



Winter Maintenance In The City of Ann Arbor

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Public Works Quick Facts

Service Functions

Water Distribution

Sanitary Collection

Stormwater

Solid Waste

Street Maintenance

Forestry

Park & Public Space Maintenance

Communications Systems

117 Full Time Employees

Public Works Technicians (97)

Supervisors (9)

GIS Coordinator (1)

Engineer (1)

Administrative Support (3)

Office Manager (1)

Financial Analyst (1)

Assistant Manager (2)

Unit Manager (1)

Quick Facts

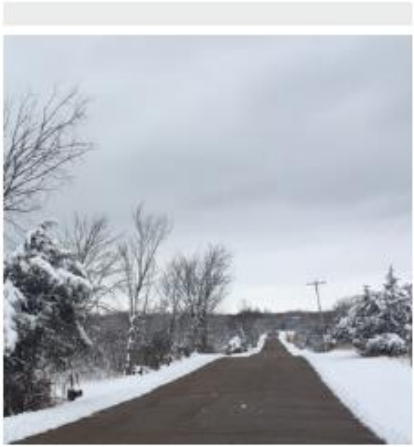
- ▶ 100 miles of major roads
- ▶ 197 miles local roads
- ▶ 51 miles paved public path (park and non-park)
- ▶ Crosswalk Islands
- ▶ Gateway Treatments
- ▶ Salt dome (1)

Winter Maintenance Goal

- ▶ Provide passable roadway. clear pedestrian paths in ROW
- ▶ Free from drifts, snow ridges, and as much ice and snow pack as is practical and can be traveled safely at reasonable speeds.

Goal is not bare pavement

Winter Pavement Conditions



Bare Pavement

May be wet. Accurate and precise plowing and chemical use may be needed to achieve this condition and maintain normal travel speeds.



Bare Wheel Paths

Some slush may remain. Plowing and chemical applications have been made. The roadway is open to near-normal travel.



Plowed and Treated

Wheel paths may or may not be visible, some snowpack remaining, plowing and chemical use performed.



Plowed to Snowpack

Maintenance is being performed, but snowpack remains across the roadway.

Winter Response Fleet

- ▶ 10- single axle spreader 5 yd. dump trucks
- ▶ 3- tandem 10 yd. dump trucks
- ▶ 34 additional vehicles to supplement in large events
- ▶ Specialized equipment for pedestrian paths

Winter Maintenance Methods

- ▶ Plows
- ▶ Salt (granular)
- ▶ Calcium Chloride
- ▶ Sand/Salt Mixture



Winter Weather Treatment Thresholds and Priority

- ▶ Less than four inch snowfall accumulation
 1. Treat major roads
 2. Treat known trouble spots on local roads as needed
 3. Treat park paths, non-motorized paths and pedestrian islands

- ▶ More than four inch snowfall accumulation
 - ▶ Increased staffing for plowing streets
 - ▶ Divert some staff from park snow response
 1. Treat major roads
 2. Plow local roads
 1. Prioritize by Solid Waste Collection Day

Routes

- ▶ 1 - Major Routes (8)
 - ▶ Highest volume road travel lanes
 - ▶ New! School Route
- ▶ 2 - Local Routes (22)
 - ▶ Next lower volume roads, turn lanes, median lane
- ▶ Multiple Non Motorized Routes

What we don't do: Bus Stops, Cross walk approaches, exit ramps, freeways



Non-motorized

- ▶ **Multiple Routes and Methods**
 - ▶ ROW walks, and paths
 - ▶ De-Icing is primarily a sand/salt combination, or just sand
 - ▶ Longer Segments of Path
 - ▶ De-Icing is primarily Salt
 - ▶ Bridge decks and longer segments of path/walk that receive snow from Streets Plowing activities
 - ▶ De-Icing is primarily salt

Non-motorized

- ▶ Pedestrian Island Routes (2)
 - ▶ Shovel or small snow throwers
 - ▶ De-Icing is primarily Calcium Chloride or Magnesium Chloride
- ▶ 2 Hand Routes:
 - ▶ Bridge steps, tight spaces
 - ▶ Shovel or small snow throwers
 - ▶ De-Icing is primarily Calcium Chloride or Magnesium Chloride
- ▶ Facility Lots and Drives
 - ▶ De-Icing is primarily Salt

