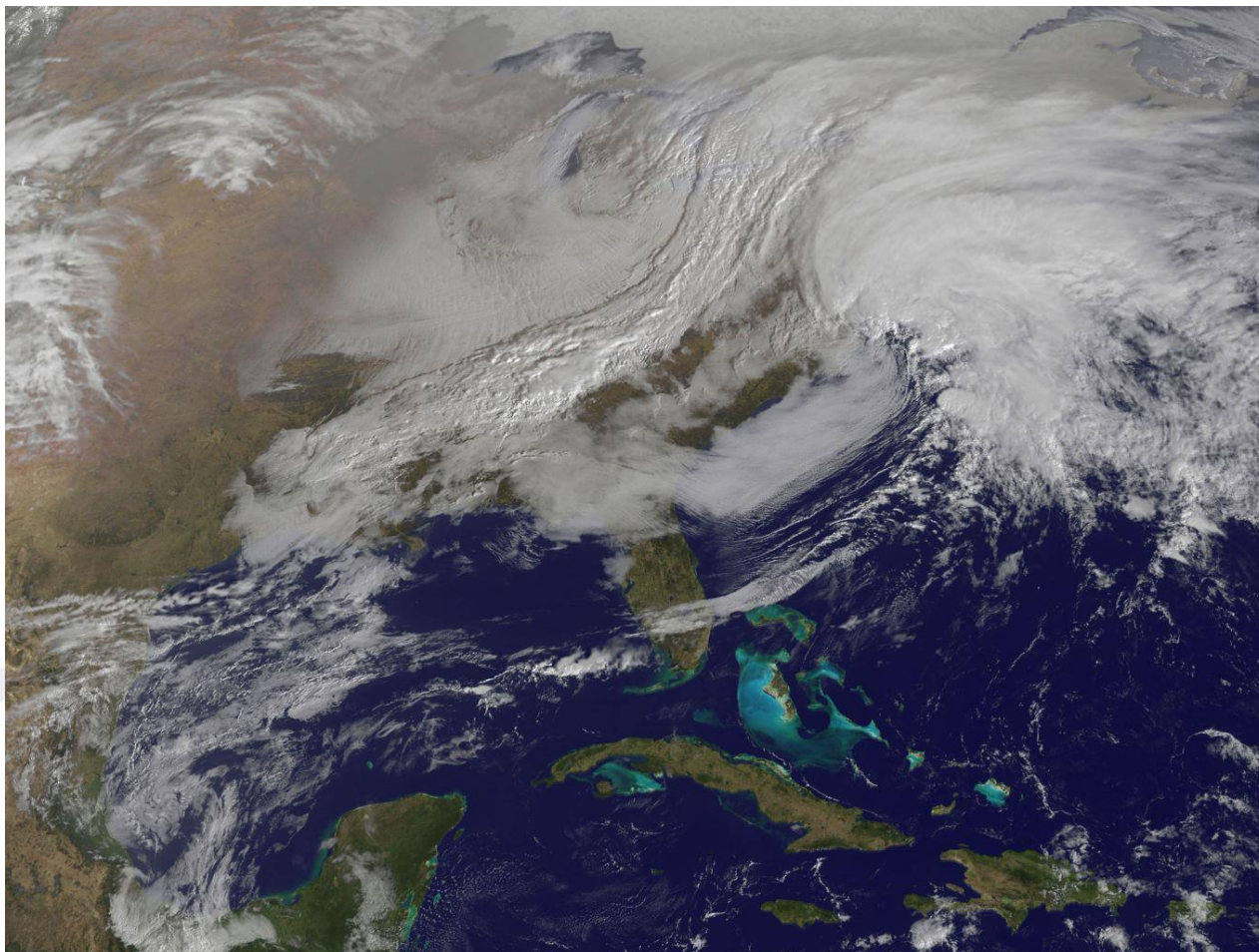
Severe Winter Storm in February 2011

Heavy snowfall (45 to 60 cm) in Illinois, Iowa, Missouri

Wind speeds in excess of 100 kph

Storm blamed for 36 deaths, impacted 16 states, and caused economic losses of around \$1.8 billion

