



CITY OF URBANDALE
SNOW AND ICE CONTROL
OPERATIONS MANUAL

FY 2016/17

INDEX

SECTION I

SNOW AND ICE CONTROL POLICY

Introduction	1
Implementation	1
Definition of Supervisor	1
Monitoring and Notification of Ice/Snow Events	1-2
Snow Control Procedures	2
Priorities	2
Emergencies	3
Anti-icing	3
Material Spreading	3
Joint Jurisdiction	3-4
Driveways and Private Property	4
Intersections	4
City Sidewalks and Parking Lots	4
Complaint Procedures	5
Reports	5
Snow Fence	5
Mailboxes	5
Disclaimer	6

SECTION II

SNOW AND ICE REMOVAL PLAN

Prior to Storm Event	1
Storm Classifications	1-4
Snow Plow Instructions	4-7

SECTION III

OPERATIONAL PROCEDURES

Equipment Assignments (Snow Plowing Routes)	1
Equipment Assignments (Cul-de-sac and Crossover Routes)	2
Equipment Assignments (Split Shifts)	3
Equipment Assignments (Parking Lots and Sidewalks)	4
Material Spreader Inspection Form	5
Plow Inspection Form	5
Equipment Check	6
Equipment Carried in or on Vehicle	7
Towing, Pushing or Removing Vehicles	7
Supervisor Checklist	8
Salt Application	9
Recommended Salt and Calcium Chloride Application Rates	10
Snow Ordinance Notification	11
Storm Record - Employee	12
Storm Record - Supervisor	13

Parking Regulations	14
Sidewalk Regulations	15
Sidewalk Notice	16

SECTION IV

MAPS

Anti-Icing Route	1
Snow Plow Zones	2
Zone 1	3
Zone 2	4
Zone 3	5
Zone 4	6
Cul-de-sac and Crossover Routes	7
Responsibility for Shared Streets	8
Lots and Sidewalks	9-12

TABLE OF REVISIONS

The following is a table of City Council approved amendment dates to the Snow and Ice Control Operations Manual:

Adopted:	August 15, 1985
First Revision	December 6, 1994
Second Revision	October 22, 1996
Third Revision	November 18, 1997
Fourth Revision	November 3, 1998
Fifth Revision	November 2, 1999
Sixth Revision	January 4, 2000
Seventh Revision	October 11, 2000
Eighth Revision	October 16, 2001
Ninth Revision	October 29, 2002
Tenth Revision	November 11, 2003
Eleventh Revision	November 23, 2004
Twelfth Revision	November 8, 2005
Thirteenth Revision	November 21, 2006
Fourteenth Revision	November 6, 2007
Fifteenth Revision	November 4, 2008
Sixteenth Revision	November 17, 2009
Seventeenth Revision	November 30, 2010
Eighteenth Revision	November 15, 2011
Nineteenth Revision	November 13, 2012
Twentieth Revision	November 12, 2013
Twenty-first Revision	October 28, 2014
Twenty-second Revision	October 27, 2015
Twenty-third Revision	October 25, 2016

SECTION I

SNOW AND ICE CONTROL POLICY

CITY OF URBANDALE SNOW AND ICE CONTROL POLICY

INTRODUCTION

The purpose of this Snow and Ice Control Manual is to establish the City's policy and level of service with respect to snow and ice control and clearing of its street system and public property during the snow season. This manual supersedes all previously written policies of the City on snow and ice control procedures.

The following policies and procedures serve as a practical guide for the effective snow and ice control procedure in and for the City of Urbandale, Iowa. Provisions contained in this Manual may be updated and reviewed as conditions change.

IMPLEMENTATION

This Manual will be in effect when weather conditions could cause accumulations of frost, sleet, ice, snow, or other occurrences on the City of Urbandale streets and public parking areas and will be in effect during the normal winter season.

DEFINITION OF SUPERVISOR

The use of the word "Supervisor" in this Manual means the Engineering and Public Works Department person who is on duty at the time of a snow or ice control operation. This may include one or all of the following: Director of Engineering and Public Works, Assistant Director of Public Works, and Public Works Supervisor(s).

MONITORING AND NOTIFICATION OF ICE/SNOW EVENTS

During normal working hours, (7:30 a.m. to 4:00 p.m., Monday through Friday) the observations of the Engineering and Public Works employees shall alert the first response for snow and ice removal.

During off duty hours, police officers are asked to monitor street conditions and contact the Engineering and Public Works Department regarding street conditions. All Supervisors are directed to monitor street conditions while off duty and any may implement snow and ice removal operations.

The use of weather reports from radio, television, the internet and National Weather Service broadcasts will be used concurrently with existing street condition reports to determine notification timing.

News media notification of the application of the snow ordinance or of road condition reports will be made by the Engineering and Public Works Department working in conjunction with the Police Department.

Media Notification of the enactment of the emergency parking ban, snow emergency declarations and road closures will be made by Engineering and Public Works Department with the consultation of the Police Department.

SNOW CONTROL PROCEDURES

The snow accumulation and volume of traffic will normally dictate when snow plowing operations will begin. Plowing and/or material spreading will take place during a storm as needed to keep the accumulation on the street surface less than the guidelines contained in this Manual if possible.

The normal procedure on the primary streets will be to operate the plow trucks in teams. Team plowing may consist of two or more plows operating simultaneously to provide for the rapid removal of snow from centerline to curb in one pass. All other streets will normally be plowed with a single plow unit making multiple passes in each direction to clear the street of accumulated snow from curb to curb.

Snow removal operations will be conducted in accordance with the provisions and guidelines established for the various streets as outlined in this Manual and snow plowing activities may be accomplished in conjunction with ice control procedures.

PRIORITIES

In order to make the most efficient use of available resources, it is necessary to establish priorities using the assumption that the severity of a storm is not beyond the normal capabilities of the city's snow removal resources. Deviations will occur. For example, storm severity may preclude all snow removal operations, or seriously impede response, or an emergency may require a different allocation of resources. The established priorities are as follows:

Priority 1	Red
Priority 2	Yellow
Priority 3	All other residential streets
Priority 4	Cul-de-sacs
Priority 5	Parking lots and sidewalks

The order of plowing each route may be determined by each individual operator. The goal is to open all streets as quickly as possible. When conditions are favorable, or plowing is during times of low traffic, each route should be plowed by efficiency. However, during peak traffic times, when snowfall has exceeded one and a half inches per hour, or when blizzard conditions exist, the secondary priority streets (yellow) within each route should be plowed first.

EMERGENCIES

Some foreseeable emergencies may include:

1. Immediate need for police, fire, and rescue assistance. City personnel may be asked for assistance and may leave the public right-of-way to respond to an emergency. Snow removal crews will provide necessary assistance, such as opening a driveway or parking lot to give access to the emergency crews.
2. Isolated problem areas where traction is urgently needed before all other areas are handled: The Police Department may only advise of road conditions and shall not direct snow and ice operations of the Engineering and Public Works Department.
3. Icing conditions due to a water main break.

ANTI-ICING

Prior to a precipitation event, the Supervisor may employ anti-icing operations. If frost, and snow and/or ice is being forecasted, and pavement temperatures are dropping at a rate that they will reach freezing, one or more trucks will be dispatched to apply salt brine or other anti-icing chemicals to pavement. The operator will apply anti-icing materials to first priority streets. Additional streets may be treated if conditions warrant and time allows.

MATERIAL SPREADING

Conditions may warrant the application of sand, salt, or a mixture of both. Standard procedure will be to use only salt. Temperature and moisture conditions may also warrant pre-wetting with salt brine or liquid calcium chloride. Application will follow the same priorities established for snow removal. Although material spreading may be indicated in the plan section of this document, road conditions and temperatures may warrant plowing only.

Materials will first be applied on all priority one routes. Other streets will have material spread only at intersections, hills and curves. Materials on those streets may also be applied at spot locations to allow tracking and clearing of streets, rather than uniformly.

JOINT JURISDICTION

There are various 28E Agreements that define the responsibilities of the City of Urbandale and bordering governmental entities pertaining to snow and ice removal on certain streets. A map of responsibilities is included in this manual. The City of Urbandale may perform services on shared borders with these entities or outside of its boundaries for efficiency reasons. Furthermore, other entities may perform work within the City of Urbandale for the same reason.

Should snow and ice removal operations be implemented by the City of Urbandale, and not a bordering entity, the City shall treat or plow those streets normally done by others within its limits or at a shared boundary. If Urbandale has its snow routes open and serious problems remain on boundary streets, Urbandale may assist based on the judgment of the supervisor on duty, with the exception of Interstate roadways.

DRIVEWAYS AND PRIVATE PROPERTY

1. City snowplows will not clear private driveways or other private property such as parking lots, school driveways or parking lots, except in a verified emergency as discussed previously.
2. Snow placed in a driveway or on sidewalks where the driveway or sidewalk meets the street by city plows is the responsibility of the property owner to remove.
3. Residents or private contractors are prohibited from blowing or pushing snow into or across the street or leaving windrows of snow in the street as a result of cleaning their sidewalk or drive.

INTERSECTIONS

There may be times where snow build up restricts the view of motorists at intersections. The City will make every effort to clear the intersections. However, the primary function is clearing streets and intersection clearing will follow as time allows. The first priority will be non-signalized intersections with the highest volume of traffic. The next priority is non-signalized intersections with the lower volumes of traffic. Typically signalized intersections will be the last cleared.

CITY SIDEWALKS AND PARKING LOTS

1. If conditions warrant, snow and ice accumulations shall be removed from City-owned parking lots (including but not limited to City Hall, Library, Police Department, Water Utility, Senior Center, Swimming Pool, Fire Station 41, Fire Station 42, Walker Johnston Park, Lions Park, Murphy Park, and Rocklyn Park). Material spreading may occur at exits and areas near intersections if conditions warrant.
2. If conditions warrant, snow and ice accumulations shall be removed from public sidewalks adjacent to City-owned property and trails that are part of the public sidewalk system.
3. Snow and ice removal from recreational trails is limited. Users are advised to use recreational trails at their own risk. Signs advising of limited winter trail maintenance are posted at main entrances throughout the trail system. Information on limited winter trail maintenance is also placed on the City's web page and listed in the Parks and Recreation Program Guide.
4. If conditions warrant, snow and ice accumulations shall be removed from sidewalks and entries to City Buildings (including but not limited to City Hall, Library, Police Department, Water Utility, Senior Center, Swimming Pool, Fire Station 41, Fire Station 42, Walker Johnston Park, Lions Park, Murphy Park, and Rocklyn Park). Entry walks and stairways may be treated with salt.

COMPLAINT PROCEDURES

1. It is the responsibility of the resident to remove accumulations of snow or ice from the public sidewalk adjoining their property within 24 hours of a snowfall or ice storm. A form designed specifically for noncompliance sidewalk snow removal will be used for complaints regarding a failure to remove snow.
2. The Supervisor(s) on duty, the Assistant Director of Public Works or the Director of Engineering and Public Works will handle emergency complaints. A work order form will be used for all other snow related complaints.
3. A supervisor will investigate each location, and if necessary, will dispatch a person or crew to address the problem.

REPORTS

The supervisor for each snow removal operation will complete a snow record as soon after each storm as applicable. This record will contain operating times, weather conditions, resources committed and results.

SNOW FENCE

To assist in preventing blowing snow from accumulating on city streets, parking areas and trails, the Department of Engineering and Public Works and Parks and Recreation Department will place snow fence at various locations throughout the city. Said snow fence will be placed on private property with permission of the owner. Snow fence locations will be subject to change or elimination as development continues to occur within the city.

MAILBOXES

Mailboxes not installed in accordance with United States Postal Service specification and damaged during snow plowing operations will not be the responsibility of the City for reimbursement for repair or replacement. Each mailbox installation should be sufficiently solid to withstand snow-clearing efforts by the city. The City is only responsible to clear streets from curb to curb; it will be the responsibility of the adjacent property owner to clear snow around mailboxes to assure mail delivery by the United States Postal Department. In the event a City vehicle damages a properly installed mailbox, the City will install a new green-treated post and/or standard black mailbox. If the property owner desires a different mailbox, the City will reimburse up to \$100 towards replacement by the property owner. If the damage exceeds \$100, the property owner will be responsible for any costs above the \$100 reimbursed by the City, if approved for reimbursement. The City will only reimburse for materials, no labor, unless a third party is contracted for the repairs.

DISCLAIMER

This policy is not intended to create any duty to any individual member of the public or to protect any particular or circumscribed class of persons. At least one or more of the following, which will delay all or some of the services provided, may affect all or parts of this policy:

1. Equipment breakdown or manpower shortage.
2. Vehicles disabled in deep snow.
3. Weather so severe as to cause crews to be called in from the street.
4. Equipment rendered inadequate by the depth of the snow or snow drifts
5. Crew breaks, and breaks required for refueling, refilling of material spreaders and installing chains and new blades.
6. Unforeseen conditions and emergencies.

SECTION II

SNOW AND ICE REMOVAL PLAN

CITY OF URBANDALE SNOW AND ICE REMOVAL PLAN

The implementation of this plan is subject to actual weather conditions. The following are guidelines only and the supervisor in charge may adjust the level of service and priorities.

PRIOR TO STORM EVENT

- I. If no ice or snow has fallen but forecasted, or precipitation is falling but not accumulating on roads, and pavement temperatures are 35° F or less, the Supervisor monitoring conditions may implement anti-icing operations. Anti-icing will occur at a minimum on the streets indicated in this manual. If time allows, salt brine or other anti-icing chemicals may be applied to additional streets.

STORM CLASSIFICATIONS

- I. Accumulations of ice:
 - A. Material spreading on all streets.
- II. Less than two inches of snow:
 - A. Plowing and material spreading on first priority streets.
 - B. Once snow removal on priority one streets is completed, the Supervisor in charge will determine if plowing second and third priority streets is necessary. This will depend on residual snow on streets from prior storms and the forecast beyond the storm. Material spreading if necessary, where necessary.
 - C. In general, no plowing or material spreading will take place on fourth priority streets.
- II. Two to five inches of snow:
 - A. Plowing and material spreading on first priority streets.

- B. Plowing of second and third priority streets will occur once priority one streets are completed and in general, near the end of the precipitation event. Material spreading if necessary, where necessary.
 - C. Towards the end of the precipitation event, pickups will be dispatched to plow dead end streets, cul-de-sacs and median crossings (fourth priority streets).
- III. Over five inches but less than eight inches of snow on the ground and still snowing with additional snow forecast:
- A. All trucks may be periodically dispatched to conduct plowing operations on priority one streets only in order to maintain acceptable driving conditions on those streets. They shall team to clear first priority streets in their zones.
 - B. Only after first priority streets are cleared, each operator will enter his or her route and plow second priority streets. The remainder of residential streets will then be plowed by efficiency. At this point, streets will be opened only. Plowing from curb to curb will occur after the snow event.
 - C. Pickups will plow cul-de-sacs and other specified areas.
- IV. Over 8 inches of snow with additional snow predicted, high winds and night time:
- A. Restrict trucks to first priority streets only.
 - B. If plowing operations cannot keep a street segment open for an extended period of time, that road segment may be closed.
 - C. If visibility does not provide for safe operation of vehicle, that operator will be dispatched elsewhere.
 - D. Units shall work in tandem in blizzard conditions when visibility is limited.
- V. Over 8 inches of snow with additional snow predicted, high winds and daylight:
- A. Follow guidelines for a Class III snowstorm as long as possible.
 - B. Shift from Class III to Class IV procedures if necessary.
- VI. Conditions have deteriorated to the point where plows are pulled from the streets.
- A. Two trucks and loader go to each Fire Station and secure.

- B. Two trucks and loader go to Police Station and secure.
 - C. All other trucks to return to shop and secure.
 - D. City streets are considered temporarily closed and media notification will be issued.
- VII. To re-open the city streets, reverse procedures will be followed with all available equipment.
- A. Assemble as many employees at the shop as possible.
 - B. End loader to free equipment and plow the yard open. The Engineering and Public Works Department yard will be used for storage of vehicles towed from the streets.
 - C. Hickman Road to Douglas Avenue via 86th Street, if the roadway is not blocked by vehicles, if it is, then Hickman Road to Douglas Avenue via 100th Street. The top priority is to open all of the first priority streets first in the order assigned by the supervisor.
 - D. Plows at the Fire Stations are to open the Fire Station driveways and then the primary streets in their respective areas as soon as possible.
 - E. The Police Department will have tow trucks available to remove stalled vehicles from the streets in conjunction with the end loaders and snowplows as requested by the supervisor.
 - F. Schedule for the plowing of the remaining streets as follows:
 - 1. All the remaining first and second priority streets are to be plowed first. The specific route to be followed will be determined by the supervisor and will depend on whether the trucks can break through the snow, the number of abandoned vehicles in the way, and whether the end loaders or road grader must open the streets first.
 - 2. After all first and second priority streets have been opened, the remaining residential streets will be opened as follows:
 - a. School and Metro Bus Routes
 - b. Perimeter streets around schools
 - c. All remaining streets

- XIV. In order to make this snow plan workable, the following policy will be followed:
- A. Only Public Works Department supervisors will direct snow removal equipment.
 - B. The Police Dispatcher will relay messages to the supervisors and between the supervisor and the equipment as needed.
 - C. The Police Department will direct the removal of cars from streets. The Public Works Department may request that vehicles be towed in order to allow for safe and efficient removal of snow and ice.
 - D. Tow trucks are to be available with priority to emergency vehicles and disabled snow removal equipment.
 - E. Cars to be removed from the streets in accordance with Title XIII, Chapter 18 of the Municipal Code of the City of Urbandale. Removal is to be coordinated with the snow removal units until the streets have been cleared from curb to curb or shoulder to shoulder.

SNOW PLOW INSTRUCTIONS

1. Discussion and demonstration on how to properly connect and disconnect plows.
2. Discussion on how to properly plow snow.
3. Speed to be observed while plowing.

15-20 MPH, maximum on residential streets. 25 MPH on arterial and collector streets or as traffic flow dictates. Do not exceed speed limits and drive cautiously. Utilize extreme caution when operating in cramped quarters with parked vehicles on a street. Slow down while turning ó your plow will tend to push you where it wants to go.
4. Plow Assignment
 - a. Each operator will receive a snow route map or material application map outlining his specific area to work in.
 - b. A discussion will be held with each operator highlighting difficult sections within each employee's area and the operator will be instructed how to plow the area properly.
5. Discussion on what equipment shall be carried in each vehicle at all times.

See attached checklist.

6. Use of flashing top lights and warning lights.

Top lights shall be used at all times except during breaks.

