

**CITY OF DELAWARE**  
**PUBLIC WORKS/PUBLIC UTILITIES**  
**COMMITTEE**  
**AGENDA**  
**CITY COUNCIL CHAMBERS**  
**1 S. SANDUSKY ST.**  
**7:00 P.M.**

REGULAR

JANUARY 6, 2015

1. ROLL CALL
2. APPROVAL of the Motion Summary for the meeting of the Public Works/Public Utilities Committee meeting held November 4, 2014, as recorded and transcribed
3. PUBLIC COMMENTS
4. ELECTION of Chairperson
5. ELECTION of Vice-Chairperson
6. PRESENTATION of SafeWalk Appeals
7. DISCUSSION/PRESENTATION of AMR/AMI Systems
8. DISCUSSION of Snow and Ice Removal Policies and Procedures
9. UPDATE on Public Works Facilities Improvements
10. STAFF COMMENTS
11. MEMBER COMMENTS
12. ADJOURNMENT

# ***ITEM 2***

**PUBLIC WORKS/PUBLIC UTILITIES COMMITTEE  
MOTION SUMMARY  
NOVEMBER 4, 2014**

Staff present included Dan Whited, Director of Public Service Group, Bill Ferrigno, Director of Public Works/City Engineer, Brad Stanton, Director of Public Utilities, Matt Weber, Deputy Engineer and Linda Mathews, Customer Service Liaison.

Meeting called to order at 7:00 p.m. by Chairman Chris Jones.

1. ROLL CALL

Committee members present at roll call included Chairman Chris Jones, Vice-Chairman Kent Shafer, and Mayor Carolyn Riggle.

2. APPROVAL of the Motion Summary for the meeting of the Public Works/Public Utilities Committee meeting held September 2, 2014, as recorded and transcribed

Vice-Chairman Shafer moved to approve the Motion Summary for the meeting of the Public Works/Public Utilities Committee meeting held September 2, 2014, as recorded and transcribed, seconded by Mayor Riggle and approved by a 3-0 vote.

3. PUBLIC COMMENTS

There were no public comments presented.

4. UPDATE on Resurfacing Program

Director of Public Works/City Engineer Bill Ferrigno mentioned that staff had forwarded correspondence with Ms. Dunlap to them with regard to alley repairs/resurfacing as Ms. Dunlap had been invited to speak under the Public Comments agenda item.

Mr. Ferrigno recapped the documents that had been included in the agenda packet that were created to show how the road network will appear over time.

Committee members posed questions with regard to the modeling documents and all were addressed.

Committee members will be provided with documents that show the various city streets by wards with the current PCI rating as well as the criteria that is

used to determine the assigned rating.

5. DISCUSSION of Snow and Ice Removal Policies and Procedures

Mr. Ferrigno discussed the salt storage facility that was recently erected at the Public Works facility, the brine system that will be installed and the status of the salt supplies for the upcoming season. He also indicated that staff is in the process of preparing the equipment for wintertime operations.

6. UPDATE on Transportation Plan

Mr. Ferrigno reviewed the enclosed documents relative to the Transportation Plan and advised that a review and update of the plan is anticipated to be undertaken in 2015. The new update will include bikeways and multi-use paths as they were not in the most recent updated plan. Other fixtures that will be considered with the new overall plan will be signals, guardrail and resurfacing features. The review and development of the new Transportation Plan will most likely take the entire year of 2015 to complete.

7. UPDATE on Public Works Facilities Improvements

Mr. Ferrigno updated committee members on the status of wintertime operations facilities and overall yard area at Public Works.

Mr. Ferrigno also indicated that the new Administrative building is in the “mid-stages” with the plans to be finalized within the next 2-3 weeks and the building construction to begin in early 2015.

8. STAFF COMMENTS

Director of Public Utilities Brad Stanton updated committee members on the status of the water plant improvement project, indicating that it will be substantially completed in early 2015 and full completion in spring 2015 with an Open House in spring of 2015.

Director of the Public Service Group Dan Whited advised that he and Mr. Stanton are enlisting the assistance of a third party to perform some investigations with regard to issue with the AMR program.

Mr. Ferrigno indicated that all of the backlogged guardrail repairs that have been funded, along with the installation on Valleyside Dr. should be completed the next week or so by M P Dory.

9. MEMBER COMMENTS

Chairman Jones inquired about the plowing of the parking lot and sidewalk at the YMCA-who is responsible for each, if a large trash pick-up had taken place this fall, the status of the SafeWalk Program and locations that had been marked recently and recently completed curb repairs in new subdivisions.

Mr. Ferrigno mentioned the fall street sweeping program and that it is not designed to pick-up leaves as is the anticipated by some residents. As such, this will possibly be the last city wide sweeping done during the fall,

10. ADJOURNMENT

Mayor Riggle moved to adjourn and meeting was adjourned at 7:57 p.m.

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Chris Jones, Chairman

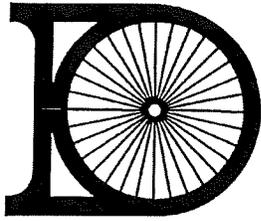
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Linda Mathews, Clerk

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Date

# ***ITEM 6***



CITY OF DELAWARE, OHIO  
PUBLIC WORKS DEPARTMENT

MEMORANDUM

SUBJECT: Safe Walks Appeal for 257 London Road

DATE: 1/6/15

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Property evaluated on 8/30/13 and found to have 4 squares at approximately 100 sq. ft. deficient sidewalk.

Certified mailing sent to and received by Paul Scaggs of 257 London Rd. Sidewalk maintenance agreement form was not returned.

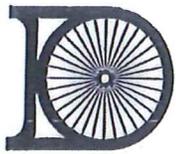
Contractor completed work on property on 10/10/14.

Jason & Amber Murfield invoiced for 115 sq. ft., \$1,069.50.

Mr. Murfield called 12/10/14 letting us know that he was not notified and that he wanted a remeasurement.

Remeasurement found to be 106.5 sq. ft., and a new total of \$990.45.

Address on hold until appeals ruling.



City Of Delaware  
Department of Engineering Services

SIDEWALK EVALUATION FORM

Street Address: 257 London Rd. Date: 8/30/13  
Property Owner Name & Mailing Address: Inspector: MUS/DEW

Sections of Sidewalk to be Repaired at Property Owner Expense

Walk	No. of Sections:	<u>4</u>	Σ Length	<u>5</u>	Avg Width	<u>5</u>	= SF	<u>100</u>
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Driveway	No. of Sections:		Σ Length		Avg Width		= SF	
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Total Area (SF)

Deficiency	<input checked="" type="checkbox"/> Trip Hazard >1/2"	<input checked="" type="checkbox"/> Cracked or Loose Section	<input type="checkbox"/> Deteriorated Surface
	<input type="checkbox"/> Tree Root Damage (Private)	<input type="checkbox"/> Negative Cross Slope	<input type="checkbox"/> Missing Section(s)
	<input type="checkbox"/> Cross Slope >3/4"/FT	<input type="checkbox"/> Open Joint >5/8"	<input type="checkbox"/> Excessive Running Slope

Notes:

Sections of Sidewalk to be Repaired at City Expense

Street Tree Root Damage

Quantity	No. of Sections:	Σ Length	Avg Width	= SF
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Notes:

SENDER: COMPLETE THIS SECTION

- Complete Items 1, 2, and 3. Also complete Item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

PAUL SCAGGS  
257 LONDON RD  
DELAWARE OH 43015

2. Article Number  
(Transfer from service label)

PS Form 3811, February 2004

COMPLETE THIS SECTION ON DELIVERY

A. Signature  
X PAUL SCAGGS  Agent  Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from Item 1?  Yes  
If YES, enter delivery address below:  No

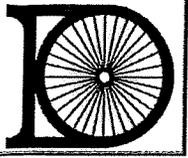
3. Service Type  
 Certified Mail  Express Mail  
 Registered  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

7008 2810 0000 4830 0180

Domestic Return Receipt

102595-02-M-1540

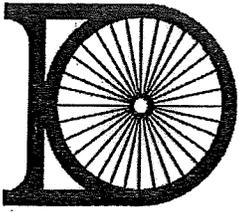


City of Delaware Division of Engineering  
Services

Street Address	257 LONDON RD
Property Owner	PAUL SCAGGS
Owner Mailing Address	257 LONDON RD

