Pre-Council
Public Works – Snow Removal
October 19, 2000
1:30 PM

Members Present: Jayne Snyder, Eugene Carroll, Doug Emery, Jon Camp, Adam Hornung
Others Present: Greg MacLean, Scott Opfer, Andrew Edwards, Diane Gonzolas

Councilman Emery brought the meeting to order and stated that the Open Meeting Act is posted in the back of the room.

Greg MacLean thanked the Council for the opportunity to come and speak today. Snow Removal is the biggest and most public operation that Public Works does. MacLean introduced Scott Opfer and Andrew Edwards who will present information regarding the Snow Removal Program and answer any questions Council members have.

Scott Opfer pointed out that this is his second year working with the snow program, however Andrew Edwards has over 40 years of experience. Edwards will be able to answer any questions that Opfer may not be able to answer. Opfer presented a list of other personnel involved in the snow removal program. Roger Figard, City Engineer, heads the Street Operations area with Randy Hoskins, Scott Opfer and Andrew Edwards. There are three district shops involved located at 33rd & Baldwin Street, 32nd & South Street and 901 by Haymarket Park. Jim Chiles is the head of Fleet Services and is responsible for maintaining and taking care of the equipment used.

Budget
In the 2009-2010 budget, there is just over $3 million dollars appropriated for snow. Public Works tries to carry over approximately $1.5 million dollars from the year before and keep it in reserve in case there is a major event or a severe winter. Although last winter was relatively mild, Public Works was out 14 times preparing and responding to frozen precipitation. There were times when people were on the clock and ready to go, but they had to be sent home because nothing happened. Therefore, there was only approximately $300,000 left out of the $3 million that was budgeted last year. Currently, there is $4.5 million available for the remainder of the fiscal year.

Preparations
A lot of time is spent time preparing for the winter. Materials are purchased and staff are trained/re-trained. Equipment is prepared and contracts are secured for the use of contractors and private equipment. Public Works contracts with local farmers in order to use tractors which can plow residential areas easier than the larger vehicles. Interlocal Agreements are also completed with the County to allow them to take care of some City streets and the City to take care of some County roads. See the attached map for those locations.

Opfer showed a photo of the salt domes which hold 4,000 tons of salt. Previously, 4,000 tons of salt was purchased prior to the snow season and was replenished through the winter as needed. This year Opfer was able to find more space allowing for an additional 3,000 tons of salt to be purchased using some of the funds left over from last year. This will provide a cost savings to the City as the peak season price for salt is higher. Opfer intends to do this again next year.

Predicting the Weather

Opfer stated that one of the biggest challenges Public Works faces is trying to predict what is going to happen with the weather. Several weather sites are monitored such as the National Weather Service, The Weather Channel and local TV stations. Staff utilize the State of Nebraska's weather stations that are placed on several highways throughout the state. This provides cameras that can be used to view the weather and sensors that give the temperature of the pavement. Pavement temperatures are important during the early season because if the pavement is warm enough the snow won't stick. Public Works also has its own pavement temperature sensing equipment. There is also a third shift crew during the winter that is responsible for watching what is going on when a major event may be coming in.

Proactive Approach

The most frequently asked questions and concerns are related to putting down salt brine. When the temperatures are in the mid 30's to 20 degrees, salt brine is put down. It is a salt water mixture containing 23% salt and 77% water. It is ineffective once the temperature gets below 20 degrees. Other chemicals are used that can melt ice and prevent freezing at lower temperatures.

Salt brine is put down on all overpasses and bridges in town to prevent black ice from forming. Frost builds up on the surface when the temperature underneath the bridge or overpass freezes. The brine minimizes and in some cases eliminates the frost on bridges. Typically, the bridges and overpasses are pretreated once a week when there is no threat of a storm in the forecast. With regular traffic the brine wears out in about a week.

Public Works receives the most criticism when the arterial streets are pretreated prior to certain storms. This won't be done if the City will get a major rain event before a storm as the mixture will be washed away. When the arterial streets are pretreated it is in the hope that when the snow falls a coating is created on the pavement. This coating won't keep the snow from completely sticking but will make it easier to peel off with plows. A lot of people believe that the salt brine will automatically melt the snow, however, this is not the case. It simply buys time for Public Works to get plows out to get the snow off. This is a valuable part of the snow program.