7. Use of plow lights and truck lights.

Headlights are not to be used when the plow is attached, they serve no useful purpose.

8. Use of radio for communication.

- a. Vehicle numbers are to be used when calling another unit, NOT NAMES OR NICKNAMES.
- b. If you are called and given an assignment, pick up the microphone and acknowledge receipt of the message. Do not just depress the mic button while attached to the dash and expect your transmission to be heard and understood. The engine noise or the radio will drown out your transmission.

9. Hours to be worked

To be determined by the amount of snowfall.

10. Traffic Control Signals and Signs

All traffic signals, stop signs, speed limit and other traffic control signs and devices, and any traffic regulations shall be observed at all times. Snowplows are not emergency vehicles, and must yield to traffic that have the right-of-way.

11. Dead End streets and cul-de-sacs

- a. Dead end streets may be plowed from left to right if there are no driveways at the end on the right. Those trucks equipped with power angle blades may straight blade all dead end streets in their area.
- b. The necks of all cul-de-sacs in your route are to be plowed to the curb. Four-wheel drive units are assigned to plow cul-de-sacs, but you can help them by doing this.

12. Sod Damage in Parking

If your plow jumps the curb and damages the sod, write down the address and report it to your supervisor.

13. Mail Boxes

If you hit a mailbox while plowing or spreading material, write down the address and report it to your supervisor.

14. Sidewalks

When curbing snow, it is good for public relations if you do not bury sidewalks that have been cleaned. Keep your speed down, that this does not occur. In some areas of the city, the walks are very close to the street. If they are in your area, remember where they are.

15. What to do in case of an accident.

- a. Personal injury ó Notify the police dispatcher immediately. In the event of a personal injury to an employee, the employee should notify the Company Nurse at 1-800-770-0928.
- b. Property damage ó Call your supervisor and he will check into it and notify the police dispatcher if necessary.
- c. Motor Vehicle ó Call the police dispatcher immediately and notify your supervisor.
- d. All accidents must be reported to the Public Works Department and City Hall within 24 hours and a safety incident form must be filled out by you.

16. What to do in case of a breakdown.

- a. Call your supervisor first and follow his instructions.
- b. The supervisor may call for a mechanic if one is necessary.

17. Where to go if blizzard conditions develop.

See department snow plan section and/or call your supervisor.

18. What to do after your route is completed.

Contact your supervisor and he will provide you with further instructions.

19. What to do before parking your vehicle or before a shift change.

See attached checklist.

20. Vehicle Maintenance

Each employee is assigned a unit to operate for the winter. He will remain with that unit unless some unforeseen circumstance necessitates a change or your supervisor assigns you to another unit.

21. Overtime

A significant amount of overtime may be necessary to complete snow and ice removal operations. It is the policy of the department that most overtime is done on a voluntary basis. However, overtime is mandatory during snow and ice removal operations. Time off will be granted only in the event operations are not implemented or if previously approved by a Supervisor.

22. Plowing

Keep your blade down as much as possible. It is very irritating to see a snow removal vehicle with its blade in the air and snow on the street. Do not curb any streets until you have made one pass down each side of every street. Your primary objective is to open streets. Widening them is secondary. Avoid making left turns wherever possible. Left turns leave snow piled up in the intersection. Every time you turn right, you cut down on the amount of time you will have to spend cleaning intersections later.

23. Curbing

When curbing snow, be sure to get it back as far as possible. If the postal service cannot reach the mailboxes, they will not deliver the mail, and if it snows again, the streets will begin to narrow because we will not have properly utilized our snow storage area in the parking.

24. Wash Bay

Clean the floor after each use. Don't run over the pressure washer hose or drop plow blades on it. Don't leave the gun end in a barrel of water. Roll up the hoses, hang the gun up, and turn off the water and shut off the lights when done before leaving the building.

25. Shop

If you have been working on your assigned vehicle in the shop, you should sweep, squeegee, or wash down the floor after you have completed the necessary repairs.

SECTION III

PROCEDURES

EQUIPMENT ASSIGNMENT

SNOW PLOWING/MATERIAL SPREADING ROUTES

ZONE NO.	VEHICLE NO.	OPERATOR
1	76	Joe Morris*
1	61	Aubrey Minnis
1	68	Matt Lamberti
1	69	Scott Wicks
2	62	Jim Miller*
2	60	Tim Terrill
2	74	Steve Landers
2	64	Josh Robertson
3	75	Steve Chambers*
3	63	Scott Ford
3	73	Tim Staley
3	65	Chadd Jones
4	72	Scot Markla*
4	77	Mark VanDerSluis
4	66	Jeremy Thayer
4	67	Shane Huston

*Zone Leader

EQUIPMENT ASSIGNMENT

CUL-DE-SAC AND CROSSOVER ROUTES

ROUTE NO.	VEHICLE NO.	OPERATOR
C21	21	John Skatter
C22	22	Brian Stoklasa
C30	30	Steve Hanrahan
C32	32	Kevin O'Keefe
C35	35	Ron Piper
C36	36	Dan Buske
C37	37	Travis Meeves
C45	45	James Peterson
C56	56	Jeff Menz
C59	59	Tony Hair
X31	31	Scott Hansen

EQUIPMENT ASSIGNMENT

SNOW PLOWING/MATERIAL SPREADING ROUTES SPLIT SHIFTS

ZONE NO.	VEHICLE NO.	SHIFT 1	SHIFT 2
1	76	Joe Morris	
1	61	John Skatter	Aubrey Minnis
1	68		Matt Lamberti
1	69	Scott Wicks	Dan Buske
2	62		Jim Miller
2	60	Tim Terrill	Steve Hanrahan
2	74	Steve Landers	
2	64	Scott Hansen	Josh Robertson
3	75	Steve Chambers	
3	63	Chad Anderson	Scott Ford
3	73		Tim Staley
3	65	Chadd Jones	Brian Stoklasa
4	72	Travis Meeves	Scot Markla
4	77	Mark VanDerSluis	Kevin O'Keefe
4	66	Jeremy Thayer	
4	67		Shane Huston

EQUIPMENT ASSIGNMENT

PARKING LOTS AND SIDEWALKS/TRAILS

ROUTE NO.	VEHICLE NO.	OPERATOR
P47	47	Dan Cashman
P55	55	Mike McIntire
P57	57	Dan Meacham
Z1	4	Jason Van Depol
Z2	6	Dennis Trammell
Z3	3	Greg Neal
S1	51	Jacob Sparks
S2	46	Heith Hofmeyer
S3	26	Brian Vriezelaar

MATERIAL SPREADER INSPECTION FORM

1. Check setting of discharge gate
2. Check setting of spinner
3. Check variable speed control operation to prevent over application of product.
4. Check spinner for material build up
5. Check to make sure protective flap is up for the material conveyor
6. Grease spinner and associated equipment
7. Servicing and cleaning of the end loaders, sanders and trucks shall be the responsibility of the respective operators

PLOW INSPECTION FORM

1. Check for cut or leaking hydraulic hoses
2. Make sure plow chain is hooked up
3. Make sure plow pins/cotter keys are in place
4. Check to see if bolts are tightened on curb protectors
5. Make sure flags are in place
6. Check to see if the cutting edge is worn or fractured and bolts are secured
7. Check for broken welds
8. Check trip mechanism

EQUIPMENT CHECK BEFORE AND AFTER SNOW AND ICE REMOVAL OPERATIONS

VEHICLE CHECK

1. Check lights: clearance lights, snow plow lights, head lights, stop lights, turn signals, brake lights, tail lights, and strobe lights
2. Check reflectors and mirrors
3. Check tire pressure, lug nuts, leaf springs
4. Check mud flaps, chain on tail gate, and tail gate pins and hitch
5. Check hydraulic ram to raise box
6. Check truck box safety lock
7. Leaks under body
8. Check to see if all fittings have been greased
9. Hydraulic motor and reservoir sight glass
10. Chain sprocket and rollers on sander conveyor
11. Radio
12. Back up alarm

UNDER THE HOOD CHECK

1. Oil level, transmission level, cooling level window washer level, and brake reservoir level
2. Check all belts and air cleaner
3. Check for any hose leaks
4. Are battery terminals corroded

EQUIPMENT TO BE CARRIED IN OR ON VEHICLE

1. Shovel
2. Tow rope
3. Fire extinguisher
4. Bolts for plow chain
5. Fuses for top light, plow lights and radio
6. Flash light
7. Unit clip board and pad and pencil
8. First aid kit
9. Snow removal route maps and snow removal manual
10. Snow brush and ice scraper

TOWING, PUSHING OR REMOVING VEHICLES

City equipment shall not be used to tow, push or remove private vehicles that are disabled or unable to move. If your plow truck or other piece of equipment needs to be towed or removed from the snow, contact a supervisor immediately. If you come upon a private vehicle that is disabled or stuck in no instances shall employees under the scope of this Snow and Ice Control Manual offer any type of physical assistance. The proper procedure is to check that all involved are safe and contact the Police Department.