Sections of Sidewalk Repaired at Property Owner Expense

Walkway SF	115
Residential Driveway SF	0
Commercial Driveway SF	0
Actual Cost	\$1,069.50



City of Delaware Division of Engineering  
Services

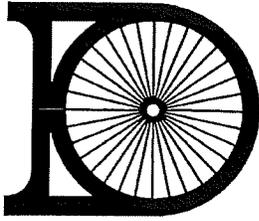
**NEW INVOICE**

Street Address 257 London Rd  
Property Owner Jason P & Amber D Murfield  
Owner Mailing Address 4091 Twp Rd 21 Marengo, OH 43334

**Sections of Sidewalk Repaired at Property Owner Expense**

Walkway SF	106.5
Residential Driveway SF	
Commercial Driveway SF	
Actual Cost	\$990.45





CITY OF DELAWARE, OHIO  
PUBLIC WORKS DEPARTMENT

MEMORANDUM

SUBJECT: Safe Walks Appeal for 178 S. Franklin Street

DATE: 1/6/15

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Property evaluated on 8/30/13 and found to have 3 squares at approximately 90 sq. ft. deficient sidewalk.

Certified mailing sent to Mary L. Wilson of 178 S. Franklin St. and went unclaimed by owner.

Public Notice was printed in the Delaware Gazette 12/6/13.

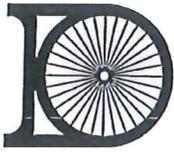
Contractor completed work on property between 9/17/14 – 9/25/14.

Mary L. Wilson was invoiced for 50 sq. ft., \$465.00.

Bobbie Wilson, daughter of Mary L. Wilson called 12/8/14 letting us know that the work completed was not on her mother's property.

Public Works Department went to property and by our best judgement, it looks to be on 178 S. Franklin Street.

Address on hold until appeals ruling.



City Of Delaware  
Department of Engineering Services

**SIDEWALK EVALUATION FORM**

Street Address: ~~875~~ 1785 Franklin St. Date: 8/30/13  
Property Owner Name & Mailing Address: Inspector: MVS/DEN

**Sections of Sidewalk to be Repaired at Property Owner Expense**

Walk	No. of Sections:	3	Σ Length	6	Avg Width	5	= SF	90
Driveway	No. of Sections:		Σ Length		Avg Width		= SF	
<b>Total Area (SF)</b>								
Deficiency	<input type="checkbox"/>	Trip Hazard >1/2"	<input checked="" type="checkbox"/>	Cracked or Loose Section	<input type="checkbox"/>	Deteriorated Surface		
	<input type="checkbox"/>	Tree Root Damage (Private)			<input type="checkbox"/>	Missing Section(s)		
	<input type="checkbox"/>	Cross Slope >3/4"/FT	<input type="checkbox"/>	Negative Cross Slope	<input type="checkbox"/>	Excessive Running Slope		
	<input type="checkbox"/>	Open Joint >5/8"						

Notes:

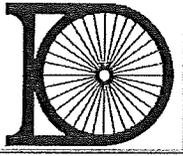
**Sections of Sidewalk to be Repaired at City Expense**

<b>Street Tree Root Damage</b>								
Quantity	No. of Sections:		Σ Length		Avg Width		= SF	

Notes:

<b>City Utility Damage</b>								
Quantity	No. of Sections:		Σ Length		Avg Width		= SF	

Notes:



City of Delaware Division of Engineering  
Services

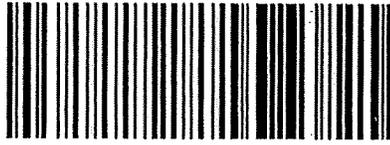
Street Address	178 S FRANKLIN ST
Property Owner	MARY L WILSON
Owner Mailing Address	178 S FRANKLIN ST

Sections of Sidewalk Repaired at Property Owner Expense

Walkway SF	50
Residential Driveway SF	0
Commercial Driveway SF	0
Actual Cost	\$465.00

Delaware, Ohio  
Eng. Services  
William St.  
Delaware, Ohio 43015

**CERTIFIED MAIL™**



7007 0710 0003 1493 8978



U.S. POSTAGE >> PITNEY BOWES



ZIP 43015 \$ 006.31<sup>0</sup>  
02 1W  
0001365711 OCT. 31. 2013

*Handwritten: pointing hand*  
MARY L WILSON  
78 S FRANKLIN ST  
DELAWARE OH 43015  
*Handwritten: DELAWARE*

*Handwritten: 11-1*  
1st CLASS 11-7  
2nd CLASS 11-7  
RETURN TO 11-17

Miscellaneous

**Holiday Open House**  
at Kathy's Westside Klippers  
435 Dunlap St  
Sat. Dec. 7th  
Sun. Dec. 8th  
11AM-4PM  
Mary Kay, Betty's Boutique  
It Work!, Wreath's By Kim  
Baked Goods  
Bonnie's Jams & Jellies  
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Our Goodies!

Flea Market

**Warehouse 61**  
Flea Market  
Christmas Sale  
10% off \$10.00 or more  
Saturday & Sunday  
8AM-4PM  
61 Flax St

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**Cake Decorator**



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• Competitive pay  
• Flexible hours  
• Must have  
some cake  
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Send resume to  
careers@freshencounter.com

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Great work place, Health Ins.  
Pay depends on experience  
Please call 740-369-8660

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**DIETARY AIDE**  
We are currently accepting  
applications for full time,  
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other weekend. We are  
locally owned and operated.  
Interested applicants should  
apply in person at Delaware  
Court Healthcare Center  
4 New Market Dr.  
369-6400  
EOE

Other

**DEER GUNS**  
12 GA Remington 870 deer  
slayer with scope \$350.00.  
50 Cal Charles Dely muzzle  
loader with all accessories  
\$300.00.  
740-362-4415

Land (Acreage)

BOUNDARY LAND

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**Coleman Powerhouse**  
Generator, 8KW, very low  
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\$1500-New  
Asking \$700/OBO  
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Miscellaneous

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able.) SAVE! Ask About  
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NOW! 1-800-734-5524

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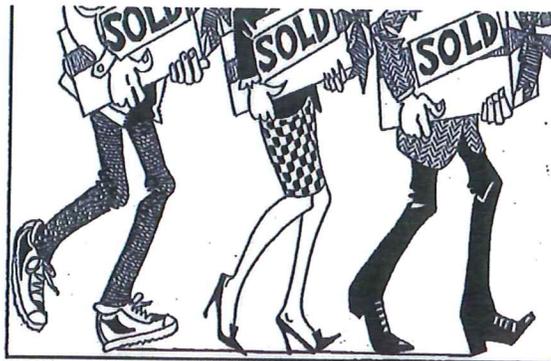
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Kitchen Utility

**The Courtyard Restaurant** at Willow Brook seeks FT Kitchen  
Utility employee 8am-4pm weekdays & every other weekend.  
Plays a vital role in the culinary department by maintaining the  
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utensils, as well as storage areas. Start rate \$9.25/hr. Many  
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health insurance & more! Great working environment & award  
winning team. Apply at [www.willow-brook.org](http://www.willow-brook.org)  
or visit 100 Willow Brook Way South,  
Delaware, OH 43015

