Review of Policies

Spring Road Restrictions (SRR), and

Winter Seasonal Weights (WSW)

MCCC Meeting

November 16, 2016

Manitoba

Objective and Outline of Today's Presentation

Objective:

- Obtain stakeholder input on the proposed changes to SRR and WSW Policies

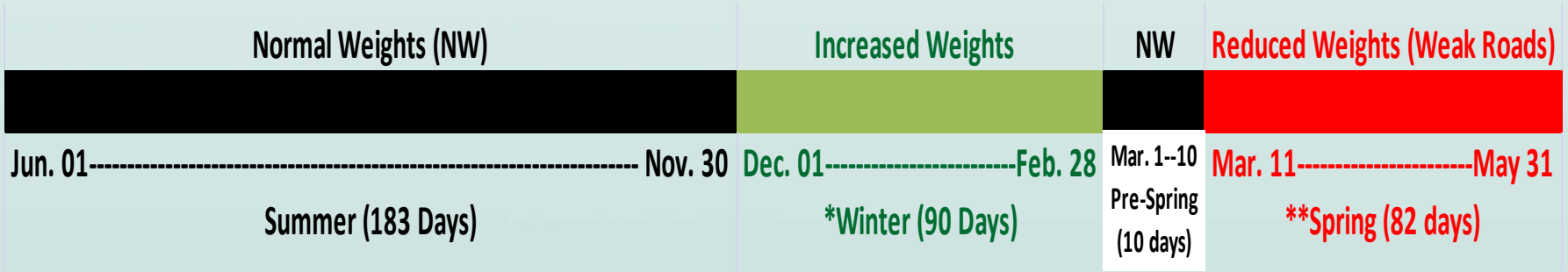
Outline:

- Overview of SRR and WSW
- Review current polices
- Present proposed changes
- Provide opportunity for questions
- Request stakeholder input

Seasonal Variation of Truck Axle Weights

Manitoba

- Reduces the allowable axle weights on weak roads during the spring thawing period; and
- Allows higher than normal axle weights during the winter season



*Can be longer than 90 days:
- Can start before Dec. 1
- Can extend into March (normal)

** Max. 56 days within this window:
- Can start later than Mar. 11 (normal)
- Should end on or before May 31

Review of Spring Road Restrictions (SRR) Policy

Why does MI impose SRR?

- Pavements are at their weakest state during the spring thawing period
  - Due to excessive moisture in the base layer(s) and subgrade
  - Surfaced weak pavement structures are susceptible to significant damage
  - The allowable axle weights are reduced from the normal (legal) weights to minimize the damage and save millions of dollars in repair costs

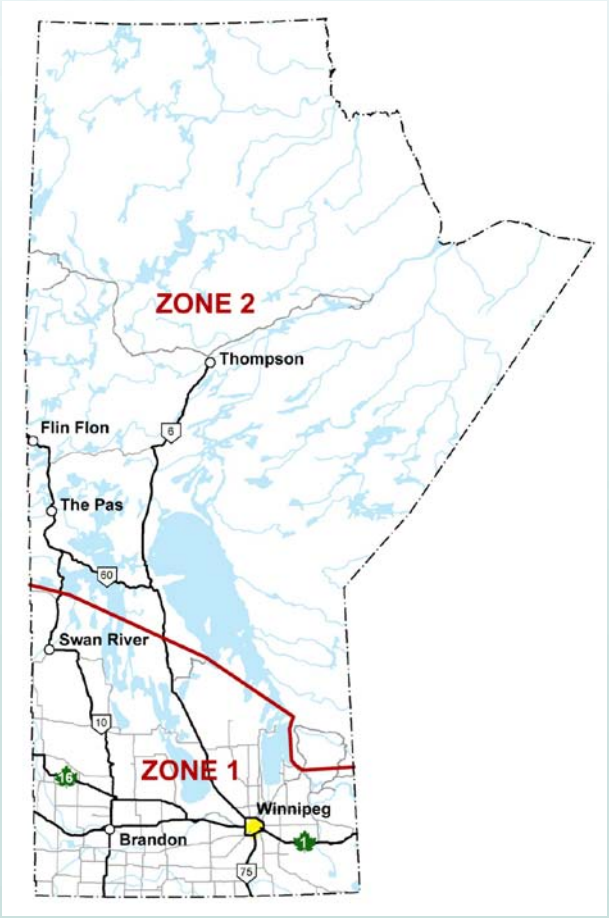
Current SRR Policy

- Manitoba currently has two levels of SRR
- Has fixed earliest start and latest end dates
  - Earliest start date = March 11th
  - Latest end date = May 31st
- Maximum duration = 56 days
- Province is divided into two climate zones: north and south

Current Climate Zones

Zone #1 - means the Province of Manitoba south of the line that includes PTH #77, going easterly to include PR #513 (Gypsumville) and the northern tip of Black Island, following the eastern shore of Lake Winnipeg to the north shore of the Winnipeg River, easterly along the north shore of the Winnipeg River to PR 304 and easterly to the Ontario border.

Zone #2 - means the Province of Manitoba north of Zone #1.



Current Concerns

- SRR cannot be started before March 11th
  - Inconsistent weather patterns, warm weather and thawing in late February and early March can result in significant pavement damage before the start of SRR
- SRR cannot extend beyond 56 days or May 31st
  - Slow thawing sometimes requires more than 56 days and beyond May 31st to adequately recover pavement strength

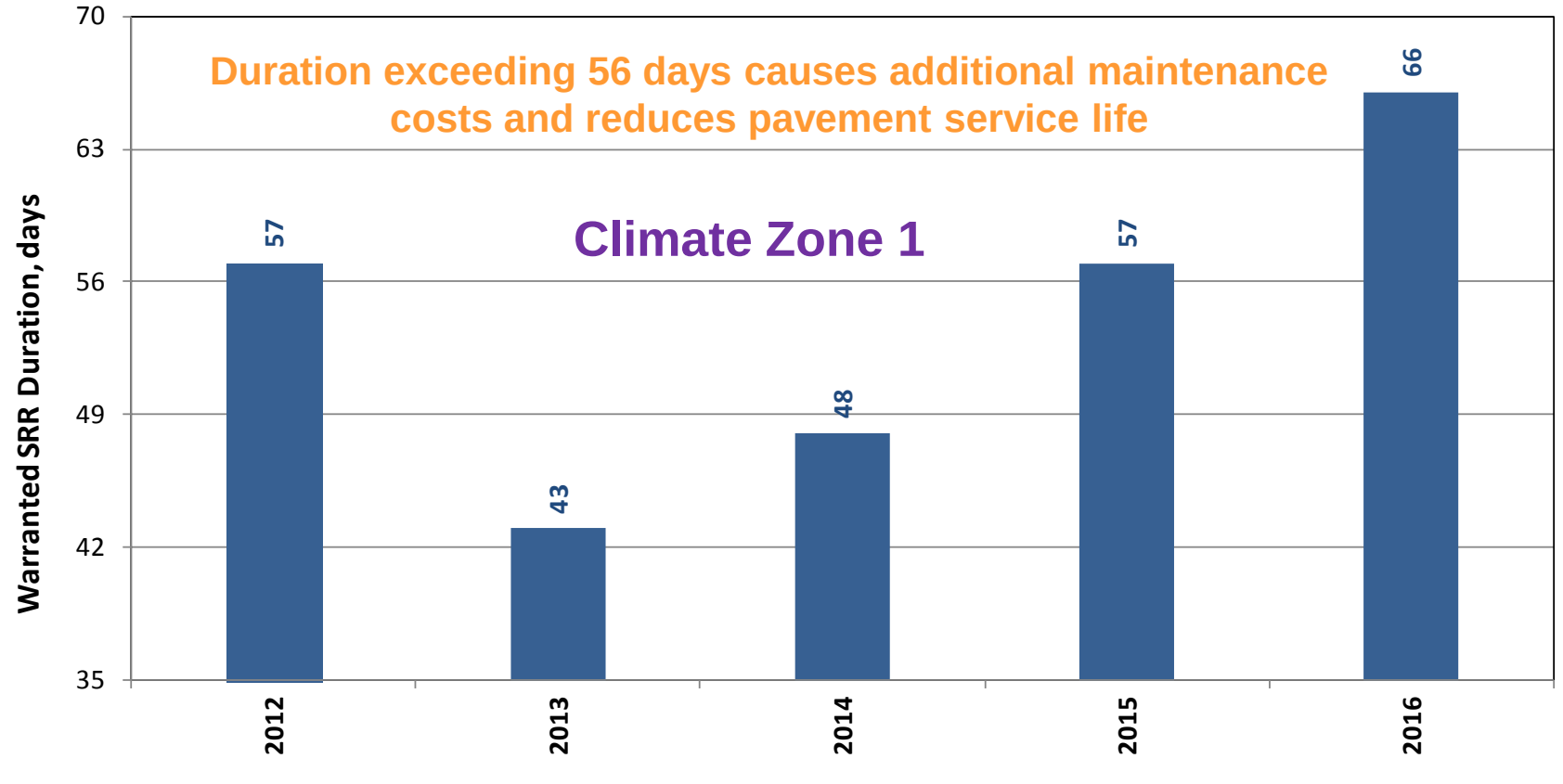
Current Concerns (cont'd.....)