**SUPERVISORS CHECKLIST
FOR
SNOW REMOVAL OPERATIONS**

1. Check with each employee and be sure that they start out with all of the spare parts and equipment necessary and also be sure that they replace anything they use after each storm.
2. Get personnel and equipment out on the street and into their assigned areas as quickly as possible.
3. Carry a pen and pad in your clipboard with you at all times so that you can write down items that need to be taken care of later. Usually there are several, and you can't remember them all.
4. Check to make sure all intersections are as clean as possible.
5. Check for incomplete plow routes or routes that have not been cleaned completely or properly.
6. Check for parked cars that need to be moved.
7. Make a list of damaged signs or mailboxes. **WRITE THEM DOWN.**
8. Make sure all shoulders are pushed back to the ditch on the rural sections and main roads.
9. Have each unit washed and repaired as required.
10. Have each unit checked for loose bolts, broken welds, and any other damage on the plows and plow frames.
11. Have the sanders cleaned, repaired, greased and adjusted after each use.
12. Make a list of the yearly problem areas such as drifting, dead ends, snow piled at intersections, school bus routes, slick hills, and check them frequently.
13. Before leaving, see that all building doors are closed, vehicles are parked properly, and the shop tools and cabinets are locked.
14. Make sure that all necessary vehicle keys are returned to the shop office.

SALT APPLICATION

General Guidelines:

When removing snow from arterials streets, operators shall apply a salt with pre-wetting solution to streets. When operating in tandem, only the rear truck shall apply material. Material should be applied closest to the peak of the road to allow for gravity and traffic to track and move the salt to the complete roadway.

When plowing residential streets, salt should be applied while making the last pass through each street. Application should be limited to hills and intersections and other problem areas only.

Consult supervisors on the application rate that is dependent on pavement temperatures.

Consult supervisors on the type of pre-wetting solution to utilize (salt brine or calcium chloride). Typically if pavement temperatures are above 25 degrees Fahrenheit, and expected to remain there throughout the event, salt brine will be used.

During a dry snow, temperatures below 10 degrees Fahrenheit, and dry pavement is present, salt and pre-wetting solution are not used.

Operators should use sound judgment when applying salt. For example, if road conditions are poor during rush hour, additional material should be used at intersections. If the same exists around schools on residential streets, complete coverage is necessary.

Supervisors shall give operators specific instruction on salt and pre-wetting application during each storm depending on conditions.

Good Housekeeping:

Keep all salt stored inside and away from the weather. Clean up any spilled salt.

Don not overload trucks. Salt should not be loaded higher than the side rail.

Inspect truck daily to make sure salt is not leaking from the tailgate.

Recommended Application Rates for Solid and Liquid Sodium Chloride (Road Salt)

ICE CONTROL DILUTION POTENTIAL

Precipitation Type	Precipitation Rate		
	Light	Medium	Heavy
Powder Snow	Low	Low	Medium
Ordinary Snow	Low	Medium	High
Wet/Heavy Snow	Low	Medium	High
Rain	Low	Medium	High
Freezing Rain	Low	Medium	High
Sleet	Low	Medium	High
Frost & Black Ice	Low	---	---
None (end of storm)	Low	Low	Low

ADJUSTMENT TO DILUTION POTENTIAL (Not to exceed a value of "High")

Cycle Time, Hours	Levels to Add
0 - 1.5	0
1.6 - 3.0	1
More than 3.0	2

For Traffic Speeds > 35 MPH Traffic Volume, Vehicles per Hour	Levels to Add
Less than 125	0
More than 125	1

Residual Loose Snow/Ice on Road, Inches	Levels to Add
Less than 0.25	0
0.26 - 1.00	1
More than 1.00	2

Probable Pavement Temperature at Treatment and Trend	Ice Control Chemical Dilution Potential	Ice-Pavement Bond Characteristics Before Treatment	Application Rate	
			Solid (note 5) Pounds per Lane Mile	Liquid (Note 6) Gallons/ Lane Mile
Greater than 32° F (0° C)	Low	Bonded/Packed	41 - 28	NR
	Medium	Unbonded	Note 7	Note 7
		Bonded/Packed	28 - 55	NR
23° F to 32° F (-5° C to 0° C)	High	Unbonded	Note 8	Note 8
	Low	Bonded/Packed	55 - 83	NR
		Unbonded	14 - 28	22 - 44
12° F to 22° F (-11° C to -5° C)	Medium	Bonded/Packed	28 - 55	NR
	High	Unbonded	50 - 150	22 - 66
		Bonded/Packed	55 - 83	NR
Below 12° F (-11° C)	Medium	Unbonded	200 - 300	155 - 207
	Low	Bonded/Packed	42 - 55	66 - 88
		Unbonded	83 - 100	NR
Notes:	A. If unbonded, try mechanical removal without chemical. B. If bonded, apply chemical @ 450 to 500 pounds per lane mile. Plow when slushy and retreat when necessary. C. Apply abrasives when necessary.	NR = NOT RECOMMENDED	200 - 300	88 - 134
			250 - 400	70 - 110
			100 - 250	28 - 70
Notes:	1. These are starting points. Local experience should refine these recommendations. 2. Pre-wetting chemicals should allow applications rates to be reduced. 3. Application rates for chemicals other than sodium chloride will have to be adjusted. 4. Before applying any ice control chemical, the surface should be cleared of as much snow and ice as possible. 5. Values include the equivalent dry chemical weight in pre-wetting solutions. 6. Liquid values are shown for the 23% concentration solution. 7. In unbonded, try mechanical removal without applying chemicals. If pretreating, use 25-75 lb/in-mi of solid or prewet solid chemical or 11-13 gal/in-mi of liquid chemical. 8. In unbonded, try mechanical removal without applying chemicals. If pretreating, use 38-88 lb/in-mi of solid or prewet solid chemical or 17-39 gal/in-mi of liquid chemical.	NR = NOT RECOMMENDED	350 - 450	98 - 125
			400 - 500	110 - 140
			350 - 450	98 - 125

1. These are starting points. Local experience should refine these recommendations.
2. Pre-wetting chemicals should allow applications rates to be reduced.
3. Application rates for chemicals other than sodium chloride will have to be adjusted.
4. Before applying any ice control chemical, the surface should be cleared of as much snow and ice as possible.
5. Values include the equivalent dry chemical weight in pre-wetting solutions.
6. Liquid values are shown for the 23% concentration solution.
7. In unbonded, try mechanical removal without applying chemicals. If pretreating, use 25-75 lb/in-mi of solid or prewet solid chemical or 11-13 gal/in-mi of liquid chemical.
8. In unbonded, try mechanical removal without applying chemicals. If pretreating, use 38-88 lb/in-mi of solid or prewet solid chemical or 17-39 gal/in-mi of liquid chemical.

FOR IMMEDIATE RELEASE

SNOW ORDINANCE

**CITY OF URBANDALE
DEPARTMENT OF ENGINEERING AND
PUBLIC WORKS**

DATE:

TIME:

PHONE NUMBER: 278-3950

The City of Urbandale Snow Ordinance will go into effect at time on day and date.

This means that all parked vehicles must be removed from City streets until all snow has been cleared from curb to curb and the snow ordinance has been lifted.

Thank you for your cooperation.

CONTACT:

David J. McKay,

Director of Engineering and Public Works

NOTE: THIS REPORT IS TO BE FILLED OUT AT THE END OF EACH EVENT, SHIFT OR DAY

§ 74.08 SNOW REMOVAL.

The Engineering and Public Works Director, or designee, is authorized to declare a snow event, as defined in the city's snow and ice removal policy, that will cause enactment of these snow parking restrictions. During a designated snow event, no vehicle shall be parked in or on any part of a public street or right-of-way of a public street during snow removal operations, or before operations have removed or cleared accumulated snow or ice from the street to each curb or shoulder edge. The registered owner of a vehicle parked in violation of this section shall be subject to §§ [70.42](#) and [70.45](#).

(1999 Code, § 69.12)

 **§ 99.070 REMOVAL OF SNOW, ICE AND ACCUMULATIONS.**

(A) It is the responsibility of the abutting property owners to remove snow, ice and accumulations promptly from sidewalks.

(B) When the city receives a complaint that snow or ice or accumulations of snow or ice or any unsafe condition has remained on any sidewalk for 24 hours or more, the city may notify the abutting property owners that the snow or ice or accumulations of snow or ice or unsafe conditions are to be removed by the abutting property owner within the next 12 hours or that the abutting property owner shall be subject to criminal prosecution.

(1999 Code, § 135.01) Penalty, see § [10.99](#)

NOTICE
TO
REMOVE SNOW OR ICE FROM SIDEWALK

Date: _____ Time: _____ (A.M. / P.M.)

Address: _____

Comments: _____ Sidewalk not cleared of snow and ice _____

Name of Inspector: _____

Dear Urbandale Resident:

A sidewalk field inspection indicates that as of the date and time of this notice, snow or ice deposited from the previous storm had not been removed from the above-described sidewalk abutting your residence.

Urbandale City Ordinance requires that all accumulated snow and ice be removed from all public sidewalks within twenty-four (24) hours after the end of a snowfall or ice storm. This correspondence is your official notification that you have twelve (12) hours from date and time of receipt of this notice to clear the above-mentioned sidewalk of accumulated snow or ice.

Please arrange to have the sidewalk cleaned within the specified time period. As soon as the snow or ice has been removed from the sidewalk please call our office at **278-3950** and we will suspend any further action, which may include a citation.

We look forward to your cooperation and continued compliance with this ordinance for the remainder of the winter season.