Public/Legal Notice

On October 14, 2013 the City of Delaware, Ohio City Council  
passed a Resolution of Necessity for construction or repair of  
sidewalks (Res. 13-38) which required property owners to com-  
plete specified sidewalk repairs by July 1, 2014 as identified on  
inspection reports available for review at the City of Delaware,  
Department of Engineering Services, 20 East William Street,  
Delaware, Ohio. Certified notices regarding the requirements  
were mailed to all affected property owners. The addresses of  
identified properties determined unreachable by certified mail de-  
livery include:  
56 Annette St., 501 Apple Valley Circle, 114 Ash St., 125 Ash  
St., 1976 Ashburn Dr., 111 Aspen Ct., 135 Aspen Ct., 144 As-  
pen Ct., 86 Beech Ct., 141 Beech Ct., 142 Beech Dr., 296 Beech  
Dr., 27 Bernard Ave., 71 Bernard Ave., 227 Bristol Dr., 112 E.  
Central Ave., 120 E. Central Ave., 142 E. Central Ave., 156 E.  
Central Ave., 173 E. Central Ave., 175 E. Central Ave., 210 E.  
Central Ave., 215 E. Central Ave., 250 E. Central Ave., 291 E.  
Central Ave., 415 E. Central Ave., 441 E. Central Ave., 33  
Cheshire St., 74 Cheshire St., 114 Cheshire St., 250 Crystal Pet-  
al Dr., 215 Dogwood Dr., 257 Emerald Ice Loop, 117 Fieldcrest  
Dr., 178 S. Franklin St., 233 S. Franklin St., 244 S. Franklin St.,  
241 Indigo Blue St., 53 Lake St., 81 Lake St., 20 Little St., 285  
Loflon Circle, 246 London Rd., 21 Noble St., 36 Noble St., 70  
Noble St., 74 Noble St., 4 Rheim St., 419 S. Sandusky St., 29  
Tabllore Loop, 112 Tabllore Loop, 241 Thornapple Trail, 200  
Vista Ridge Dr., 175 S. Washington St., 216 S. Washington St.,  
201 E. William St., 222 E. Winter St., 261 E. Winter St.

Failure to complete required repairs in accordance with the terms  
of the approved resolution may result in the City of Delaware  
causing the repairs to be completed, and in accordance with  
ORC 729.04, assess the property owners for the actual cost of  
the repair work once completed.

December 6, 2013 11  
40533191

**WIGTON AUCTION CALENDAR**

December 7-10 am-4297 SR 42N-Delaware- Annual  
Consignment sale-9 TRACTORS-COMBINE-EQUIPMENT-  
TRACTORS-COMBINE-JD SPRAYER-EQUIPMENT:  
'05 John Deere 4920 sprayer, 1200 gal stainless tank, 120'  
booms & 1800 hrs; 2000 John Deere 9850 combine, 2WD,  
2280 sep. hours, Clean!, '03 JD 930F grain head, '90 JD 843  
corn head, offered individually then as a package; Ag  
Systems 6000 applicator; CIH 1083 corn head; '61 John  
Deere 4010, wide front; '80 Case 2290, good rubber; '09 CIH  
1200, 16 row planter; IH 175, 18' manual folding disk; JD  
1000, 18' cultivator w/ Remlinger harrow; IH 6000, 8 shank  
chisel disk; 300 gal pto sprayer; JD 15, silage chopper; Case  
steel wheel 4 bar rake; Woods 16' leveler; IH 550, 5 bottom  
plow; New Holland 66 baler; IH 560, 6 bottom plow; 1000 gal  
nurse wagon; 17 row Blue Jet applicator; 45' DMI Tigermate  
field cultivator; CIH 1020 30' grain head; Redball 680  
sprayer, 1350 gal tank, 90' booms; 150bu gravity wagon; JD  
1210A grain cart (500bu); 3pt. sprayer; bumper pull livestock  
trailer; Wheel Horse 607 & 856 riding mowers; Stihl MS180  
chainsaw; Coleman 25 gal. 5hp air compressor; Troy Bilt  
Pony rear tine tiller; Items from the Shane Kraus Estate-  
Kraus Concrete: 2009 Honda Accord; 2001 Dodge Ram  
2500 4x4, 5.9 w/snow plow; 1991 Ford 350 w/Knapheide

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Pre-Pass EZ-Pass. Passenger  
100% NO [www.butlertransj](http://www.butlertransj)

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deBoer Transportation. Expe  
\$1000 Sign On Bonus. Milea  
[drivedeboer.com](http://drivedeboer.com)

Help Wanted Owner Operat  
Solos up to \$175,000/year, \$  
\$350,000/year. \$5000 Sign-

Help Wanted Solo & Team C  
& Pay! \$3000 to \$5000 Sign-  
Service! 866-979-1402 Drive

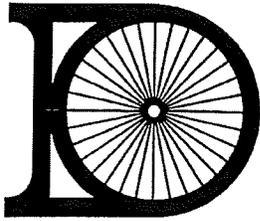
Help Wanted WOOD TRUCKI  
Regional Drivers. Must live w  
1-800-621-4878

Help Wanted Train to be a PI  
Prime's Student Driver Progr.  
Driver's License, then get pai  
[driveforprime.com](http://driveforprime.com)

Help Wanted New Pay Pack;  
Sign-On Bonus, Outbound G







CITY OF DELAWARE, OHIO  
PUBLIC WORKS DEPARTMENT

MEMORANDUM

SUBJECT: Safe Walks Appeal for 253 S. Franklin Street

DATE: 1/6/15

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Property evaluated on 8/30/13 and found to have 4 squares at approximately 80 sq. ft. deficient sidewalk.

Certified mailing sent to Larry Mitchell of 26 Morning Street, PO Box 426 (for 253 S. Franklin Street) and went unclaimed by owner.

Public Notice was not printed in the Delaware Gazette.

Contractor completed work on property between 9/17/14 – 9/25/14.

Larry Mitchell was invoiced for 56 sq. ft., \$520.80

Larry Mitchell called 12/9/14 stating that he was never notified about deficient sidewalk on this property.

Address on hold until appeals ruling.



City Of Delaware  
Department of Engineering Services

**SIDEWALK EVALUATION FORM**

Street Address: 253 S. Franklin St.

Date: 8/30/13

Property Owner Name & Mailing Address:

Inspector: MBS/DEW

**Sections of Sidewalk to be Repaired at Property Owner Expense**

Walk	No. of Sections:	$\Sigma$ Length	Avg Width	= SF
	<u>4</u>	<u>6</u>	<u>4</u>	<u>120</u>
Driveway	No. of Sections:	$\Sigma$ Length	Avg Width	= SF
<b>Total Area (SF)</b>				

Deficiency	<input type="checkbox"/> Trip Hazard >1/2"	<input checked="" type="checkbox"/> Cracked or Loose Section	<input type="checkbox"/> Deteriorated Surface
	<input type="checkbox"/> Tree Root Damage (Private)	<input type="checkbox"/> Missing Section(s)	
	<input type="checkbox"/> Cross Slope >3/4"/FT	<input type="checkbox"/> Negative Cross Slope	<input type="checkbox"/> Excessive Running Slope
	<input type="checkbox"/> Open Joint >5/8"		

Notes:

*Revisions due to 2<sup>nd</sup> round inspections*

**Sections of Sidewalk to be Repaired at City Expense**

Street Tree Root Damage				
Quantity	No. of Sections:	$\Sigma$ Length	Avg Width	= SF

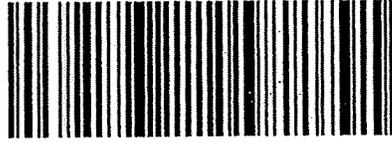
Notes:

City Utility Damage				
Quantity	No. of Sections:	$\Sigma$ Length	Avg Width	= SF

Notes:

ware, Ohio  
g. Services  
m St.  
Ohio 43015

**CERTIFIED MAIL™**



7013 1090 0002 2586 0840



U.S. POSTAGE >> PITNEY BOWES

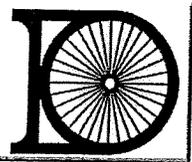


ZIP 43015 \$ 006.31<sup>0</sup>  
02 1W  
0001365711 NOV. 01. 2013

LARRY MITCHELL  
26 MORNING ST PO BOX 4  
DELAWARE OH 43015

**UNCLAIMED**

253 S Franklin



City of Delaware Division of Engineering  
Services

Street Address	253 S FRANKLIN ST
Property Owner	LARRY MITCHELL
Owner Mailing Address	26 MORNING ST PO BOX 426

Sections of Sidewalk Repaired at Property Owner Expense

Walkway SF	56
Residential Driveway SF	0
Commercial Driveway SF	0
Actual Cost	\$520.80



# ***ITEM 8***

**City of Delaware, Ohio  
Department of Public Works**

**2014-2015**

**Snow & Ice Management Policy**

Revised December 22, 2014



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## **Introduction**

The City of Delaware maintains established policies regarding winter snow and ice events to assure acceptable service levels for highways, streets, multi-use trails and parking lots. The level of service by which snow and ice covered surfaces can be properly addressed is associated with staffing, equipment and material availability. While technology changes have provided for some improvement to the snow management operation, street network expansion - in association with land development activity - continues to strain resources and necessitate adjustments to practices and policy.