- Two climate zones do not sufficiently represent varying weather conditions throughout the province
  - Thompson and northern areas are colder than the southern part within current Zone 2
  - Southern part of Zone 2 triggers early start and early end of SRR that cause additional damage to pavements in Thompson and northern areas

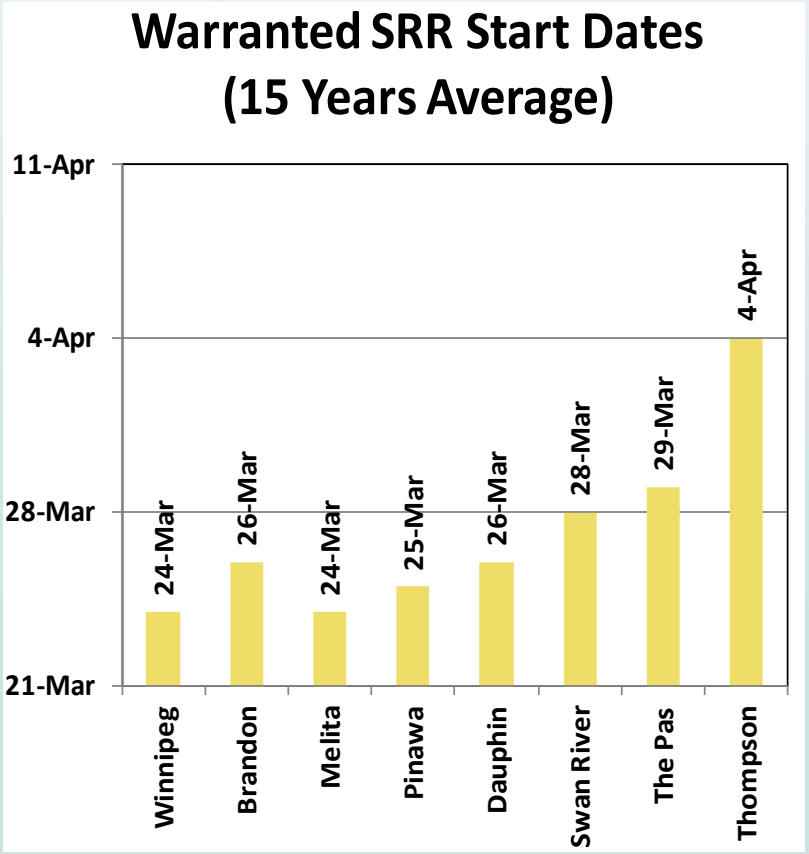
Example of Early Thawing, Slow Recovery and Infrastructure Damage