Respectfully,

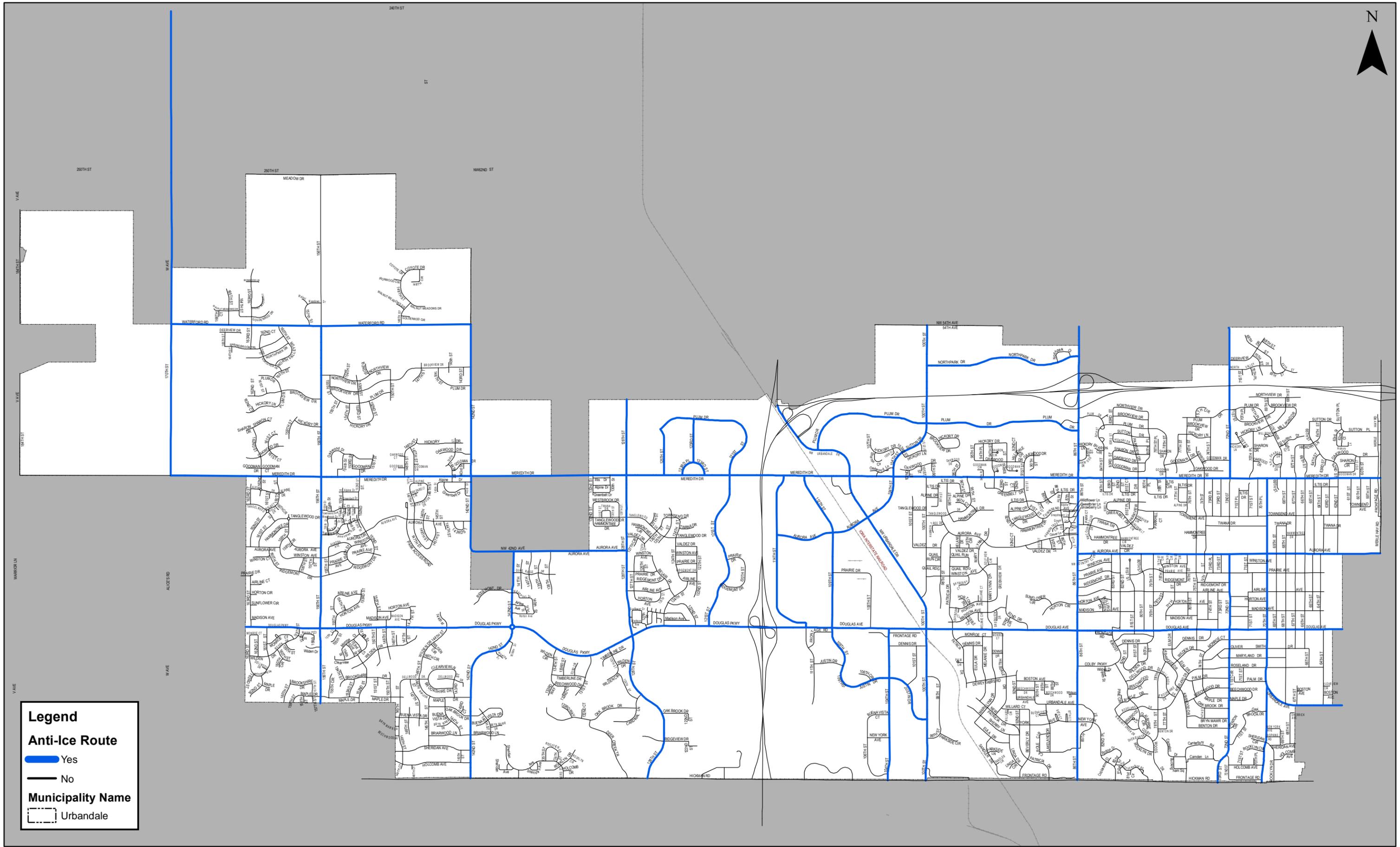
Department of Engineering and Public Works
City of Urbandale

SECTION IV

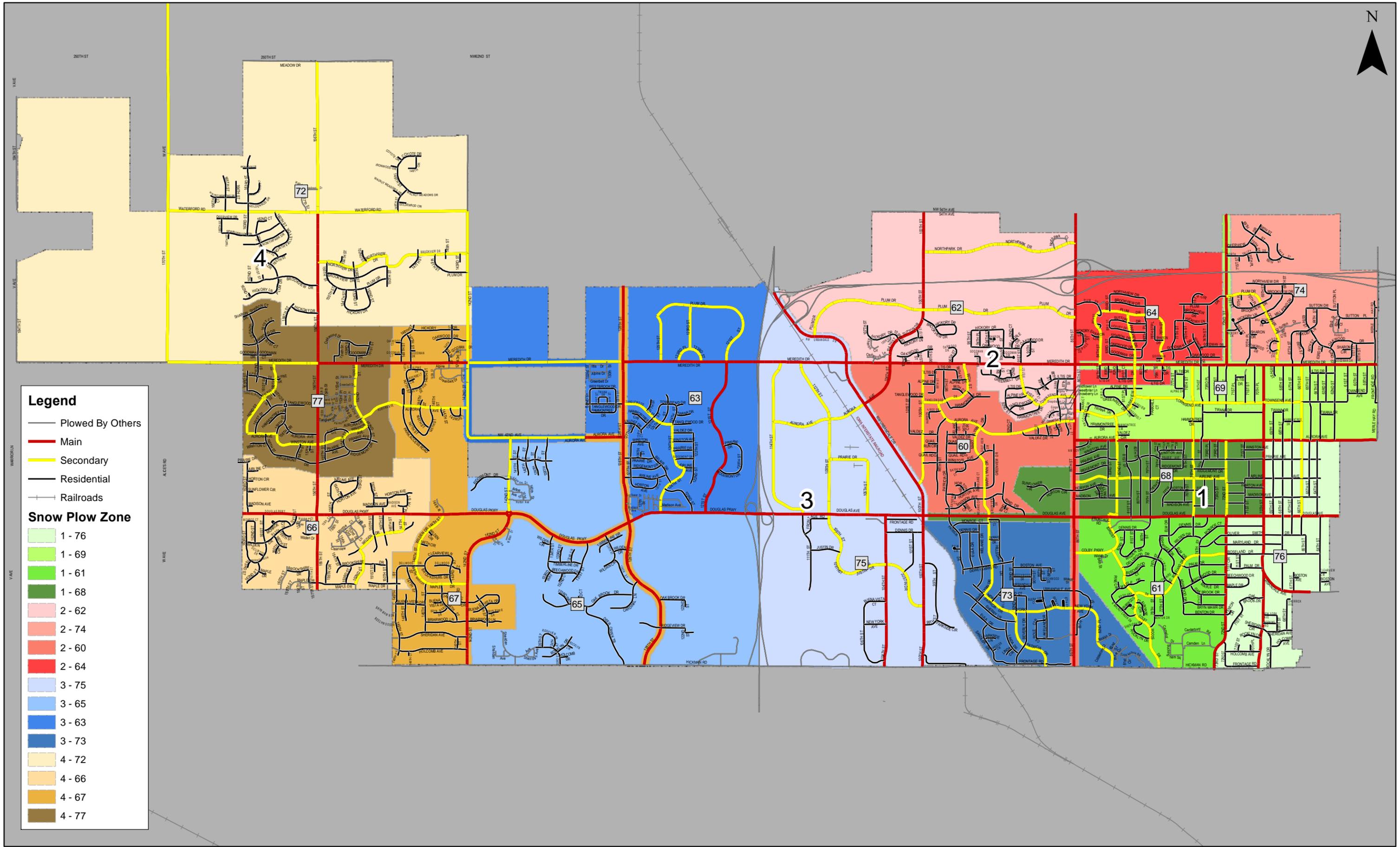
SNOW AND ICE CONTROL MAPS

City of Urbandale Anti-Ice Routes

N



City of Urbandale Snow Plow Zones



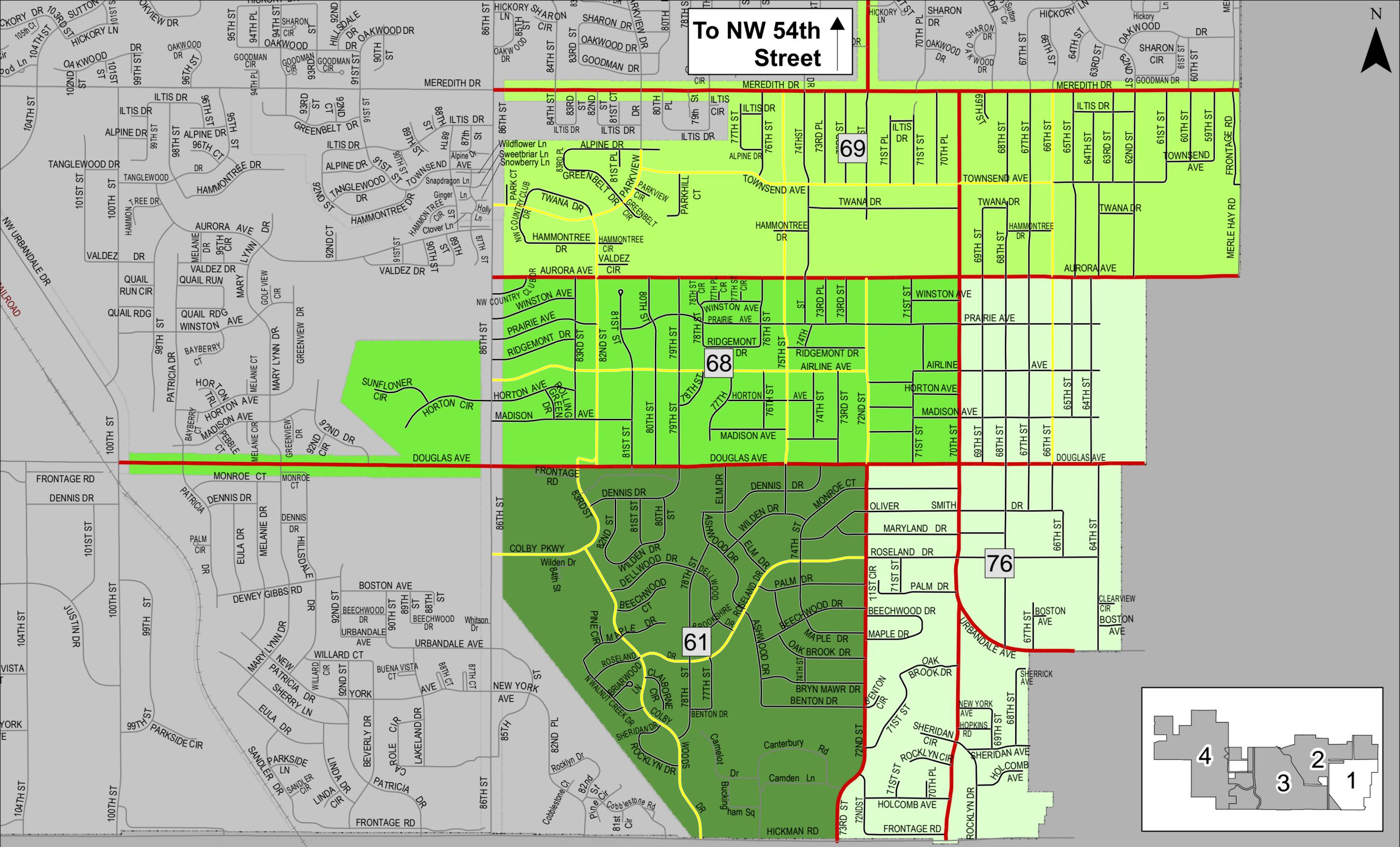
Legend

- Plowed By Others
- Main
- Secondary
- Residential
- Railroads

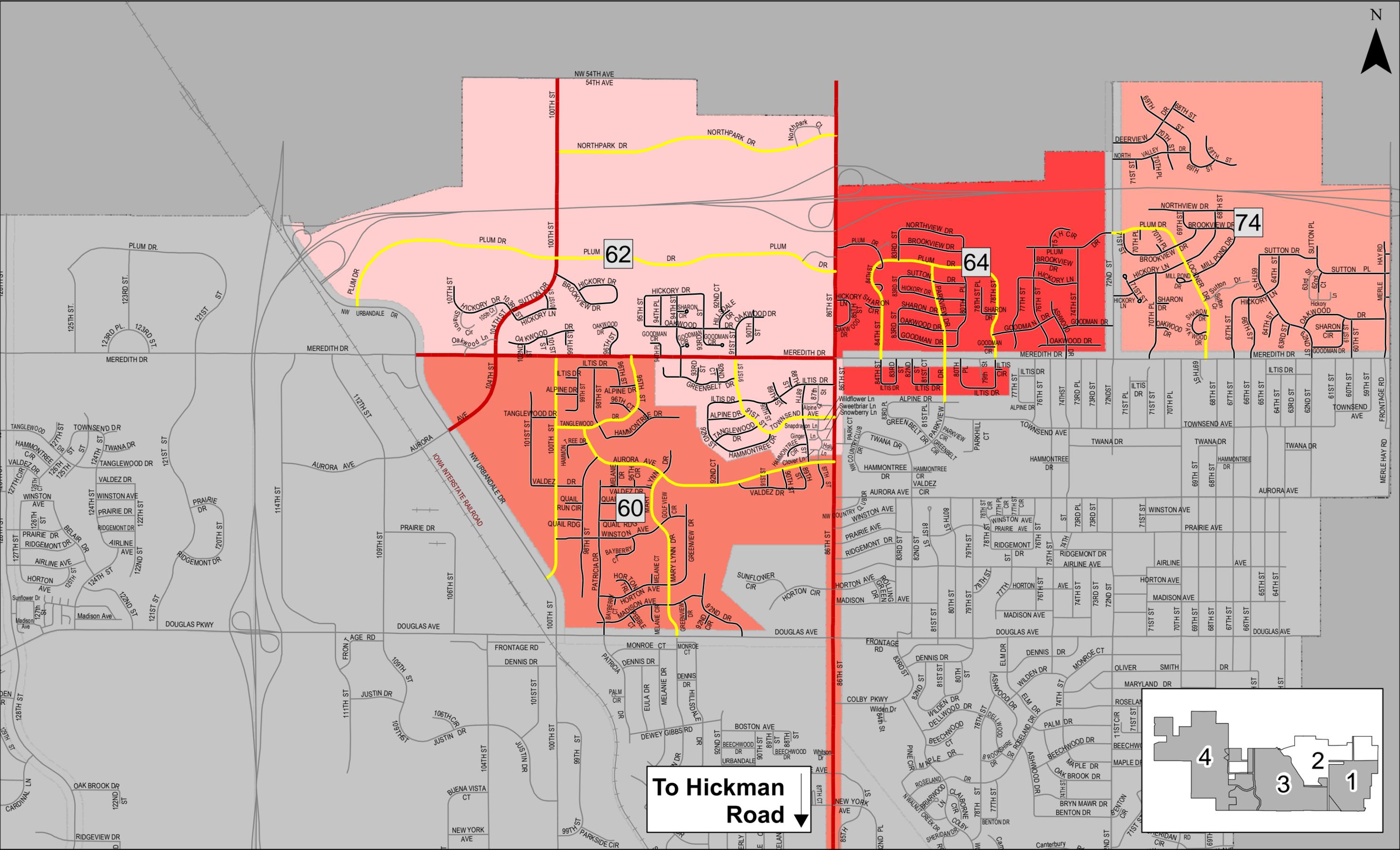
Snow Plow Zone

- 1 - 76
- 1 - 69
- 1 - 61
- 1 - 68
- 2 - 62
- 2 - 74
- 2 - 60
- 2 - 64
- 3 - 75
- 3 - 65
- 3 - 63
- 3 - 73
- 4 - 72
- 4 - 66
- 4 - 67
- 4 - 77