The City is responsible for 304 lane miles of roadway pavement. For a winter with average precipitation, approximately 2,000 tons of rock salt or a salt/aggregate mix is applied annually for winter operations. We have the capability to store approximately 3,000 tons of stockpiled salt and aggregate in the salt storage building at 440 E. William Street and up to 24,000 gallons of salt-brine used for pre-treating pavement and pre-wetting salt before application.

Central Ohio averages 27 inches of annual snowfall, November through April. The level of snow clearing service provided depends on snowfall amount and rate of fall. For snowfalls of less than three inches, the priority I and II roads can be maintained passable through a combination of pretreatment applications, salting application and then plowing. Plowing will not typically occur on Priority III streets comprised primarily of residential roads, as the light accumulation of snowfall is generally packed tight from traffic by the time plow operators are done working on the higher priority streets. The local streets will be managed with pretreatment and salting applications. For winter storms yielding more than three inches of snowfall, all streets are managed in the same manner. However, significant accumulations generally mean plows will not be able to address the local subdivision streets for a day or longer until all higher priority streets are clear.

Streets are cleared in order of a predetermined prioritization that begins with the highest travelled/highest speed arterial streets first, then the moderately travelled collector streets, and ending with then lowest travelled local streets general restricted to subdivision side streets, loops streets and cul-de-sacs. Plows will generally continue on higher-order streets until snowfall ends allowing for completed edge-to-edge pavement clearing. Adhering to this prioritization is critical in maintaining emergency service access routes to all business and residential areas throughout the community. Within the subdivisions, plow operators will attempt to clear streets curb-to-curb, which generally requires making two clearing passes in each direction. Cars parked within the roadway limit the ability to clear streets to the curb line. Plow operators do not return to areas to check if parked cars have been moved. During this operation, snow is windrowed across driveways and sidewalk ramps, which at times leads to property owner frustration over having to clear the windrow. Removing snow edge-to-edge improves vehicle safety, mailbox access, refuse collection, and helps curb inlets and storm drains remain open.

During the course of plowing activities, mailbox damage can occur. The City will assess damage in accordance with the Mailbox Policy included as Appendix C of this policy, to determine if the City is liable for making repairs. Mailboxes not sturdy enough to withstand the force of snow plowed against it, or damaged because they protrude over the curb line, will not be repaired by the city.

Traffic signals at various locations are set in "flash mode" at the discretion of the Public Works Department and/or city safety forces to reduce vehicle collision risk on steep grades under icy conditions. Flash mode is minimized as pedestrians are not provided a protected crossing phase while operating. Intersections subject to flash mode include William St. and Elizabeth St., Central Ave. and Elizabeth St., Sandusky St. and Spring St., and Sandusky St. at the OWU Jaywalk.

### **Government Coordination**

The City's Street Division Superintendent is responsible for administering all aspects of the snow and ice management program though operations require coordination among multiple jurisdictions. The superintendent hosts an annual pre-season meeting with other departments and agencies to review policy, and discuss potential service-level coverage and route coordination changes. Decisions made at the meeting are journalized in agreements between the agencies, copies of which are included in Appendix D of this document. Agencies included in the meeting are:

City Public Works, Police, Fire, City Manager and Parks Departments  
Ohio Department of Transportation District 6 County Garage  
Delaware County Engineer's Office  
Concord, Delaware and Troy Townships  
Delaware City and Olentangy Local Schools  
Delaware Christian School and St Mary School

### **Snow Emergency - Level 1, 2 and 3 Events**

In accordance with Ohio law, the City of Delaware recognizes the following snow emergency classifications as declared by the Delaware County Sheriff:

**Level 1** - Conditions are hazardous; Motorists should drive carefully.

**Level 2** - People should only drive if absolutely necessary.

**Level 3** - Roads are closed to non-emergency travel. Police may arrest motorists who are on the road unnecessarily.

During a Level 2 snow emergency, the Department of Public Works office will be open until 10 p.m. to receive public inquires at 740-203-1810. During a Level 3 snow emergency, the Department of Public Works will remain open 24 hours a day to receive inquiries and emergency calls.

### **Treatment Options**

A variety of snow and ice management materials and techniques are available. Temperature plays a critical role in determining the best application of snow and ice management materials. Rock salt is the primary material utilized by the city in de-icing roadway surfaces. Rock salt is typically spread on a roadway surface directly

over accumulated snow to aid melting. A pre-wetting salt brine solution is sprayed over the salt in the truck bed to expedite salt activation. When salt is combined with water, the resultant brine freezing point is reduced, allowing for better melting and clearing. Subsequent plowing becomes more effective once the salt brine breaks up the snow cover. Salt stockpiles also can be mixed with a fine aggregate to extend the per-ton coverage. The city utilizes a 25 percent (by weight) mix of No. 9 stone aggregate and salt. This mixed salt can provide traction to icy surfaces when colder temperatures limit salt's melting effectiveness. However, a ton of mixed salt, when applied at the same rate as straight salt, is less effective at melting snow and is prone to freezing within the truck bed due to the higher percentage of water in the aggregate.

Pretreating pavement with salt brine reduces snow and ice bond to pavement, allowing for improved clearing as plows pass through. After application, the water evaporates leaving behind a pavement coating of salt that stays in place for up to several days in advance of a storm. In contrast, 75 percent of rock salt, when applied directly to pavement surface, can be scattered to the pavement edge by exposure to traffic, thus reducing efficiency. Both rock salt and salt brine becomes less effective in temperatures below 20 degrees. Agricultural additives such as sugar beet molasses can be added to salt piles or salt brine to improve effectiveness at lower temperatures. The city utilizes 23.3 percent salt brine to pretreat pavement surfaces in temperatures above 20 degrees, and an 80/20 mix of salt brine with beet additive to expand the working range down to 10 degrees. In colder temperatures, additives such as calcium chloride are required to safely expand the pretreatment temperature range.

Pretreating operations will occur for all Priority I and II streets in advance of a storm. Priority III streets may be pretreated to aid in snow removal if temperatures are anticipated to drop below freezing so that accumulated snow remains a hazard to traffic. Pretreatment should occur on all streets when snowfall accumulations are anticipated to be greater than 3 inches.

The benefits of applying anti-icing and deicing materials must be carefully monitored against both the rising expense and associated environmental impacts. In 2014, we experienced a doubling in the cost of rock salt as a result of the recent exceptionally cold and snowy winter resulting in a nationwide depletion of stockpiles. Research also demonstrates that the chloride levels of local and regional streams and rivers increase in direct association with salt runoff and penetration into the groundwater aquifers, impacting the biology of the river systems.

### **Snow Removal - Prioritization of Services**

Plowing occurs when the snow cover must be removed to establish safe passage for vehicles. The city plows all Priority I and II streets to bare pavement for all storms. Priority III streets are generally not plowed unless the snow depth exceeds 3 inches.

The city places emphasis on roadways that carry the highest volume of traffic at higher speeds. The city has five primary snow management routes serviced by one or two dedicated plow trucks, depending on snow event severity. Maps delineating the five primary Priority I & II Snow Routes and associated streets are included in Appendix A. To maximize plowing efficiency, windrows may be temporarily developed through

cross street intersections. Once the mainline pavement is cleared, the plows can return to intersections and remove the windrowed snow. This practice allows plows to clear the maximum miles of main line street in the least amount of time.

**Priority I** roads are the most critical for emergency vehicle routing, daily commuter traffic, industrial and business transport, and for school busing. In addition, Priority I locations include specific “hotspots” that become dangerous in icy conditions such as steep hills, dangerous curves, rail crossings, and intersections prone to heavy traffic volumes, congestion or pedestrian crossings. During an active winter event, Priority I roads and locations will be maintained in passable condition at all times and will be cleared curb-to-curb, within 12 hours of the event’s conclusion.

**Priority II** locations include designated major and minor collector roadways within the city that serve schools, business centers and residential areas. All Priority II roadways will be cleared curb-to-curb, within 12 hours following completion of Priority I roads, and will provide the majority of residents a clear and safe path of vehicle travel within ¼ to ½ mile of their residence.

**Priority III** roadways generally include all remaining neighborhood streets and cul-de-sacs. Priority III streets are cleared in five routes beginning with the current refuse collection route and continuing through the remaining routes until all streets have been addressed. All residential roadways will be cleared curb-to-curb, within 48 hours following the conclusion of the snow event requiring plowing.

Cul-de-sacs first will be partially cleared by large plow equipment up to the cul-de-sac “bulb.” Because large plow trucks are not efficient in clearing the bulb’s confined spaces, more maneuverable four-wheel drive trucks equipped with plows will be assigned to clear the bulb area. Timing of this action is dependent on availability of staffing and upon completion of Priority III Routes.

### **Downtown Business District**

Snow removal in the Downtown Business District is impacted by motorist and pedestrian traffic, and the lack of adequate snow storage along the curb. Snow is plowed to the center lane of Sandusky Street (between Court Street and Bernard Avenue), center lane of Winter Street (between Henry Street and Franklin Street), and center lane of William Street (between Henry Street and Washington Street). This reduces parking restrictions and allows for business access.

Generally, downtown snow clearing is initiated approximately 48 hours following a major snowfall and the clearing of all Priority I, II and III streets. The delay provides ample opportunity for business and property owners to remove snow from the walks to the street curb line where it can be plowed to the center during overnight hours. Snow clearing here is performed during early morning shifts to avoid conflicts with traffic and parked cars, generally managed through overnight parking restrictions. The City Manager has the authority to issue a “No Parking” ban within specified areas to help facilitate downtown snow removal operations.

## **Delaware Municipal Airport**

The airport is considered a high priority due to accident potential. However, pilots generally do not expect the runway to remain clear at an unmanned airport during a winter storm. The Airport Operations Supervisor is responsible for initiating snow clearing. The Airport has two single-axle dump trucks for snow clearing operations manned by airport personnel. Additional vehicles are equipped with plows and available at the facility to remove snow accumulation from T-hangar areas. Assistance from Public Works personnel is available on an as-needed basis, but only after all Priority I, II and III roadways are cleared. The airport runway, taxiway, and the apron will be cleared first. If a heavy snowfall results in an equipment shortage, hangar area clearing may be delayed.

If runway ice develops, airport personnel will issue a "Notice to Airmen" (NOTAM) indicating this condition. A NOTAM is issued if, in the opinion of the person authorized to conduct inspections, runway snow accumulation could present a danger to aircraft. A NOTAM will also be issued prior to airport runway snow clearing or maintenance activity which requires operating equipment on the runway for an extended period.

Non-corrosive ice control applications may be applied if available. Under no circumstance can a corrosive material like rock salt, calcium chloride or potassium chloride be utilized at the airport property for snow and ice control. A heated stockpile of fine aggregate sand is available to improve runway traction as needed.

## **Public Parking Lots**

The city has fourteen properties with public parking lots. The Parks Department is responsible for snow clearing operations of all city lots. Some can be cleared by plowing snow to the edge where adequate room exists to stockpile snow. Other lots require stockpiles to be removed so that parking spaces are not lost. Clearing parking lots generally begins at 3 a.m. so that public access is maintained by the time city buildings open. Generally all public parking lots can be cleared in one 8-hour shift.

The following parking lots are listed in order of priority.

1. Justice Center
2. YMCA
3. City Hall
4. 20 East William Street
5. East William Street Parking Lot
6. North Franklin Street Public Lot
7. East Winter Street Public Lot
8. Mingo Park Complex
9. Smith Park Complex
10. Blue Limestone Park
11. Hidden Valley Golf Course
12. Parks Division Complex (Ross Street)
13. Cemetery

## **Sidewalks and Multi-Purpose Recreational Trails**

The Parks Department is responsible for clearing specified segments of public sidewalk and multi-purpose recreational trails. While the goal is to have all sidewalks and trails cleared within 48 hours of a particular snow event, the ability to complete the work is subject to the personnel and equipment availability. Sidewalks cleared and treated with salt include the following, in order of priority:

- Sidewalks abutting city owned buildings.
- Sidewalks abutting city controlled public parking lots.
- Sidewalks on public highway bridges.
- Sidewalks abutting city park areas.

Only heavily used sections of multi-purpose recreational trails within the public right of way will be cleared of snow. Trails in remote areas of the community, or in areas where there will be little use and that have alternate walking routes available will not be cleared. Trails are not necessarily treated with salt following clearing of snow.

## **Fire Stations 301, 302 and 303**

Fire Department personnel are responsible for clearing parking and apron areas in front of the apparatus bays, and pedestrian walks at all stations. The department has access to a 4-wheel drive pickup truck outfitted with a snow plow to aid in snow removal.

## **Staffing and Equipment**

Operations are principally managed by a core team of 11 staffers from Public Works' Streets and Traffic divisions, with additional support available on an as-needed basis. All single- or tandem-axle plow truck drivers possess Class B Commercial Driver's License certification, and are trained in the safe operation of large plow and salt spreader equipment. Staff assigned to operate the brine application equipment must also be certified with a tanker endorsement. Non-CDL drivers are permitted to operate the  $\frac{3}{4}$ -ton and one-ton pickups outfitted with plows, with appropriate training. The core group operates on 12-hour shifts, as required.

The Public Works Department maintains eight single-axle and two tandem-axle dump trucks as the "front line" snow removal equipment. Each is equipped with 10 or 11 foot wide plow blade and salt spreader. The single-axle dumps carry 8 tons of salt while the tandem axles are both outfitted with V-Body salt spreaders, each with a 12-ton capacity. Also available are a number of  $\frac{3}{4}$ - and 1-ton pickup trucks with plows, skid steers, backhoes and a front-end loader to assist in particularly heavy accumulations. The city also utilizes a 1,600-gallon anti-icing applicator insert that can be installed on a dump truck for pretreating operations. A second brine applicator is mounted to a former street sweeper chassis and cab. Brine is manufactured at the Public Works facility, with a production capacity of 1,500 to 1,800 gallons of 23.3 percent brine per hour.

## Community Responsibility

Property owners and motorists alike have a responsibility to do their part in maintaining safety as well by following several simple practices:

- Adhere to the Snow Emergency Level driving restrictions as initiated by the County Sherriff's office.
- Keep a safe distance when driving near snowplows and brine application vehicles.
- Never pull up directly behind a plow truck in the drivers blind spot, as plows often back up as part of their operation.
- Do not pass a snowplow on either side as plows can suddenly shift lanes.
- Keep children away from streets while plows are clearing snow.
- Move parked cars off the street to allow plow drivers a clear path to work.
- Drive cautiously during snow and icy conditions. A good rule of thumb is "half the posted speed limit or less, depending on the conditions."
- Use winter snow tires to improve traction.
- Pile shoveled driveway snow to the right of the driveway as you face the street.
- Do not push snow into the roadway with shovels or snow blowers.
- Clear snow around fire hydrants.
- Keep sidewalks and ramps clear and free of snow and ice.

## Appendix B

### Winter Mailbox Repair or Replacement Guidelines

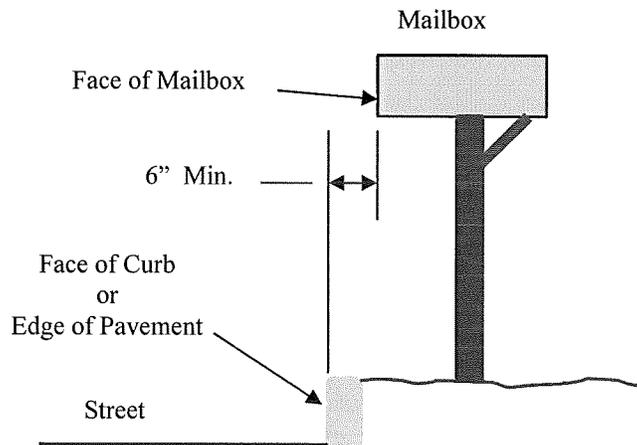
It is the property owner's responsibility to ensure a mailbox meets the following criteria:

- The mailbox's front face is a minimum of 6 inches behind the curb face.
- The wooden support post is sturdy with no cracks, rot or deterioration. Even cedar posts will deteriorate over time.
- Metal posts are free of rust or other signs of deterioration.
- Support hardware (brackets, hinges, bolts etc.) are not loose or rusted.

