



2015 National Winter Maintenance Peer Exchange
Bloomington , Minnesota
September 23 - 25, 2015

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Minnesota - some fun factoids

- Home to the Mall of America – almost 9.5M square feet of mad shopping... and general winter relief (78 football fields)
- Boasts 90,000 miles of shoreline - more than California, Florida and Hawaii combined
- Land of 10,000 lakes... actually there are 11,842 lakes over 4 hectares - that's why there is 1 boat for every 6 citizens
- Home of Mayo Clinic – great place to get sick
- Birth place of Judy Garland, Bob Dylan and Prince Rogers Nelson – similar singers
- And responsible for Jesse Ventura - governor and entertainer... entertaining he was



State of Minnesota Overview

- North Latitude from 43° to 49°
- Northernmost town in contiguous (ken' tigyooes) states
- Area: 86,943 square miles (360 miles by 407 miles)
- Minnesota is the 12th largest state in the USA
- Population: 5,400,000 (2012 est.)
- Minnesota is the 21st most populous state in the USA
- State – 285,180 lane miles (5th largest road system)
- DOT – 30,000 lane miles (12,000 centerline miles)
- 11,842 lakes over than 10 acres
- 6,564 rivers and streams totaling 69,000 miles



Minnesota Department of Transportation Overview

Winter Weather and Winter Spending

- December (Minneapolis): 27°F high; 12°F low
- January (Minneapolis): 24°F high; 7°F low
- February (Minneapolis): 29°F high; 13°F low
- Snowfall in Minneapolis: 54 inches (Duluth 10 feet winter 13/14)

Winter Spending (Total Project Cost in Millions):

- 2010/11 - \$107
- 2011/12 - \$62
- 2012/13 - \$112
- 2013/14 - \$136
- 2014/15 - \$85 - right at 10 year average



Winter spending is approximately 1/4 - 1/3 of overall maintenance spending

Labor, Equipment and Materials (Winter Resources)

- 1747 Snowfighters with Certified Drivers License
 - About 15 percent cross overs
- 800 Snow Plows (incl 52 reserves) – (50/50 single tandem axles)
 - 12,000 centerline miles or 30,000 lane miles
- 5-year annual average material use:
 - Salt = 236,519 tons
 - Sand = 49,319 tons
 - Salt Brine = 2.5M gallons