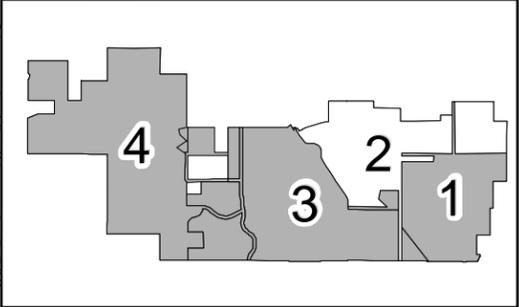
City of Urbandale Snow Plow Zone 1



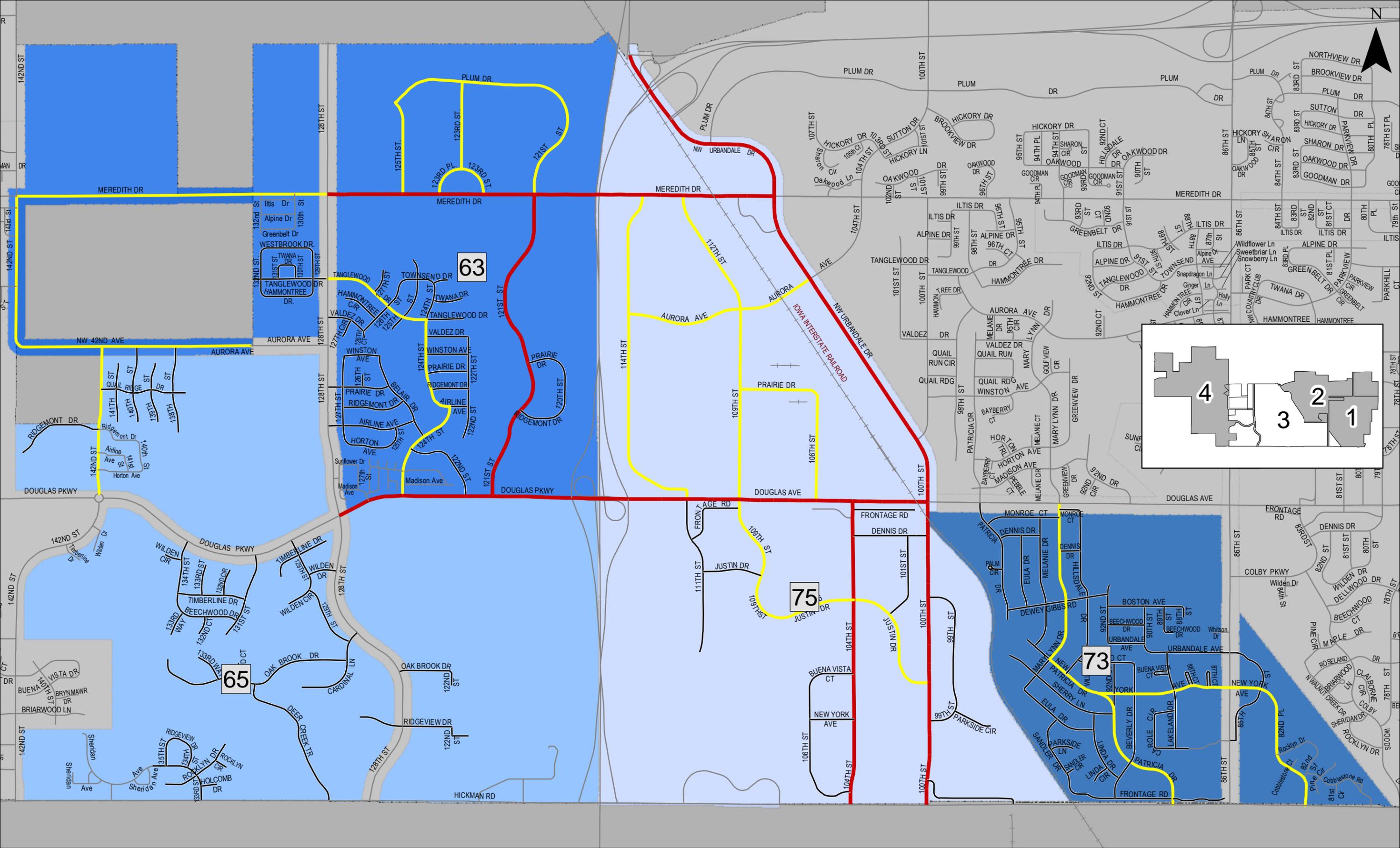
City of Urbandale Snow Plow Zone 2



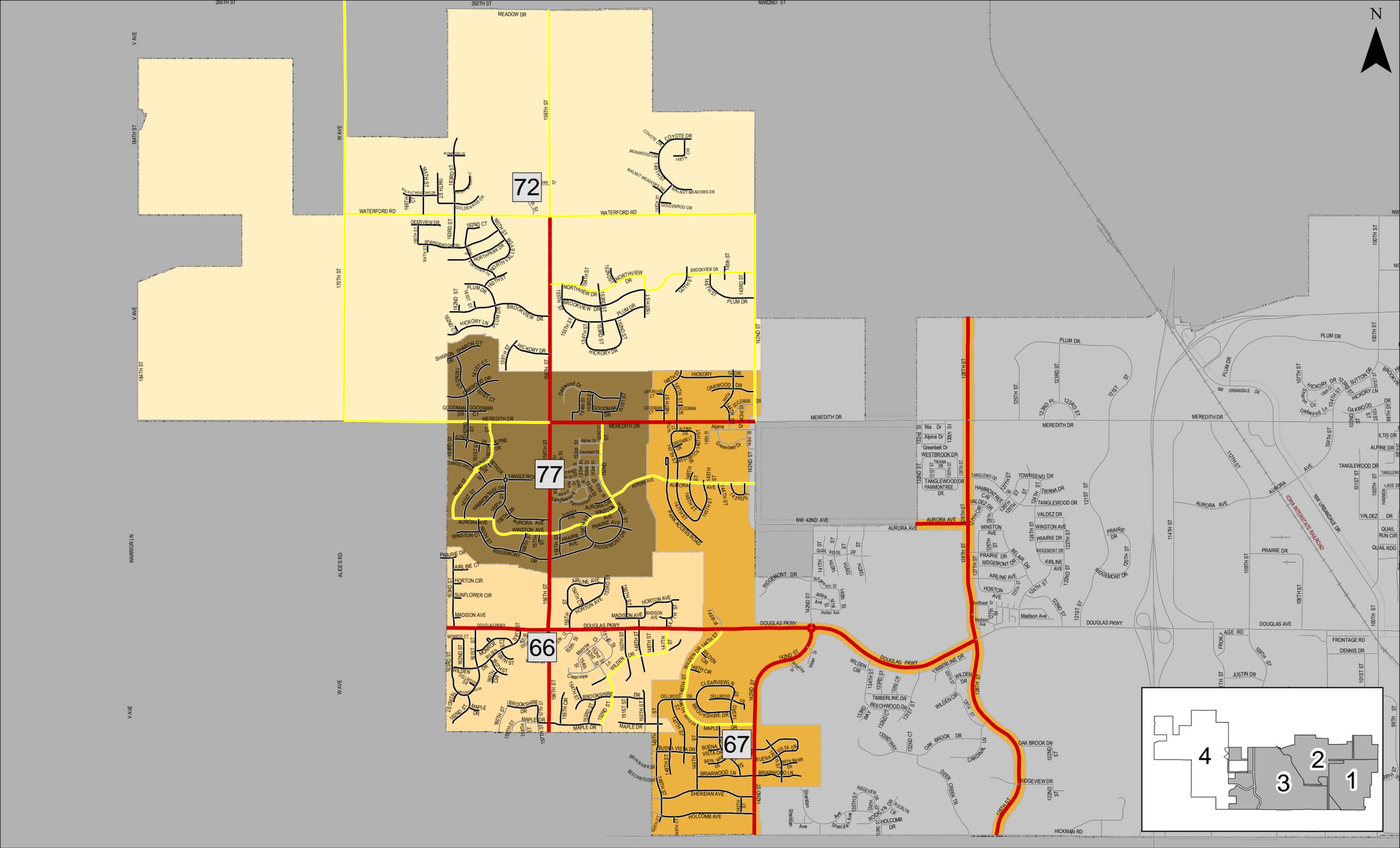
To Hickman Road ▼



City of Urbandale Snow Plow Zone 3

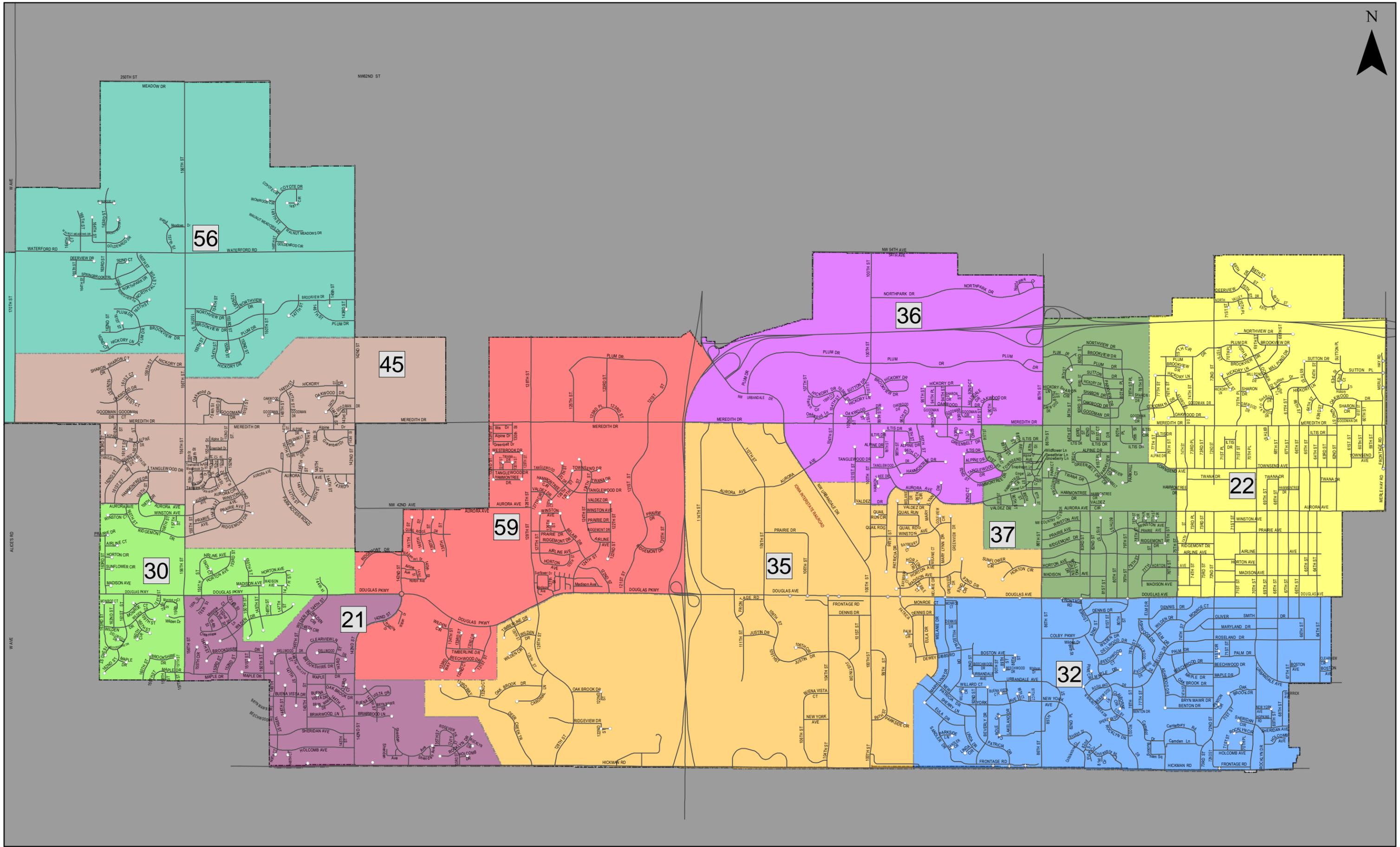


City of Urbandale Snow Plow Zone 4

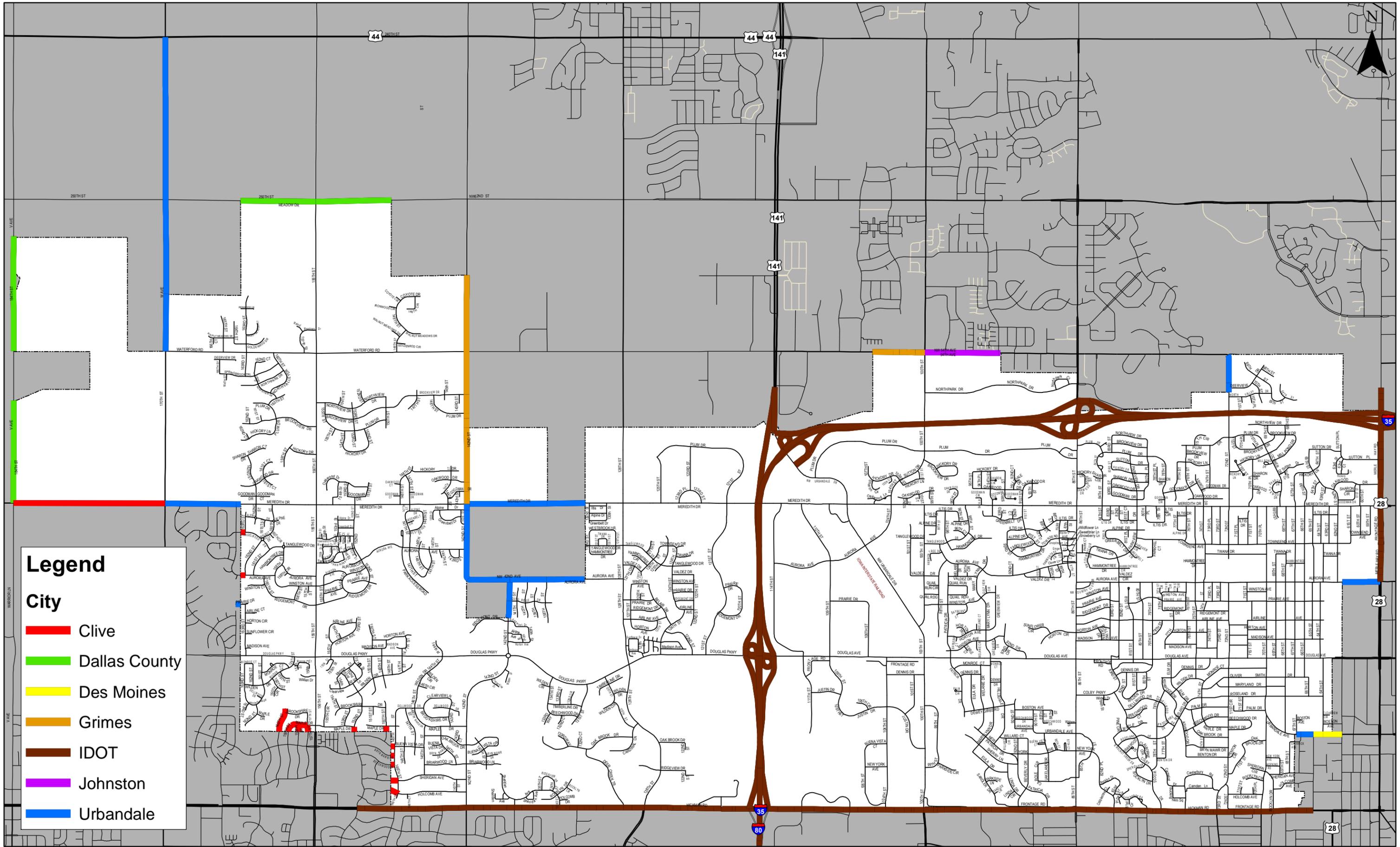


City of Urbandale Cul-De-Sac Routes

N



City of Urbandale Shared Streets



**CITY OF URBANDALE
SNOW AND ICE REMOVAL SCHEDULE
PARKING LOTS AND SIDEWALKS**

Snow Plow Route – P47

Police North Lot
Fire Station #42
Police South Lot
Water Utility
Walker Johnston Park
Bike Trail 156th Street (south of Walnut Hills Elementary)
Bike Trail 128th Street (north of Webster Elementary)
Bike Trail at Douglas Avenue and I-80/35 underpass and bridge
Little League Complex
UGRA Complex

Snow Plow Route – P55

Fire Station #41
Lions Park
Swimming Pool
Senior Center
Murphy Park
Rocklyn Park
McDivitt Cemetery
Dunlap Park

Snow Plow Route - P57

City Hall
Library
Park Maintenance Facility
Wellness Center

Sanding Route Truck #52 w/ Sander

City Hall
Library
Senior Center
Pool
Fire Station #41
Fire Station #42
Police Department
Water Utility
Walker Johnston Park
Murphy Park
Rocklyn Park

Snow Route for John Deere Blower – Z1 All City property east of 86th Street

North Karen Acres Park ó public sidewalk system along Douglas
Fire Station 41- Public and Building sidewalk
Lions Park - walkways on Prairie Avenue, 72nd Street, Aurora Avenue, 71st Street and Gazebo,
walkways all around park included in the public sidewalk system
Pool ó sidewalks
Senior Center ó sidewalks
Lakeview and Reforestation ó sidewalks along aurora and trails that lead to the schools
Meredith Park/ Sharon Heights ó trail and sidewalks along Meredith Drive in the public sidewalk
system
72nd Street ó trail on East side of 72nd Street north of Meredith Drive to North Valley Drive
Lockner Drive ó public sidewalk system
McDivitt Cemetery ó public sidewalk system
67th Street and Meredith Drive ó trail frontage sidewalk
66th Street - east and west trail entries sidewalks
Sutton Drive and Sutton Place ó public sidewalk system
Oakwood Drive at 62nd Street - trail entry sidewalk
Meredith Drive at 62nd Street - trail entry sidewalk
Murphy Park ó frontage sidewalks (3) and trail along Urbandale Avenue adjacent to park
Rocklyn Park ó public sidewalk system
South Karen Acres Park ó frontage sidewalks (3)
Colby Woods Drive ó frontage sidewalks

Snow Route for John Deere Blower – Z2 All City property west of 86th St. & east of Interstate

City Hall- building sidewalks

Library ó building and parking sidewalks
Wellness Center ó building sidewalks
86th St. & Douglas Ave. ó public sidewalk from Colby Parkway to entrance to Walker Johnston
86th Street ó public sidewalks near frontage road and in Colby Woods Park
Park offices ó building sidewalks
Water Utility- building sidewalks
Police Department- building and parking sidewalks
Douglas Avenue and 86th Street - public sidewalk system