A properly maintained mailbox should be able to withstand the force of snow being plowed against it during normal plowing activities. The city will not be responsible for repair or replacement of mailboxes that fail to meet the referenced criteria. We suggest property owners perform a routine mailbox check-up every year.

#### What's the process if my mailbox has been damaged?

1. Contact the City of Delaware Ohio, Public Works Department @ 740-203-1810.
2. A work order is generated and a technician is sent out to inspect the mailbox and make temporary repairs if appropriate in order to receive mail. The actual timing to inspect the mailbox is somewhat dependent on the severity of ongoing winter weather event however the goal would be to address the issue within 24 hours of it being reported.
3. Following inspection a letter is sent to the property owner indicating the findings. If mailbox is found to be in conformance with the referenced criteria, a Proof of Loss Claim form will be included for the property owner to complete. The homeowner will be reimbursed for their cost in replacing the damaged mailbox.
4. If the mailbox was determined to be out of compliance with the referenced criteria, the letter will identify the specific reason(s) why. If a property owner wishes to challenge our findings, they may do so by completing a Proof of Loss form and submit it to the City of Delaware Department of Administrative Services. The City's insurance company will make a final determination based on the facts provided by both parties.



## Appendix C

### Priority 1 Routes

Route 1	Route 2	Route 3	Route 4	Route 5
US 23 North/South (Penns. on/off ramps to SR 315)	36/37 (e to Davidson Ln) 521 to DCC	W. Central (Sandusky to 203) Warrensburg Rd (to Grand Circuit)	W William St (Sandusky St to Springer Woods)	S. Sandusky St (William to US 23 & US 42 Connection)
US 42 (23 Interchange to London Rd.)	E. William St	Houk Rd. (William to Merrick)	London Rd.	Liberty Rd (to Hawthorn Blvd)
William St Ramps	E. Central Ave	Elizabeth St	S Liberty St (William to London)	W. Hull Dr
Central Ave Ramps	N. Sandusky St	West Winter St	S Houk Rd (William to Pittsburgh)	Hawthorn Blvd
Pennsylvania Ave Ramps	Lake St (to Horseshoe Rd)	N. Liberty St (William to Penns.)	Pittsburgh Dr	Cheshire Rd. (to Gregory Rd. and stub to the East)
*Sawmill Pkwy & Cul-de-sac (*Proposed for Next Year)	E. Winter Street	Pennsylvania Ave		Glenn Parkway
		Troy Rd		Ohio Health Blvd (Roundabout to US 23)
				Olentangy Street
				Stratford Road

### Hot Spots

Route 1	Route 2	Route 3	Route 4	Route 5
Pinecrest Dr (to Saddletree Ct.)	Hayes St (Hill)	Chatham Lane Western Dreamer Dr (to Knight Dream)	S. Washington St (Hill) King Avenue Valley Side Drive	Holly Rd

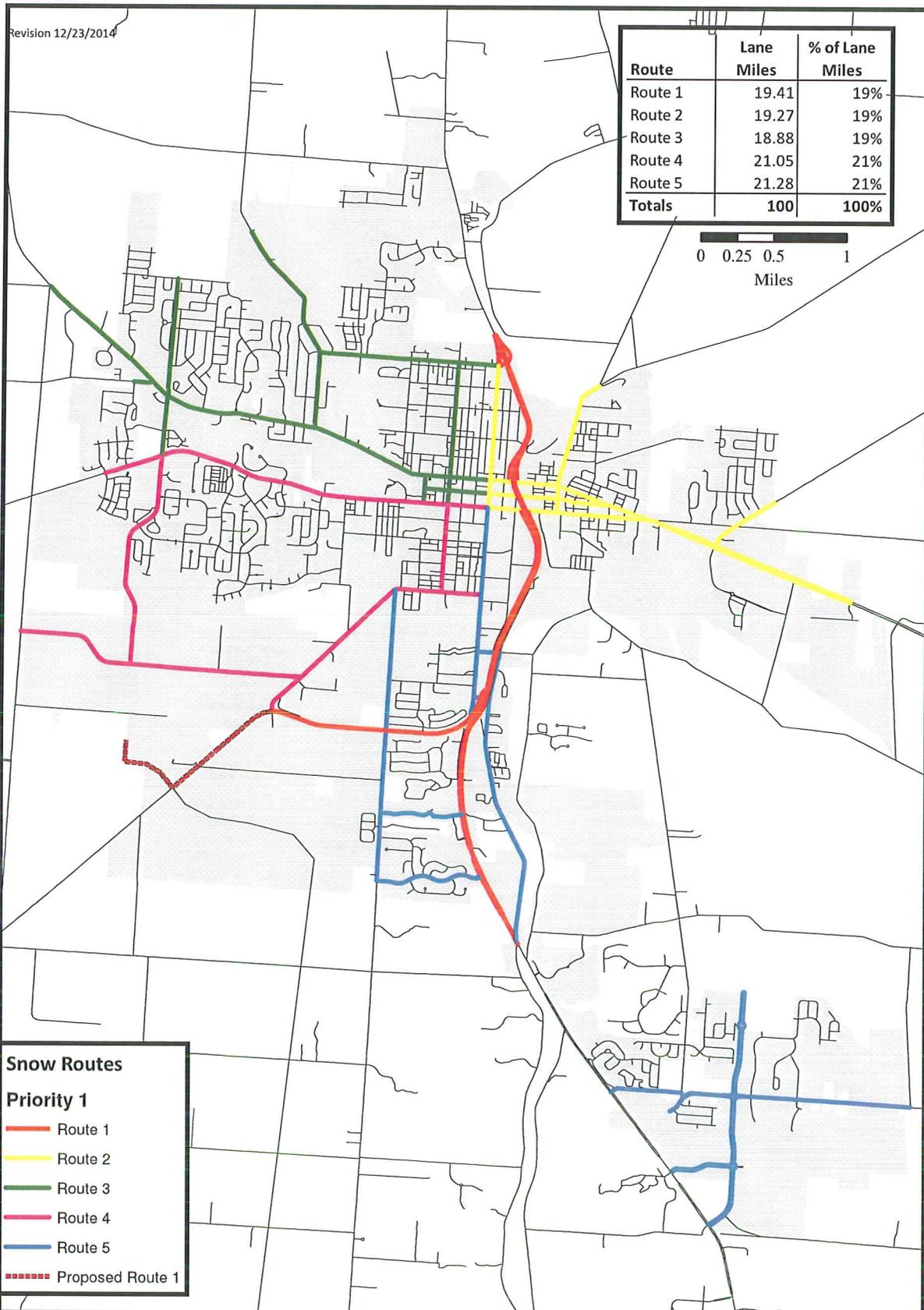
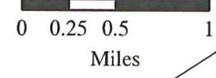
### Priority II