Challenges and Initiatives

Challenges:

- ▶ Student Sections - On Street Parking used as car storage
- ▶ Narrow Streets, One Way Streets
- ▶ Snow Emergency

Initiatives

- ▶ Pilot Parking Restrictions
- ▶ Brine System
- ▶ Temperature Pucks



Budget

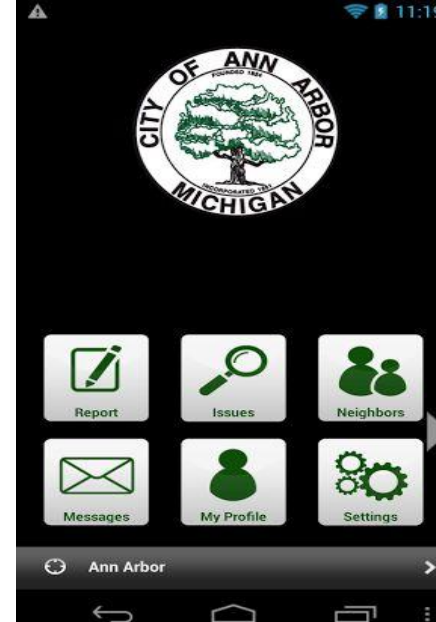
- ▶ Major Streets: \$737,000
- ▶ Local Streets: \$329,000
- ▶ Metro Fund: \$130,000
- ▶ Parks (General Fund) \$295,000

Challenges: Non-motorized, Alleys

Initiatives: Brine System

Resources and Tools

- ▶ Free Sand/Salt mix
- ▶ Green Lights
- ▶ A2Fix It
- ▶ Vehicle Tracking



When green is flashing...

GREEN Means Slow

MDOT and county road commissions will begin using green and amber lights on winter maintenance vehicles and equipment.

Green strobe will improve visibility.
Studies suggest that humans can differentiate more shades of green than any other color.
Better visibility with green lights means safer roads for winter maintenance workers and motorists.

Green strobe will improve safety.
Green lights will alert motorists to drive with caution during inclement weather conditions and low visibility.
The goal is to reduce rear-end crashes and improve safety on the road.

In 2016 more winter maintenance vehicles will have a green strobe to improve visibility.



70 percent of Michigan's 83 county road commissions will use green lights on their trucks in 2016.

Green and amber lights can be flashing, rotating, or oscillating, and can be used by state, county or municipal agencies responsible for winter or maintenance operations.

The changes are a result of House Bill 5247 (PA 181 of 2016), which amends the Michigan Vehicle Code, PA 300 of 1948.



CRA County Road Association OF MICHIGAN



Green is easier to see



Experts say that blue is the preferred color; however, blue is reserved for use by law enforcement. Green is a good alternative as it is close to blue while offering some contrast to amber.

The screenshot displays the RSI AVL Web Reporting interface within a web browser. The browser's address bar shows the URL `http://webflvl.rsiavlweb.com/AnnArborSL/Reporting.aspx`. The page header includes the CalAmp logo, the text "GovOutlook™", and user information: "Logged in as kc.bemish" with links for "Logout" and "My Account". Navigation links for "Tracking", "Report", "Admin", and "Help" are also present.

The main interface is divided into two tabs: "MAP-BASED REPORTS" (selected) and "TABULAR REPORTS". On the left, a "MAP CONTENTS" panel lists various layers and settings:

- Vehicle Layers
 - Report Graphics
 - Vehicles
 - IGN ON
 - PLOW DOWN
 - SPREADER ON
 - PLOW/SPREADER DOWN/ON
 - IGN OFF
 - NO GPS
 - Labels
 - History Layers
 - Feature Layers
 - Geofence Layers
 - Ann Arbor Overlay
 - Map Layers
 - Ann Arbor (RSI/CalAmp Hosted)
 - Ann Arbor (Ann Arbor Hosted)

The central map area shows a street view with several blue location markers. A detailed information popup for vehicle "3282 (3282)" is open, displaying the following data:

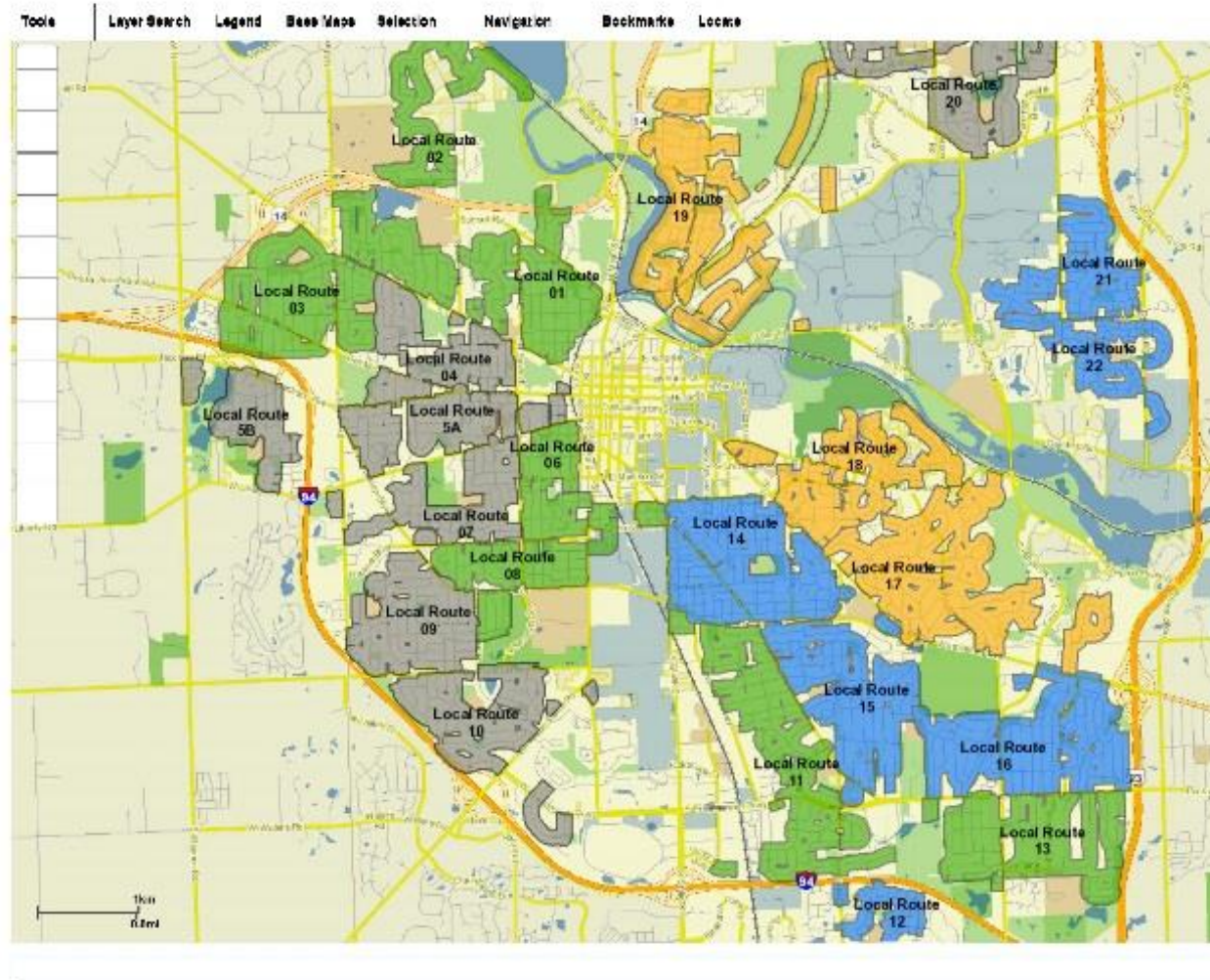
Vehicle Name	3282
Group Name	ActiveSnowPlows
Route	
Driver	
Status	
Time	9/20/2017 6:29:18 AM
Time Fix	9/20/2017 6:29:18 AM
Location	1070 ROSEWOOD ST
Landmark	
Speed	34.04693
Heading	SE
Vehicle Layers	> 3282

At the bottom of the map, a scale bar indicates a scale of 1:3,010, with a distance of 0.020010 miles. The bottom status bar shows the coordinates "13294279.693, 275444.497" and a zoom level of "100%".

Coming Soon!

Cityworks

<http://cityworks/a2ams/fieldMap>



Questions