

Implementation of Superpave in Ontario

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Implementation of Superpave in Ontario

- Ontario's history for implementation of Superpave goes back 20 years
- Ontario's experience is primarily the MTO's history with the technology
- MTO is the largest single user of Superpave
- Majority of asphalt mix used is Marshall specified

Implementation of Superpave in Ontario

- Recap of implementation history
 - Binder
 - Mix
- Challenges
- Summary of current status and future development needs



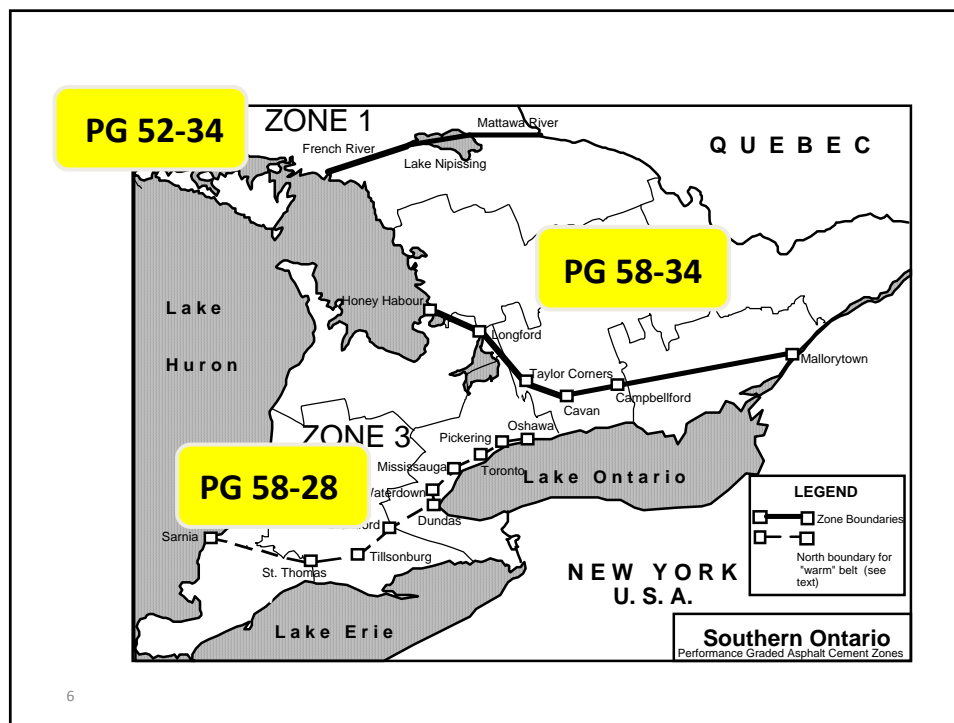
MTO 1st Superpave Contract- Petawawa Test Site

FHWA's SPS-9A
Binder Placed - Fall 96
Surfaced - Spring 97



Implementation of Superpave in Ontario

- Acquired binder testing equipment and training in mid 1990s
- Participated in the SPS-9A Superpave Demonstration Project 1996-97
- Full binder implementation 1997-98 through the PGAC Committee
 - All stakeholders: Suppliers, ORBA, OHMPA, MEA, CCIL





Implementation of Superpave in Ontario – PGAC Challenges

- Initial position: Spec to be blind to the method of modification
- Pavement cracking led MTO to introduce additional tests such as extended BBR and DENT
- Spec has now evolved:
 - PPA is governed more tightly
 - MSCR used to evaluate polymer modified binders
- Responsible use of recycled engine oil bottoms
- Responsible use of RAP
- ***MTO/Industry consultations continue.***

Superpave Mix Design Implementation

- Preceded by a detailed study of existing aggregates and mixes
 - specifications for aggregates, mixes, Marshall mix design and acceptance during construction
 - Challenge was to incorporate the advancements of Superpave but not give up on the knowledge base
- PGAC Committee evolved into the Ontario Superpave Implementation Committee (OSIC)
- First MTO Superpave contracts in 2002, 30%
- Incremental implementation – 100% by 2006



Mix Types in MTO Contracts

- Use 25.0 mm for lower binder course if opportunity permits (80 -100 mm lift)
- Use 19.0 mm for binder courses (in place of HL 4, HDBC, MDBC, HL 8)
- Use 9.5 mm for levelling course
- Use 12.5 mm for all surface courses
 - 12.5FC 1 for HL 1 applications
 - 12.5FC 2 for DFC applications
 - 12.5 for HL 4 (amended gradation)

Hwy. 6, 2002: Dufferin



Challenges – Mix Design/Construction

- Initial designs were often very coarse and dry
- Joint and segregation issues
- MTO response:
 - Independent expert review of three contracts
 - Fine graded mixes are promoted
 - Percent AC for bid purposes
 - VMA introduced into ERS as integral part of Mix acceptance
- Stripping tests are used but other Performance tests need to be implemented

Current Ontario Status

Superpave

- Ministry of Transportation
- Larger Municipalities
 - Ottawa, York, Hamilton, etc.

Marshall

- Most municipalities
- Private sector



Both use Performance Graded Binders

Summary Remarks

- Significant Superpave implementation in Ontario
- Marshall is predominant in the private sector and smaller municipalities
- There continue to be challenges on the binder side
 - Quality of AC? , RAP content? Methods of modification?
- On the mix side, Superpave design and testing capability is well established, but
- Work needs to be done to put in place performance testing

*Implementation of Superpave in
Ontario*

Thank you