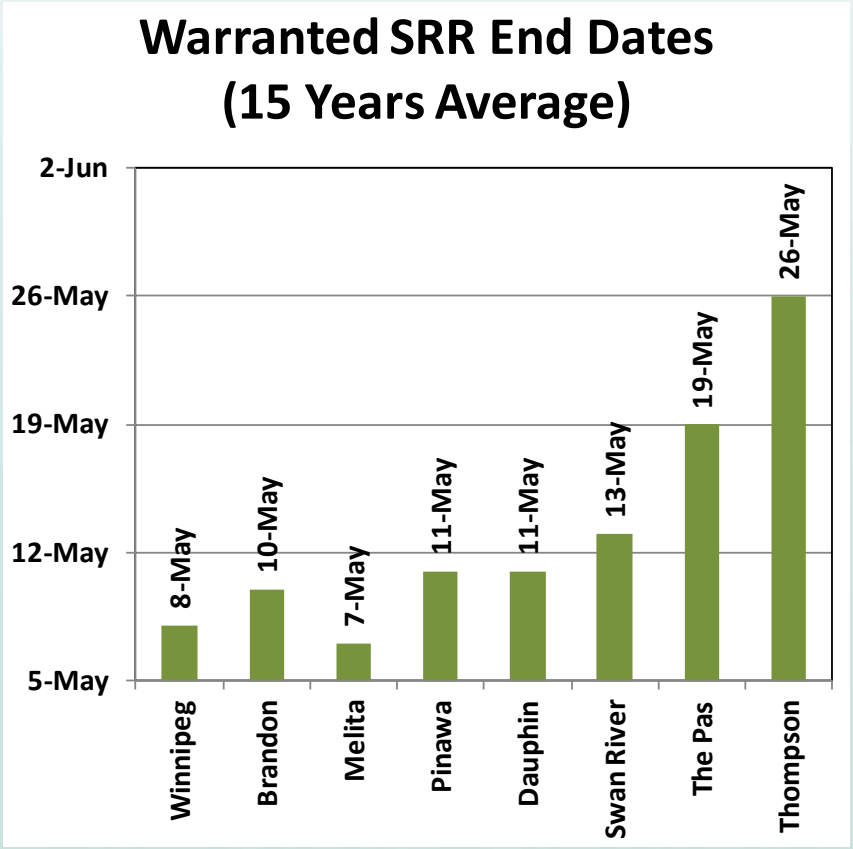
- In 2016, the weather based trigger to start SRR was reached on **March 7th** in Zone 1
  - SRR started on **March 11th** (earliest start date in current policy)
- Pavements warranted **66 days** for recovery to the desired strength in both zones (i.e. more than **56 days**)
- The estimated cost associated with the reduction in pavement service life due to structural damage for the entire road network is in the order of **$25 million** (for 2016)
- Road maintenance cost due to surface break up was estimated at **$7.2 million** for 2016 alone, in large part due to the current SRR policy limitations

Time Warranted for Adequate Strength Recovery (Last 5 Years Data)



Variation of Warranted Dates in Different Areas





Proposed SRR Policy Changes

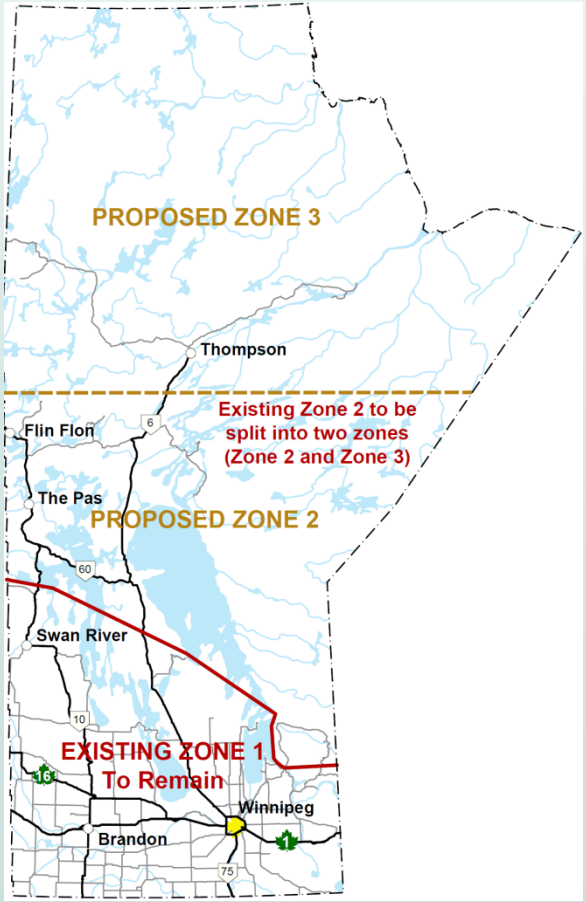
- Redefine the climate zones
- Revise the earliest start and latest end dates
- Remove the maximum 56 day duration and allow the duration to be calculated based on sound engineering

Proposed SRR Policy Changes: Redefine Climate Zones

Zone 1- no change from current zone

Zone 2- means the Province of Manitoba north of Zone 1 and south of the line that includes Sherridon Road (Sherridon), going easterly to include PR 393, Wabowden Access Road (Wabowden) and Sipiwesk Lake Access Road, and easterly to the Ontario border

