

# 2021 Fall Asphalt Virtual Seminar

## Recap: 2021 Asphalt Technical Symposium (ATS), OAETG Updates & Next Steps



# ASPHALT TECHNICAL SYMPOSIUM

## JUNE 15/2021 UPDATE

### 2021 ATS Focus:

Explored the continued focus on recovered asphalt testing, and pathways towards mix performance testing in Ontario.



### ATS Presentation(s) Available at this Link:

<http://www.onasphalt.org/publications/asphalt-technical-symposium.html>

PUBLICATIONS & EDUCATION / ASPHALT TECHNICAL SYMPOSIUM PRESENTATIONS

## Asphalt Technical Symposium Presentations

2021 OAPC Asphalt Technical Symposium

[Sina Varamini - Summary of OAETG 5-year vision](#)

[Hussain Bahia - Responsible Use of RAP in Surface Mixes](#)

[Amin Mniena - OGRA/OAPC 2020 RAP Survey Results Handout](#)

[Ludomir Uzarowski - Engaging with OPSS.MUNI 1101: Highlights & Experiences](#)

[Amma Wakefield - OAPC CPATT Study: Performance Testing Update](#)

[Stevenson Ganthier - Transitioning to Balanced Mix Design: Agency Perspectives on Benefits and Practicalities of Performance Testing](#)

[Amma Wakefield - The Road Ahead: Plastics in Asphalt](#)



OAPC 2021 Fall Asphalt Virtual Seminar

# ASPHALT TECHNICAL SYMPOSIUM

## JUNE 15/2021 UPDATE

### General Feedback

- 56 participants in attendance (**excludes the panelists**).
- Need to hear a more positive message for the use of RAP in mixes.
- Keen interest in the OAPC/CPATT Performance Study Updates.
- Per references to engaging with OPSS 1101 – We see a potential to explore an article on **“Standardization of Municipal Specifications”**.
- Overall value for Municipal participants in attendance.
- Gained some new participants in the OAETG meetings.



# ASPHALT TECHNICAL SYMPOSIUM

## JUNE 15/2021 UPDATE

### Suggestions for Next ATS

- Monitoring the quality of asphalt depending on its crude source.
- More presentations on Balanced Mix Design / Performance Testing that relate to Ontario's focus on (HWT, SCB-IFIT, DCT).
- More performance data around new Ontario specs and tests (40hr PAV, DENT, exBBR etc.)
- Investigate well-performing pavements and explore possible binder recovery and mix performance testing to find out why they are performing so well.
- Long Term Pavement Performance evaluation of different mixes and the experience to move toward evidence-based decision making, and perhaps getting the owners to speak to their experiences, challenges, concerns, etc. about asphalt.

# Ontario Asphalt Expert Task Group (OAETG)

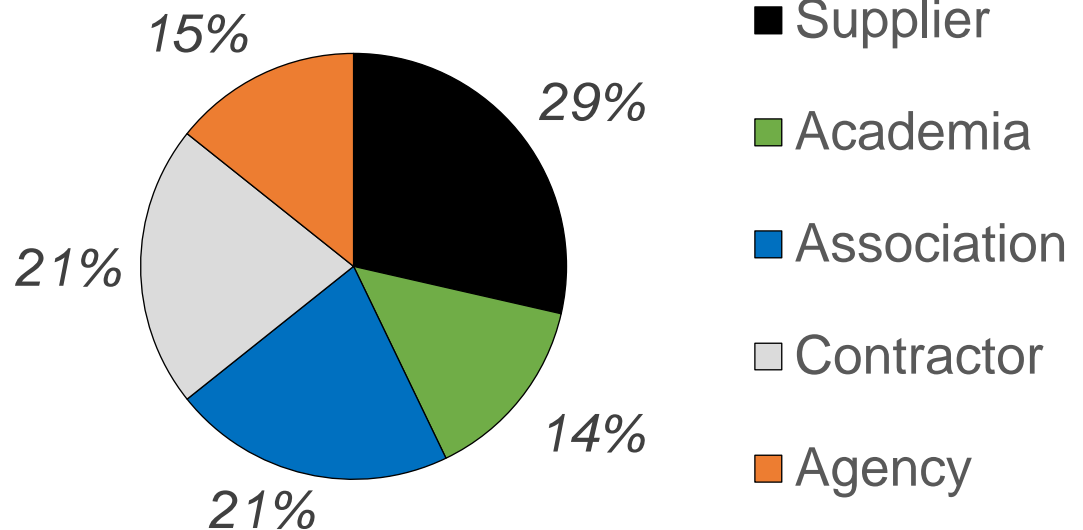
Established in Late Fall 2020 to satisfy specific mandates

