

Austin E. Rowser, P.E.
Street Maintenance Engineer
Omaha Public Works

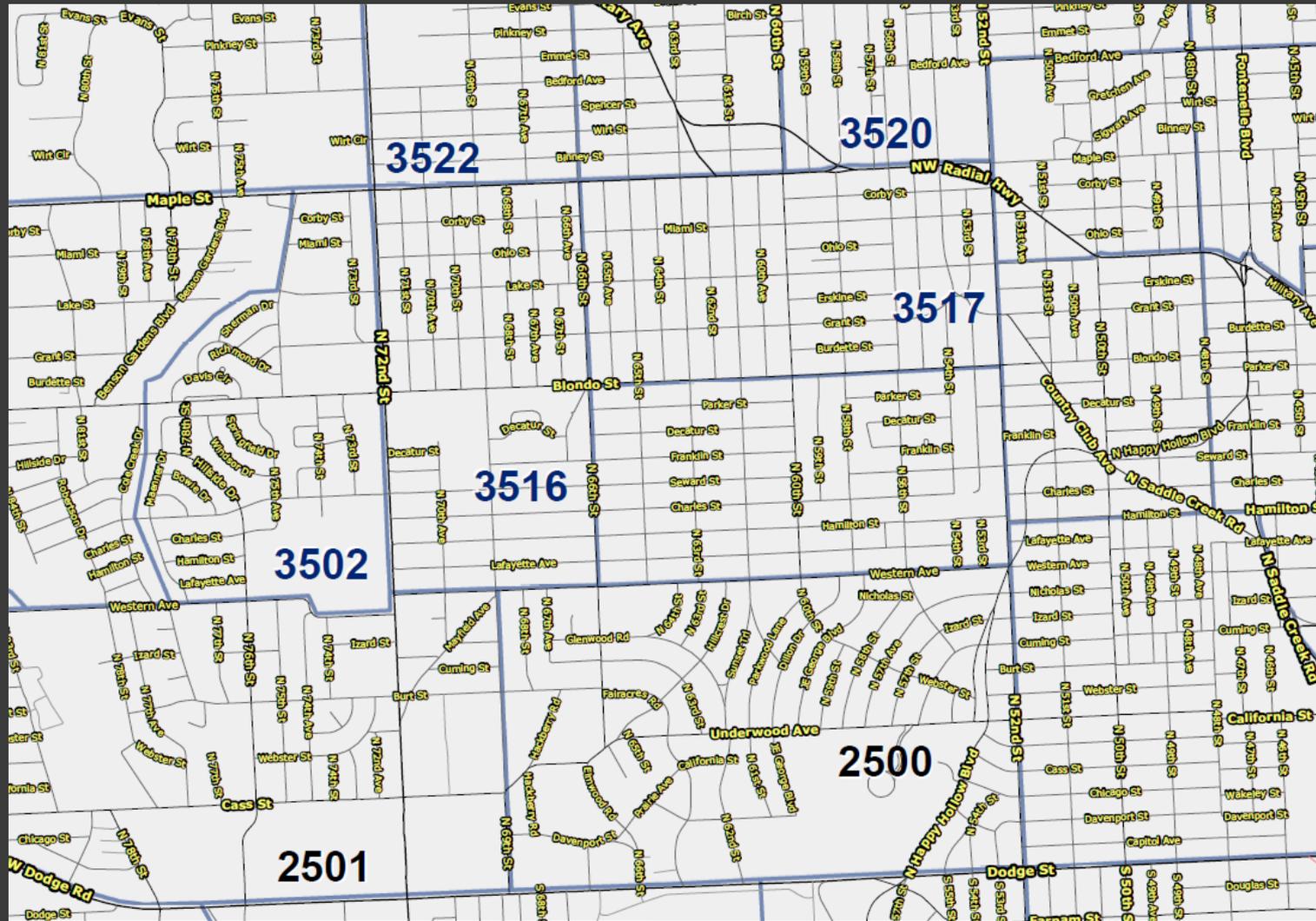


THE EVOLUTION OF RESIDENTIAL SNOW REMOVAL IN OMAHA

About Omaha

- 40th Largest City in the US
- Approximately 5,000 lane-miles
- Average of 30” snow annually in 10-15 events
- City is divided into defined spread and plow routes on arterial and collector streets with more generalized “areas” for residential streets.