Zone 3- means the Province of Manitoba north of Zone 2



Proposed Policy Changes: Start & End SRR

- Revise the allowable earliest start & latest end dates and duration:

Policies	Zones	Earliest SRR Start	Latest SRR End	SRR Duration
Current	Zone 1	March 11	May 31	Max. 56 days
	Zone 2	March 11	May 31	Max. 56 days
Proposed	Zone 1	March 01	May 31	*Variable
	Zone 2	March 06	May 31	*Variable
	Zone 3	March 12	June 10	*Variable

*Variable = As required in any given year

Note: The average (15 years) warranted SRR duration = 53 days

Review of Winter Seasonal Weights (WSW) Policy

What is WSW?

- Increase in allowable gross axle weights and gross vehicle weights when pavements are frozen. It includes:
  - Winter weight premium (WWP): Up to 10% increase in axle weights (except steering and tridem axles) on all highways
  - Winter seasonal Class A1 highways: Specific Class B1 highways are reclassified as Class A1 highways
    - *Allowed Class A1 highway axle weights plus WWP*
  - Winter seasonal RTAC routes: Specific Class B1 and Class A1 highways are reclassified as RTAC routes
    - *Allowed RTAC axle weights plus WWP*

Current WSW Policy

- Has fixed latest start and earliest end dates
  - Latest start date = December 1st
  - Earliest end date = Last day of February in the following year
- Uses the same existing climate zones and weather stations as the SRR program

Current Concerns

- WSW cannot be started later than December 1st
  - Inconsistent weather patterns and mild/warm weather in late fall can result in-
    - *Slow freezing of pavement layers and subgrade*
    - *Insufficient frost depth by December 1st , and*
    - *Insufficient pavement strength gain by December 1st*
  - This will result in pavement damage after starting the WSW on December 1st
- WSW cannot be ended before the end of February
  - Inconsistent weather patterns and warm weather in late winter can result in thaw weakening of pavements before end of February
  - This will result in pavement damage before ending the WSW

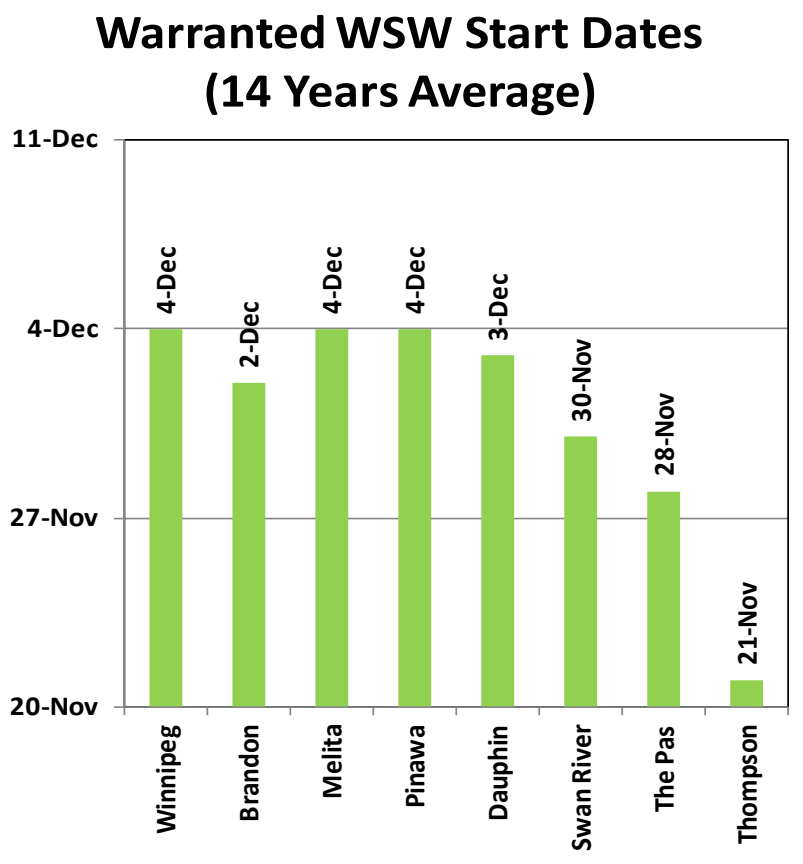
Current Concerns (cont'd.....)