- Brainstorm asphalt-related and emerging issues – particularly on subjects of RAC and Mix Performance acceptance
- Identify improvements to binder and mixture specification and testing methods – Ontario-specific climate and traffic conditions
- Act as an advisory group to recommend and/or perform asphalt research interests and needs
- Contribute to content development and organization of the Asphalt Technical Symposium (ATS)

# OAETG – Membership and Executive Team

Open to all stakeholders

Total of 14 Members



**Sina Varamini, Ph.D., P.Eng., Chair**

*Manager, Research & Development, McAsphalt Industries Ltd.*

**Pejoohan Tavassoti, Ph.D., Vice Chair**

*Research Assistant Professor, University of Waterloo*

**Amma Wakefield, MAsc., P.Eng., Secretary**

*Canadian Regional Engineer, Asphalt Institute*

# OAETG – Fiver Year Vision

LONG TERM

Bridge the knowledge gap in “Performance Testing methods and Acceptance”

Literature search on practice-ready “mix performance” thresholds

Develop a framework to execute industry-wide Mix Asphalt Program (MAP)

INDUSTRY TRENDS

2021

2022

2023

2024

2025

2026

*Short-term topics led by volunteers from this committee  
Few months time-frame to complete*

# OAETG – Fiver Year Vision

LONG TERM

INDUSTRY TRENDS



Execute series of MAPs to Benchmark performance

Results analysis [coarse-tuning]

Provide input to contract language/spec development, and quantifying suggested pay factor adjustment

1-Year Distress Survey  
Threshold adjustments (if needed)



# OAETG – Fiver Year Vision

LONG TERM

INDUSTRY TRENDS



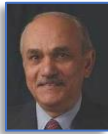
Multi-Year field follow-ups

Utilize any upcoming changes on performance test methods – threshold adjustments [fine-tuning]

Create a performance database for members

# OAETG Activities in 2021

*Organized National & International Presentations Focused on Industry Trends*



**Responsible Use of RAP in Surface Mixes**  
*Prof. H. Bahia (University of Wisconsin-Madison)*



**Evaluation of Extraction Procedures to Determine the Content and PG Characteristics of Binders Recovered from Recycled Mixtures**  
*Dr. Carolina Rodezno (National Center for Asphalt Technology, NCAT)*



**Evaluation of Asphalt Mixture Cracking Performance Tests at Full-Scale Pavement Facility: Lessons Learned and Knowledge Gaps**  
*Dr. M. Elwardany (FHWA Turner-Fairbank Highway Research Center)*



**Lowering Gyration in Superpave Mixes – An Ontario Perspective**  
*Dr. D. Ambaiwei (ORBA/OAPC)*



**Review of OAPC-CPATT Study – RAC and Performance Testing**  
*Amma Wakefield (Asphalt Institute)*

*Presentations & recordings available upon request. Please reach out to Sina Varamini ([svaramini@mcasphalt.com](mailto:svaramini@mcasphalt.com))*



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# OAETG Activities in 2021

*Organized Panel Session Focused on Industry Trends*

*Municipality Outreach and Feedback*



## **City of Hamilton High RAP Trials**

*Dr. Yashar Azimi Alamdary*

*(Product Development Specialist, Coco Paving)*



## **Town of Innisfil Update for Recovered Asphalt Experience**

*Trevor Tinney (Engineering Technologist, Town of Innisfil)*



## **York Region's Initiatives Toward More Resilient Road Network: Mix Performance Testing & Pavement Instrumentation**

*Mehran Kafi Farashah*

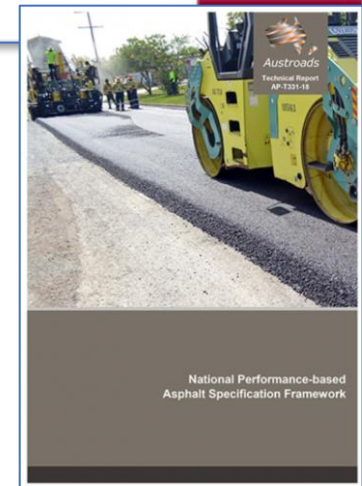
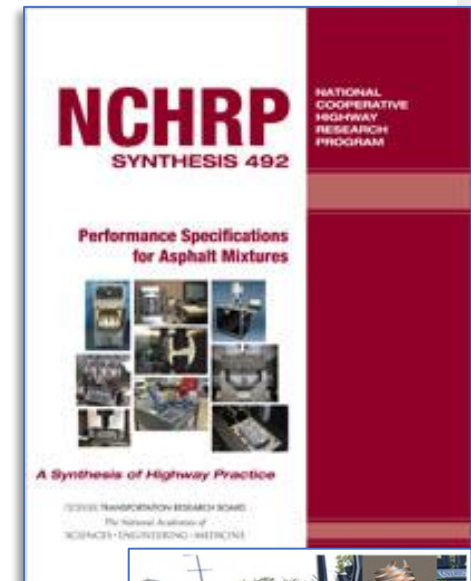
*(Asset Management Office, York Region)*



