**2015 DEICING AND SNOW REMOVAL QUESTIONNAIRE**

The CAWS Chloride Reduciton Initiative Workgroup is seeking information on deicing and snow-fighting practices of industries, agencies, and municipalities in the CAWS watershed. The general survey results will be compiled and emailed to all respondents excluding the names and specific information of the responding agencies. **Please return completed questionnaire to Stephanie Jones by (February 10, 2015), via mail, e-mail or fax:**

|  |  |
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| **100 East Erie Street**  **Chicago, IL 60611** | **Fax: (312) 751-5145**  **Stephanie.jones@mwrd.org** |

Municipality:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Agency:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Industry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Receiving Stream:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Deicing and Snow Removal

1.1(a) What is the total approximate amount of roadways (lane-miles) and lots cleared (sq. feet) per event?

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1.1(b) What is the approximate amount of roadways (lane-miles) and lots (sq. feet) treated with pre-wetted salt per event?

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1.1(c) What is the approximate amount of roadways (lane-miles) and lots (sq. feet) anti-iced per event?

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1.2(a) What is your program’s annual salt usage from each of the past five years (lbs, tons)?

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1.2(b) Did you run out of salt in the past five years?

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1.3 Please fill in the following table pertaining to deicing product usage in differing storm conditions.

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| --- | --- | --- | --- | --- |
| Storm Event | Do you Anti-Ice for the event? | Do you Pre-Wet for the event? | Please check the application rate that you would use. | |
| Long Duration Freezing Rain Event | * Anti-Ice | * Pre-Wet | * <200 lbs/lane-mile | * 200-300 lbs/lane-mile |
| * 300-400 lbs/lane-mile | * >400 lbs/lane-mile |
| Small 1”  Storm Event | * Anti-Ice | * Pre-Wet | * <200 lbs/lane-mile | * 200-300 lbs/lane-mile |
| * 300-400 lbs/lane-mile | * >400 lbs/lane-mile |
| 2”-3”  Storm Event | * Anti-Ice | * Pre-Wet | * <200 lbs/lane-mile | * 200-300 lbs/lane-mile |
| * 300-400 lbs/lane-mile | * >400 lbs/lane-mile |
| 6” or greater  Storm Event | * Anti-Ice | * Pre-Wet | * <200 lbs/lane-mile | * 200-300 lbs/lane-mile |
| * 300-400 lbs/lane-mile | * >400 lbs/lane-mile |

1.4 Indicate the deicing agents used. Check the appropriate box for (D)ry solids, (P)re-wetted solids, or (L)iquids.

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| **D** | **P** | **L** | **Deicing Agent** | **D** | **P** | **L** | **Deicing Agent** |
|  |  |  | Rock salt (sodium chloride) |  |  |  | Calcium magnesium acetate (CMA) |
|  |  |  | Calcium chloride |  |  |  | Potassium acetate |
|  |  |  | Magnesium chloride |  |  |  | Abrasives (sand, gravel, cinder) |
|  |  |  | Potassium chloride |  |  |  | Other: |
|  |  |  | Urea |  |  |  | Other: |

1.5 Please describe any pre-storm anti-icing practices implemented, including methods and materials, and how anti-icing has helped your overall program. Please provide your anti-icing mix/blend.

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If you are not currently implementing pre-storm anti-icing practices, please describe the major obstacles you face in doing so and what assistance the Workgroup could provide to reduce or remove those obstacles.

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Please answer the following questions if applicable.

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| 1.6 Have the prices of your salt or deicing products changed over the past few years? | * Increase | * Decrease | * Same |
| 1.7 Do you use a for weather forecasting service? | | * Yes | * No |
| 1.7 Do you make use of pavement temperature forecast reports or sensors? | | * Yes | * No |
| 1.8 Have you changed deicing practice recently due to improved methods? | | * Yes | * No |
| 1.8 Do you communicate your winter maintenance policy to residents, employees or constituents?  If yes, what method(s) do you use? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | * Yes | * No |
| 1.9 Are you considering adjusting your winter maintenance policies?  If yes, how so?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | * Yes | * No |

**2. Deicing and Snow Removal Equipment**

2.1 Please indicate the types and numbers of snow/ice removal equipment you employ.

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| --- | --- | --- | --- |
| **Number of vehicles with:** | | **Number of vehicles with:** | |
|  | Mechanically controlled spreaders for dry solids |  | Computer/sensor controlled spreaders for dry solids |
|  | Mechanically controlled spreaders for pre-wetted solids |  | Computer/sensor controlled spreaders for pre-wetted solids |
|  | Mechanically controlled spreaders for liquids |  | Computer/sensor controlled spreaders for liquids |
|  | Snow plows |  | Other vehicle-mounted equipment (please describe): |

2.2 Other snow/ice removal equipment used:

3. Salt Storage

Please answer the following questions about salt storage, if applicable. Check answer; provide brief comment if necessary in the blank box at the far right of the table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3.1 Number of salt storage areas? | * 0 | * 1 | * 2 | * 3 | * 4 | * 5+ |  |
| 3.2 Is salt stored in fully enclosed structures? | | | | * Yes | * No | * N/A |  |
| 3.3 Is salt stored on an impervious pad? | | | | * Yes | * No | * N/A |  |
| 3.4 Number of salt storage areas without a fully enclosed storage structure or impervious storage pad? | * 0 | * 1 | * 2 | * 3 | * 4 | * 5+ |  |
| 3.5 Is residual salt in the loading areas swept up after usage? | | | | * Yes | * No | * N/A |  |

3.6 Where and how do you store salt when you have surplus supply?

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3.7 Briefly describe storage methods for any other agents used for deicing and snow removal:

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4. Equipment Maintenance

4.1 After a deicing event, where is equipment washed or cleaned?

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|  | Interior garage or wash rack that drains to sanitary sewer |
|  | Exterior area that drains to sanitary sewer |
|  | Exterior area that does not drain to sanitary sewer |
|  | Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| 4.2 Are you collecting deicing equipment wash water for reuse (making brine)? | | | * Yes | | * No |
| If yes, how many gallons annually (estimated)? | | | | | |
| 4.3 Do you calibrate your deicing equipment? | | * Yes | | * No | |
| If yes, how often? | * Annually (recommended) | | | * Other: | |

5. Management and Record-Keeping

Please indicate the methods used to manage, control and monitor the use of salt and/or other agents. Check all that apply.

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| 5.1 Training frequency: | | * at start of employment | | | | | | * annually | | * other: | |
| 5.2 The rate of application is established by: | | | * director | | * supervisor | | | * operator | | * other: | |
| 5.3 The rate of product application is controlled: | | | | * by operator | | | * automatically | | | * fixed rate | |
| 5.4 Records are kept of the product used in: | | | * each truck | | | * each storm | | | * each winter | | * none |
| * 1. (continued) | * other - please briefly explain: | | |  | | | | | | | |

6. Contact Information

6.1 Name: 6.2 Phone:

6.3 Fax: 6.4 E-mail:

6.5 Would you consider participating in the Workgroup?

\_\_\_\_\_ YES \_\_\_\_\_ NO

Comments:

6.6 Would you consider participating in the Steering Committee or other committees within the Workgroup?

\_\_\_\_\_ YES \_\_\_\_\_ NO

Comments:

6.7 Would you consider presenting your deicing and snow-removal practices at future training workshops?

\_\_\_\_\_ YES \_\_\_\_\_ NO

Comments: