

# CITY OF HUDSON SNOW PROGRAM

## Overview of Managing the Snow and Ice Control Plan

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## Program Introduction

- The Public Works Snow and Ice Control operation covers 25 square miles and 360 lane miles of roads and is staffed and ready to respond to winter weather conditions 24 hours a day 7 days a week.
- There are 15 snow routes consisting of approximately 24 lane miles per route.
- There are 15 dedicated snowplow truck operators and 5 back up operators.
- The operation utilizes road salt, brine (liquid deicer) and calcium chloride in extremely low temperatures.
- Snow Program is managed by 2 Asst. PW Superintendents and there are 2 back up Managers if needed.



## Program Resources

- There are 15 dedicated snowplow trucks with on board brine tanks and 6-8 ton materials capacity with a Gross Vehicle Weight Rating (GVWR) of 42K-56K
- Each full-size snowplow truck with all apparatus, snow equipment and electronics costs approximately \$240,000
- Ice melting materials 3-year average usage is 9,290 tons.
- The 3-year average OT cost - \$127,165
- The 3-year average materials cost - \$589,116 (average unit cost \$63.41/ton)

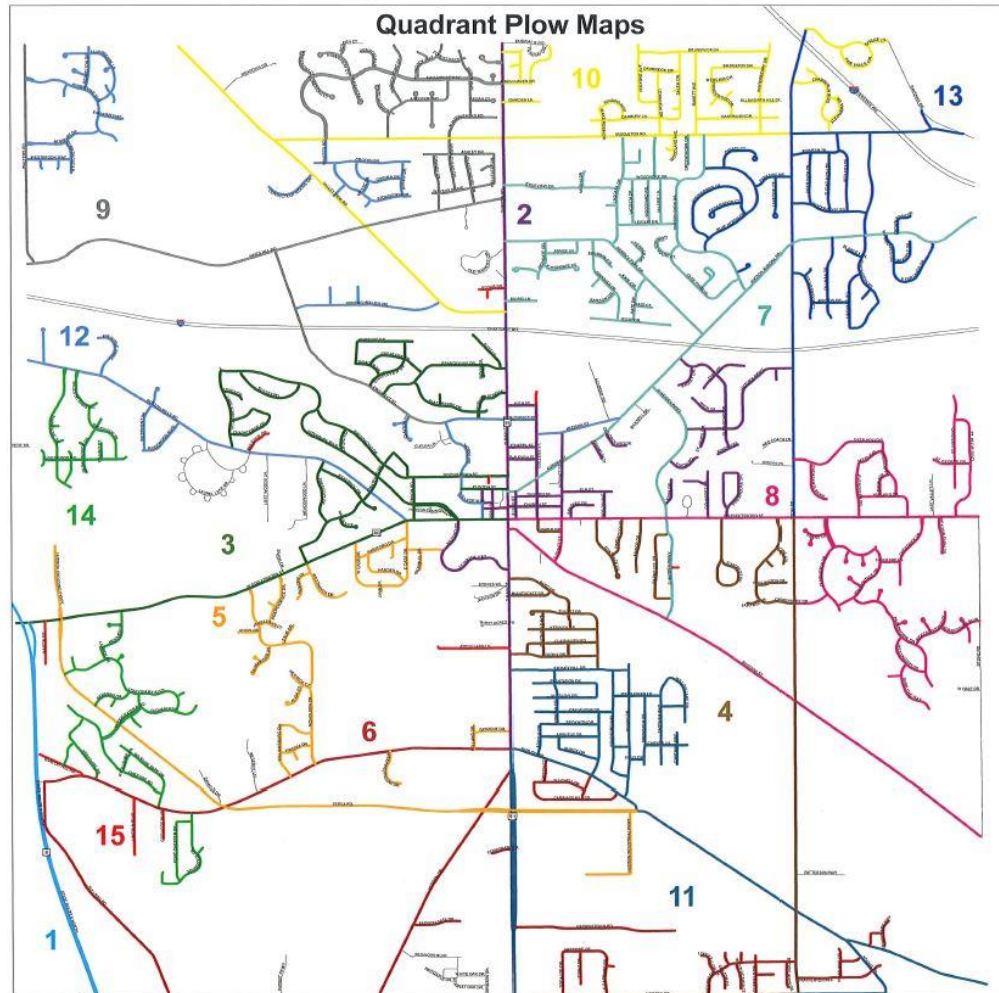


## Program Management

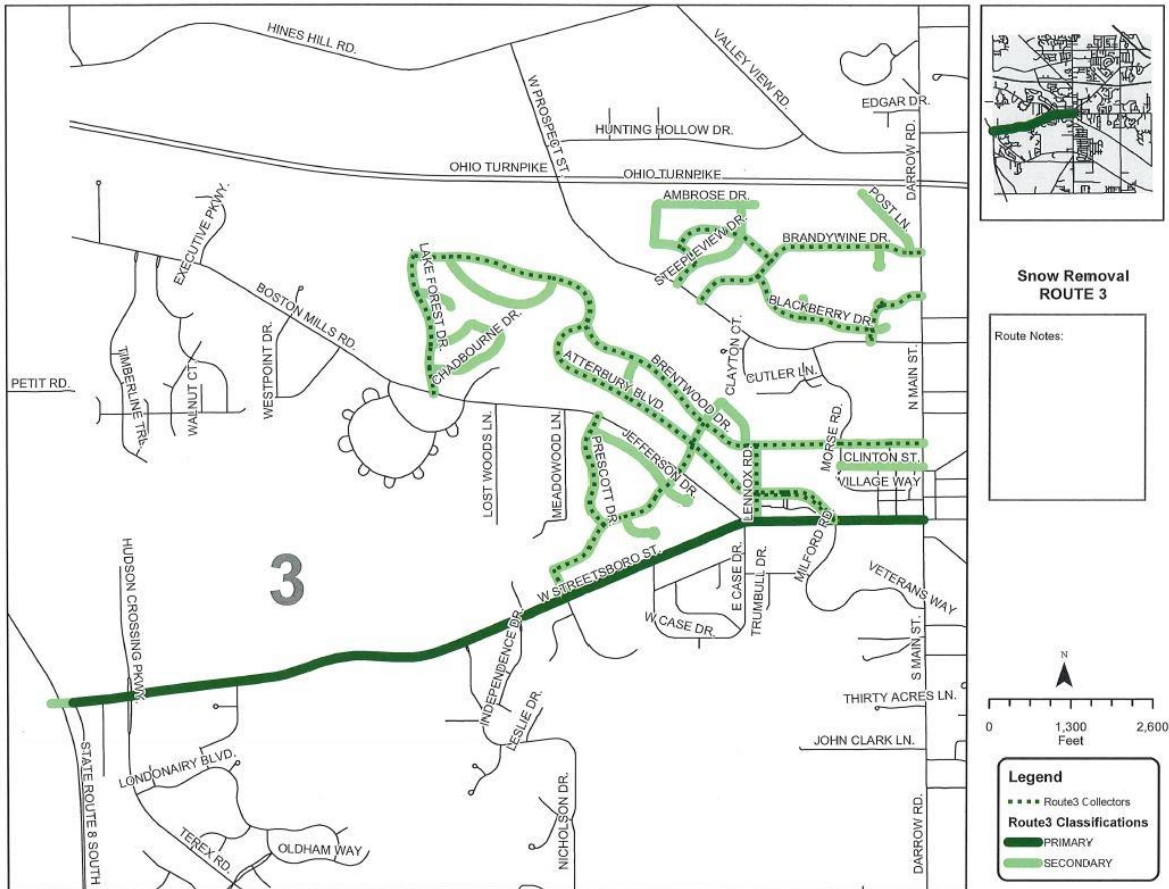
- Routing of plow trucks- primary roadways vs. secondary roadways
- Pre-treatment of road surfaces- 60,000 gallons of our brine have been used this winter.
- Existing resources includes employees with 8 hours of earned rest after working for 16 consecutive hours.
- 231 cul-de-sacs have historically been subcontracted to provide a higher level of service and push snow into smaller openings.



## Program Management



# Program Management



## Service Levels and Expectations

### Estimated Service Times- Snow and Ice Control Program

| General Conditions                    | Estimated Time to Service Primaries | Estimated Time to Service Secondaries |
|---------------------------------------|-------------------------------------|---------------------------------------|
| Light Snow                            | 1 hours                             | 2 hours                               |
| Snow Increasing/Temperatures Dropping | 1.5 hours                           | 3 hours                               |
| Heavy Snow                            | 2 hours                             | 4 hours                               |

- Notes: 1. Cleanup following extended heavy snow events could last 8-12 hours depending on total snowfall.
2. Cul-de-sac crews are called after 3-4" of snowfall. Historically, cleanup within 12 hours.

## Service Levels and Expectations

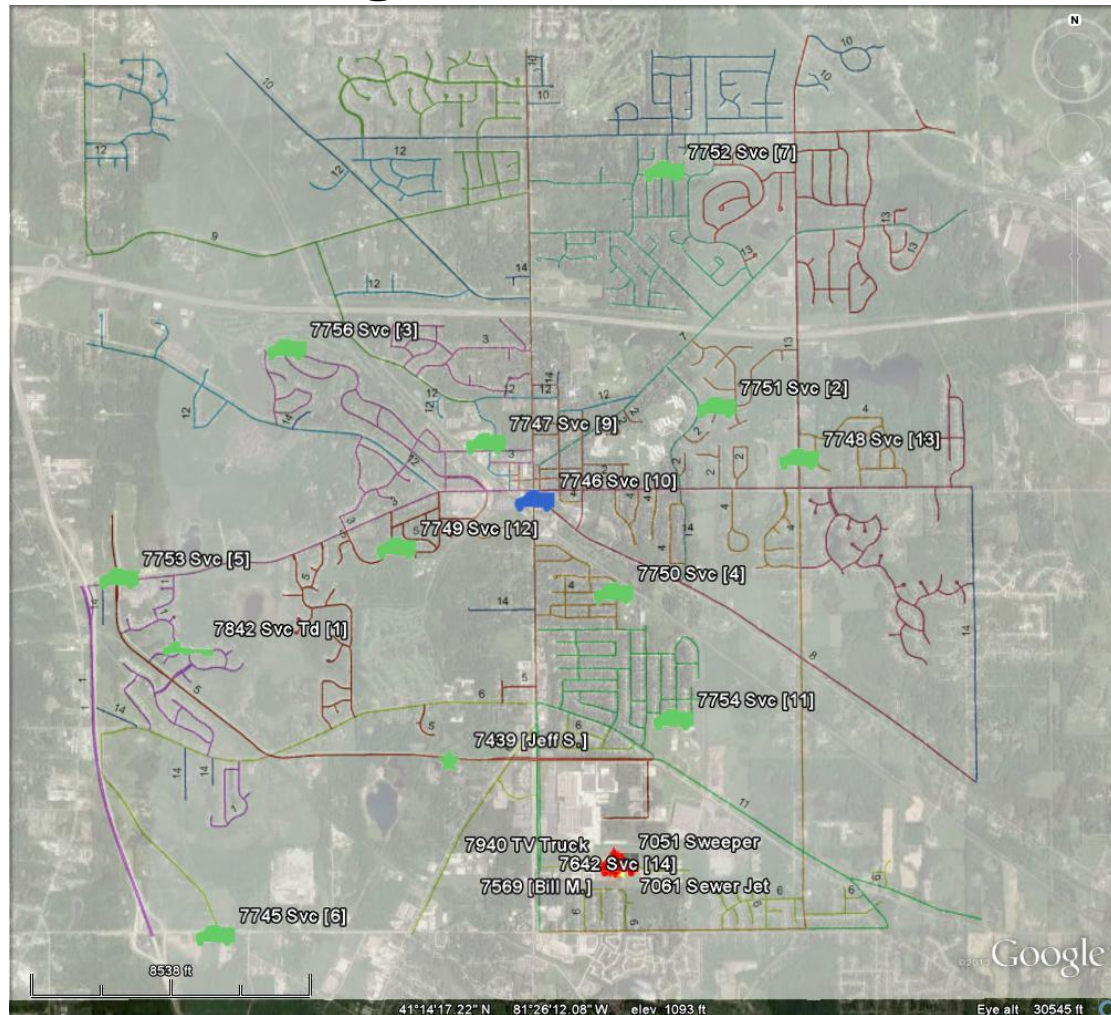
- During extended snow events, we actively manage the hours worked by our employees.
  - 20 employees in total cover 15 routes
  - Each employee can work 16 straight hours and then must have 8 hours of earned rest for safety purposes
  - For an overnight snow event, we have a full call in for 15 drivers at 3:00 am. Those drivers can plow snow until 7:00 pm. This allows optimum coverage during both morning and evening rush hours. If the snow continues, we will run a skeleton crew (1 truck per quad, 1 on Rt. 8) overnight while the least number of residents are on the roadways. After 8 hours of earned rest, drivers may return.
- Every snow storm is different. Variables include:
  - Air Temperature- will impact our melting strategy
  - Type of snowfall- light, heavy, ice, moisture content
  - Timing of event- possible traffic impacts
  - Available resources- manpower, equipment breakdowns, ice melting products
  - Others-wind, road temperatures, snowfall intensity

## Technology

- Computer aided salt dispensing on plow trucks.
- Hydraulic floating of snow plow reduces vehicle vibrations and significantly extends plow blade life and stress on road surfaces.
- Enhanced weather radar and forecasting.
- Road surface temperature readings
- Weather station located at Public Works building.
- Video recording in some vehicles (implementing program).
- GPS tracking in plow vehicles.



# GPS Vehicle Tracking



## Future Service Levels

- Increasing levels of service requires increasing manpower and equipment.
  - Annual salaries for equipment operators are \$66,000. This does not include overtime and benefits.
  - The typical cost of a new vehicles is \$240,000.
  - Each employee + truck added would reduce all plow routes by 2 miles.
  - Estimated time to plow 2 miles is 10 minutes.
- Fine tuning cul-de-sac contract.
  - Existing contract expires this summer.
  - Opportunity for splitting a large contract into several smaller contracts held by multiple contractors.
- Notification on secondaries during large snow events.



## Future Service Levels

- Constant program review
  - Where did we succeed and where did we stumble?
  - How do we make adjustments for the next event?
- Cost of plowing secondaries at the same time as primaries
  - \$660,000 in hourly rates not including OT and benefits
  - \$3,360,000 for 14 additional plow trucks not including additional fuel and maintenance costs
- Majority of issues this year stemmed from:
  - One large snow event (11+ inches)
  - One extra large snow event (18+ inches)
  - These were not typical snow events for northeast Ohio
- How do we compare to neighboring communities?



