



CITY COUNCIL AGENDA ITEM

Date: September 23, 2010

To: John Szerlag, City Manager

From: Mark F. Miller, Assistant City Manager/Economic Development Services
Timothy L. Richnak, Public Works Director

Subject: Winter Maintenance Agreement, Road Commission for Oakland County

Background

Since 2001 the City of Troy has serviced all county roads in Troy for snow and ice control. The amount of compensation to the City has not increased since the 2007/2008 Winter Maintenance Contract, which does not cover costs but does provide for a higher level of service by the City of Troy.

Attached are copies of the proposed 2010/2011 Winter Maintenance Agreement between the Road Commission for Oakland County and the City of Troy, the 2009/2010 Winter Maintenance Guidelines (2010/2011 guidelines have not been finalized), the RCOC Winter Maintenance Historical Funding report and a map of the roads in Troy. In review of these guidelines, the City has no county roads that fall into the highest priority category (Critical Priority). The county roads that do fall into Priority I are Crooks and Big Beaver, with all other county roads falling into Priority II.

In a basic comparison, the City provides 1 truck for each of the 9 segments of county roads, with a road segment averaging 5.5 miles long and 3.5 lanes in width. The RCOC has stated, that based on the intensity of a snow and ice event, they would have at most 1 truck for every 3 segments or as little as 1 truck for all 9 segments of roadway.

The City of Troy and the RCOC vary greatly when comparing response times for snow and ice control. The 9 different road segments vary in length of time for treatment of ice and snow, but using the RCOC method of treating 25 lane miles per hour, it will take an average of 52 minutes to treat one segment. Utilizing the 2009/2010 snow and ice control measures, on average the City of Troy can treat all 9 road segments with 1 truck per route in 52 minutes. The RCOC completes all nine road segments with one truck per 3 routes in 2 hours and 37 minutes. The RCOC level of service would not provide some service for road segments for more than 1 hour and 44 minutes or more. This is the highest level of service that the RCOC can provide. With only 1 truck for all nine routes, the initial cleanup could take nearly 8 hours to treat all of the RCOC roads just in Troy. Treatment times and level of service will also vary greatly based on storm intensity, length of storm temperature, wind, time of day and traffic volumes.

CITY COUNCIL AGENDA ITEM

The level of service that the RCOC would strive for at the morning and evening rush hours on the priority-I roads (Big Beaver and Crooks Roads) would be bare wheel tracks. Based on the RCOC method of treating 25 lane miles per hour it would take the RCOC 1 hour and 14 minutes to treat all lanes of roadway one time.



Figure 1 Bare Wheel Tracks on roads

All other road segments are priority-II roads and the RCOC would strive to have $\frac{1}{4}$ of slush in the wheel tracks. Keep in mind that some road segments may not even see treatment for 1 hour and 44 minutes and will not be fully treated for up to 2 hours and 37 minutes.



Figure 2 Slush Roads

All other times the level of service would be intermediate to minimum with $\frac{1}{4}$ " slush in wheel tracks to slush in intersections, on curves and on hills.



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The RCOC is willing to divide the 9 road segments so that the City of Troy can select the road segments to be maintained by the City and the RCOC will maintain the remaining segments. This allows the City to select roads for a higher level of service. The charges will be identified in Exhibit A of the winter maintenance contract. For example; if the City of Troy selects Big Beaver Road (\$37,678.80) and Crooks Road (\$29,797.87) the funding provided to the City would total \$67,476.67.

Salt contracts with the State of Michigan are approved. The price for salt purchases this winter for the City of Troy is \$47.28 per ton, 13.6% lower than last winter. It continues to be very evident that this agreement is beneficial to all parties with regards to level and timeliness of service. The City is able to administer Snow & Ice Control in a more timely and uniform manner to it's high priority roads, while allowing the County to concentrate on it's highest priority roads, I-75 and M-59.

Recommendation

City Management is in agreement with the measured lane mile figures as presented, and with the calculations used to determine the level of compensation for each road configuration; therefore we recommend that the proposed maintenance agreement be approved with funding that is attached to the road segment selected by City Council.

If City Council's decision is to approve the funding agreement but limit it to specific roadways, Council can offer a substitute resolution listing the roadways the City will be maintaining.

Fund Availability

Funds are available in the operating budgets of the Streets Division for snow and ice control for county roads.

City Attorney's Review as to Form and Legality

Approved as to Form and Legality:

Lori Grigg Bluhm, City Attorney

August 6, 2010



Mr. Timothy Richnak
Director of Public Works
City of Troy
500 West Big Beaver Road
Troy, Michigan 48084-5285

RE: 2010-2011 Winter Maintenance Agreement

Dear Mr. Richnak:

Attached are two copies of a Winter Maintenance Agreement between the Road Commission for Oakland County and the City of Troy.

If this agreement is satisfactory, please return the two-signed copies and the resolution of approval by your City Council. One fully signed copy will be returned to you upon approval by the Board of Road Commissioners.

Please note that the insurance provisions in Section V have been updated to include the Road Commission's current standard insurance requirements (see Exhibit B). If you have any comments on these provisions, you may contact Thomas Reiss, Legal Counsel, at 248-645-2000. Please furnish proof that your liability insurance covers this agreement, and particularly covers your personnel and equipment working on county roads under the jurisdiction of the Board of Road Commissioners. If there are any changes in this coverage during the term of this agreement, we must be notified of these changes. We will also need a current certificate of membership in the Michigan Municipal Workers Compensation Fund.

The Board of Road Commissioners and I extend our appreciation to you, the City Council, and your personnel for the fine work that has been done. We will continue to cooperate in any way to provide our citizens with the best road system possible.

Sincerely,

Darryl M. Heid, P.E.
Director of Highway Maintenance

/sll

Attachment

Board of Road Commissioners

Gregory C. Jamian
Commissioner

Richard G. Skarritt
Commissioner

Eric S. Wilson
Commissioner

Brent O. Bair
Managing Director

Dennis G. Kolar, P.E.
Deputy Managing Director
County Highway Engineer

Highway Maintenance
Department

2420 Pontiac Lk.Rd.
Waterford, MI
48328

248-858-4881

FAX
248-858-7607

TDD
248-858-8005

www.rcocweb.org

2010-2011 WINTER MAINTENANCE AGREEMENT
CITY OF TROY

Under 1951 PA 51, As Amended

This Winter Maintenance Agreement ("Agreement") is made this ____ day of _____, 2010, between the Board of County Road Commissioners of the County of Oakland, State of Michigan, a public body corporate, hereinafter referred to as the "Board," and the City of Troy, Oakland County Michigan, a Michigan municipal corporation hereinafter referred to as the "City."

WHEREAS, certain county primary and local roads more specifically set forth in Exhibit A, attached hereto, are under the jurisdiction and control of the Board and are located within or adjacent to the City; and

WHEREAS, The City desires to be responsible for certain winter maintenance of said roads under the terms of this Agreement, and the Board is willing to participate in the cost thereof as provided in Section III of this Agreement;

NOW, THEREFORE, in consideration of the mutual covenants set forth herein as provided, it is hereby agreed as follows:

I

The City hereby agrees to be responsible for performing Winter Maintenance of certain roads under the terms of this Agreement, and the Board agrees to participate in the cost thereof as provided in Section III of this Agreement. "Winter Maintenance," herein required to be performed by the City, shall mean snow removal and ice control, on all roads listed in Exhibit A, as follows: Snow removal by blading, plowing and other methods necessary to make the roads reasonably safe for public travel, and ice control by salting, sanding, scraping and other methods necessary to make the roads reasonably safe for public travel, together with such other work and services, such as recordkeeping and insurance, required by this Agreement. All Winter Maintenance work and services performed by the City shall be in accordance with the Board's maintenance guidelines, including the Board adopted Winter Maintenance Guidelines, the Board's standard practices and this Agreement.

II

The City shall keep accurate and uniform records of all Winter Maintenance work performed pursuant to this Agreement. The Board shall have the right to audit City accounts and records insofar as such documents concern this Agreement and the work and services performed and to be performed hereunder.

III

In consideration of the assumption of Winter Maintenance by the City, the Board hereby agrees to pay to the City the sum of \$249,691.36, as set forth in Exhibit A, attached hereto and made a part hereof. Such amounts are to be used by the City for Winter Maintenance. Payments are to be made by the Board to the City as follows:

35% in December, 2010
65% in March, 2011

The making of said payments shall constitute the Board's entire obligation in reference to Winter Maintenance.

IV

The City hereby agrees to hold harmless, represent, defend and indemnify the Board, the Road Commission for Oakland County, its officers, and employees the County of Oakland; the Oakland County Drain Commissioner and applicable drainage districts(s); the Michigan State Department of Transportation and the Transportation Commission; and any and all local units(s) of government within which the roads subject to this Agreement are located, against any and all claims, charges, complaints, damages, or causes of action for (a) public or private property damage, (b) injuries to persons, or (c) other claims, charges, complaints, damages or causes of action arising out of the performance or non-performance of the activities which are the subject matter of this Agreement, specifically those activities set out in Section I, both known and unknown, whether during the progress or after the completion thereof. However, this hold harmless provision does not apply in so far as any claim or suit is alleged to be, or demonstrated to be, the result of a defect in highway design or condition and not related to the Winter Maintenance activities set out in Section I. Further, since the Board has the statutory responsibility for maintenance of the roads under this Agreement, it is the intent of the parties that the delegation by this Agreement of those maintenance responsibilities to the City provide immunity to the City as an agent of the County. Therefore, the City falls within the governmental immunity protection of the County.

During that part of the year that the City is providing Winter Maintenance under Section I, the City agrees to promptly notify the Board as soon as possible, but not longer than 10 days, should it become aware of defects or maintenance requirements in the roads set forth in Exhibit A, if said defects or maintenance requirements are not Winter Maintenance subject to this Agreement.

V

The City shall acquire and maintain, during the term of the Agreement, statutory worker's compensation insurance, automobile and comprehensive general liability insurance coverage, as described in Exhibit B attached hereto, covering the Board's liability for any and all claims arising out of the City's performance or non-performance of the activities which are the subject matter of this Agreement.

Without the prior written consent of the Board, the City shall not cancel, reduce, or fail to renew the insurance coverage required by this Agreement. Certificates of insurance for each policy of insurance required by this Agreement shall provide for 30 days actual (not "endeavor to"), prior, written notice to the RCOC by the insurance carrier of any cancellation, termination, reduction or other material change of the policy; and the City shall deliver such certificates to the RCOC.

VI

The City further agrees to comply with all applicable laws and regulations, including laws and regulations of the State of Michigan for safeguarding the air and waters of the State. In particular, City facilities and operations must meet the provisions of Part 5 (Spillage of Oil and Polluting Materials) rules promulgated pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. (Rules R324.2001 through R324.2009 address release prevention planning, secondary containment, surveillance, and release reporting requirements).

VII

In accordance with Michigan 1976 Public Acts No. 220 and 453, being MCLA §§37.1209 and 37.2209, as the same may be amended, the City and its subcontractors shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or matter directly or indirectly related to employment, because of race, color, religion, national

origin, age, sex, height, weight, or marital status; or because of a disability that is unrelated to the individual's ability to perform the duties of a particular job or position.. A breach of this covenant may be regarded as a material breach of this Agreement.

VIII

It is the intention of the parties hereto that this Agreement is not made for the benefit of any third party.

It is anticipated that subsequent agreements regarding Winter Maintenance activities will be executed annually by the Parties hereto.

The terms and conditions of this Agreement shall become effective on October 1, 2010, and shall continue in full force and effect until a subsequent Winter Maintenance agreement has been executed by the parties hereto or until this Agreement is terminated, as set forth below.

In the event that a subsequent Winter Maintenance agreement has not been executed by the parties hereto on or before September 1, 2011, either party may terminate this Agreement by providing the other party hereto with written notice of intent to terminate, at least thirty (30) days prior to the date of termination.

This Agreement is executed by the Board at its meeting of _____, and by the City by authority of a resolution of its governing body, adopted _____, (copy attached as Exhibit C).

Witnesses:

CITY OF TROY
A Municipal Corporation

By: _____

Its: _____

By: _____

Its: _____

Witnesses:

BOARD OF COUNTY ROAD COMMISSIONERS
OF THE COUNTY OF OAKLAND,
A Public Body Corporate

By: _____

Its: _____

By: _____

Its: _____

WINTER MAINTENANCE
2010-2011
CITY OF TROY

EXHIBIT A

Long Lake Road

Extending from Adams to Dequindre	
1.54 miles at \$3,252.78 per mile	\$ 5,009.28
0.16 miles at \$4,615.14 per mile	\$ 738.42
3.47 miles at \$5,692.38 per mile	\$ 19,752.56
0.86 miles at \$7,020.96 per mile	<u>\$ 6,038.03</u>
TOTAL	\$ 31,538.29

John R Road

Extending from Fourteen Mile Road to South Boulevard	
1.15 miles at \$3,252.78.00 per mile	\$ 3,740.70
0.32 miles at \$4,615.14 per mile	\$ 1,476.84
4.37 miles at \$5,692.38 per mile	\$ 24,875.70
0.38 miles at \$7,020.96 per mile	<u>\$ 2,667.96</u>
TOTAL	\$ 32,761.20

Big Beaver

Extending from Adams to Dequindre	
3.40 miles at \$5,692.38 per mile	\$ 19,354.09
2.61 miles at \$7,020.96 per mile	<u>\$ 18,324.71</u>
TOTAL	\$ 37,678.80

Crooks Road

Extending from Maple Road to South Boulevard	
0.38 miles at \$3,252.78 per mile	\$ 1,236.06
0.26 miles at \$4,615.14 per mile	\$ 1,199.94
3.08 miles at \$5,692.38 per mile	\$ 17,532.53
1.40 miles at \$7,020.96 per mile	<u>\$ 9,829.34</u>
TOTAL	\$ 29,797.87

Livernois Road

Extending from Maple Road to South Boulevard	
1.31 miles at \$3,252.78 per mile	\$ 4,261.14
0.34 miles at \$4,615.14 per mile	\$ 1,569.15
3.05 miles at \$5,692.38 per mile	\$ 17,361.76
0.43 miles at \$7,020.96 per mile	<u>\$ 3,019.01</u>
TOTAL	\$ 26,211.06

WINTER MAINTENANCE
2010-2011
CITY OF TROY

EXHIBIT A

Maple Road

Extending from Dequindre to Coolidge
5.01 Miles at \$5,692.38 per mile \$ 28,518.83

South Boulevard

Extending from Dequindre to Adams
5.96 Miles at \$3,252.78 per mile \$ 19,386.57

Dequindre Road

Extending from Fourteen Mile to South Boulevard
2.16 Miles at \$3,252.78 per mile \$ 7,026.00
3.98 Miles at \$5,692.38 per mile \$ 22,655.67
TOTAL \$ 29,681.67

Adams Road

Extending from South Troy City Limits to South Boulevard
4.34 Miles at \$3,252.78 per mile \$ 14,117.07

TOTAL \$249,691.36

CITY OF TROY
 EXHIBIT A
 (Continued)

TWO LANES

(\$3,252.78 per mile)

1.54 miles	\$ 5,009.28
1.15 miles	\$ 3,740.70
0.38 miles	\$ 1,236.06
1.31 miles	\$ 4,261.14
5.96 miles	\$ 19,386.57
2.16 miles	\$ 7,026.00
<u>4.34 miles</u>	<u>\$ 14,117.07</u>
16.84 miles	\$ 54,776.82

THREE LANES

(\$4,615.14 per mile)

0.16 miles	\$ 738.42
0.32 miles	\$ 1,476.84
0.26 miles	\$ 1,199.94
<u>0.34 miles</u>	<u>\$ 1,569.15</u>
1.08 miles	\$ 4,984.35

FOUR OR FIVE LANES

(\$5,692.38 per mile)

3.47 miles	\$ 19,752.56
4.37 miles	\$ 24,875.70
3.40 miles	\$ 19,354.09
3.08 miles	\$ 17,532.53
3.05 miles	\$ 17,361.76
5.01 miles	\$ 28,518.83
<u>3.98 miles</u>	<u>\$ 22,655.67</u>
26.36 miles	\$150,051.14

SIX OR MORE LANES

(\$7,020.96 per mile)

0.86 miles	\$ 6,038.03
0.38 miles	\$ 2,667.96
2.61 miles	\$ 18,324.71
1.40 miles	\$ 9,829.34
<u>0.43 miles</u>	<u>\$ 3,019.01</u>
5.68 miles	\$ 39,879.05

TOTAL 49.96 miles \$249,691.36

35% in December, 2010	\$ 87,391.98
65% in March, 2011	<u>\$162,299.38</u>
	\$249,691.36

EXHIBIT B

2010-2011 WINTER MAINTENANCE AGREEMENT

ROAD COMMISSION FOR OAKLAND COUNTY

**SPECIAL PROVISION
FOR
INDEMNIFICATION, DAMAGE LIABILITY AND INSURANCE**

Section 107.10 of the Michigan Department of Transportation 1996 Standard Specifications for Construction is to be superseded with and replaced by the following:

Indemnification and Damage Liability

See also provisions of the maintenance agreement to which this Exhibit B is attached.

Insurance Coverage:

The City, prior to execution of the maintenance agreement, shall file with the Road Commission for Oakland County, copies of completed certificates of insurance as evidence that he carries adequate insurance satisfactory to the Board. Insurance coverage shall be provided in accordance with the following:

- a. **Workmen's Compensation Insurance:** The insurance shall provide protection for the City's employees, to the statutory limits of the State of Michigan and \$500,000 employer's liability. The indemnification obligation under this section shall not be limited in any ways by any limitation on the amount or type of damages, compensation or benefits payable by or for the City under worker's disability compensation coverage established by law.
- b. **Bodily Injury and Property Damage Other than Automobile:** The insurance shall provide protection against all claims for damages to public or private property, and injuries to persons arising out of and during the progress and to the completion of the work, and with respect to product and completed operations for one year after completion of the work.

1. Bodily Injury Liability		or: Single Limit: Bodily Injury
Each Person:	\$1,000,000	and Property Damage
Each Occurrence	\$1,000,000	Each Occurrence: \$1,000,000
Aggregate	\$2,000,000	Aggregate: \$2,000,000

Property Damage Liability:

Each Occurrence:	\$250,000
Aggregate:	\$250,000

Such insurance shall include: 1) explosion, collapse, and underground damage hazards (x,c,u), which shall include, but not be limited to coverage for (a) underground damage to facilities due to drilling and excavating with mechanical equipment; and (b) collapse or structural injury to structures due to blasting or explosion, excavation, tunneling, pile driving, cofferdam work, or building moving or demolition; (2) products and completed operations; (3) contractual liability; and (4) independent contractors coverages.

- 2. **Bodily Injury Liability and Property Damage Liability - Automobiles (Comprehensive Auto Liability) --**
The minimum limits of bodily injury liability and property damage liability shall be:

Bodily Injury Liability		Single Limit: Bodily Injury
Each Person	\$ 500,000	and Property Damage Liability

Each Occurrence \$1,000,000

Each Occurrence: \$2,000,000

Property Damage Liability:

Each Occurrence: \$1,000,000

Such insurance shall include coverage for all owned, hired, and non-owned vehicles.

- c. Excess and Umbrellas Insurance – The City may substitute corresponding excess and/or umbrella liability insurance for a portion of the above listed requirements in order to meet the specified minimum limits of liability.
- d. The City shall provide for and in behalf of the Road Commission for Oakland County and all agencies specified by the Road Commission, as their interest may appear, Owner's Protective Public Liability Insurance. Such insurance shall provide coverage and limits the same as the City's Public Liability Insurance.
- e. Notice – The City shall not cancel, renew, or non-renew the coverage of any insurance required by this Section without providing 30 day prior written notice to the Road Commission for Oakland County. All such insurance shall include an endorsement whereby the insurer shall agree to notify the Road Commission for Oakland County immediately of any reduction by the City. The City shall cease operations on the occurrence of any such cancellation or reduction, and shall not resume operations until new insurance is in force. If the City cannot secure the required insurance within 30 days, the Board reserves the right to terminate the Contract.
- f. Reports – The City or his insurance carrier shall immediately report all claims received which relate to the Contract, and shall also report claims investigations made, and disposition of claims to the County Highway Engineer.

See provisions of the maintenance agreement to which this Exhibit B is attached.

2010-2011 WINTER MAINTENANCE AGREEMENT
CITY OF TROY

Under 1951 PA 51, As Amended

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WHEREAS, The City desires to be responsible for certain winter maintenance of said roads under the terms of this Agreement, and the Board is willing to participate in the cost thereof as provided in Section III of this Agreement;

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The City shall keep accurate and uniform records of all Winter Maintenance work performed pursuant to this Agreement. The Board shall have the right to audit City accounts and records insofar as such documents concern this Agreement and the work and services performed and to be performed hereunder.

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The making of said payments shall constitute the Board's entire obligation in reference to Winter Maintenance.

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A Municipal Corporation

By: _____

Its: _____

By: _____

Its: _____

Witnesses:

BOARD OF COUNTY ROAD COMMISSIONERS
OF THE COUNTY OF OAKLAND,
A Public Body Corporate

By: _____

Its: _____

By: _____

Its: _____

WINTER MAINTENANCE

2010-2011

CITY OF TROY

EXHIBIT A

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WINTER MAINTENANCE
2010-2011
CITY OF TROY

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South Boulevard

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TOTAL \$249,691.36

CITY OF TROY
EXHIBIT A
(Continued)

TWO LANES
(\$3,252.78 per mile)

1.54 miles	\$ 5,009.28
1.15 miles	\$ 3,740.70
0.38 miles	\$ 1,236.06
1.31 miles	\$ 4,261.14
5.96 miles	\$ 19,386.57
2.16 miles	\$ 7,026.00
<u>4.34 miles</u>	<u>\$ 14,117.07</u>
16.84 miles	\$ 54,776.82

THREE LANES
(\$4,615.14 per mile)

0.16 miles	\$ 738.42
0.32 miles	\$ 1,476.84
0.26 miles	\$ 1,199.94
<u>0.34 miles</u>	<u>\$ 1,569.15</u>
1.08 miles	\$ 4,984.35

FOUR OR FIVE LANES
(\$5,692.38 per mile)

3.47 miles	\$ 19,752.56
4.37 miles	\$ 24,875.70
3.40 miles	\$ 19,354.09
3.08 miles	\$ 17,532.53
3.05 miles	\$ 17,361.76
5.01 miles	\$ 28,518.83
<u>3.98 miles</u>	<u>\$ 22,655.67</u>
26.36 miles	\$150,051.14

SIX OR MORE LANES
(\$7,020.96 per mile)

0.86 miles	\$ 6,038.03
0.38 miles	\$ 2,667.96
2.61 miles	\$ 18,324.71
1.40 miles	\$ 9,829.34
<u>0.43 miles</u>	<u>\$ 3,019.01</u>
5.68 miles	\$ 39,879.05

TOTAL 49.96 miles \$249,691.36

35% in December, 2010	\$ 87,391.98
65% in March, 2011	<u>\$162,299.38</u>
	\$249,691.36

EXHIBIT B

2010-2011 WINTER MAINTENANCE AGREEMENT

ROAD COMMISSION FOR OAKLAND COUNTY

**SPECIAL PROVISION
FOR
INDEMNIFICATION, DAMAGE LIABILITY AND INSURANCE**

Section 107.10 of the Michigan Department of Transportation 1996 Standard Specifications for Construction is to be superseded with and replaced by the following:

Indemnification and Damage Liability

See also provisions of the maintenance agreement to which this Exhibit B is attached.

Insurance Coverage:

The City, prior to execution of the maintenance agreement, shall file with the Road Commission for Oakland County, copies of completed certificates of insurance as evidence that he carries adequate insurance satisfactory to the Board. Insurance coverage shall be provided in accordance with the following:

- a. **Workmen's Compensation Insurance:** The insurance shall provide protection for the City's employees, to the statutory limits of the State of Michigan and \$500,000 employer's liability. The indemnification obligation under this section shall not be limited in any ways by any limitation on the amount or type of damages, compensation or benefits payable by or for the City under worker's disability compensation coverage established by law.
- b. **Bodily Injury and Property Damage Other than Automobile:** The insurance shall provide protection against all claims for damages to public or private property, and injuries to persons arising out of and during the progress and to the completion of the work, and with respect to product and completed operations for one year after completion of the work.

1. Bodily Injury Liability		or: Single Limit: Bodily Injury
Each Person:	\$1,000,000	and Property Damage
Each Occurrence	\$1,000,000	Each Occurrence: \$1,000,000
Aggregate	\$2,000,000	Aggregate: \$2,000,000

Property Damage Liability:

Each Occurrence:	\$250,000
Aggregate:	\$250,000

Such insurance shall include: 1) explosion, collapse, and underground damage hazards (x,c,u), which shall include, but not be limited to coverage for (a) underground damage to facilities due to drilling and excavating with mechanical equipment; and (b) collapse or structural injury to structures due to blasting or explosion, excavation, tunneling, pile driving, cofferdam work, or building moving or demolition; (2) products and completed operations; (3) contractual liability; and (4) independent contractors coverages.

- 2. **Bodily Injury Liability and Property Damage Liability - Automobiles (Comprehensive Auto Liability) –** The minimum limits of bodily injury liability and property damage liability shall be:

Bodily Injury Liability		Single Limit: Bodily Injury
Each Person	\$ 500,000	and Property Damage Liability

Each Occurrence \$1,000,000

Each Occurrence: \$2,000,000

Property Damage Liability:

Each Occurrence: \$1,000,000

Such insurance shall include coverage for all owned, hired, and non-owned vehicles.