Other concerns arise about the salt brine causing cars to get rusty. As stated above, the mixture is only 23% salt and 77% water. When a snow event does occur pure salt, and a lot of it, is put down. It costs roughly $5,300 every time Public Works goes out and pretreats the arterial streets. If only one injury crash on a bridge or street is prevented, it more than pays for itself. The truck that applies the salt brine looks as if it has a bunch of tubes hanging down. The brine is applied and traffic spreads it out on the street. This is a popular method and is used all over the country and all over the world.

Snow Program

There are five phases of a snow event.
Phase 1: Material Spreading on arterial streets and bus routes, including emergency snow routes. This encompasses approximately 1,100 lane miles and takes 4-6 hours to complete. This phase involves 26 City staff utilizing 26 units. Trouble spots in residential areas are included along with schools on weekdays and churches on weekends. The cost is $2,400 per hour, which includes overtime. If overtime is not involved the cost is a little less.

Phase 2: Plowing emergency snow routes.

Phase 3: Plowing the rest of the arterials and bus routes. Phase 2 and 3 are combined when there is a plowing operation. These phases encompass 1,100 lane miles and take 10-14 hours to complete once snow accumulation stops. This is a larger scale effort which involves 91 people with 84 units. Some contractors are involved in this phase. The second attachment shows a map with 19 routes, including downtown. Typically three plows and one material spreader are placed on a route. There is a special route for newly paved or concreted streets as the salt can be detrimental to the new surface. Sand is put down on this route. The cost is $6,200 per hour, including overtime.

Phase 4: Residential Plowing. Public Works policy and practice is to plow residential areas once there is four inches of accumulation. This phase encompasses approximately 1,500 lane miles and can take 2-3 days to complete once phase 2 and 3 are done. It costs approximately $250,000 each time the residential streets are plowed. During this phase private contractors and equipment are utilized in addition to City staff, which totals 112 people and 104 units. The cost is $7,200 per hour.

Phase 5: Complete Removal. Depending on the amount of the accumulation, certain arterial streets and bridges have snow completely removed. This is done downtown and in some of the other business districts due to the tight space. This operation is done overnight. The cost is $6,000 per hour.

A new program was started a few years ago in an effort to get more available staff to help plow snow. The larger trucks require the operator to hold a Commercial Drivers License (CDL). Due to the limitations this created, Public Works has outfitted some existing equipment and even purchased other equipment that do not require the operator to hold a CDL. Roger Figard and Scott Opfer went through training on this equipment last year and were able to plow snow for 12 hours.

Citizens frequently ask why snow is plowed to the curb and not to the center of the street. If the snow were plowed to the center of the street, it would melt back into the street and freeze again. This would cause reoccurring problems with ice in the street.

Parks Department is responsible for snow removal on bike trails. Public Works also puts out message boards near bridges to warn of slick conditions.

Diane Gonzolas came forward to discuss how the City reaches out to the community during a snow event. CIC is responsible for getting information out to the public about the snow

operations the City is involved in. This is considered a high priority. There are three CIC employees who are on call during nights and weekends so snow reports can be done 24/7. The employees are also able to do this from their homes in case they can't make it in to work due to the snow. The on-call schedule is made available to Public Works and the media.

Information is dispersed through an extensive e-mail list which includes the media, various City offices, UNL, LPS, State office buildings, the Capitol and cultural centers for those that don't speak English. Information is also posted on the City website, Channels 5 and 10 and on a phone recording that the media can call. The snow plan can be found on the City's website and in the Windstream phone directory.

Councilman Camp asked if the cost involved with the application of salt brine included fuel and depreciation of the equipment. Opfer responded that the $5,300 includes the cost of material, personnel, and fuel. The depreciation is built into the mileage rate that is paid on the vehicle.

Councilman Camp expressed concerns about the damage that snow plows do to curbs. Although it is hard to see the depth of the snow where the curbs are at, Camp encouraged preventative measures to keep the curbs from being damaged. Opfer explained that the gouging on curbs is actually coming from the graders that extend downward pressure on their blades. When the streets get slick, the slope toward the curb pulls the graders into the curb. Opfer will be talking to staff about being careful during every phase of snow removal.

With no further questions the meeting was adjourned.

