

City of Newton
SNOW REMOVAL POLICY

Adopted by City Council

Resolution No 2012-126

November 19, 2012

Revised November 2014 per Resolution No 2014- _____

Table of Contents

Overview	1
Purpose	1
Goal	1
Procedure	1
Definitions	2
Street Priority Ratings.....	2
Industry Standard Terms	2
Materials	2
Newton Specific Terms.....	3
Plowing Operation Goals	3
Priority #1 Streets.....	3
Priority #2 Streets	3
Priority #3 Streets	3
Priority #4 Streets	4
Downtown Snow Removal District.....	4
Abrasives & Chemicals Used In Snow Removal Operations	4
Sanding Procedure.....	4
Salting Procedure	5
Salt Brine	5
Clean Up Operations After a Storm	5
Hauling Snow from the Downtown Snow Removal District.....	5
Hauling and Pushing Snow	6
Snow Cleanup from Bridges and Intersections.....	6
Common Drifted Areas and Equipment/Materials Preparation for Next Storm	6
Mailboxes, Driveways and Right-of-Ways	6
Snow Removal Parking Restrictions	7
Snow Removal Practice	7
APPENDIX A – Snow Plow Routes	
APPENDIX B – Salt Brine Routes	
APPENDIX C – Downtown Snow Removal District	

Overview

Purpose

The purpose of this policy is to establish and maintain uniform definitions, procedures and expectations concerning snow and ice control operations in the City of Newton. This policy adheres to the Snow Removal ordinances found in Title 2 Chapter 11.1048 of the City of Newton Code of Ordinances.

Goal

It is the goal of the City of Newton to maintain city streets at a safe level of normal winter driving conditions during and after a winter storm event to assure deliveries of goods, emergency services and to provide access to the motoring public.

Procedure

The Street Superintendent or designee will determine when to begin snow removal operations and what method & materials to be used. Plowing operations will typically begin at 2" of accumulation of snow. Plowing operations may begin after about an inch of accumulation for snow events during normal working hours.

The City of Newton's snow removal responsibilities

200 lane miles of streets

21 gravel roads

9 City of Newton parking lots

19 cul-de-sacs

Hauling snow from the Downtown Snow Removal District

Streets were given a priority by rating of #1 through #4 (#1 being highest priority). Several parameters were taken into consideration when prioritizing the streets such as, traffic speeds, traffic volume, emergency routes, truck routes, and school routes.

The City has 6 snowplow trucks and staff to operate one shift per 24-hour period. The City of Newton has been divided into three equal territories, each containing approximately the same miles of priority #1, #2 & #3 streets (refer to plow route maps in Appendix A). Snowplow operators have been divided into teams consisting of two operators. Each team is assigned one of the territories of the city and the teams are responsible for the snow & ice control within their territory.

Weather conditions will dictate what methods or materials are used on which priority streets. The Street Superintendent or designee will determine what methods and materials used, and the operators having the ability to adjust to conditions in the field.

The city will not remove snow from private streets, accesses or driveways unless it is to provide access for emergency personnel or equipment.

Definitions

Street Priority Ratings

- **Priority #1 Streets** are major streets in Newton with the most volume of traffic, emergency routes, greater number of businesses and or higher speeds.
- **Priority #2 Streets** are collector streets, some businesses and near schools.
- **Priority #3 Streets** are residential streets.
- **Priority #4 Streets** consists of dead end streets, cul-de-sacs, gravel roads, parking lots and downtown alleys.

Industry Standard Terms

- **Anti-Icing / Brining** is a cost effective proactive approach to fighting a winter storm. Anti-icing is a process of applying liquid de-icing chemicals (salt brine) on the street prior to the storm to prevent the snow, ice or frost from bonding to the pavement. Anti-icing is a commonly misunderstood process. The snow or ice will still accumulate on the treated street surface, but the layer of brine allows the snow & ice to be removed by plowing because the snow & ice does not bond to the pavement. The weather conditions must be right to use this method, or the material will wash away doing no good or in some conditions, it could freeze causing ice.
- **Deicing** is a method of applying chemicals to snow & ice that is already bonded to the street. This method takes more material than anti-icing, but is a method that must be used when the snow and ice has bonded to the street surface.
- **Pre-Wetting** is a term to used describe the wetting of material as it comes out of the auger onto the spinner of the sander for applying to the street. This is typically done with salt brine made at the Public Works shop, but can be one of many different liquid deicing chemicals such as calcium chloride, magnesium chloride or many of the other hybrid deicers on the market.

Materials

- **Calcium Chloride** is a snow & ice melting product that can be purchased in a pellet, liquid or granular form that can be used at lower temperatures.
- **Salt** is a rock salt "Sodium Chloride" about 3/8" diameter with an anti-clump spray applied to it to keep it from bonding to itself.
- **Salt Brine** is salt-water solution made by injecting water thru granular sodium chloride (rock salt) to a salinity of 23.3% creating a brine solution. The city makes the brine at the Public Works shop for a lower cost compared to buying other materials. Salt brine is less expensive and less corrosive product than calcium chloride, magnesium chloride or similar ice melting products.

- Sand is for ice control, it is sand mixed with a small amount of rock salt.

Newton Specific Terms

- **Downtown Snow Removal District** consists of streets located between W 4th Street, E 4th Street, N 4th Avenue and S 2nd Avenue. Also included are the 400 block of S 2nd Avenue W, 200 block W 2nd Street S and 200 block of 1st Street S. These streets do not have an available parking strip to store plowed snow (refer to map of Downtown Snow Removal District in Appendix C).
- **Parking Strip** is the area between the curb and the sidewalk or property line that is available for the storage of snow plowed from the street.
- **Snow Removal Operations** is a declaration made public by the street superintendent or designee by activating the telephone snow line and notifying the local media. When the Snow Removal Operations are in effect it is illegal to park a vehicle unattended on any public street, alley, or city owned off-street parking area between 10 pm and 7 am.

Plowing Operation Goals

The goal of the City of Newton is to maintain city streets during winter to acceptable winter driving conditions. The goals are different based on priority of the street as outlined below. The decisions as to what method or material to use for clearing the streets shall be made by the Street Superintendent or designee based on many variables such as ground temperature, air temperature, wind conditions, time of day or night, forecasts and scheduling of staff. The following are the goals for each priority level street:

Priority #1 Streets

The goal is to keep priority #1 streets with minimal accumulation of snow & ice during the event and to return to bare pavement as soon as possible. This will most likely require multiple passes throughout the duration of the storm and after the snowfall has stopped.