- c. Excess and Umbrellas Insurance – The City may substitute corresponding excess and/or umbrella liability insurance for a portion of the above listed requirements in order to meet the specified minimum limits of liability.
- d. The City shall provide for and in behalf of the Road Commission for Oakland County and all agencies specified by the Road Commission, as their interest may appear, Owner’s Protective Public Liability Insurance. Such insurance shall provide coverage and limits the same as the City’s Public Liability Insurance.
- e. Notice – The City shall not cancel, renew, or non-renew the coverage of any insurance required by this Section without providing 30 day prior written notice to the Road Commission for Oakland County. All such insurance shall include an endorsement whereby the insurer shall agree to notify the Road Commission for Oakland County immediately of any reduction by the City. The City shall cease operations on the occurrence of any such cancellation or reduction, and shall not resume operations until new insurance is in force. If the City cannot secure the required insurance within 30 days, the Board reserves the right to terminate the Contract.
- f. Reports – The City or his insurance carrier shall immediately report all claims received which relate to the Contract, and shall also report claims investigations made, and disposition of claims to the County Highway Engineer.

See provisions of the maintenance agreement to which this Exhibit B is attached.

**ROAD COMMISSION FOR OAKLAND COUNTY
WINTER MAINTENANCE GUIDELINES**

2009/2010

I PURPOSE

The intent of the Winter Maintenance Guidelines is to provide a plan for winter snow and ice control in a manner to reasonably control hazardous conditions caused by snow and ice on roads maintained by the Road Commission.

The purpose of these guidelines is to:

1. Identify roadway factors, weather conditions, and operational adjustments that must be considered in performing winter maintenance.
2. Prescribe guidelines regarding winter maintenance procedures and practices.
3. Provide operating personnel with a clear understanding of Road Commission plans for implementation of the Board policy.

II FACTORS TO BE CONSIDERED IN PERFORMING WINTER MAINTENANCE

Every winter storm is characterized by a unique combination of temperature, precipitation, and pavement conditions that must be considered in selecting the appropriate maintenance strategy. Given the daily and weekly traffic patterns of the County, the day of the week and the time of day when the storm occurs are also factors.

It is not possible to summarize every conceivable storm situation and alternative strategy. Judgment and experience must be exercised in tailoring the response as conditions change and the work progresses.

Understanding the various factors involved, and how they interact, however, is essential to ensuring that the initial response to a winter storm is rapid and effective.

A. Road Condition and Traffic Considerations

Traffic volume is a factor in establishing the priority and level of maintenance to be performed. The most heavily traveled roads are generally maintained first, except in situations where abnormal conditions are known to exist or emergencies involving public health and safety occur. Conditions such as hills and sharp curves also contribute to the priority given to a road.

State and County roads will be maintained using the following priority scheme:

1. Critical Priority

Critical Priority roads are paved State and County roads with traffic volumes normally greater than 10,000 vehicles per day per single lane and/or 40,000 vehicles per day with roads four or more lanes.

2. Priority I

Priority I roads are paved State and County roads generally with volumes of 2,500 to 10,000 vehicles per day per single lane. In addition, terrain and road alignments are factors in assigning this priority. Priority I may also be assigned to roads to achieve route continuity and efficiency.

3. Priority II

Priority II roads are other paved County roads shown on District salt route sheets contained as Appendix A of this document. Priority II roads may be maintained as part of higher priority routes, but are generally maintained after Critical and Priority I roads are cleared.

4. Priority III

Priority III roads are those paved roads providing access to hospitals, schools, and other significant traffic generators, and not categorized as Critical, Priority I or Priority II roads. Priority III roads are shown on each District's Priority III route maps.

5. Priority IV and Priority V Roads

Roads under the jurisdiction of the Road Commission not designated by the priority scheme outlined above are Priority IV and Priority V roads. Priority IV roads include mile-type local roads and primary gravel roads. Priority V roads include all other roads and subdivision streets.

B. Day of Week and Time of Day Considerations

When winter storms occur they are categorized as being "Critical", "Intermediate", or "Minimal" depending upon the time of day and day of the week. These times of occurrence are closely tied to travel patterns in the county.

1. Situation "A" - Critical Level Time

Critical level situations occur during the morning and evening rush hours from 6:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m., Monday through Friday.

The maintenance objective during critical situations is to achieve an optimal pavement condition by 6:00 a.m. or 3:00 p.m. and to maintain it through the critical period. The optimal pavement condition varies by road priority:

<u>Road Priority</u>	<u>Optimal Pavement Condition</u>
Critical Priority	75% Bare Pavement
Priority I	Bare Wheel Tracks.
Priority II	1/4" or less slush in wheel tracks.

2. Situation "B" - Intermediate Level Time

Intermediate level situations occur during off-peak periods from 9:00 a.m. to 3:00 p.m., Monday through Friday, from 6:00 a.m. to 7:00 p.m. on Saturday and from 8:00 a.m. to 7:00 p.m. on Sunday and Holidays. The maintenance objectives during these periods are:

<u>Road Priority</u>	<u>Optimal Pavement Condition</u>
Critical Priority	Bare Wheel Tracks.
Priority I	1/4" or less slush in wheel tracks.
Priority II	Slush in wheel tracks in intersections, on curves or on hills.

3. Situation "C" - Minimum Level Time

Situation C is in effect for storms during night and early morning hours from 7:00 p.m. to 6:00 a.m., Monday through Saturday and from 7:00 p.m. to 8:00 a.m. on Sunday and Holidays. During Situation C, the objective is to maintain pavements to the following levels:

<u>Road Priority</u>	<u>Optimal Pavement Condition</u>
Critical Priority:	1/4" or less slush in wheel tracks.
Priority I:	Slush in wheel tracks.
Priority II:	Routine treatment unless a hazard is present.

These Situations govern maintenance operations during storms only. As a consequence, Priority III, Priority IV, and Priority V roads may be maintained only as part of higher priority routes, as time permits, or in the event of known hazards or emergencies during storms.

The day of week and time of day considerations are summarized in Exhibit I on page 5.

C. Precipitation and Temperature Considerations

1. Precipitation:

The type and amount of precipitation both present at the outset and received during the storm, are important factors in determining the maintenance strategy.

If pavement is dry at the outset of a snowstorm, and temperatures are below 25 degrees Fahrenheit, traffic may keep the pavement bare and dry during the storm. Under these conditions, salt may not be required. Dry snow may be allowed to accumulate and be bladed off provided no icing develops.

If the pavement is wet at the outset, snow will begin to stick to the surface immediately. Salting is required as soon as possible. Whenever snow accumulates to one inch or more, the surface should be bladed off prior to applying salt.

Sleet or freezing rainstorm requires application of salt as soon as possible to prevent icing of pavement surfaces.

Preferential icing is a special condition; generally occurring on bridge decks in the beginning of the winter season and in early spring. Preferential icing occurs when moisture is present and bridge deck temperatures are less than bridge approach surface temperatures. During these conditions, bridge decks become icy without corresponding icing of roadway surfaces. Preferential icing conditions require salting as soon as possible after notice.

2. Temperature

The effectiveness of salting operations is closely tied to temperature. Sunshine and traffic increases the effectiveness of salt. As temperatures decrease, more salt must be applied to achieve the same level of effectiveness. At temperatures of 10 degrees Fahrenheit or less, producing bare pavement using only salt becomes very difficult.

Exhibit II, on page 6, prescribes treatments given the storm forecast and prevailing road condition at the time maintenance operations commence.

ROAD COMMISSION FOR OAKLAND COUNTY
WINTER MAINTENANCE EQUIPMENT CALLOUT SITUATIONS

EXHIBIT I

	Sunday/ Holidays	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1:00 A.M.	SITUATION C MINIMUM LEVEL						
2:00 A.M.							
3:00 A.M.							
4:00 A.M.							
5:00 A.M.							
6:00 A.M.							
7:00 A.M.	SITUATION A CRITICAL LEVEL						
8:00 A.M.							
9:00 A.M.							
10:00 A.M.	SITUATION B INTERMEDIATE LEVEL						
11:00 A.M.							
12:00 P.M.							
1:00 P.M.							
2:00 P.M.							
3:00 P.M.							
4:00 P.M.	SITUATION A CRITICAL LEVEL						
5:00 P.M.							
6:00 P.M.							
7:00 P.M.	SITUATION C MINIMUM LEVEL						
8:00 P.M.							
9:00 P.M.							
10:00 P.M.							
11:00 P.M.							
12:00 A.M.							

EXHIBIT II
TREATMENT GUIDELINES

ROAD CONDITIONS	FORECAST STORM	FORECAST TEMPERATURE	RESPONSE
WET	Any accumulation of snow, sleet or freezing rain	30 degrees or below	If freezing rain or sleet, apply salt immediately at the rate of 400#/2L.M. and repeat as necessary to prevent ice packs from forming. If snow, apply salt at the rate indicated in Exhibit IV. If snow continues and accumulates, blade and continue to patrol for icy spots.
WET	Any accumulation of snow	Below 30 degrees and falling	Apply salt at the rate indicated by Exhibit IV as soon as possible. If snow continues and accumulates plow and reapply salt.
DRY	Any accumulation of snow	Below 20 degrees and falling	Try to keep the pavement dry. Apply salt at wet or icy spots only, at the rate indicated in Exhibit V. If snow continues and accumulates, blade and continue to patrol for icy spots.
DRY	Any accumulation of snow	Below 10 degrees	Apply salt or sand/chloride mixture to designated signalized intersections, hills, curves, and ramps. If snow accumulates, plow and reapply salt or sand/chloride. Roads that glaze over or become wet may be salted at the appropriate application rate.
DRIFTING SNOW	High Winds		Control drifting by plowing. Apply sand/chloride if needed for traction.

III. WINTER STORM ORGANIZATION

Decreasing the response time during winter storms requires adjustment to normal maintenance departmental operations. These adjustments include activation of the Winter Storm Watch Snow Duty Officer (hereafter referred to as SDO), implementation of workforce call out procedures, and initiation of snow and ice patrols.

A. Winter Storm Watch Snow Duty Officer

The SDO is responsible for monitoring storm forecasts, determining an appropriate response to storms including call out, adjustments, and curtailing of work force.

The Director of Highway Maintenance, or his designate, functions as the SDO for a rotating one week period from November through early April. The SDO is a Highway Maintenance Department staff person responsible for winter maintenance operations during all hours of that one week period.

The SDO is expected to exercise judgment regarding factors related to time of day, day of week, expected storm conditions (rate of fall, total accumulation, duration and temperature), and available work force.

To insure that the roadways in the urban areas of Oakland County receive premium service during winter maintenance operations, a plan has been developed that allows for the transfer of operators and equipment in time of need to Districts 4, 4S and 4T from Districts 1, 2 and 3. The SDO will implement this process when deemed necessary.

The SDO may authorize the salting of subdivision streets, and in consultation with district supervisors' call out additional personnel.

In the event that storm conditions are so severe that it becomes necessary to depart from normal winter storm maintenance plans, the SDO is responsible for developing, implementing and coordinating alternative plans as necessary to combat the storm.

Conditions making such action appropriate may include heavy snow accumulations over prolonged periods accompanied by high winds and possibly freezing rain. These conditions call for development of strategies that depart significantly from those outlined in these guidelines, and require independent judgment on the part of the SDO.

If, in the opinion of the SDO, additional help by private contractors is needed, he shall contact the Managing Director and recommend implementation of snow removal by private contractors.

B. Winter Call Out Procedures

During winter maintenance on overtime, the work force should be sufficient to maintain the roads at the prescribed optimal condition. Ordinarily, this results in a reduction in the work force when moving from Situation "A" to either Situation "B" or "C".

Similarly, additional employees may have to be called in to prepare for rush hour traffic when it appears that storm conditions may be present during a Situation "A" time frame.

Exhibit III, on the following pages, provides guidelines for the initial call out of additional employees.

At the time of initial call out and anytime during the storm when significant changes in work force occur, the Public Information Officer for Road Commission for Oakland County shall be informed of these changes to allow him to update the news media of changing conditions. This can generally be performed by the night watchman during off duty hours and the SDO during regular working hours at sometime after the call out or work force changes have been made.

DISTRICT NO	1
CRITICAL	6
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 6	Have 6 spreading units available after forecast
	I (II) 7 THRU 16	Have 5 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 6 spreading units available after forecast
	I (II) (I)	Have 5 spreading units available after forecast Have 5 spreading units when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 6 spreading units available after forecast
	I (I)	Have 10 spreading units available after forecast
	NONE	NONE

GOAL FOR PAVEMENT CONDITION

CRITICAL	75% BARE PAVEMENT
PRIORITY I	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY II	¼" OR LESS SLUSH IN WHEEL TRACKS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	1
CRITICAL	6
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 6	Call 6 drivers when snow begins
	I (II) 7 THRU 16	Call 5 drivers if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 6 spreading units available after forecast
	I (I)	Call 10 drivers when snow begins
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 6 spreading units available after forecast
	I (I)	Call 10 drivers when snow begins
	NONE	NONE

<p>CRITICAL PRIORITY I PRIORITY II</p>	<p><u>GOAL FOR PAVEMENT CONDITION</u> BARE PAVEMENT IN WHEEL TRACKS ¼" OR LESS SLUSH IN WHEEL TRACKS SLUSH IN WHEEL TRACKS AT INTERSECTIONS, CURVES AND HILLS</p>
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COVERAGE LEGEND
(I) SINGLE COVERAGE
(II) DOUBLE COVERAGE
(III) TRIPLE COVERAGE

DISTRICT NO	1
CRITICAL	6
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 6	Have 3 spreading units available after forecast
	I (III) 7 THRU 16	Have 4 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 3 drivers when snow begins
	I (II)	Call 5 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 3 drivers when snow begins
	I (II)	Call 5 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

CRITICAL	<u>GOAL FOR PAVEMENT CONDITION</u>
PRIORITY I	¼" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY II	SLUSH IN WHEEL TRACKS
	NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	2
CRITICAL	4
PRIORITY I	11
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 4	Have 4 spreading units available after forecast
	I (II) 5 THRU 15	Have 6 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 4 spreading units available after forecast
	I (II) (I)	Have 6 spreading units available after forecast Have 5 spreading units when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 4 spreading units available after forecast
	I (I)	Have 11 spreading units available after forecast
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
	75% BARE PAVEMENT
CRITICAL	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY I	1/4" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY II	

COVERAGE LEGEND
(I) SINGLE COVERAGE
(II) DOUBLE COVERAGE
(III) TRIPLE COVERAGE

DISTRICT NO	2
CRITICAL	4
PRIORITY I	11
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 4	Call 4 drivers when snow begins
	I (II) 5 THRU 15	Call 6 drivers if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 4 spreading units available after forecast
	I (I)	Call 11 drivers when snow begins
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 4 spreading units available after forecast
	I (I)	Call 11 drivers when snow begins
	NONE	NONE

<p>CRITICAL PRIORITY I PRIORITY II</p>	<p><u>GOAL FOR PAVEMENT CONDITION</u> BARE PAVEMENT IN WHEEL TRACKS ¼" OR LESS SLUSH IN WHEEL TRACKS SLUSH IN WHEEL TRACKS AT INTERSECTIONS CURVES AND HILLS</p>
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COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	2
CRITICAL	4
PRIORITY I	11
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 4	Have 2 spreading units available after forecast
	I (III) 5 THRU 15	Have 5 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 2 drivers when snow begins
	I (II)	Call 5 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 2 drivers when snow begins
	I (II)	Call 6 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

CRITICAL
PRIORITY I
PRIORITY II

GOAL FOR PAVEMENT CONDITION
¼" OR LESS SLUSH IN WHEEL TRACKS
SLUSH IN WHEEL TRACKS
NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	3
CRITICAL	7
PRIORITY I	8
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 7	Have 7 spreading units available after forecast
	I (II) 8 THRU 15	Have 4 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 7 spreading units available after forecast
	I (II) (I)	Have 4 spreading units available after forecast Have 4 spreading units when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 7 spreading units available after forecast
	I (I)	Have 8 spreading units available after forecast
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	75% BARE PAVEMENT
PRIORITY I	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY II	¼" OR LESS SLUSH IN WHEEL TRACKS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	3
CRITICAL	7
PRIORITY I	8
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 7	Call 7 drivers when snow begins
	I (II) 8 THRU 15	Call 4 drivers if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 7 spreading units available after forecast
	I (I)	Call 8 drivers when snow begins
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 7 spreading units available after forecast
	I (I)	Call 8 drivers when snow begins
	NONE	NONE

<p>CRITICAL PRIORITY I PRIORITY II</p>	<p><u>GOAL FOR PAVEMENT CONDITION</u> BARE PAVEMENT IN WHEEL TRACKS ¼" OR LESS SLUSH IN WHEEL TRACKS SLUSH IN WHEEL TRACKS AT INTERSECTIONS CURVES AND HILLS</p>
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COVERAGE LEGEND
(I) SINGLE COVERAGE
(II) DOUBLE COVERAGE
(III) TRIPLE COVERAGE

DISTRICT NO	3
CRITICAL	7
PRIORITY I	8
PRIORITY II	0
TOTAL ROUTES	15

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 7	Have 4 spreading units available after forecast
	I (III) 8 THRU 15	Have 3 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 4 drivers when snow begins
	I (II) (III)	Call 3 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 4 drivers when snow begins
	I (III)	Call 3 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	¼" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY I	SLUSH IN WHEEL TRACKS
PRIORITY II	NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4
CRITICAL	11
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	21

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 11	Have 11 spreading units available after forecast
	I (II) 12 THRU 21	Have 5 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 11 spreading units available after forecast
	I (II) (I)	Have 5 spreading units available after forecast Have 5 spreading units when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 11 spreading units available after forecast
	I (I)	Have 10 spreading units available after forecast
	NONE	NONE

GOAL FOR PAVEMENT CONDITION

CRITICAL	75% BARE PAVEMENT
PRIORITY I	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY II	¼" OR LESS SLUSH IN WHEEL TRACKS

COVERAGE LEGEND

(I) SINGLE COVERAGE
(II) DOUBLE COVERAGE
(III) TRIPLE COVERAGE

DISTRICT NO	4
CRITICAL	11
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	21

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 11	Call 11 drivers when snow begins
	I (II) 12 THRU 21	Call 5 drivers if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 11 spreading units available after forecast
	I (I)	Call 10 drivers when snow begins
	NONE)	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 11 spreading units available after forecast
	I (I)	Call 10 drivers when snow begins
	NONE	NONE

<p>CRITICAL PRIORITY I PRIORITY II</p>	<p><u>GOAL FOR PAVEMENT CONDITION</u> BARE PAVEMENT IN WHEEL TRACKS ¼" OR LESS SLUSH IN WHEEL TRACKS SLUSH IN WHEEL TRACKS AT INTERSECTIONS CURVES AND HILLS</p>
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COVERAGE LEGEND
(I) SINGLE COVERAGE
(II) DOUBLE COVERAGE
(III) TRIPLE COVERAGE

DISTRICT NO	4
CRITICAL	11
PRIORITY I	10
PRIORITY II	0
TOTAL ROUTES	21

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 11	Have 6 spreading units available after forecast
	I (III) 12 THRU 21	Have 4 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 6 drivers when snow begins
	I (III)	Call 4 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 6 drivers when snow begins
	I (III)	Call 4 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	¼" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY I	SLUSH IN WHEEL TRACKS
PRIORITY II	NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4S
CRITICAL	21
PRIORITY I	2
PRIORITY II	0
TOTAL ROUTES	23

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 20	Have 21 spreading units available after forecast
	I (II) 21 THRU 22	Have 1 spreading unit available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 21 spreading units available after forecast
	I (II) (I)	Have 1 spreading unit available after forecast Have 1 spreading unit when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 21 spreading units available after forecast
	I (I)	Have 2 spreading units available after forecast
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	75% BARE PAVEMENT
PRIORITY I	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY II	¼" OR LESS SLUSH IN WHEEL TRACKS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4S
CRITICAL	21
PRIORITY I	2
PRIORITY II	0
TOTAL ROUTES	23

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 20	Call 21 drivers when snow begins
	I (II) 21 THRU 22	Call 1 driver if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 21 spreading units available after forecast
	I (I)	Call 2 drivers when snow begins
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 21 spreading units available after forecast
	I (I)	Call 2 drivers when snow begins
	NONE	NONE

CRITICAL
PRIORITY I
PRIORITY II

GOAL FOR PAVEMENT CONDITION
BARE PAVEMENT IN WHEEL TRACKS
¼" OR LESS SLUSH IN WHEEL TRACKS
SLUSH IN WHEEL TRACKS AT INTERSECTIONS,
CURVES AND HILLS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4S
CRITICAL	21
PRIORITY I	2
PRIORITY II	0
TOTAL ROUTES	23

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 20	Have 11 spreading units available after forecast
	I (III) 21 THRU 22	Have 1 spreading unit available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 11 drivers when snow begins
	I (II)	Call 1 driver when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 11 drivers when snow begins
	I (II)	Call 1 driver when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

CRITICAL
PRIORITY I
PRIORITY II

GOAL FOR PAVEMENT CONDITION
¼" OR LESS SLUSH IN WHEEL TRACKS
SLUSH IN WHEEL TRACKS
NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4T
CRITICAL	10
PRIORITY I	6
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION A
6:00 A.M. – 9:00 A.M. MONDAY - FRIDAY
3:00 P.M. – 7:00 P.M. MONDAY - FRIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 9	Have 10 spreading units available after forecast
	I (II) 10 THRU 15	Have 3 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL	Have 10 spreading units available after forecast
	I (II) (I)	Have 3 spreading units available after forecast Have 3 spreading units when snow begins if prior to 6:00 a.m. or 4:30 p.m.
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 10 spreading units available after forecast
	I (I)	Have 6 spreading units available after forecast
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	75% BARE PAVEMENT
PRIORITY I	BARE PAVEMENT IN WHEEL TRACKS
PRIORITY II	¼" OR LESS SLUSH IN WHEEL TRACKS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4T
CRITICAL	10
PRIORITY I	6
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION B
9:00 A.M. – 3:00 P.M. MONDAY - FRIDAY
6:00 A.M. – 7:00 P.M. SATURDAY
8:00 A.M. – 7:00 P.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (I) 1 THRU 9	Call 10 drivers when snow begins
	I (II) 10 THRU 15	Call 3 drivers if roads become slippery
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (I)	Have 10 spreading units available after forecast
	I (I)	Call 6 drivers when snow begins
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (I)	Have 10 spreading units available after forecast
	I (I)	Call 6 drivers when snow begins
	NONE	NONE

GOAL FOR PAVEMENT CONDITION
CRITICAL BARE PAVEMENT IN WHEEL TRACKS
PRIORITY I ¼" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY II SLUSH IN WHEEL TRACKS AT INTERSECTIONS,
CURVES AND HILLS

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

DISTRICT NO	4T
CRITICAL	10
PRIORITY I	6
PRIORITY II	0
TOTAL ROUTES	16

EXHIBIT III
ROAD COMMISSION FOR OAKLAND COUNTY
STORM CALLOUT GUIDELINES

SITUATION C
7:00 P.M. – 6:00 A.M. MONDAY - SATURDAY
7:00 P.M. – 8:00 A.M. SUNDAY AND HOLIDAY

FORECAST STORM SEVERITY	ROAD PRIORITY	CALLOUT RESPONSE
CONDITION YELLOW FLURRIES AND/OR DRIFTING LITTLE OR LIMITED EFFECT	CRITICAL (II) 1 THRU 9	Have 5 spreading units available after forecast
	I (III) 10 THRU 15	Have 3 spreading units available after forecast
	NONE	NONE
CONDITION RED EXPECT ALL PAVEMENT TO BE SNOW COVERED	CRITICAL (II)	Call 5 drivers when snow begins
	I (II)	Call 3 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE
CONDITION BLACK MAJOR SNOWSTORM	CRITICAL (II)	Call 5 drivers when snow begins
	I (II)	Call 3 drivers when snow begins Additional drivers may be called with approval of headquarters
	NONE	NONE

	<u>GOAL FOR PAVEMENT CONDITION</u>
CRITICAL	¼" OR LESS SLUSH IN WHEEL TRACKS
PRIORITY I	SLUSH IN WHEEL TRACKS
PRIORITY II	NONE

COVERAGE LEGEND

- (I) SINGLE COVERAGE
- (II) DOUBLE COVERAGE
- (III) TRIPLE COVERAGE

When deciding on work force adjustments during the storm, the following procedures will be followed:

1. Evaluate road conditions three or four hours before the onset of the next expected change in the Situation.
2. Determine desired pavement conditions to be achieved and maintained during the upcoming Situation.
3. Evaluate expected weather conditions for the next four to five hours.
4. Estimate the labor force required to achieve desired maintenance objectives.
5. In consultation with district supervision, augment or reduce labor force accordingly at the transition time.

C. Southfield and Troy Maintenance Districts

Winter maintenance problems are particularly acute in the southern part of the County where heavy concentrations of traffic and longer employee travel times hinder operations.

When storm conditions make additional personnel and equipment necessary in these districts, initial call out should be made one to two hours earlier than the other districts prior to the morning rush hour.

In addition, all reasonable steps should be taken to ensure full maintenance of Southfield and Troy routes whenever conditions warrant. It may be necessary to reassign routes from adjacent districts to accomplish this. The SDO will be responsible for determining route changes.

D. Other Labor Force Considerations

During winter storms and other emergencies, situations may be encountered where work must be continued and this tends to generate long hours of work by individuals.

In the interest of employee and public safety, no employee should work more than 16 hours continuously. Department and district supervision should attempt to get replacements from within their own district.

Equipment should remain on the road continuously during Situation "A" periods. The only exception should be to reload salt or to take on fuel. Reassignment of drivers and vehicles for the sole purpose of relieving those drivers can normally be delayed until the end of the situation which is after 9:00 a.m. or 7:00 p.m. or at such time as the route is completed.