Winter maintenance completely provided with internal staff

Winter Maintenance Performance

Measure: Regain Time

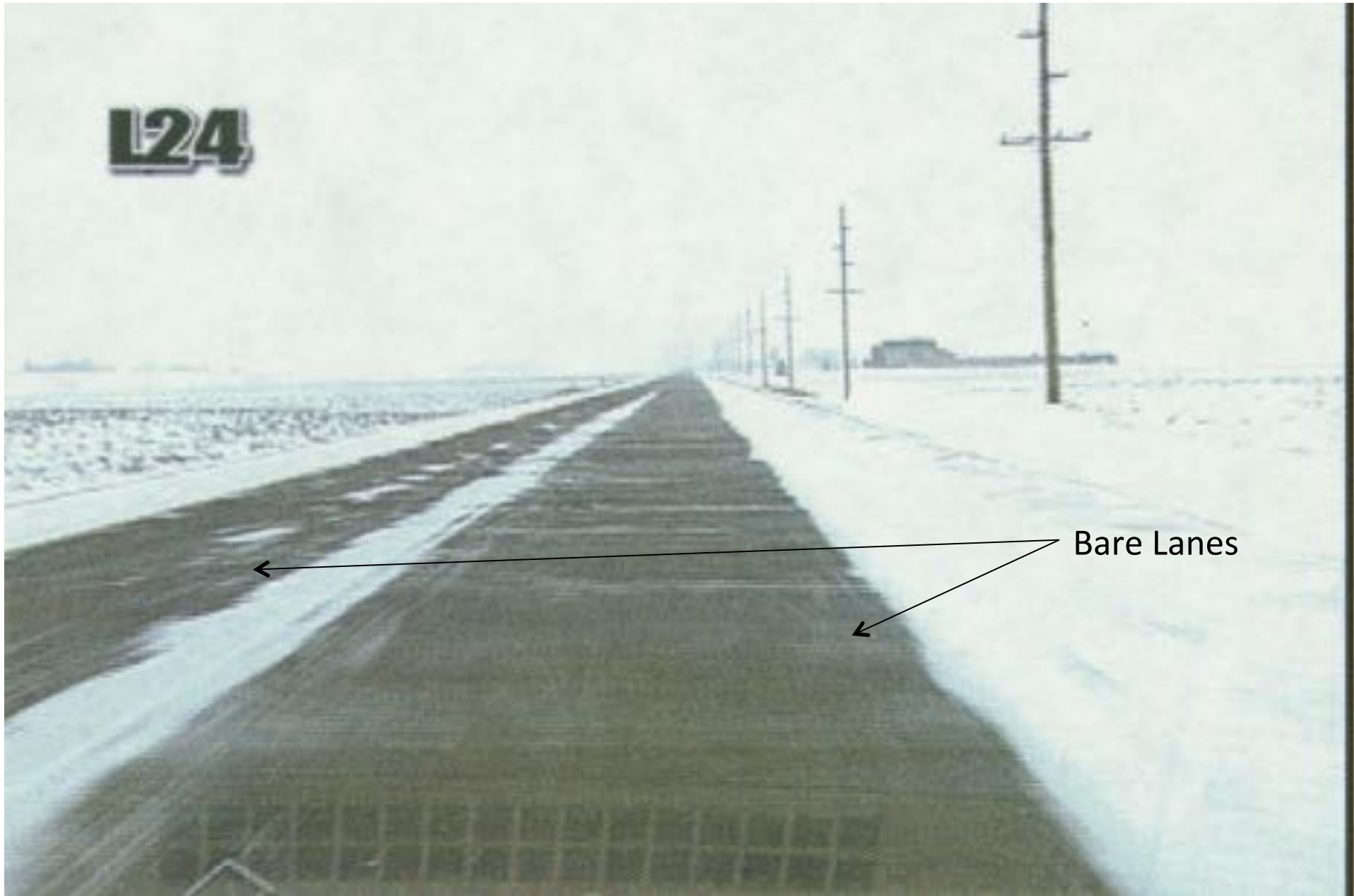
- All driving lanes are 95% free of snow and ice between the outer edges of the wheel paths and have less than 1 inch of accumulation on the center of the roadway

Target: A set time in hours

- Measured from the end of the event
- Based on classification/ADT – 5 classifications
- Recorded (performance) by the plow operators

Event: A winter weather occurrence, that consumes resources necessary to prevent, minimize or regain the loss of bare lanes

L24



Bare Lanes

This is the measure (goal) of our snow and ice control operation

These are the targets for our measure

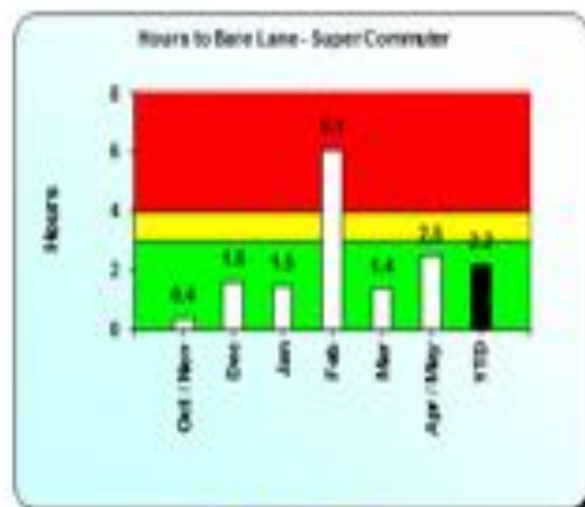
ADT	Regain Time (hrs)
30,000 < ADT	0 – 3
10,000 – 30,000	2 – 5
2,000 – 10,000	4 - 9
800 – 2,000	6 - 12
ADT < 800	9 - 36