This paper describes how two agencies handled the storms

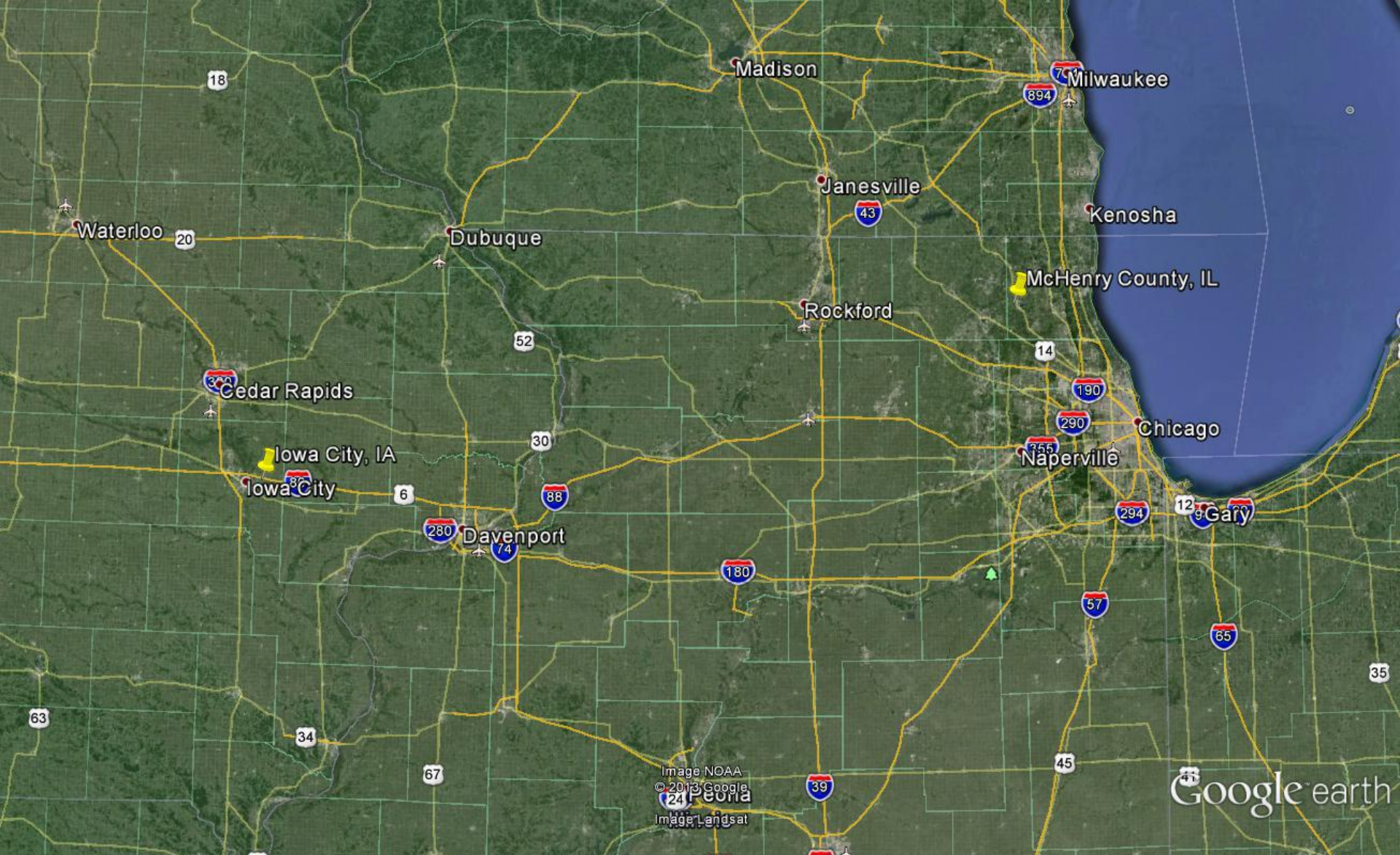


2. The Agencies

The City of Iowa City

McHenry County Illinois

	Iowa City	McHenry County
Population	68,000	300,000
System	410 lane km	728 lane km
Levels of service	3	3
Trucks	12	22
Routes	12	19 or 12



3. Storm Response Iowa City

Three priority levels cleared in order on each of 12 routes

By end of February 2:

- Priority 1 roads were mostly passable

- Some priority 2 roads could be driven with extreme care

- Priority 3 roads were for the most part not drivable

Second phase of operation, lasting for one week, comprising mostly snow hauling from lower priority roads.

Very labor intensive and required leasing six additional front end loaders

Cost of this rental comprised 16% of the total storm budget.

3. Storm Response Iowa City...

Winter Season	Inches of Snow	Tons of Salt Used	Total Cost in Dollars
2011-12	14.50	1,700	\$286,000
2010-11	34.75	4,000	\$596,000
2009-10	30.30	3,700	\$564,000
2008-09	30.55	2,900	\$695,000
2007-08	59.90	3,400	\$608,000
Five Year Average	34.00	3,140	\$549,800
Blizzard	16.5	175	\$133,000
Percentage of 5 yr Ave.	48.5%	5.5%	24.2%



Note that while snow quantity about half the annual average, salt usage was about 5% of annual usage and cost was about 25% of annual budget

4. Storm Response McHenry County

Went to split shift at start of storm (only 12 routes, fewer trucks but more endurance)

Heavy snow began at 8 p.m. on February 1, and for the next 12 hours, focus was on safety and rescue, not plowing the roads

At 2 a.m. seven of the County vehicles were stranded in one way or another

All workers were housed in nearby hotel, so no delays when getting on or off shift

But, getting to and from the hotel to the facility was hampered by heavy drifting!

4. Storm Response McHenry County...

On morning of February 2 as storm was winding down, Eastern and Southwestern part of the county had roads open (at least one lane) while Northwest and West was almost totally closed

Snow ended at about 11:15 a.m. and winds died down too

By 6:30 p.m. all roads in the County were fully open to two-way traffic

Salt usage in storm – 980 tons of solid salt, and 38,000 gallons of enhanced brine

Similar to quantities for light (5 cm accumulation) snow storm

5. Lessons Learned

Strong emphasis on priority of actions and focusing of resources

Salt not needed throughout but early use helped with clean up

Safety meant that plowing was stopped from time to time

Key lesson – FOCUS, FOCUS, FOCUS...

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