# OAETG Activities in 2021

*Selected international publications reviewed, summarized, and presented by OAETG members*

1. **“Framework For Development Of Performance-related Specifications For Hot-mix Asphaltic Concrete” NCHRP Report 332**  
*Reviewed/Presented by A. Mneina (OGRA)*
2. **“Development of a Framework for Balanced Asphalt Mixture Design”**  
NCHRP 20- 07/Task 406  
*Reviewed/Presented by P. Lubana (PNJ Consulting)*
3. **“National Performance-based Asphalt Specification Framework”** by Austroads  
*Reviewed/Presented by Dr. Y. Alamdary (Coco Paving)*
4. **“Performance Specifications for Asphalt Mixtures” – NCHRP Synthesis 492**  
*Reviewed/Presented by M.Farashah (York Region) & S.Salehiashani (UW)*
5. **“FHWA-NJ-2015-1010: Performance Testing for HMA Quality Assurance”**  
*Reviewed/Presented by M. Aurilio (Yellowline)*
5. **“The French Approach to Asphalt Mixture Design: A Performance-related System of Specifications”** AAPT 2000 proceeding  
*Reviewed by F. Magisano (Canadian Asphalt)*



# Why to Consider Performance Testing?

Volumetric parameters (Superpave or Marshall) mainly focused on selecting “optimum design blend” using available aggregate and Asphalt Cement combined with local experience – so called “Recipe Approach”

Inability to measure expected performance under different traffic and environmental conditions (constant or changing throughout service life), as well as other mix variables

# Fitting Performance Testing Into The Bigger Picture of Mixture Design

## 1 Recipe & Volumetric Selection

## 2 Performance-Verified Volumetric Design

Verification of resistant to a specific distress  
Example: Asphalt Cement (AC) modification to resist fatigue cracking

## 3 Performance-Modified Volumetric Design

Adjustment of mix proportions to resist a specific distress  
Example: rutting or fatigue cracking

## 4 Performance-Based Design

Durability; and not necessarily follow volumetrics specifications  
Performance testing for Pavement Design input (part of Mechanistic-Empirical Approach)  
Volumetrics conducted for Quality Assurance Purposes Only

Considered  
to  
improve  
Mix  
Durability

# Fitting Performance Testing Into The Bigger Picture

## 1 Recipe & Volumetric Selection

*Needs  
Benchmarking*

## 2 Performance-Verified Volumetric Design

Verification of resistant to a specific distress  
Example: Asphalt Cement (AC) modification to resist fatigue cracking

## 3 Performance-Modified Volumetric Design

## 4 Performance-Based Design

## What's Next?

### OAETG Mix Asphalt Program (O-MAP) to Benchmark

#### Objectives:

1. Bridge any knowledge gap in “Performance Testing Methods and Acceptance Thresholds”
2. Evaluate any inherent variability could impact contractual acceptance
  - A. *Test method variability (loading rate, temperature, and etc.)*
  - B. *Interlaboratory variability*
  - B. *Variability due to mix properties – volumetrics variability*

#### Progress To date:

1. Proposal submitted to OAP council directors for approval
2. Plant-produced samples collected
3. Welcome any material donations & in-kind contributions

OAETG will keep organizing **panel sessions** and invited **speakers**

*Any topic suggestions welcomed*



# Ontario Asphalt Expert Task Group (OAETG)

Get Involved & Join

## *Bi-Monthly Meetings*

*Open and informal forum discussing what matters in having better roads in Ontario*

***Interested? reach out to Sina Varamini at [svaramini@mcasphalt.com](mailto:svaramini@mcasphalt.com)***

***Next ATS in 2022 – June 14<sup>th</sup> (In-person and By Invitation)***

- Interested Municipal Participants may reach out to Doubra Ambaiowei, at ORBA/OAPC Technical Services Division.***

# Questions?



**Sina Varamini, Ph.D., P.Eng.,**  
OAETG Chair  
*Manager, Research & Development*  
*McAsphalt Industries Ltd*

*"Use what works"*  
*"Eliminate What Doesn't"*  
*"Be Simple as possible"*

*"Things should be made  
as simple as possible,  
but no simpler."*

*-- Albert Einstein*