Stopping for meals during Situation "A" periods may be allowed with the approval of district supervision if the pavement is in acceptable condition and the possibility of additional precipitation has passed.

Operators are encouraged to be productive while patrolling in anticipation of a storm. If the travel lanes are clear, shoulders can be plowed back as needed. Crossovers and other areas where snow is being tracked onto travel lanes may also be salted or plowed.

E. Night and Weekend Calls for Winter Maintenance for State Trunklines and Road Commission Primary Roads.

When a watchman receives a call at night or on weekends stating that an accident has occurred or that there is an isolated slippery spot, the watchman should contact district supervision for location inspection and determination. If the watchman has any questions or concerns, he should contact district supervision or the SDO for determination of action.

F. Night and Weekend Calls for Winter Maintenance for Local and Subdivision Roads

Calls received at night or on weekends stating that a reportable accident has occurred due to slippery conditions or that there is an isolated slippery spot (with remainder of road in reasonably good condition) that may cause a reportable accident, will initiate the following action:

1. If an accident has been reported, the watchman or alternate shift foreman will contact appropriate police agencies for confirmation, and if the accident is confirmed, will have location treated with salt, sand, or salt and sand mix as soon as possible. If the accident is not confirmed, the watchman or alternate shift foreman will follow the procedure in paragraph 2 below.
2. A report of an isolated slippery spot where the remainder of the road is believed to be in good condition will be reported to the alternate shift foreman or to district supervision immediately. The alternate shift foreman or supervisor will inspect the road as soon as possible unless they have knowledge that it is not an isolated situation (much of the road is slippery). District supervision may salt or sand immediately, schedule it for the next daylight work period, or determine that no action is advisable, depending on their own evaluation of conditions.

If the watchman has any questions or concerns, he should contact district supervision or the SDO for determination of action.

IV. WINTER MAINTENANCE PRACTICES

The following winter maintenance practices are adopted for use during winter storm operations. Operators should be made aware of these guidelines and their responsibilities as described below. Deviations from accepted practice should be corrected by counseling the operator at the first opportunity.

A. Salting

The maximum application rate to be used by Road Commission trucks is 400-pounds/2 lane mile, except for intersections, hills, ramps, and crossovers. These exceptions are discussed in Exhibit IV.

The amount of salt applied must be altered with temperature changes. Exhibit IV provides application rate guidelines for various temperatures and snow accumulations. The rates shown should produce nearly complete melting of the accumulations indicated. Whenever snow accumulates to one inch or more the surfaces should be bladed off prior to applying salt.

EXHIBIT IV

SALT APPLICATION RATES (Pounds per 2 Lane Miles)

Snow Accumulation	Application Rate
1/4 Inch	200 Pounds
1/2 Inch	300 Pounds
3/4 Inch	400 Pounds

Sunshine and traffic will increase the effectiveness of salt, reducing requirements below those shown above. Supervisors should consider this when determining application rates.

It is intended that a heavier application of salt and sand will be used on intersections, hills, ramps, and crossovers than on the remainder of the route. This should be accomplished by temporarily increasing both the delivery system and spinner speeds.

Higher application rates at these same locations should usually be advisable doing spot locations.

If equipment cannot achieve the higher rates, it may be desirable to salt these areas twice (a double application).

Spreader Calibration

Spreaders should be calibrated and charts maintained in each vehicle showing the settings and the resulting application rate at various speeds. Operators are expected to select an appropriate application rate and use salt effectively.

Spinner Speeds

Spinner speeds should be adjusted so that a six to eight foot pattern is spread. Spinner shields should be adjusted so that salt is placed at or near the high point of the pavement.

Center Lane Salting

The center lane of five-lane roads should be bladed during normal snow removal operations. Center left turn lanes should be salted as required during storm cleanup operations.

B. Blading and Plowing

Blades and/or plows should be used to remove snow from the traveled portion the road whenever accumulation reaches one inch or more.

All blading and plowing in multi-lane roads should be done with one unit for each lane whenever possible.

Shoulders should be plowed back if snow covered. Generally, however, plowing of shoulders should be part of the clean up operation during regular hours. The final plow pass on shoulders having guardrails should plow snow up and over the guardrail whenever possible.

It is extremely important to blade slush off the pavement whenever freezing temperatures exist or are expected.

Salt usually begins to lose its effectiveness about two hours after application. Plowing operations should therefore be delayed to allow maximum melting from salting.

C. Ceasing Storm Operations

When precipitation has stopped falling and no more is expected, and optimal pavement conditions have been achieved, the maintenance objective is to treat pavement so that it should remain in an adequate driving condition until cleanup can be completed during regular working hours.

In making the decision to cease storm operations, expected temperature and wind conditions for the next several hours are important factors to consider.

Forecasted temperatures significantly above freezing means that some slush may be left on the pavement and allowed to melt naturally. Slush should be bladed off so that it does not freeze if colder temperatures are expected.

Shoulders should be plowed back to minimize drifting if wind is forecast, also so they do not freeze in place thereby making them more difficult to plow later.

Critical priority routes should be treated until it is evident that the required conditions of Situations A, B, or C are met as appropriate.

When these conditions have been achieved, storm operations should cease and the work force sent home or reassigned to other work.

D. After-Storm Clean Up

Clean up after the storm should be accomplished during regular working hours. The maintenance objective during clean up is to provide bare, dry pavement conditions on all Critical, Priority I and Priority II roads, as well as reasonably adequate conditions on Priority III, Priority IV, and Priority V roads.

Priority IV and Priority V roads will be maintained in accordance with the following guidelines:

1. In making judgments about winter maintenance on Priority IV and Priority V roads, traffic volume, time of day, temperature, weather forecasts, reported hazardous conditions, and workload will be taken into consideration.
2. Mile-type local roads, whether paved or unpaved, will generally carry more traffic than subdivision streets, and will generally be maintained first.
3. Salt will normally be used for paved roads and sand for gravel roads. The most probable locations for salting or sanding will be at stops, railroad crossings, and on hills, curves and intersections.
4. Winter maintenance of Priority IV and Priority V roads will, except in case of emergency or known hazards, be performed during regular working hours.
5. Any unusual number of evening or weekend requests for spot salting sanding at locations such as hills, curves, and stopping areas will be brought to the attention of the SDO who will consider the advisability scheduling overtime responses.
6. Salt use in subdivisions will be controlled closely. Spot salting in subdivisions should be limited to fairly sharp curves and steep grades and to an approach area of about 50 feet at intersections.
7. Salting of entire lengths of subdivision streets may be performed during regular working hours, subject to the following conditions:
 - a. The Director of Highway Maintenance or his designate must give specific authorization.

- b. The temperature is 30 degrees Fahrenheit or warmer if overcast, and is expected to remain steady or increase. If the sun is shining a temperature of 26 degrees Fahrenheit is acceptable. No additional accumulation is expected for two or three days.
- c. Existing accumulation is generally at least one-half inch of ice packed snow that cannot be removed by blading.
- d. Critical, Priority I, and Priority II roads are at prescribed conditions.
- e. Adequate supply of salt is available.
- f. When subdivision streets are salted the maximum application rate should be 800 pounds per 2-lane mile of street.

Generally, clean up should be accomplished by plowing and blading. Salt can be used to clear a packed ice condition on a paved road and to melt snow or slush remaining after blading.

Strips of snow and ice between wheel tracks should be eliminated by blading.

Other factors involved in the selection of a clean up strategy include accumulation and temperature. Exhibit VI on the next page, provides guidance in selecting an appropriate strategy.