Residential Areas



History of Residential Street Plowing

WHEN IT SNOWED

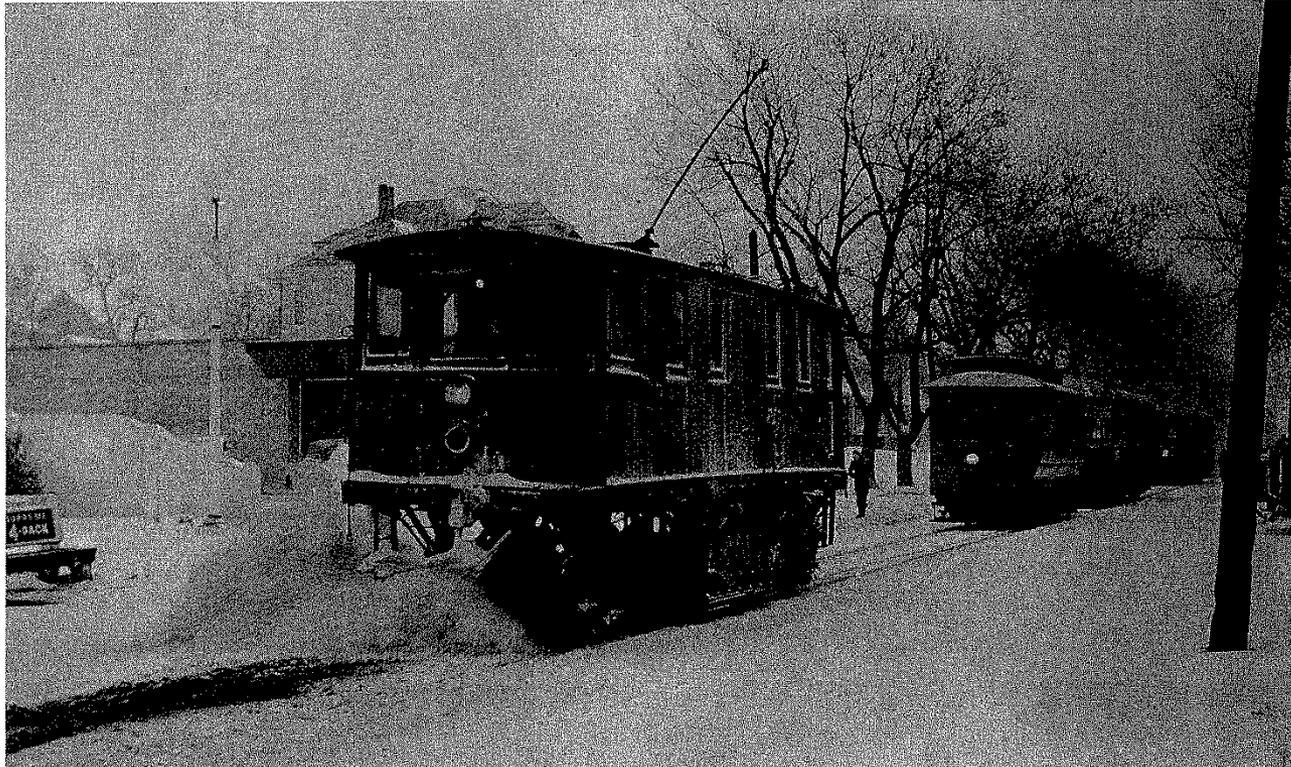


Photo by William W. Krutville

The snow team for this early 1955 snowfall lines up on Underwood Avenue just east of 50th. Car 022 is the sweeper and 039 is spreading salt. Behind are two afternoon rush hour Omaha-built cars bearing Dundee destination signs.