Priority #2 Streets

The goal is to have Priority #2 streets plowed and sanded before school starts and ends for the day, and before the majority of people have to commute to and from work. These goals may change, depending on what time a snow event starts and stops, and if crews are able to keep the priority #1 streets at an acceptable level at that time.

Priority #3 Streets

The goal is to plow priority #3 streets, including sanding the hills and intersections, one time within 24 hours after the snow stops falling (typically completed within 12 hours for most storms). The intent is not to achieve bare pavement, but rather make the street passable throughout the winter. Priority #3 streets may not be plowed when there is less

than 2 inches of accumulation. This is dependent on ground temperature, air temperature, wind conditions, and forecasts.

Priority #4 Streets

The goal is to plow priority #4 streets, including sanding the hills and intersections, one time within 48 hours after the snow stops falling. Gravel roads typically will not be sanded. The goal is not to achieve bare pavement, but rather make passable throughout the winter. Priority #4 streets may not be plowed when there is less than 3 inches of accumulation. This is dependent on ground temperature, air temperature, wind conditions, and forecasts.

Downtown Snow Removal District

Plowing the streets in the Downtown Snow Removal District is done differently due to the width of the street and lack of parking strip to store the snow. The snow is plowed to the parking stalls along the side of the street. This snow will be hauled away starting the first night after the storm. The goal on these streets is to plow the travel portions of the street as part of priority #1 streets.

Abrasives & Chemicals Used In Snow Removal Operations

Sand and salt are not used for the same purpose. Sand is used for traction, and salt is used for melting snow or ice. Because some salt is mixed with the sand, melting of snow and ice may occur where sand was applied.

There are many variables to consider when deciding what abrasives and/or chemicals, if any, to use on the streets. These variables include air temperature, ground temperature, high and low temperatures for the day and night, wind and forecasts.

Salt may not always be an option due to temperature limits that salt will work. If the temperature is too low, the salt may be ineffective and is wasted to the gutter by traffic. There may be times when other chemicals may be used such as calcium chloride or magnesium chloride. Other conditions may warrant sand only for traction.

Sanding Procedure

Sand is applied on the priority #2 and #3 streets simultaneously with plowing. Priority #4 streets are sanded only as needed.

The City of Newton begins the winter with a stockpile of approximately 500 tons of sand, which may or may not last through an entire winter. The sand is purchased from a local quarry and the stockpile can be replenished throughout the winter, if needed.

The City of Newton uses skid sand mixed with 25% to 50% salt. Salt brine is sprayed on the sand as it comes out of the sander. Salt brine helps to activate the salt to start

melting the snow / ice on the streets. Salt brine also helps reduce the bounce and scatter of the sand so it does not end up in the gutter of the street.

Sand is applied at a pre-determined rate based on conditions. Sand is typically only applied at hills, intersections, and stops.

Salting Procedure

Salt is applied on the priority #1 streets simultaneously with plowing, or as needed.

The City of Newton has a salt storage shed that can hold approximately 1,200 tons of salt; this is in addition to the approximate 125 tons mixed with the sand.

Salt is almost 7 times more expensive than sand, therefore salt is not used on every street for every storm.

Salt is applied at a pre-determined rate in pounds per lane mile based on conditions according to the National Salt Institute's sensible salting standards. When salting and plowing are being done at the same time, the sander truck applying salt is the lead truck followed by another plow truck which enables half of the street to be cleared with one pass. This enables the salt to be applied to the center of the street in a very narrow windrow, allowing the salt to liquefy into brine. The crown of the street enables the brine to flow under the remaining snow and ice that is bonded to the pavement that could not be plowed off. This process will break the bond of the snow & ice from the pavement, enabling the snow & ice to be plowed off later.

Salt Brine

Salt brine is applied to the streets prior a snowfall to help prevent snow and ice bonding to the priority #1 & #2 streets. (refer to map of Salt Brine Routes in Appendix B). Brine is also sprayed out of the sanders directly onto the salt or sand material being spread to reduce the amount of bounce & scatter and expedite the melting process.

For small accumulations of snow and with proper conditions, brine may be used to melt snow without the use of any other chemicals or plowing.

Clean Up Operations After a Storm

The following tasks are performed after a storm. These tasks are listed in order of importance.

Hauling Snow from the Downtown Snow Removal District

Hauling snow from the Downtown Snow Removal District will begin during the night of the regular shift following the storm and after all the streets have been plowed or treated from the winter storm. Overtime will not be used to haul snow unless directed by the Public Works Director.

Hauling snow from the Downtown Snow Removal District may take several nights depending on the amount of snowfall and availability of staff. Hauling may not be necessary for storms with less than 3 inches of accumulation.

The night hauling operation requires the snow to be pushed into a large windrow in the center of the street. The windrow is loaded into dump trucks by a snow blower attached to a front-end loader. The snow is hauled to the designated snow pile located behind the city Public Works Building.

The business owners in the Downtown Snow Removal District are allowed to push the snow from their sidewalk into the street for the City to remove as long as it is done prior to hauling operation on that street. The City will not make multiple trips down each street to haul the snow away. If the snow is not in the street before the city removal crew hauls snow from that street, the business is responsible for hauling the snow from their sidewalk to an appropriate location.

Hauling and Pushing Snow

Plowing the snow from the shoulders on rural sections of roads. Hauling the snow piles from parking lots, cul-de-sacs and dead ends, which may not be done every snow depending on snow storage capacity. Pushing snow behind the Public Works Building to make room for future storms.

Snow Cleanup from Bridges and Intersections

Removing snow windrow from bridges, medians and radii at intersections.

Common Drifted Areas and Equipment/Materials Preparation for Next Storm

Pushing back drifted areas and making room for additional snow accumulation. Replenishing material supplies and maintenance/repair to snow removal equipment.

Mailboxes, Driveways and Right-of-Ways

Repairing damage to infrastructure signs, potholes, mailboxes and sod repair. The snowplow operators make every effort to remove snow as close as practical to mailboxes to provide access to the mailboxes for the postal carrier. However it is not possible to provide perfect conditions and minimize damage to mailboxes with the size and type of snow removal equipment the city uses. Therefore the final cleaning of snow/ice adjacent to the mailbox is the responsibility of each resident / property owner.

The city will replace mailboxes that are damaged, broken or knocked down only if there was a direct hit by a city plow or city vehicle and provided the mailbox was installed to United States Postal Service standards.

The city will repair damage to grass as a direct result of a plow jumping the curb and damaging the grass.

Snow Removal Parking Restrictions

Parking is prohibited in the Downtown Snow Removal District only when hauling operations are declared and the downtown snow removal district line (641) 791-0411 has been activated between the hours of 2 am and 6 am. Declaration must be made by 7 pm the evening of hauling operation.