Submitted by Melissa Ramos-Lammli, Public Works Engineering Services

DISCOVERY DR

City of Lincoln
Public Works & Utilities Dept.
Snow & Ice Removal Program

Roger Figard, P.E. - City Engineer

Randy Hoskins, P.E. - Assistant City Engineer

Scott Opfer - Operations Manager

Andrew Edwards - Street Superintendent

Roger Tiedeman - West District Supervisor

Leroy Uglow - Northeast District Supervisor

Al McCracken - Southeast District Supervisor

Jim Chiles - Fleet Services Superintendent

Snow & Ice Removal Operations

- Budget
- Preparations
- Weather Watching - “the waiting game”
- Pro-Active Liquid Anti- and De-icing Program
- Phases of Snow Removal
- Other City Snow Removal Activities
- Community Notifications

Snow/Ice Removal Budget

2009/10 Appropriation = $3 million

Carry-over funds from prior years = $1.5 million

Total Available Funds (as of 10/14/09) = $4.5 million

“Getting Ready”

- Purchase Sand, Salt & other materials
- Staff Training
- Prepare Equipment
- Secure Contracts for use of Private Sector equipment and personnel.
- Secure City/County Agreements

DULTMEIER
Sales

CASE INTERNATIONAL

Predicting the Weather - Not !!!

- Monitoring of Various Weather Service Agencies
- Viewing of “Out-State” weather stations
- Utilization of Pavement Temperature Sensing Equipment.
- Driving the Streets

Proactive Approach
Pre-Treating Streets

- "What's in the Tanks?"
- Liquids applications serve two primary purposes:
  1. "Anti-Icing of Bridges"
  2. "De-Icing of Major Streets"
- Cost to Cover all arterial streets = $5,300/Application

·CAUTION·
LIQUID DE-ICER
STAY BACK
·100 FEET·

Snow Removal Phases

Phase 1 - Material Spreading on Arterials & Bus Routes

Phase 2 - Plowing of Emergency Snow Routes

Phase 3 - Plowing of Remaining Arterials & Bus Routes

Phase 4 - Plowing of Residential Streets

Complete Removal

Phase 1:
Material Spreading on Arterials & on Bus Routes

- Over 1100 Lane Miles
- 4 to 6 hours to Complete
- 26 Personnel & 26 Units - All City Staff
- Material Used - Sand/Salt/Mixtures
- Cost - Approximately $2400/hour
- Also spread material at “trouble spots”, around schools and churches.

FLYING SAND
TAY CLEAR
25038
93237
INTERNATIONAL

Phases 2 & 3: Plowing Arterials & Bus Routes

- Over 1100 Lane Miles
- 10 to 14 hours After Snow Accumulation Stops to Complete.
- 91 Personnel & 84 Units - (16 units and operators are private contractors)
- Continue to Spread Material
- Cost - Approximately $6200/hour

DISCOVERY DR

DEERE
judds
Brothers
772CH
MORPHY

Phase 4:
Plowing Residential Streets

- Over 1500 Lane Miles
- 24 to 36 hours to complete - This phase begins after Arterials are completed.
- 112 Personnel & 104 Units - (35 to 40 units and operators are private contractors)
- Continue to Spread Material
- Cost - Approximately $7200/hour

PUBLIC
WORKS

Complete Removal

- Removal of snow from Business Districts and selected Arterial Streets
- Over 2000 Lane Miles
- Work from Midnight to 8:00 am.
- 1 to 3 nights to Complete.
- 92 Personnel & 88 Units - (65 to 70 units and operators are private contractors)
- Continue to Spread Material
- Cost - Approximately $6000/hour

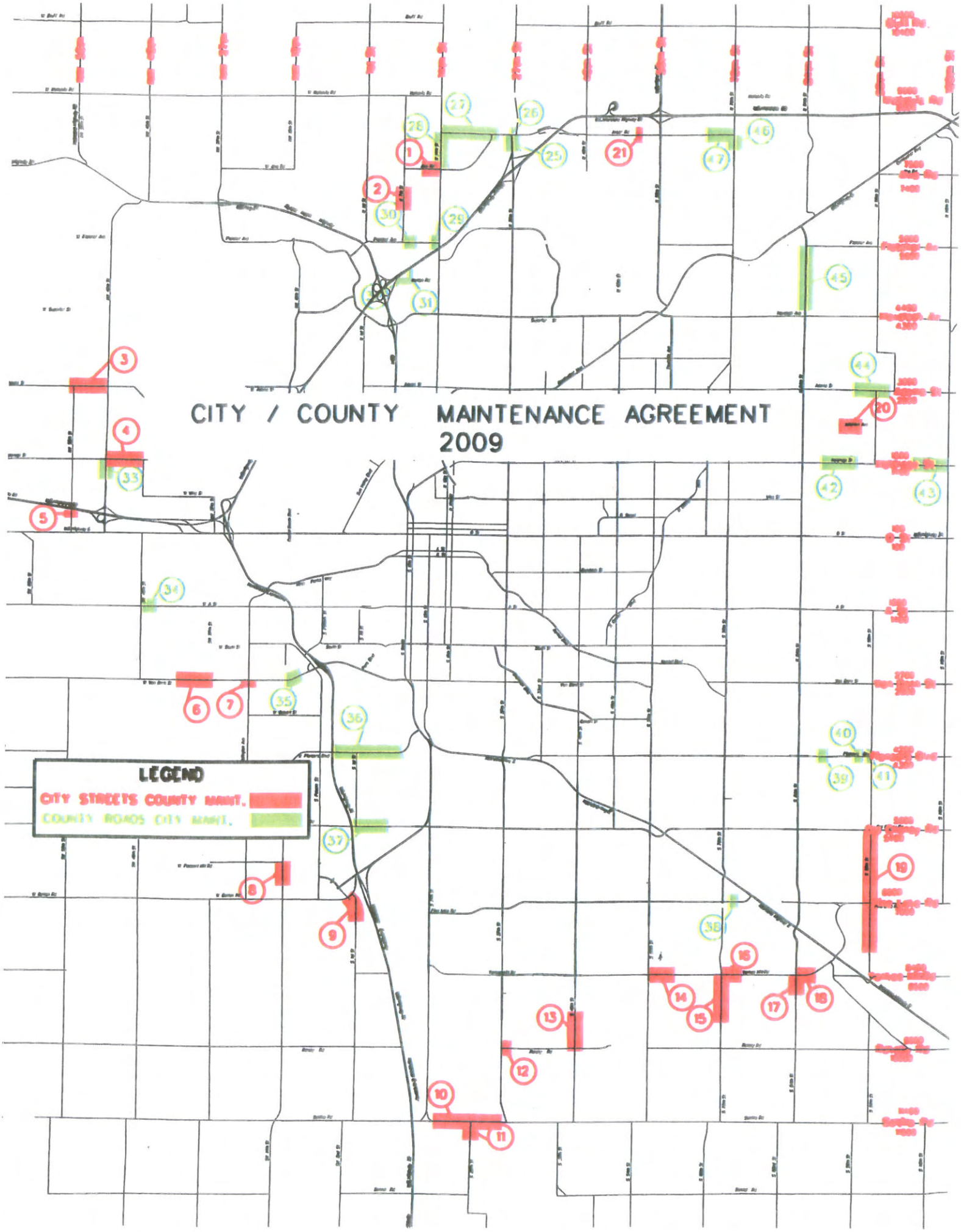
Other City Snow Activities

- Removal of snow from sidewalks adjacent to City Property & on Bridges
- Parks Dept. Snow removal on Bike Trails
- Placement of Electronic Message Signs at certain approaches to Bridges.