UGRA Complex - public sidewalk system along 100th and Meredith
L.A. Ward Park ó public sidewalks/trails along roadways park property
Golfview West- public sidewalk along 100th park property
Golfview -public sidewalk along Aurora Ave. on park property
Foxdale ó public sidewalk system
Cross Creek - public sidewalk system along Meredith on park property
Bestland - public sidewalk system along Meredith on park property
Hickman Road ó public sidewalk from 90th Street to Public Works

Snow Route for John Deere Blower – Z3 All City property west of Interstate 35/80

Douglas Avenue- city property & Interstate corridor trails(tunnel to tunnel)
Fire Station #42- Public sidewalks system
Timblerline Open Space - 124th St. public sidewalk system
Days Run- Tanglewood Drive public sidewalk system
128th Street - trail on city property near school
Donald Brush Park ó public sidewalk system
128th Street - public sidewalk system for Living History Farms, per prearranged agreement
Timberline Park ó sidewalks/trail along Douglas on park property
Douglas Avenue/Walnut Creek ó trail on Douglas Avenue near 144th Street on park property
156th Street - trails on park property
Bob Layton trail ó park trail system
Walnut Creek Regional park -park trails along Aurora Avenue on park property
147th Street - park property in the public sidewalk system
Meredith Dr- Walnut Creek Regional Park property public sidewalk system
Walnut Creek Hills Park- public sidewalk system
142nd St. Public sidewalk system
156th St. Public sidewalk system

Walk behind snow routes – S1

Includes application of ice melt to entrances when determined necessary

Fire Station # 41 ó entry doors, overhead doors and sidewalks
Lions Park Shelter - entry doors and sidewalks
Swimming Pool - entry doors
Senior Center - entry doors
Murphy Park - public sidewalk system

Trolley Park - public sidewalk system and around figures
Rocklyn Park - public sidewalk system
South Karen Acres Park - public sidewalk system

Walk behind snow routes – S2

Includes application of ice melt to entrances when determined necessary

City Hall ó Building sidewalks and entrance doors, ramps and steps
Library - building sidewalks including parking area
Police Station- building sidewalks and south entrance
Water Utility ó building sidewalks and entrances
Wellness Center ó building sidewalks and entrances
Parks Shop ó building sidewalks and entrances
Walker Johnston Shelter - sidewalks and entry doors

Walk behind snow routes – S3

Includes application of ice melt to entrances when determined necessary

Fire Station # 42 ó building sidewalks and clear overhead doors
Police Department ó walkways and entry doors for north lot
Bob Layton Trail connections
Aurora Avenue ó public sidewalk system
Coronado Park - public sidewalk system
New York Avenue/Patricia Drive Triangle ó public sidewalk system

Definitions

1. Public Sidewalk System ó sidewalks adjacent to a street in frontage
2. Building Sidewalks
3. Park trail
 - a. Regional
 - b. Neighborhood
 - c. Park System