When the Snow Removal Operations are declared, it is illegal to park an unattended vehicle on any public street or alley between the hours of 10 pm and 7 am, except as set by ordinance for the Downtown Snow Removal District.

The Street Superintendent or designee declares the Snow Removal Operations by turning on the telephone snow line and notifying the media. Per City Code, the snow line must be activated by 7 pm the evening of the parking restriction.

The fine for violating the snow removal ordinance is \$25 plus any applicable surcharge and court cost.

Snow Removal Practice

City snow removal crews begin plowing operations when snow accumulation reaches 2". Plowing operations will be completed in priority as described in priority street ratings, until 6" of accumulation is reached. Crews may be reassigned to clear lower priority streets to keep traffic moving before returning to higher priority streets trying to achieve bare pavement.

Depending on timing of the storm, and when accumulation reaches 2", it will not always be possible for the snow operation line to be activated. The snow removal line must be activated by 7 pm the evening of the parking restriction, therefore there may be many times when plowing operations are going on without the parking restriction. When this occurs windrows of snow may be left by the plow where they went around a parked car. The city crews do not have time to return to these areas to remove these windrows

By direction of the city administrator and the Public Works Director Public Works Operation may recruit personnel from other divisions of Public Works to assist in snow removal operations.

APPENDIX A

Snow Plow Routes for Plow Team A, B and C and Priority #1, #2, #3 Snow Plow Routes
(entire City)

Snow Plow Routes for Plow Team A, B and C and Priority #1, #2, #3 Snow Plow Routes
(NW, NE, SW and SE quadrants)

4 Wheeler Plow Routes (priority #4 - plowed by either pickup or front end loader)

Gravel Plow Routes (priority #4)

APPENDIX B

Salt Brine Routes

APPENDIX C

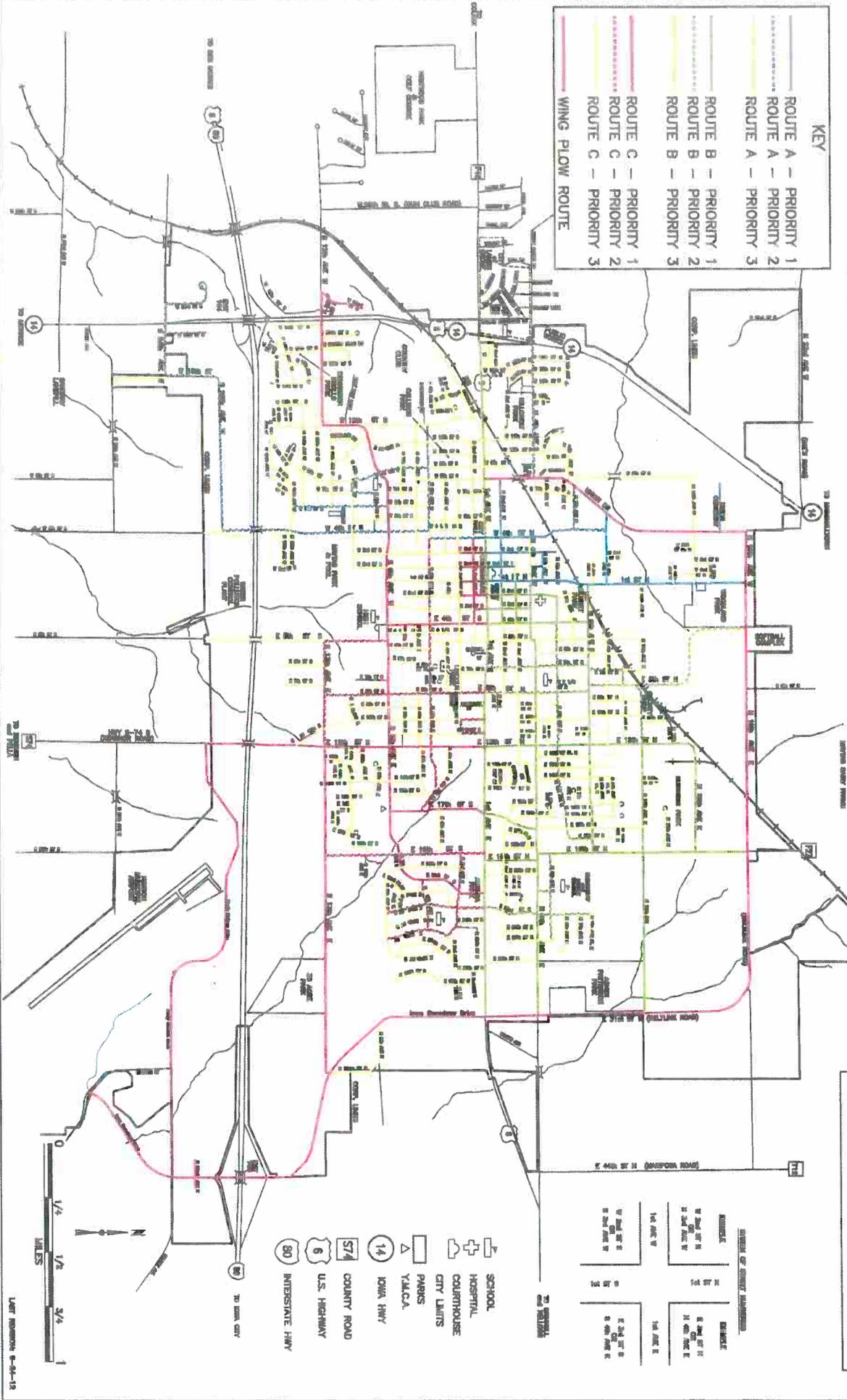
Downtown Snow Removal District

APPENDIX A

SNOW PLOW ROUTES
CITY OF NEWTON, IOWA

KEY

—	ROUTE A - PRIORITY 1
---	ROUTE A - PRIORITY 2
---	ROUTE A - PRIORITY 3
---	ROUTE B - PRIORITY 1
---	ROUTE B - PRIORITY 2
---	ROUTE B - PRIORITY 3
---	ROUTE C - PRIORITY 1
---	ROUTE C - PRIORITY 2
---	ROUTE C - PRIORITY 3
---	WING FLOW ROUTE



SCHEDULE OF STREET ADDRESSING

WING	START	END	WING	START	END
1st WING	1st St. to 11th St.	11th St. to 14th St.	1st WING	1st St. to 11th St.	11th St. to 14th St.
2nd WING	1st St. to 11th St.	11th St. to 14th St.	2nd WING	1st St. to 11th St.	11th St. to 14th St.
3rd WING	1st St. to 11th St.	11th St. to 14th St.	3rd WING	1st St. to 11th St.	11th St. to 14th St.
4th WING	1st St. to 11th St.	11th St. to 14th St.	4th WING	1st St. to 11th St.	11th St. to 14th St.
5th WING	1st St. to 11th St.	11th St. to 14th St.	5th WING	1st St. to 11th St.	11th St. to 14th St.
6th WING	1st St. to 11th St.	11th St. to 14th St.	6th WING	1st St. to 11th St.	11th St. to 14th St.
7th WING	1st St. to 11th St.	11th St. to 14th St.	7th WING	1st St. to 11th St.	11th St. to 14th St.
8th WING	1st St. to 11th St.	11th St. to 14th St.	8th WING	1st St. to 11th St.	11th St. to 14th St.
9th WING	1st St. to 11th St.	11th St. to 14th St.	9th WING	1st St. to 11th St.	11th St. to 14th St.
10th WING	1st St. to 11th St.	11th St. to 14th St.	10th WING	1st St. to 11th St.	11th St. to 14th St.

- SCHOOL
- HOSPITAL
- COURTHOUSE
- CITY LIMITS
- PARKS
- Y.M.C.A.
- IOWA HWY 14
- COUNTY ROAD 574
- U.S. HIGHWAY 6
- INTERSTATE HWY 30