Route 1	Route 2	Route 3	Route 4	Route 5
	River St	Grand Circuit (to St Rt 36)	S Washington St	Belle Ave
	Hayes St (East of River)	Euclid Ave.	Spring St	Fern Dr
	North St (to Armstrong)	Hayes Dr.	S. Franklin St (Spring - William)	Holly Rd
	Cheshire St	Northwood (off Central)	W Harrison St	Somerset (Cottswold to Liberty)
	Channing St	Grandview Ave	Park Ave	Cottswold Drive
	Vernon Ave	Lexington Blvd./Buehler Dr	Curtis St	Slack Rd
	Biltmore Dr	Heritage Blvd	Springer Woods Blvd	Kesslebrooke Ln (Entrance)
	Bowtown Rd	Executive Blvd. (to Woodhaul)	Lehner Woods Blvd	Beech Dr
	Ashburn Dr	Pinecrest Drive	Rockmill St. (to Plowington Dr.)	Thornapple Trail
	Fieldcrest Dr	Woodhaul (to Pinecrest Dr)	Plowington Dr	Tara Glen Dr
	Mill Run Crossing	Castleton Way	Carson Farms Blvd	Kitdare Dr to Tara Glen Dr
	Glenn Rd to RR tracks	Locust Curve Dr (to Seatrain)	Valleyside Drive	Ballater Dr (to Kitdare Dr)
	Davidson Ln	Jaguar Spur Ave	Applegate Ln	Balmoral Dr
	Nutter Farms Blvd	Seatrain Dr	Willow Run	Braumiller Crossing Dr
	Henry St	Cambridge Rd	Rockcreek Dr	Maple Vista Dr
	Wilmer St	Lantern Chase	New Market Dr	Saphire Flame Dr
	E Harrison St	Stonhope Dr	Cobblestone Drive	Cheshire Crossing Dr
	Wootring St	Farmland	Boulder Dr. (Firestone to Cobblestone)	Crystal Petal Dr
	Weiser Ave	Merrick Blvd	Firestone Dr. (to Boulder Dr)	
	Union St (North & South)	W Lincoln Ave	Penick Ave	
	E Lincoln Ave	W Heffner St	Colomet Dr	
	E Fountain Ave	W Fountain Ave	Johnson Dr	
	E Heffner St	Oakhurst Dr	Henderson Ct	
		N Franklin St (William - Lincoln)	Stover Dr	
		N Washington St (William - Lincoln)	Jegs Blvd.	
			Ross Street	
			David St	
			King Ave	

### Priority III - All Remaining Network Streets

Revision 12/23/2014

Route	Lane Miles	% of Lane Miles
Route 1	19.41	19%
Route 2	19.27	19%
Route 3	18.88	19%
Route 4	21.05	21%
Route 5	21.28	21%
<b>Totals</b>	<b>100</b>	<b>100%</b>



**Snow Routes**

**Priority 1**

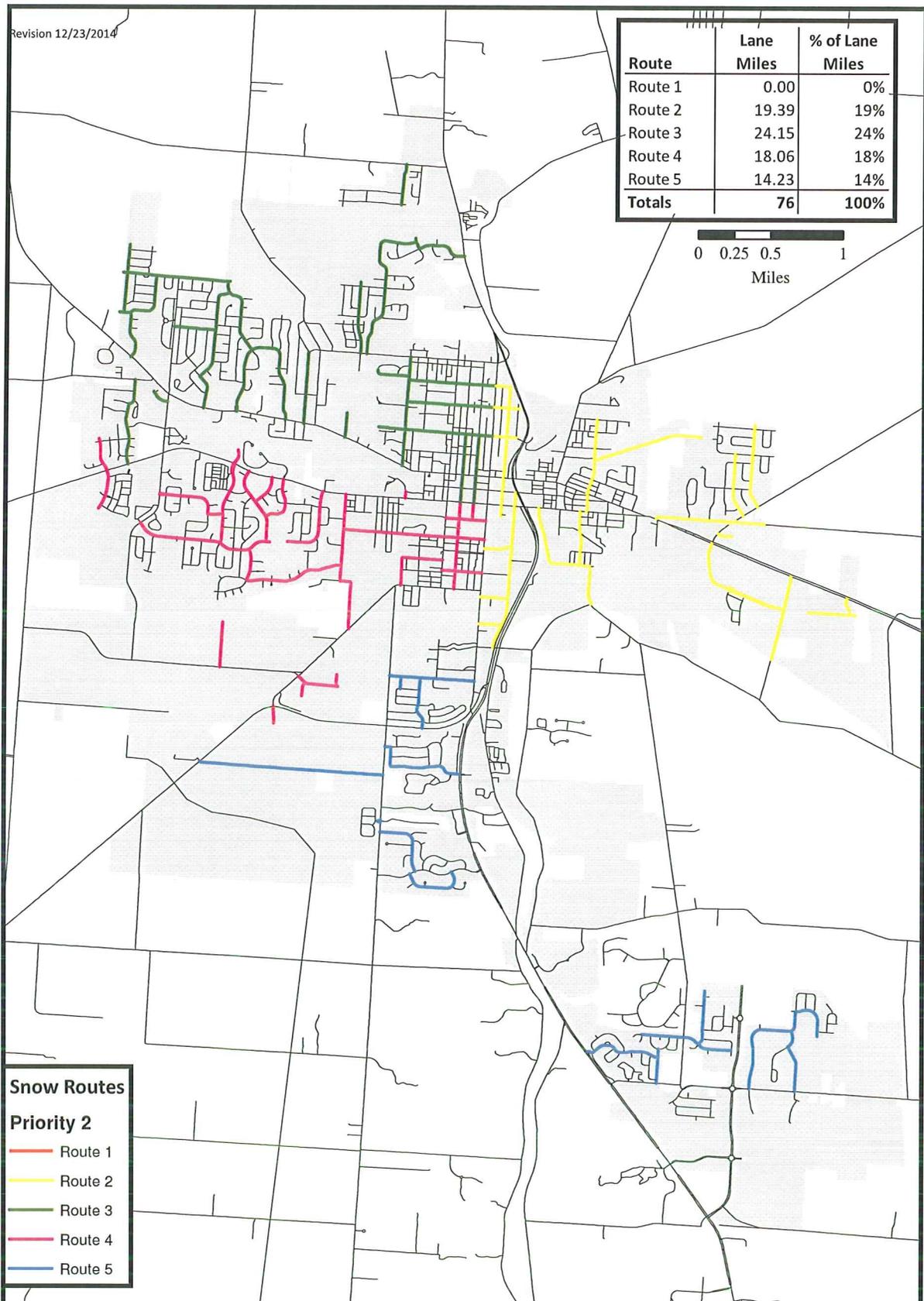
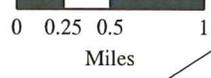
-  Route 1
-  Route 2
-  Route 3
-  Route 4
-  Route 5
-  Proposed Route 1

The City of Delaware  
Snow Management Priority I Routes



Revision 12/23/2014

Route	Lane Miles	% of Lane Miles
Route 1	0.00	0%
Route 2	19.39	19%
Route 3	24.15	24%
Route 4	18.06	18%
Route 5	14.23	14%
<b>Totals</b>	<b>76</b>	<b>100%</b>



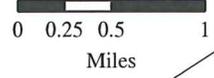
Snow Routes	
Priority 2	
	Route 1
	Route 2
	Route 3
	Route 4
	Route 5

The City of Delaware  
Snow Management Priority II Routes



Revision 12/23/2014

Route	Lane Miles	% of Lane Miles
Route 1	19.41	11%
Route 2	38.65	22%
Route 3	43.03	24%
Route 4	39.11	22%
Route 5	35.51	20%
<b>Totals</b>	<b>176</b>	<b>100%</b>