History of Residential Street Plowing

- ◎ S&ID Development in Nebraska
 - County Practices for Residential Streets Prior to Annexation
- ◎ City of Omaha has always provided some type of snow removal service to residential streets
- ◎ Anecdotal reports of LOS was for storms greater than 4”

History of Residential Street Plowing

- ◎ 1989 Snow Plan LOS:
 - “Within residential areas, the level of service varies with each storm.”
- ◎ No real documentation of the actual LOS existed in historical snow plans

History of Residential Street Plowing

- LOS was dropped to 2” in 1993 after a light winter
- Public Works tried to go back to 4” in 1994 with heavier snows, but to no avail due to political pressures
- Eventually, the LOS was to provide some service to residential streets, regardless of snowfall depth in the late 1990s

History of Residential Street Plowing

● 1999 Snow Plan Stated LOS

- “After the routes have been completed, the residential streets are plowed and spread. The methods for doing this will vary, depending on the storm.”
- “Single Pass” plowing, followed by “curbing” and spreading.

History of Residential Street Plowing

- ④ 4" LOS was reinstated in early 2000s, but limited service was still provided after main operations had ceased.
- ④ Contract snow plows were used in some capacity starting in the 1990s

History of Residential Street Plowing

- ◎ 2005 Snow Plan Stated LOS
 - “Within residential areas, the level of service varies with each storm. Some light equipment is sent into residential areas early in most storms. However, most of the emphasis is on major routes until they are clear....”
 - “Plowing of residential streets will commence when deemed necessary by evaluation of weather conditions, snow forecasts and is dependent on funding availability”

2008 Consultant Study

- ◉ In 2008, a consultant was engaged to evaluate the City of Omaha's snow removal operations
 - Summary recommended updating the snow program manual and to “identify program goals by street classification.”
 - Liquids program also resulted from the recommendations of the study as well as significant upgrades to equipment and staffing at key positions
 - Residential plow contracting also was initiated from the study recommendations

2010 Snow Plan

- ◎ Following the 2008 study, a snow plan was drafted in 2010 but never officially adopted. It was used as the de facto snow plan with the following LOS:
 - “Residential street plowing begins after the accumulating snow fall ends. Travel on residential streets is restricted during and immediately after snow fall. Residential streets may have lane restrictions after heavy and drifting snow. The goals for maintaining residential streets are: 1) Streets are plowed and treated immediately after a snowfall. 2) Streets are plowed curb to curb. 3) Streets are treated with salt or sand after plowing to prevent icing.
- ◎ Unstated LOS goals that became standard
 - 4” residential LOS – contracted. City would still provide some late and limited service for storms less than 4”
 - 24-hr standard for processing residential streets.
 - Bare pavement is not the expected standard

2015-2016 Winter

◎ 12/24/2015 Storm

- Forecast as of 12/23/2015 was for <1" snow. Street Maintenance had full crew called in at 0330.
- Early morning forecasts began predicting 4"+. Accumulations began approximately 0600. City crews began immediately.
- Snowfall rate was 1"-1.5"/hr for 6 hours; final accumulations 6"-9" in the metro. Decision made at 0900 to call contractors at noon (forecast called for 4-6" total at that time). Support help was called in and available by 1100. City personnel were prepared to handle the snow and adjustments were made rapidly with changing conditions.
- Majority of residential contractors were finished with first pass by 2400, City crews completed second pass and spread by 1200 12/25

2015-2016 Winter (Continued)

◎ 12/28/2015 Storm

- Forecast on 12/27/2015 called for up to 12" snow.
- Brine was applied to major and secondary roadways on 12/27.
- 2-4" actual snow starting at 0600, ending 1730. Periods of medium intensity AM snow.
- Residential contractors were called in and Emergency Parking Regulations took effect at 1200. The storm shifted east and when it became apparent accumulations would be much less than forecast, the emergency parking regulations were canceled around 1430.
- Initially, contractors were going to be paid for 2 passes. This was canceled. Contractors finished initial pass and City handled the second pass.
- Brine operation seemed effective at breaking the bond. 20+MPH winds caused isolated drifting overnight.
- Residential streets were plowed 1 time by midnight for the most part. Second pass was complete within 24 hours of calling in contractors.