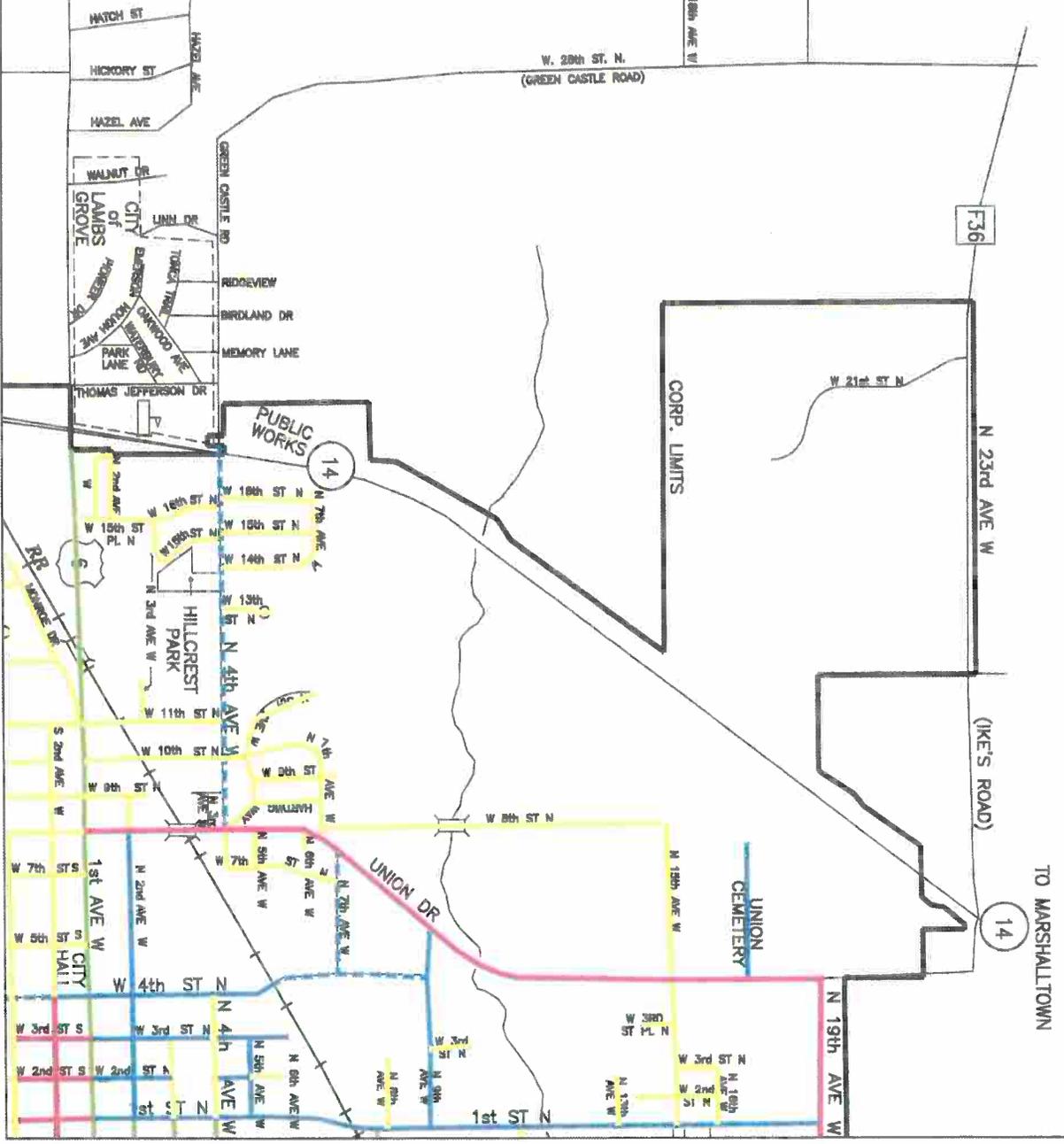
LIGHT PLANNING 8-84-13

APPENDIX A

SNOW PLOW ROUTES
 NW QUADRANT
 CITY OF NEWTON, IOWA

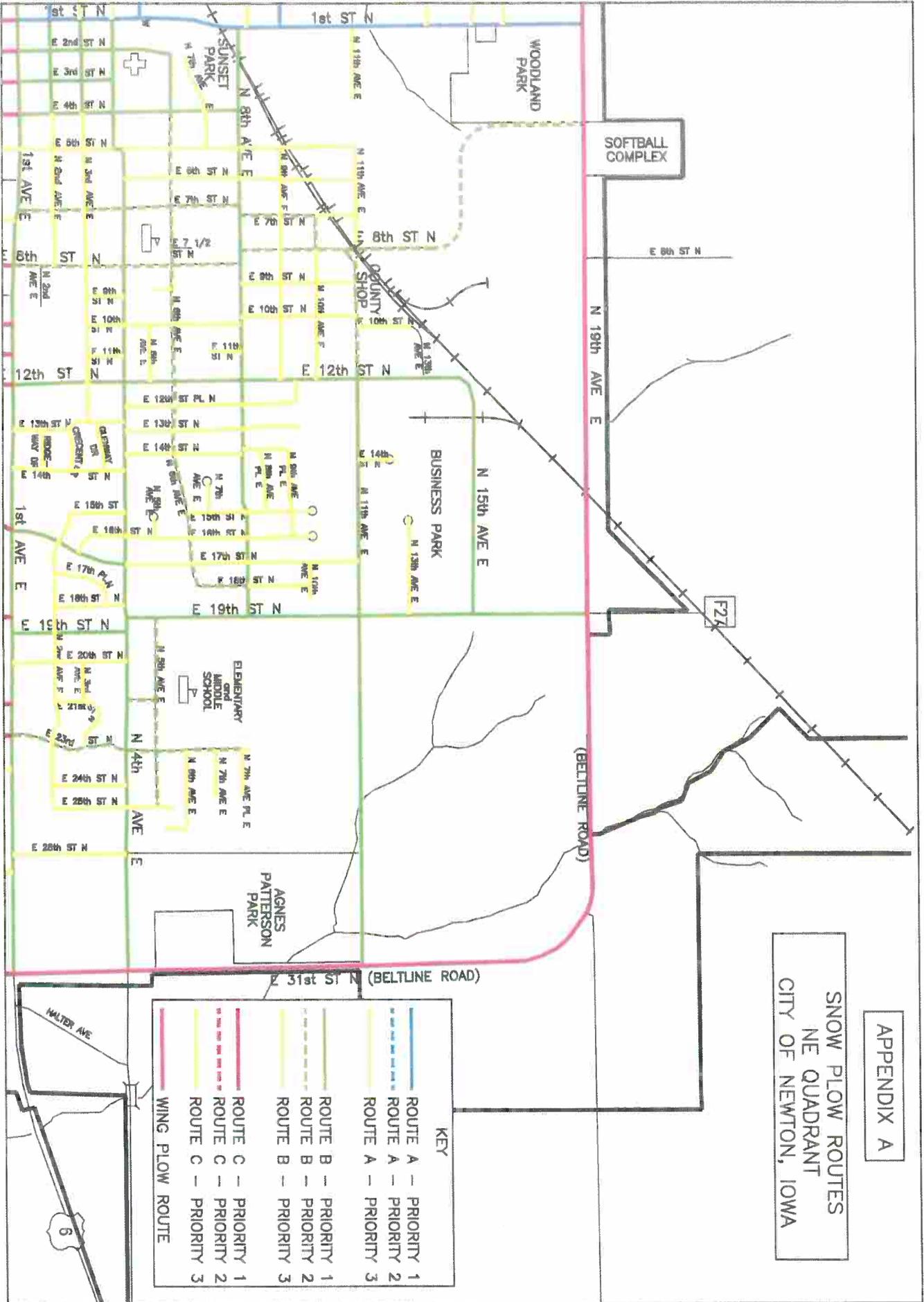
KEY

— (Blue line)	ROUTE A - PRIORITY 1
— (Dashed Blue line)	ROUTE A - PRIORITY 2
— (Yellow line)	ROUTE A - PRIORITY 3
— (Green line)	ROUTE B - PRIORITY 1
— (Dashed Green line)	ROUTE B - PRIORITY 2
— (Light Green line)	ROUTE B - PRIORITY 3
— (Pink line)	ROUTE C - PRIORITY 1
— (Dashed Pink line)	ROUTE C - PRIORITY 2
— (Light Pink line)	ROUTE C - PRIORITY 3
— (Red line)	WING PLOW ROUTE



APPENDIX A

SNOW PLOW ROUTES
NE QUADRANT
CITY OF NEWTON, IOWA



KEY

Blue line	ROUTE A -	PRIORITY 1
Green line	ROUTE B -	PRIORITY 2
Red line	ROUTE C -	PRIORITY 3
Yellow line	ROUTE A -	PRIORITY 3
Light Green line	ROUTE B -	PRIORITY 1
Light Red line	ROUTE B -	PRIORITY 2
Light Blue line	ROUTE B -	PRIORITY 3
Light Yellow line	ROUTE C -	PRIORITY 1
Light Green line	ROUTE C -	PRIORITY 2
Light Red line	ROUTE C -	PRIORITY 3
Yellow line	WING PLOW ROUTE	