ROAD COMMISSION FOR OAKLAND COUNTY
EXHIBIT VI
AFTER STORM TREATMENT RESPONSES

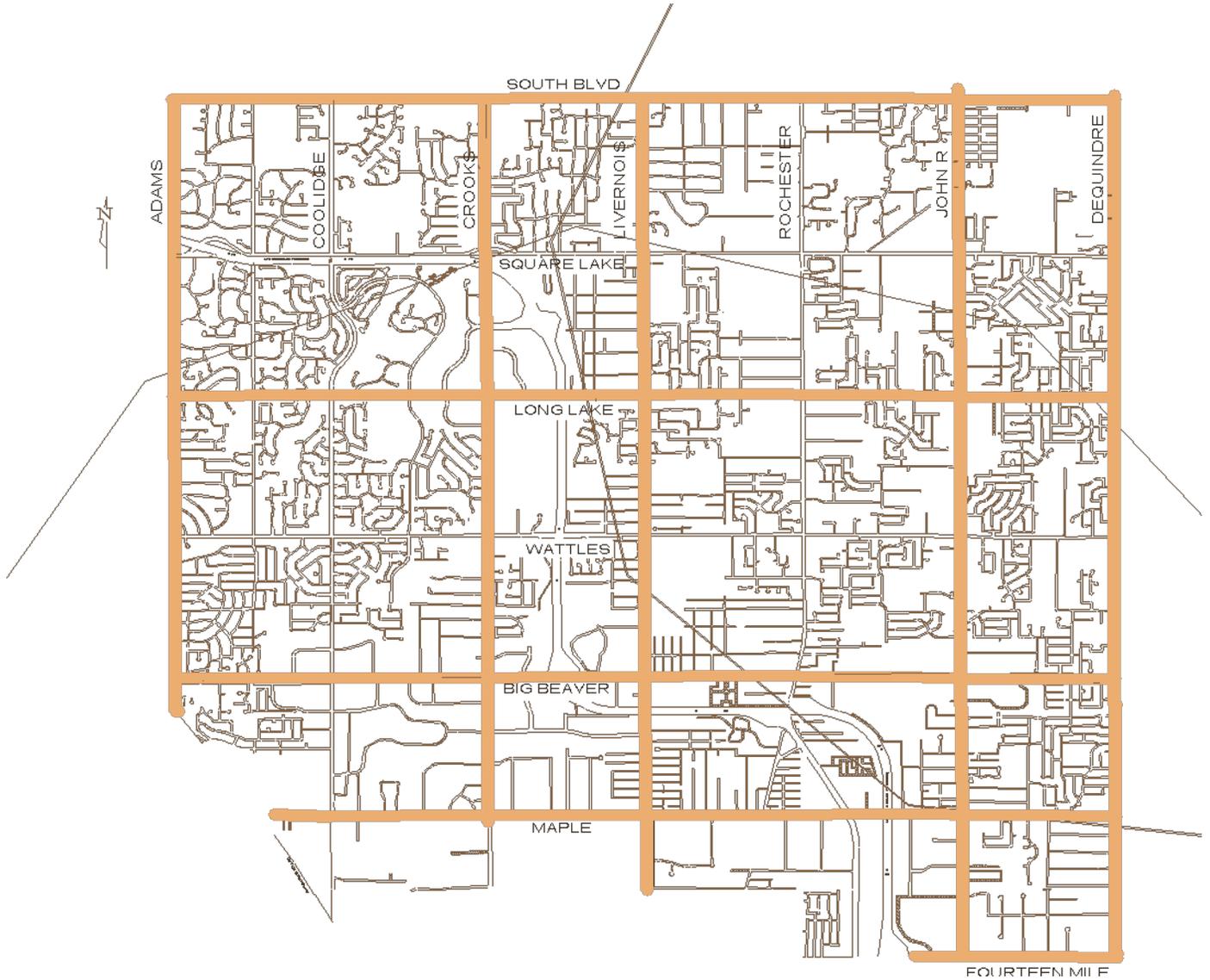
PRIORITY	EXISTING ACCUMULATION	EXISTING TEMPERATURE	TREATMENT RESPONSE
I & II III (during normal working hours)	1" and less	9 degrees and lower	Apply salt-chloride mixture at "mile road" intersections, adjacent hills and curves.
		10 degrees and above	Salt
	1" and above	9 degrees and lower	Blade and/or plow and apply salt-chloride mixture at "mile road" intersections, adjacent hills, and curves.
		10 degrees and above	Blade and/or plow and salt. Blade or plow shoulder on regular time or when patrolling on "storm alert" for next storm.
Local roads & subdivision streets (normal working hours only)	3" or less	9 degrees and lower	None
		10 degrees and above	None
	3" and above	9 degrees and lower	Blade and/or plow.
		10 degrees and above	Blade and/or plow paved and gravel roads.

Note: Salt, salt and sand, or sand may be used on local roads and subdivision streets when traffic cannot travel with reasonable safety. Intersections with paved mile roads, railroad crossings and hills command first priority for treatment in such a situation.

Road Commission of Oakland County Winter Maintenance Historical Funding

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002-2010
Personal Services	\$ 67,971	\$ 109,889	\$ 85,042	\$ 122,384	\$ 87,472	\$ 93,444	\$ 173,673	\$ 125,799	\$ 69,447	\$ 935,121
										31.8%
Salt and Supplies	\$ 64,128	\$ 128,162	\$ 118,385	\$ 167,386	\$ 128,565	\$ 120,004	\$ 257,666	\$ 238,349	\$ 117,818	\$ 1,340,463
										45.6%
Vehicles & Equipment	\$ 39,260	\$ 73,090	\$ 62,263	\$ 88,718	\$ 57,674	\$ 58,122	\$ 112,434	\$ 117,084	\$ 56,849	\$ 665,494
										22.6%
Totals Expence	\$ 171,359	\$ 311,141	\$ 265,690	\$ 378,488	\$ 273,711	\$ 271,570	\$ 543,773	\$ 481,232	\$ 244,114	\$ 2,941,078
Contract Amount	\$ 213,170	\$ 219,565	\$ 226,152	\$ 230,676	\$ 235,289	\$ 239,995	\$ 244,795	\$ 249,691	\$ 249,691	\$ 2,109,024
Net Cost to City	\$ (41,811)	\$ 91,576	\$ 39,538	\$ 147,812	\$ 38,422	\$ 31,575	\$ 298,978	\$ 231,541	\$ (5,577)	\$ 832,054
Average Net Cost to City / Year			\$ 92,450							
Average Net Cost to City/Year removing the two high and two low years			\$ 69,785							

Map of RCOC Roads and list of roads Troy would maintain for Snow & Ice Control.



- Adams
- Big Beaver
- Crooks
- Dequindre
- John R
- Livernois
- Long Lake
- Maple
- South Blvd



MICHIGAN MUNICIPAL
RISK MANAGEMENT
A U T H O R I T Y
CERTIFICATE OF COVERAGE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder except to the extent shown below. This certificate does not amend, extend or alter the coverage contained in the Authority's Joint Powers Agreement and coverage attachments thereto.

This is to certify that a Self-Insured Program has been undertaken by the member listed below through the Authority pursuant to Act 138 P.A. 1982.

The coverage provided by the Authority is as follows:

1. Liability coverage for general liability, automobile (including Michigan no-fault) law enforcement and public officials liability; in the sum of \$15,000,000 each occurrence inclusive of loss adjustment and defense costs.
2. Property Coverage including loss to real & personal property, to amounts stipulated in coverage documents and overview for this member.
3. Motor Vehicle Physical Damage Coverage for the vehicles stipulated in the Coverage Document.
4. Information only
5. The entity named below is included in the scope of protection as additional insured and loss payee, only as respects claims arising from the purchase or lease of vehicles or other property. Losses, if any, will be adjusted with the member and payable to the member and the following, as their interest may appear:
6. Other (as described here): **The scope of protection includes the Road Commission for Oakland County as additional insured, only as respects liability which may arise from work done by the City of Troy in conjunction with the Winter Road Maintenance Agreement.**

Authority membership and coverage are continuous in nature, and bear no expiration or termination date, however, should the member identified below withdraw from the Authority, or its Authority Membership be otherwise terminated, the Authority will endeavor to notify the certificate holder in writing thirty (30) days in advance thereof, but failure to furnish such notice will impose no obligation or liability of any kind upon the Authority, or its representatives.

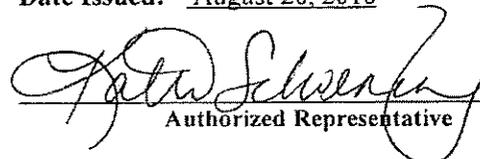
Certificate Holder:
Road Commission of Oakland County
2420 Pontiac Lake Road
Waterford, MI 48328

Member:
City of Troy
500 West Big Beaver
Troy, MI 48084

Distribution:
MMRMA Underwriting
Stephen Cooperrider, City of Troy

Member Number: 137
Effective Date of Membership: 11/8/1990

Date Issued: August 20, 2010


Authorized Representative



michigan municipal league
Workers' Compensation Fund

Certificate of Membership Proof of Insurance

The Michigan Municipal League Workers' Compensation Fund, approved by the Director of the Workers' Compensation Agency as a group self-insurer, certifies that

City Of Troy

Policy Number: 5000410-10

is a member in good standing of the Fund, for the year expiring

June 30, 2011

and as such is approved by the Agency as a self-insured.

Employer's Liability coverage of
\$500,000 is included.

Michael J Forster

July 1, 2010

Effective Date

Note: This certificate is proof that your entity has complied with the Workers' Disability Compensation Act by becoming a Member of the Michigan Municipal League Workers' Compensation Fund. Copies of this certificate may be provided to third parties as evidence that the required workers' compensation coverage is in place.