Five classes/categories based on average daily traffic

Maintenance: Snow & Ice Hours to Bare Lane -Statewide

Winter 2013 - 2014

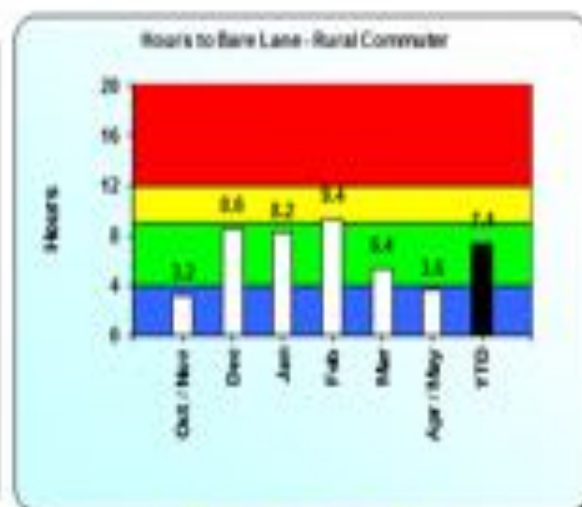
July 1, 2013 to Apr 30, 2014



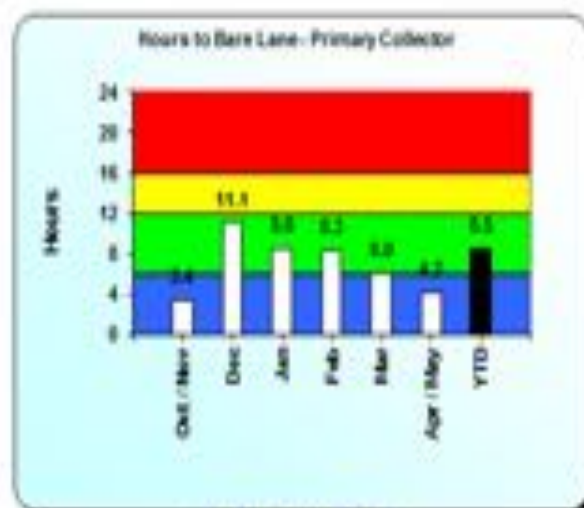
(4,743 Lane Miles)



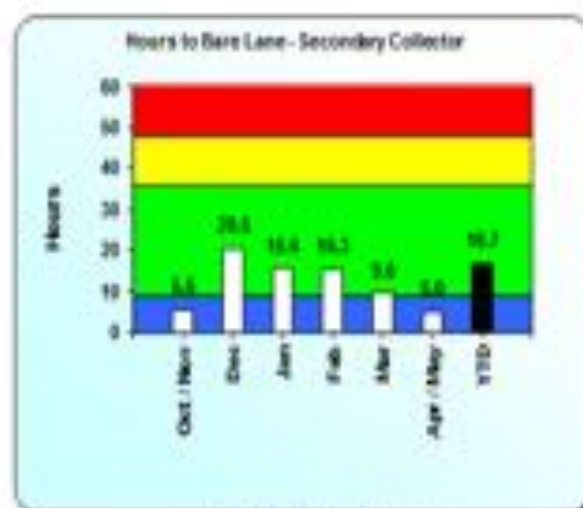
(5,621 Lane Miles)



(11,135 Lane Miles)



(6,756 Lane Miles)

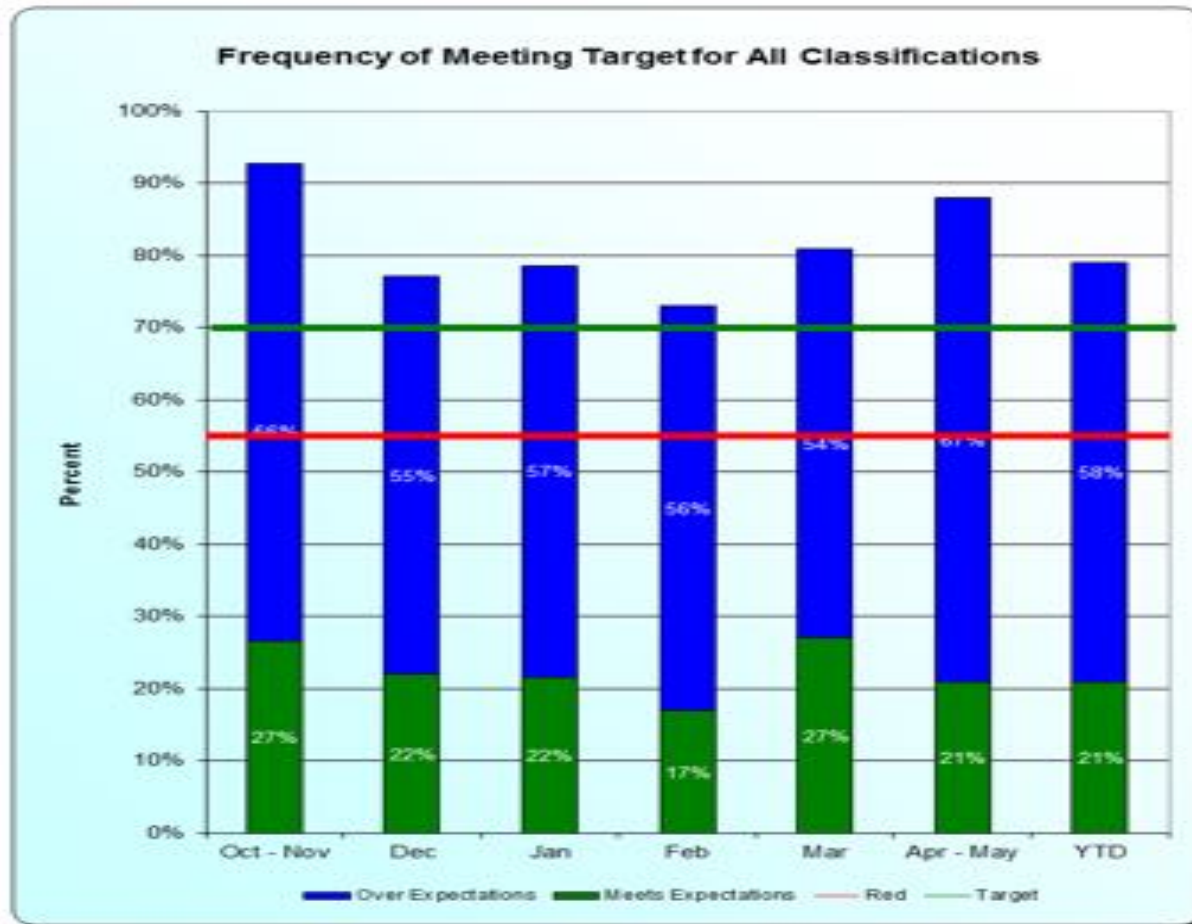


(2,342 Lane Miles)

Maintenance: Snow & Ice Removal
Statewide

Winter 2013 - 2014

July 1, 2013 to Apr 30, 2014



Roll up Performance Measure – for Governor Scorecard

Our performance goal will be achieved if we meet or exceed the target of 70%

What's New

- Implemented new severity index
 - Every event costed out with MDSS
 - Cost as the common denominator
 - Assumed performance goal met
 - Locked in MDSS settings
 - “Road-centric”



What's Next

- New winter performance measure:
 - Others using speed as measure
 - “Return to normal speed”
 - The ultimate outcome based measure
 - Automated winter performance measure
 - Utilizes traffic loop detectors
 - July SCOM presentation

- MDSS Winter Response Index
 - Comparison tool





**Thank you,
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