APPENDIX A

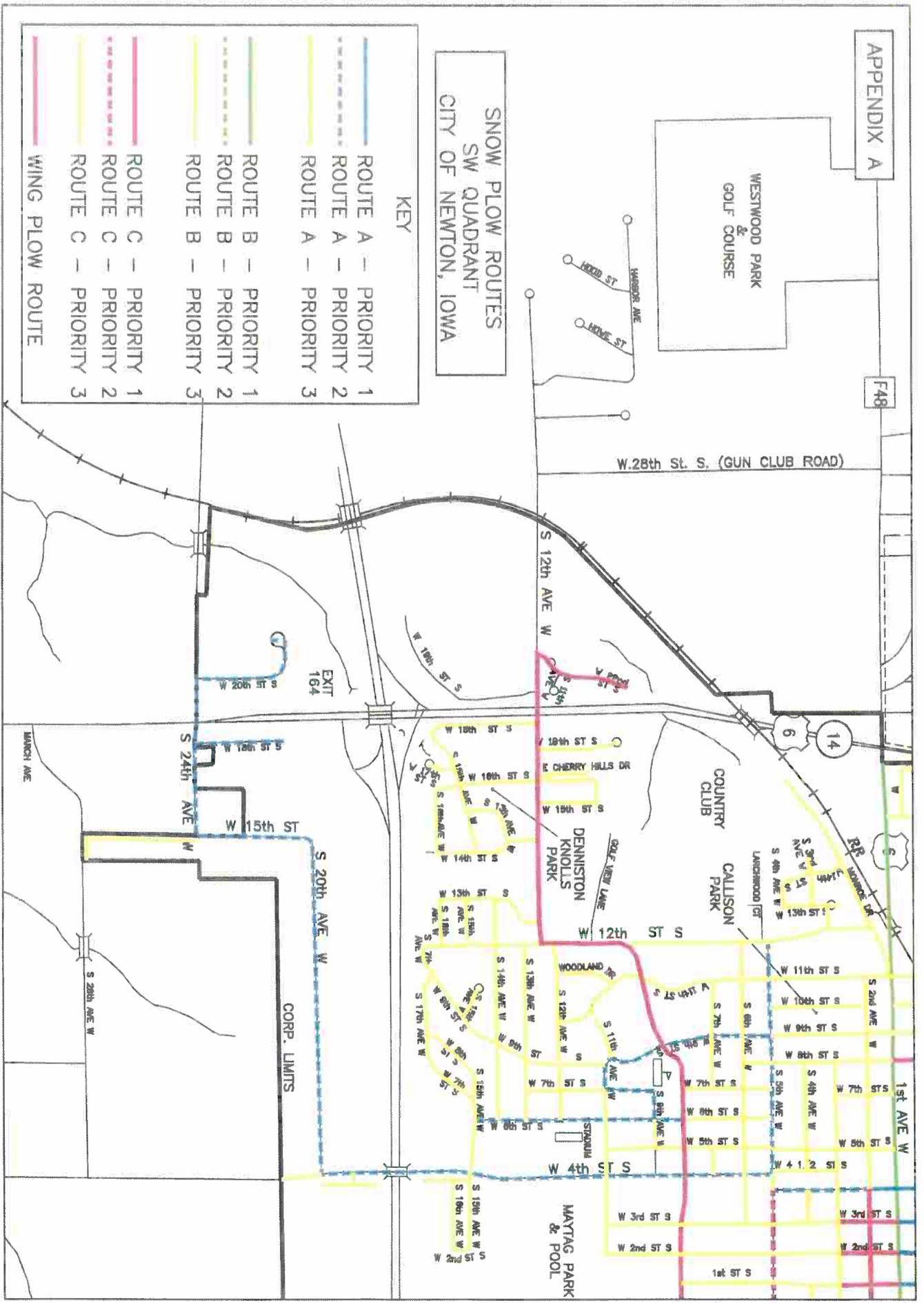
F48

WESTWOOD PARK & GOLF COURSE

SNOW PLOW ROUTES
SW QUADRANT
CITY OF NEWTON, IOWA

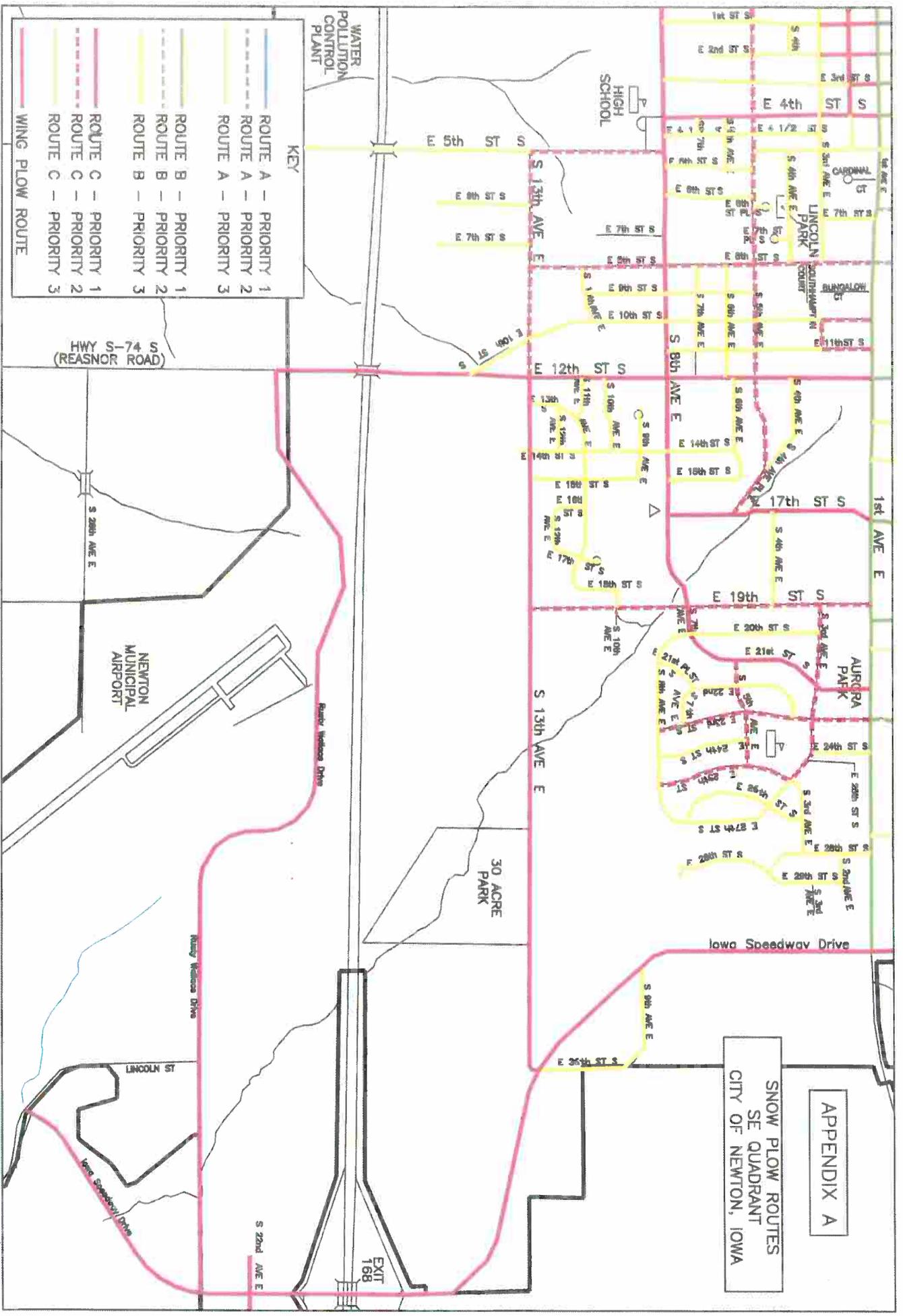
KEY

	ROUTE A - PRIORITY 1
	ROUTE A - PRIORITY 2
	ROUTE A - PRIORITY 3
	ROUTE B - PRIORITY 1
	ROUTE B - PRIORITY 2
	ROUTE B - PRIORITY 3
	ROUTE C - PRIORITY 1
	ROUTE C - PRIORITY 2
	ROUTE C - PRIORITY 3
	WING PLOW ROUTE