Community Notifications

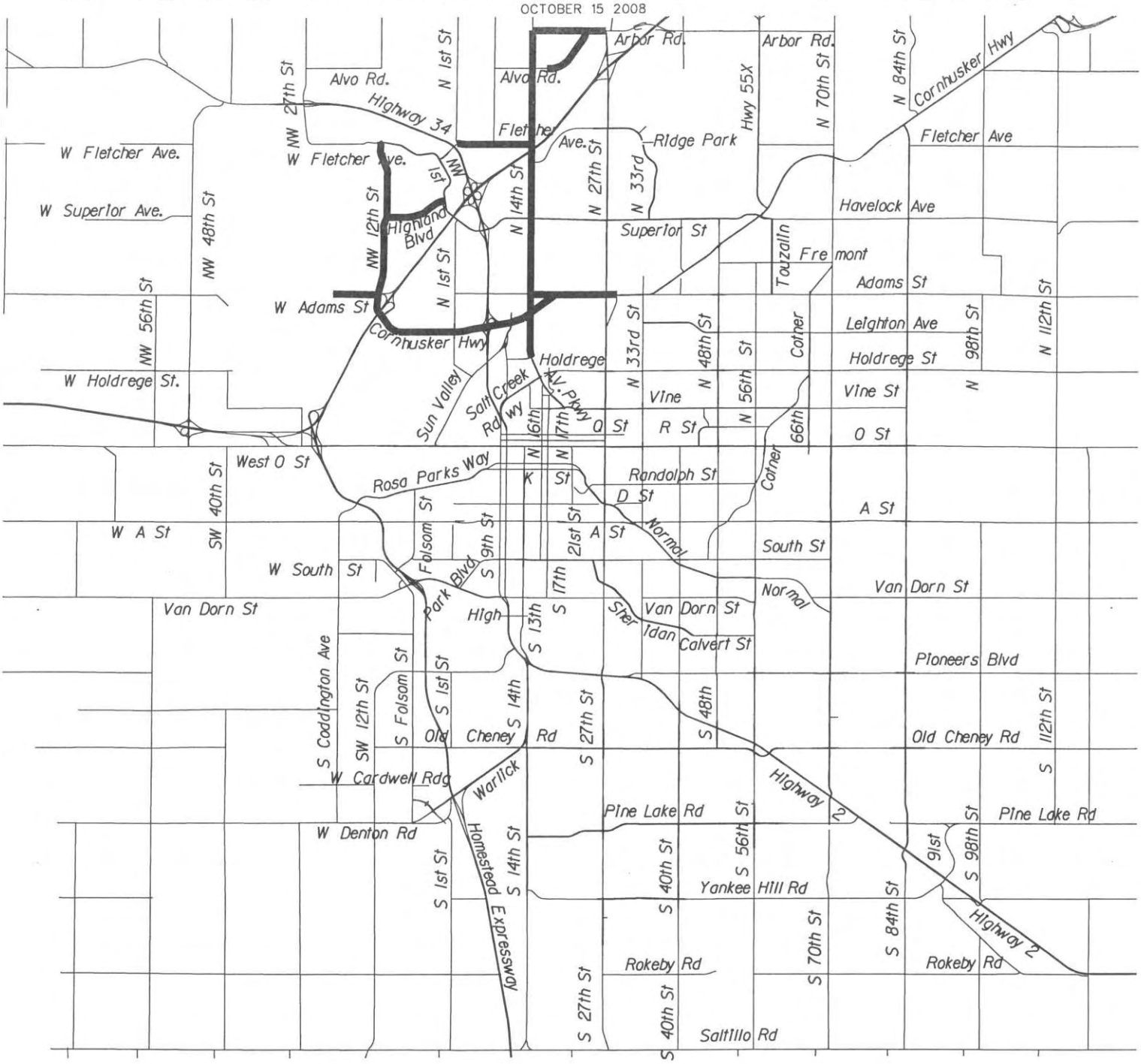
- Diane Gonzales - C.I.C.

Questions???


CITY / COUNTY MAINTENANCE AGREEMENT
2009
LEGEND
CITY STREETS COUNTY MAINT.
COUNTY ROADS CITY MAINT.