2015-2016 Winter Takeaways

(Notes from 1/11/2016 PW Committee Meeting)

⦿ Residential Contractors

- Contract allows 24-hours to clear assigned areas. Contractors enter multiple, but not all, areas upon starting. Priority is up to the contractor; they have 24-hours to complete all assigned. The contract does not allow them to leave once started.
- Inspectors check work for compliance with contract documents. Deductions are given for substandard work. The City spreads the areas and cleans up any deficient work.

⦿ Action Items

- Update Snow Plan

⦿ Feedback From Council

- What is the expected level of service? Changes to current LOS need to be determined prior to budgeting so budget can reflect.

2015-2016 Winter Takeaways

(Front Page Omaha World Herald, 1/26/2016)

'NOT ACCEPTABLE'



RYAN SODERLIN/THE WORLD-HERALD

The westbound lanes of West Dodge Road between 84th and of 90th Streets were closed for about an hour after about 4 inches of snow fell last Tuesday.

2015-2016 Winter Takeaways

(Notes from 1/26/2016 Special PW Committee Meeting)

- ⦿ For remainder of 2015-2016 snow season, we will be operating at LOS above current
- ⦿ Focus of City trucks will be majors; for large events, Contractors will be leveraged earlier in an event and paid either multiple passes (approx. \$180K/pass) or hourly (est. \$350-400K per event).
- ⦿ Consultant will be hired to review current snow plan and provide study/recommendations for new snow plan to be implemented in the 2016-2017 snow season (est. \$50K)

2015-2016 Winter Takeaways

- ⦿ Complaints were geared towards residential street LOS and issues with rush hour storms
- ⦿ Consultant was selected to help study the snow removal program, but the contract was eventually killed by the City Council
- ⦿ Citizen survey was conducted to find focused areas of the program where improvements could be made
- ⦿ Change in residential LOS resulted

2016 Citizen Survey

Residential Streets

When we turn to examine expectations concerning residential streets, we find uniformity of response among all districts. Residents expect residential streets to be plowed only after major and secondary streets and only when snow accumulation is greater than 2 inches. And while residents most commonly do not expect these streets to be plowed to bare pavement, the responses to this question were more closely divided with 57% of respondents saying they did not expect to see bare pavement while 43% do have this expectation. (See Tables 5, 6 and 7, Appendix A) When asked if they used special winter tires on their vehicle, the vast majority of residents (87%) report that they do not.

| | Very Dissatisfied | Dissatisfied | Satisfied | Very Satisfied | No Opinion |
|--|----------------------|--------------|-----------|-------------------|------------|
| Timing of snow removal on major & secondary streets | 1 | 17 | 61 | 19 | 1 |
| Quality of snow removal on major & secondary streets | 2 | 15 | 63 | 18 | 1 |
| Timing of snow removal on residential streets | 8 | 34 | 50 | 7 | 1 |

2016 Citizen Survey

Table 5

I expect residential streets to be plowed:

| | Responses | Percent |
|---|-----------|---------|
| When snow accumulation is greater than 1" | 41 | 13.1 |
| When snow accumulation is greater than 2" | 150 | 52.4 |
| When snow accumulation is greater than 4" | 62 | 21.0 |
| Anytime snow of any depth accumulates on the street | 37 | 13.4 |