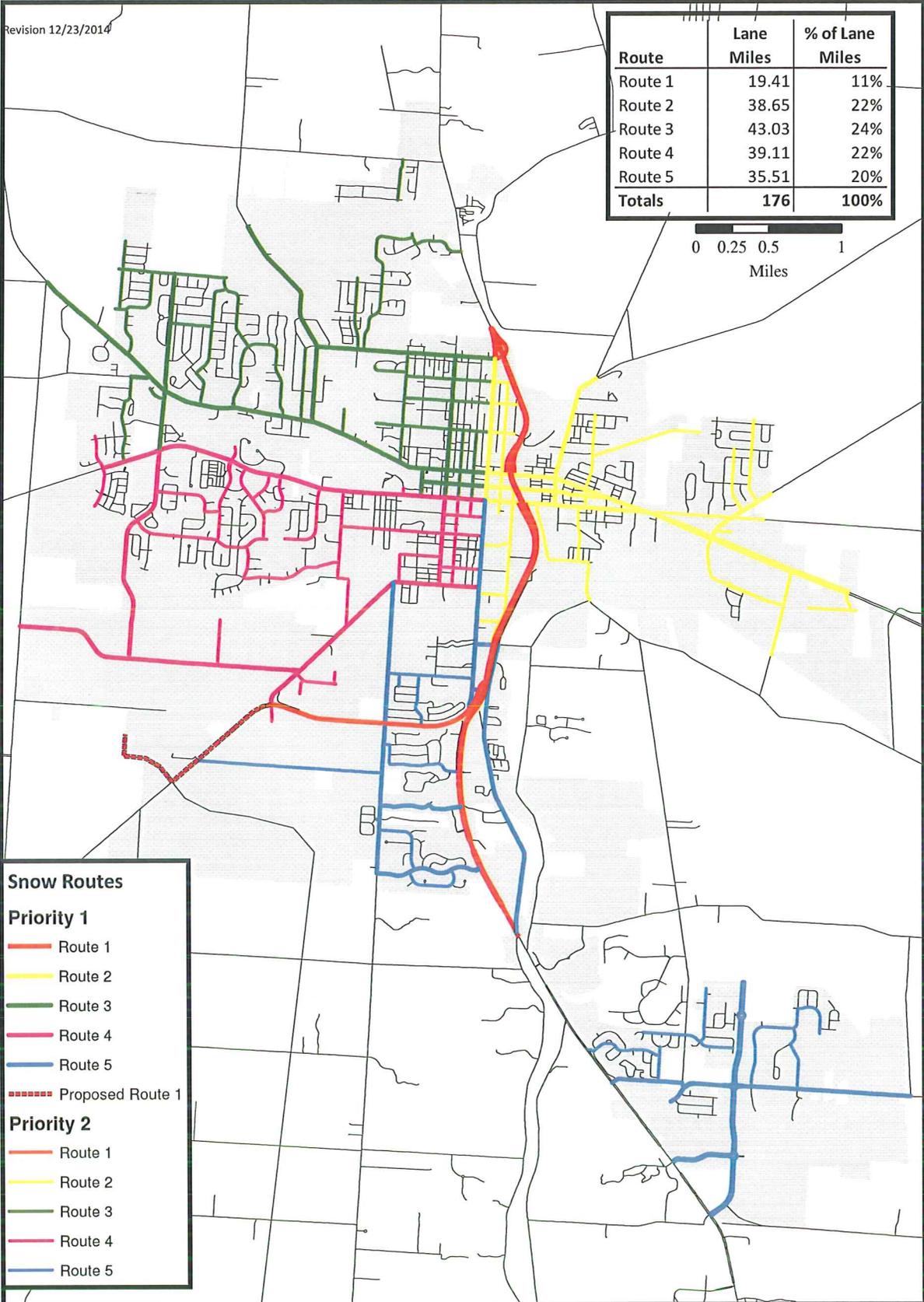
**Snow Routes**

**Priority 1**

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Proposed Route 1

**Priority 2**

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5



The City of Delaware  
Snow Management Priority I & II Routes



**EVENT # 1**

Begin: 11/13/2014  
End: 11/18/2014



**Department of Public Works - Winter Storm Report**

**Summary of the Event**

Weather forecast an anticipated 1-inch of snow possible to occur early morning of November 17th. Crews began pretreating Priority 1 routes with brine on Thursday, November 13th, and continued treating Priority 2 routes through Friday, November 14th. Weather forecast was upgraded Saturday evening to a possible 5-inches of snow expected in Central Ohio in early Monday morning (11/14). Crews came in at 9AM, Sunday 11/16 to ready all trucks for the event. Crews were called in at 5am on November 17th and worked until 7PM plowing and salting Priority 1 and 2 routes, and starting on Priority 3's. Night shift continued from 7pm to 3am, completing Priority 3's routes in residential areas. Priority 3 routes were not plowed or salted. Temperatures on the 17th ranged from a low of 15 to high of 32 degrees. Winds out of the West North West at 16mph. Total accumulation average 3.5 inches, with

**Anti-Icing Applications**

Date	Shift	Lane Miles Treated	Treatment	Gallons Applied	Salt Used for Brine	Reg Hours	OT Hours	Gals Per Lane Mile	Lane Miles per Hour	Labor Costs	Material Costs	Total Cost	Cost Per Lane Mile
11/13/2014	AM	73	Salt Brine	2000	2.0	3.5		27.4	21	\$ 117.04	\$ 360.00	\$ 477.04	\$ 6.53
11/14/2014	AM	114	Salt Brine	5900	7.0	7.5	2.5	51.8	11	\$ 349.43	\$ 1,062.00	\$ 1,411.43	\$ 12.38
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
Sub Totals		187		7900	9.0	11	2.5	42.2	14	\$ 466.47	\$ 1,422.00	\$ 1,888.47	\$ 10.10

**Plowing and De-Icing**

Date	Shift	Lane Miles Treated	Type of Brine	Gallons Pre-Wet	Tons of Salt	Reg Hours	OT Hours	Gals Per Lane Mile	Salt Lbs. Per Lane Mile	Labor Costs	Material Costs	Total Cost	Cost Per Lane Mile
11/17/2014	AM	907	Salt Brine	950	132.81	40	30	1.0	293	\$ 2,521.10	\$ 14,672.52	\$ 17,193.62	\$ 18.96
11/17/2014	PM	278	Salt Brine	165	9.34	24	0	0.6	67	\$ 802.56	\$ 1,019.83	\$ 1,822.39	\$ 6.56
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
Sub Totals		1185		1115	142.15	64	30	0.9	180	\$ 3,323.66	\$ 15,521.36	\$ 18,845.02	\$ 15.90
Totals Per Event		1372		9015	151.2	75	32.5		180	\$ 3,790.13	\$ 16,943.36	\$ 20,733.48	
Totals Prior Events		0		0		0	0			\$ -	\$ -	\$ -	
Totals Per Season		1372		9015	151.15	75	32.5		180	\$ 3,790.13	\$ 16,943.36	\$ 20,733.48	

**EVENT # 2**

Begin: 11/21/2014  
End: 11/22/2014



**Department of Public Works - Winter Storm Report**

**Summary of the Event**

Potential for very light freezing drizzle was forecast for early morning hours of November 22nd. Preventative brine pretreatment application to Priority 1 routes was initiated at 7am and were completed by 3pm on the 21st. Freezing rain began around 7:00 am and continued through 10 AM in Central Ohio area, with heavier than forecast bands in the Delaware County area. Freezing precipitation covered major highways I-71, I-70, I-270, US23, US33,, US42 with 1/8-inch of ice causing many accidents. Crews were dispatched to treat Priority 1 and 2 routes with salt. Temperatures were at 19 degrees at 1AM, 30 to 32 degrees around 9AM and rising to 49 degrees by afternoon. Precipitation turned to rain by 12 pm with no additional freezing on pavement. Temperatures for the prior week were in the teens and twenties leading to the ground temperature being at or below freezing in advance of the event. Roads treated with heavier concentrations of brine remained slippery but slushy through precipitation event.

**Anti-Icing Applications**

Date	Shift	Lane Miles Treated	Treatment	Gallons Applied	Salt Used for Brine	Reg Hours	OT Hours	Gals Per Lane Mile	Lane Miles per Hour	Labor Costs	Material Costs	Total Cost	Cost Per Lane Mile
11/21/2014	AM	84	Salt Brine	2800	3.0	8	0	33	11	\$ 267.52	\$ 504.00	\$ 771.52	\$ 9.18
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
					0.0			N/A	N/A	\$ -	\$ -	\$ -	N/A
Sub Totals		84		2800	3.0	8	0	33	11	\$ 267.52	\$ 504.00	\$ 771.52	\$ 9.18

**Plowing and De-Icing**

Date	Shift	Lane Miles Treated	Type of Brine	Gallons Pre-Wet	Tons of Salt	Reg Hours	OT Hours	Gals Per Lane Mile	Salt Lbs. Per Lane Mile	Labor Costs	Material Costs	Total Cost	Cost Per Lane Mile
11/22/2014	AM	350	Salt Brine	620	79.02	0	24	2	452	\$ 946.80	\$ 8,739.79	\$ 9,686.59	\$ 27.68
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
								N/A	N/A	\$ -	\$ -	\$ -	N/A
Sub Totals		350		620	79.02	0	24	2	452	\$ 946.80	\$ 8,628.19	\$ 9,574.99	\$ 27.36
Totals Per Event		434		3420	82.0	8	24		452	\$ 1,214.32	\$ 9,132.19	\$ 10,346.51	
Totals Prior Event		1372		9015	151.2	75	32.5			\$ 3,790.13	\$ 16,943.36	\$ 20,733.48	
Totals Per Season		1806		12435	233.17	83	56.5			\$5,004.45	\$26,075.55	\$31,080.00	