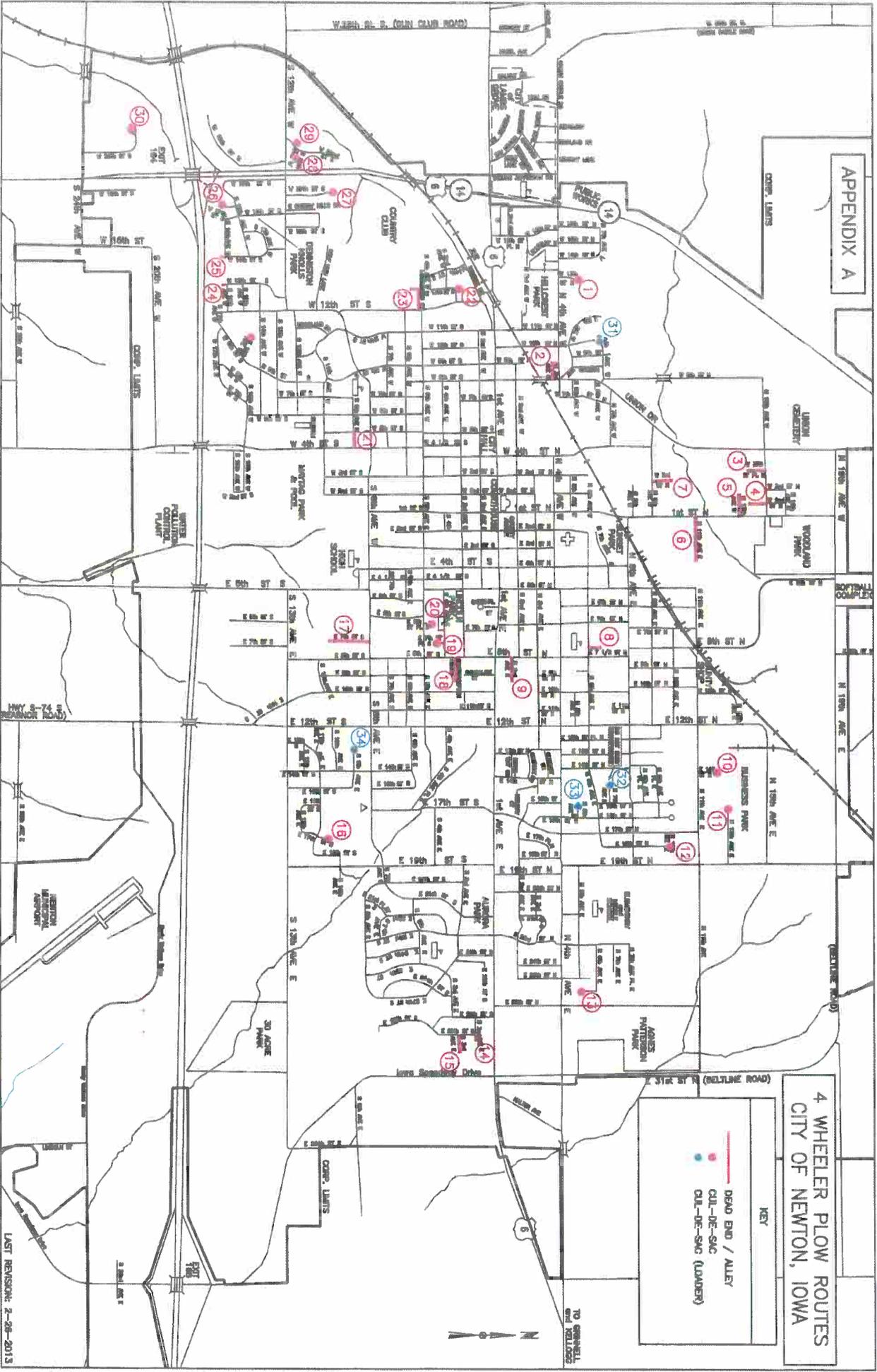
APPENDIX A

SNOW PLOW ROUTES SE QUADRANT CITY OF NEWTON, IOWA



APPENDIX A

4 WHEELER PLOW ROUTES
CITY OF NEWTON, IOWA

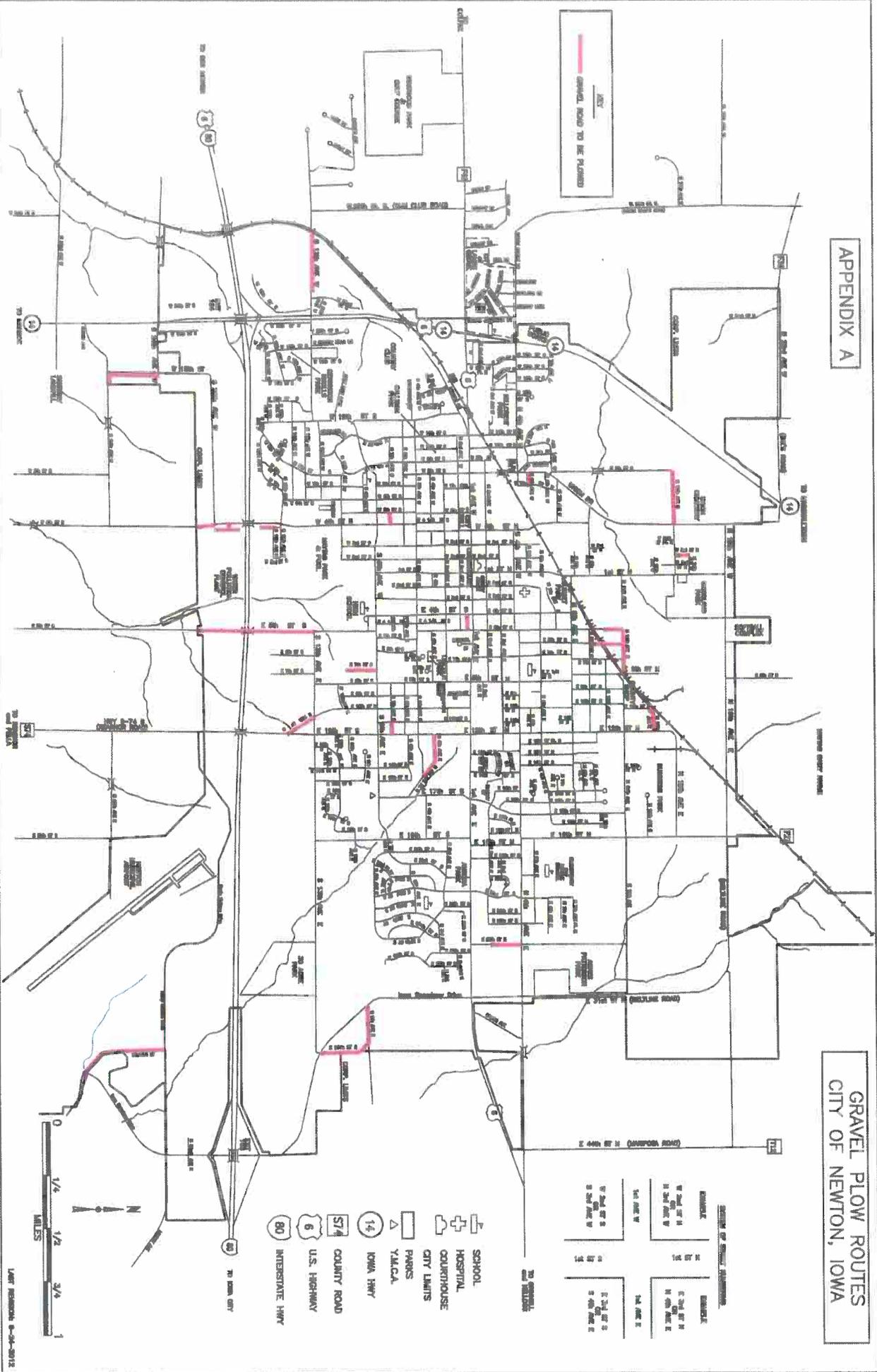


- KEY
- DEAD END / ALLEY
 - CUL-DE-SAC
 - CUL-DE-SAC (LOADER)