MATERIAL SPREADING / PLOWING ROUTE 1

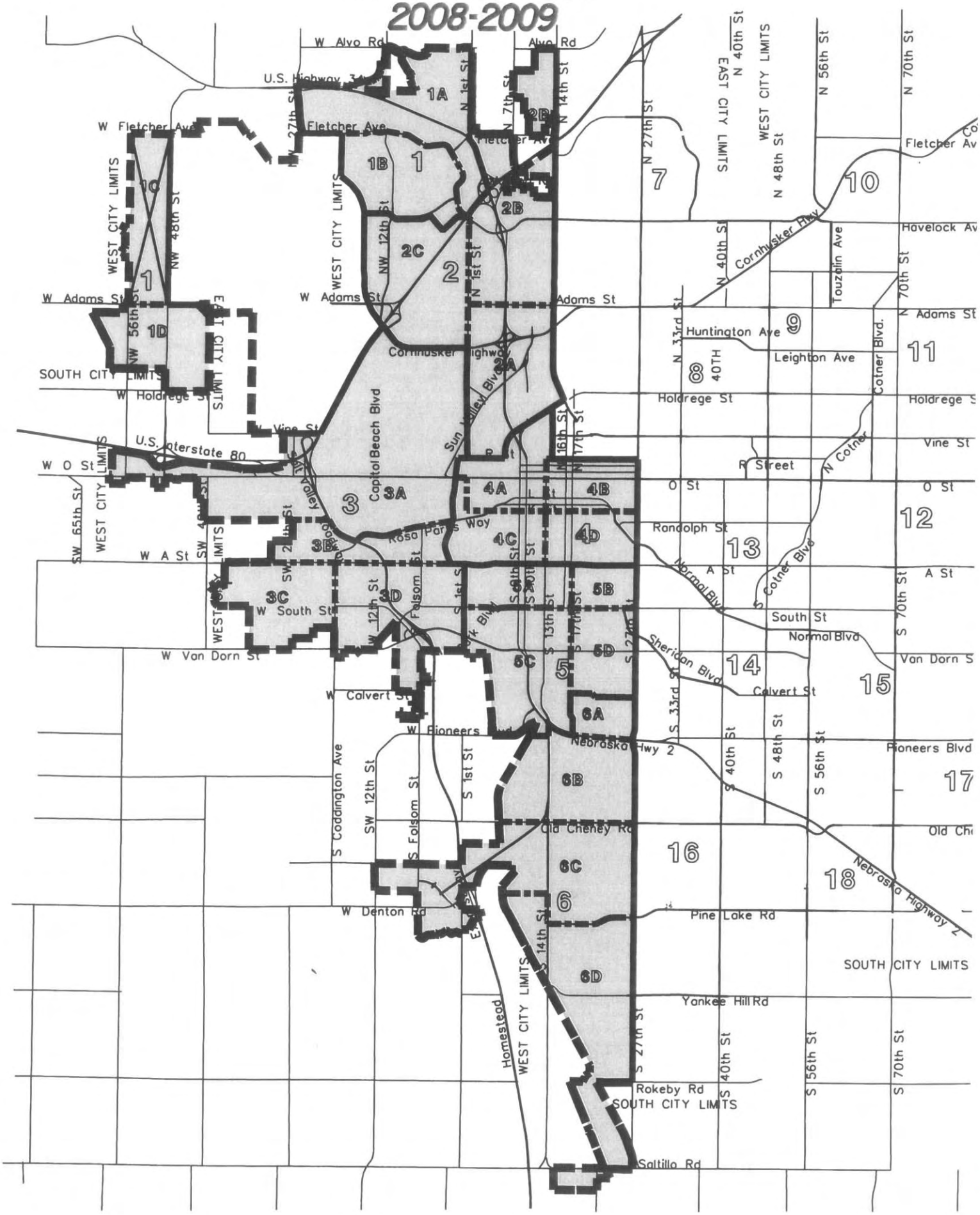
OCTOBER 15 2008



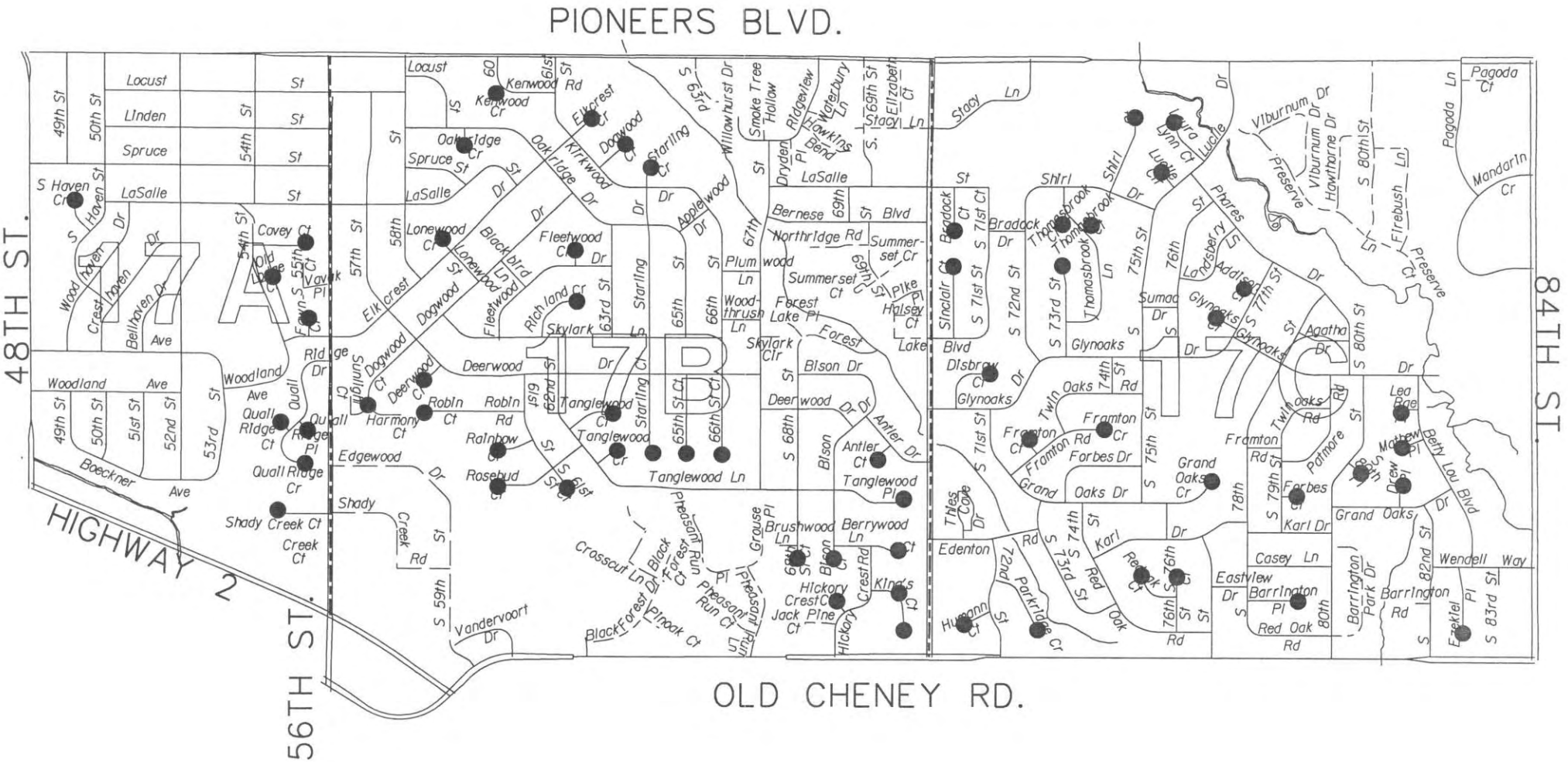
EMERGENCY SNOW ROUTES ARE IN BOLD PRINT

CORNHUSKER HIGHWAY	-	**STATE FAIR PARK DRIVE**	TO	**WEST ADAMS STREET**
WEST ADAMS STREET	-	**CORNHUSKER HIGHWAY**	TO	**AIRPORT ENTRANCE**
N.W. 12TH STREET	-	**WEST ADAMS STREET**	TO	**WEST HIGHLAND BOULEVARD**
WEST HIGHLAND BOULEVARD	-	**N.W. 1ST STREET**	TO	**N.W. 12TH STREET**
N.W. 12TH/13TH STREET	-	WEST HIGHLAND BOULEVARD	TO	WEST FLETCHER AVENUE
ANTELOPE VALLEY PARKWAY	-	MILITARY ROAD	TO	DAWES AVENUE
NORTH 14TH STREET	-	DAWES AVENUE	TO	ARBOR ROAD
ADAMS STREET	-	CORNHUSKER HIGHWAY	TO	NORTH 14TH STREET
FLETCHER AVENUE	-	NORTH 1ST STREET	TO	NORTH 14TH STREET
ARBOR ROAD	-	NORTH 14TH STREET	TO	NORTH 27TH STREET
ALVO ROAD	-	NORTH 16TH STREET	TO	ARBOR ROAD
	-		TO	

RESIDENTIAL SANDING & PLOWING DISTRICTS
WEST DISTRICT
2008-2009



RESIDENTIAL SNOW REMOVAL SANDING & PLOWING DISTRICTS AND CUL DE SACS DISTRICT 17 PART 1

NORTH

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