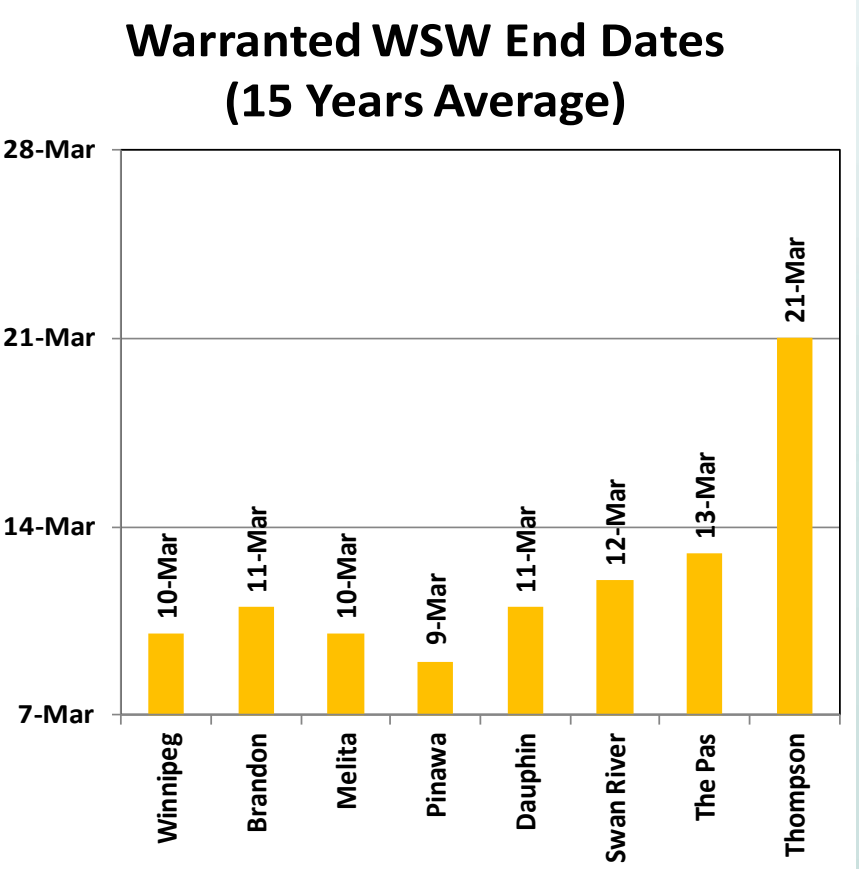
- Two climate zones do not sufficiently represent varying weather conditions throughout the province
  - Thompson and northern areas are colder than the southern part within current Zone 2
  - Southern part of Zone 2 triggers a late start and an early end of WSW that results in a shorter WSW period in Thompson and northern areas

Example of Slow Freezing, Early Thawing and Infrastructure Damage

- In 2015, the weather based trigger to start WSW was reached on December 22nd in Zone 1 and on December 12th in Zone 2, but WSW was allowed on December 1st
  - The estimated cost associated with the reduction in pavements service life due to structural damage for the entire road network is in the range of $1 million (for 2015)
- In 2010 and 2016, thawing started in mid February, but WSW could not be removed until the end of February

Variation of Warranted Dates in Different Areas





Proposed WSW Policy Changes

- Redefine the climate zones
  - Use the same zones as proposed for SRR

Policies	Zones	Latest WSW Start	Earliest WSW End
Current	Zone 1	December 01	February 28 or 29
	Zone 2	December 01	February 28 or 29
Proposed	Zone 1	December 21	February 20
	Zone 2	December 12	February 20
	Zone 3	December 01	February 25

- 14-15 years average warranted durations:
  - Zone 1: December 6th to March 9th (94 days)
  - Zone 2: November 28th to March 13th (106 days)
  - Zone 3: November 21st to March 21st (121 days)

Summary (Both Programs)

- Change fixed earliest and latest dates to be consistent with current weather patterns
- Change climate zones to adequately represent weather in different areas of the province
- Continue to use rational method (flexible) to start and end either program
- Most years, this will have no (or negligible) effect on Industry

Next Steps (Both Programs)

- Seeking input from Industry by December 2nd, 2016
- Industry concerns will be presented by Engineering and Operations of MI to the Minister of MI for further direction

SRR /WSW Policy Review

Thank You.

Questions?

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