LAST REVISION: 2-26-2013

APPENDIX A

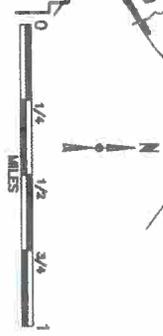
GRAVEL FLOW ROUTES
CITY OF NEWTON, IOWA



SECTION OF ROADWAY

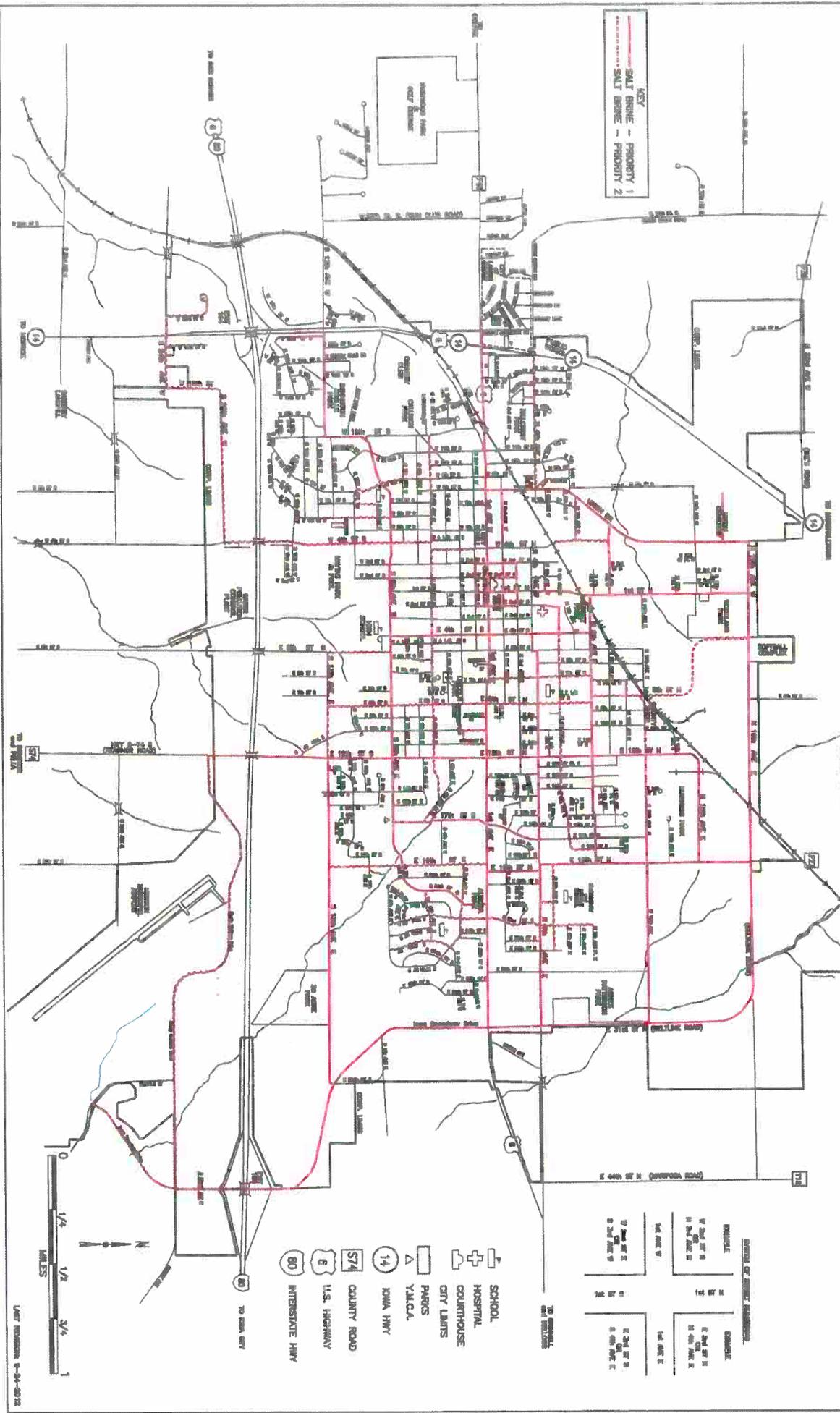
ROADWAY	SECTION	ROADWAY	SECTION
1/4 A.M.C. W	1/4 A.M.C. E	1/4 A.M.C. W	1/4 A.M.C. E
1/2 A.M.C. W	1/2 A.M.C. E	1/2 A.M.C. W	1/2 A.M.C. E
3/4 A.M.C. W	3/4 A.M.C. E	3/4 A.M.C. W	3/4 A.M.C. E
1/4 A.M.C. W	1/4 A.M.C. E	1/4 A.M.C. W	1/4 A.M.C. E
1/2 A.M.C. W	1/2 A.M.C. E	1/2 A.M.C. W	1/2 A.M.C. E
3/4 A.M.C. W	3/4 A.M.C. E	3/4 A.M.C. W	3/4 A.M.C. E

- SCHOOL
- HOSPITAL
- COURTHOUSE
- CITY LIMITS
- PARKS
- Y.M.C.A.
- IOWA HWY
- COUNTY ROAD
- U.S. HIGHWAY
- INTERSTATE HWY



APPENDIX B

SALT BRINE ROUTES
CITY OF NEWTON, IOWA



GENERAL OF STREET CLASSIFICATION

ROUTE	CLASSIFICATION	CLASSIFICATION
14	14	14
6	6	6
80	80	80

- SCHOOL
- HOSPITAL
- COURTHOUSE
- CITY LIMITS
- PARKS
- V.I.C.A.
- 14 IOWA HWY
- 574 COUNTY ROAD
- 6 U.S. HIGHWAY
- 80 INTERSTATE HWY

Areas Snow Hauled
From Street

APPENDIX C

DOWNTOWN SNOW
REMOVAL DISTRICT