Table 6

When residential streets are plowed, I expect them to be plowed:

| | Responses | Percent |
|---|-----------|---------|
| Within 24 hours of the end of the accumulating snowfall | 63 | 23.1 |
| Continuously once snow starts accumulating | 33 | 11.7 |
| Only once the major and secondary streets have been cleared | 111 | 36.9 |
| Within 12 hours of the end of the accumulating snowfall | 83 | 28.3 |

Table 7

When the City plows residential streets, I expect them to be plowed to bare pavement.

| | Responses | Percent |
|-----|-----------|---------|
| Yes | 124 | 42.8 |
| No | 166 | 57.2 |

2016 – 2017 Snow Plan LOS

- ***Residential/Local Streets***

- A local, or residential, street serves individual residences and neighborhoods. The City of Omaha's main plow routes are designed such that citizens will only have a few short blocks to travel from their home over a local street before they reach a collector or arterial street. Local streets will receive a lower level of service than arterial and collector streets. When the City plows residential streets, the timing of the beginning of the plow operation will be based upon the forecast for the first 2" of accumulation.

- **Level of Service:**

- **Residential/Local Streets shall be plowed and anti-iced/deiced when snowfall accumulation exceeds 2"**
- **When Residential/Local Streets are plowed and anti-iced/deiced by the City, plowing shall be complete within 12 hours of the end of accumulating snowfall for less than 4" accumulation, 18 hours for 4-8" of accumulation, and less than 24 hours for snowfall accumulation over 8"**
- **When Residential/Local Streets are plowed and anti-iced/deiced, some snowpack/ice accumulation may remain on the surface. Bare pavement shall not be the expected level of service**

2016 – 2017 Snow Plan LOS



Future LOS Considerations

- What about ice? We experienced 6 freezing rain/ice events in 2017-2018. Demand from the public and elected officials will likely result in change to 2018-2019 plan to address ice LOS.
- In 2017-2018, we began rethinking anti-icing operations. We have started these operations in residential areas and move to collector and arterial streets last.
- Improved cul-de-sac service

Residential Contracting

- Omaha began contracting residential snow removal for the 2010-2011 winter.
- Timing of contractor entry was at the end of accumulating snow for storms 6" or less or after 4" of accumulation for storms greater than 6"
- Contractors were given initial assignments and returned for additional areas when complete
- Consultant inspectors used to check work

Residential Contracting (Continued)

- Contractors were assigned specific starting areas in 2011-2012 winter. When they completed the assigned areas, they were allowed to request additional areas
- Starting in 2014-2015, all areas were assigned to residential contractors. Areas were predetermined upon contract award and remained through the entire winter

Residential Contracting (Continued)

- Bids are solicited annually in August/September.
- A specification and standard plans are included in the bid package to define the program expectations
- Consulting inspectors provide RFP in September/October
- Bids are reviewed and ranked. Most bids are accepted.

Residential Contracting Bid Evaluation (Continued)

| | | | Bids Ranks | | |
|-------------------------|--|--|--------------|--------------|------------------------------|
| | | | East of 72nd | West of 72nd | |
| Affordable Construction | | | 11 | 12 | Alexander Lawns |
| Alexander Lawns | | | 4 | 14 | Choppers Lawn Services |
| Cooter Enterprises | | | 2 | 13 | Cooters |
| DPS, LLC | | | 7 | 9 | D&S Lawns Service |
| Dr Exteriors | | | 9 | 2 | Dana Ent. |
| H&H Building Services | | | 8 | 17 | DPS, LLC |
| MaConn Enterprises | | | 1 | 19 | Dr Exteriors |
| Precision Enterprises | | | 10 | 18 | H&H Building Services |
| RMS Services | | | 3 | 7 | Hardscape |
| Sean Negus Construction | | | 6 | 6 | MaConn Enterprises |
| Melvin Sudbeck Homes | | | 4 | 4 | Neon Green |
| | | | | 3 | Pond Pros |
| | | | | 7 | Precision Enterprises |
| | | | | 1 | Priority Turf and Irrigation |
| | | | | 10 | RMS Services |
| | | | | 11 | SC Contracting |
| | | | | 16 | Sean Negus Construction |
| | | | | 15 | Stanger Enterprises |
| | | | | 4 | Melvin Sudbeck Homes |

Residential Contracting Issues

- Mailboxes & Mow Strip Turf
- Plowing Closed Driveways
- Light Trucks and Substandard Performance
- No Real Material Spreading Capacity
- Difficulty Managing Contracts for Larger Storms and Declared Snow Emergencies
- Cost per Storm
- Managing Public Expectations
- Contractor Staffing in Extended Events

Snow Emergencies

○ Sec. 36-179. - Snow emergency parking rules.

- (a) The mayor or his/her designee is hereby authorized to declare a snow emergency, by announcement made on at least two radio or television stations or other methods of communications whose normal operating range covers the city in an expeditious manner within one hour thereafter. Upon the declaration of the snow emergency, the parking regulations in this section shall immediately become effective. The snow emergency shall remain in effect until such time as snow plowing, spreading of sand or salt operations have been declared completed by the public works director or his/her designee in the same manner.
- (b) During the period that the snow emergency is in effect, vehicles may only park on one side or the other of all city streets, except as noted in subsection (e) below. Parking is only permitted on the odd-addressed (south and east) sides of the street on odd calendar dates. Parking is only permitted on the even-addressed (north and west) sides of the street on even calendar dates. This parking rule is in effect from midnight to midnight for the duration of the snow emergency. This section does not allow parking on either side of an emergency snow route.
- (c) It shall be unlawful to park during a snow emergency on the even-addressed (north and west) side of the street on odd dates or on the odd-addressed (south and east) side of the street on even dates. Violation of this section shall be punished by a fine of \$50.00. Written notice of violation shall be placed on the illegally parked vehicle as allowed for by this Code. Nothing in this section shall preclude any other remedies available to the city under this Code.
- (d) The snow emergency parking rules in this section are in addition to existing and applicable parking regulations and prohibitions, including the designation by official traffic signs of areas where parking is prohibited; provided, that if an official traffic sign prohibits parking along one side of a city street along the entire length of a block, then during a snow emergency it shall be permissible to park along that side of the city street if such parking is otherwise allowed under the odd/even rules of subsection (b) above.
- (e) The snow emergency parking rules in this section shall not apply to the following:
 - (1) Streets with metered on-street parking;
 - (2) All private and public parking lots and parking structures; and
 - (3) All streets west of and including 72nd Street.
- (f) If during a snow emergency a vehicle parked in violation of any parking rule of this chapter impedes the city's removal of snow or ice from city right-of-way and thereby endangers public health and safety, then an authorized employee of the city may remove such vehicle and relocate it or deliver it to an authorized lot, so that such removal of snow or ice may be completed.
- (g) The public works department shall develop, implement, and execute a communication plan in conjunction with a snow emergency declared pursuant to this section, which may include but not be limited to public awareness and education, news media alerts, automated calling to citizens, text and email alert systems, twitter and other social media campaigns, and internet web-based alert and information systems. The plan may include a supplemental street maintenance or other designated account appropriation request as is reasonably required to implement such dissemination of information.

Sand Barrels

- ⦿ Program designed to bridge the gap between the snow beginning and the timing of residential snow operations
- ⦿ Residents are allowed to request barrels from October 1 through December 1 each year
- ⦿ If eligible, 55 gallon drum full of salt/sand mixture is delivered to the home
- ⦿ Only intended for residential streets or alleys with a hill or other obstacle warranting the need for early treatment
- ⦿ Intended to be used only on the street. If found used in driveways and sidewalks, the barrels are removed.

Sand Barrels



Sand Barrels



QUESTIONS?