Ministry of Transportation

MTO 2023 Technical Outlook Webinar

March 28, 2023

Ontario

Welcome!

We have invited you all here today to provide you with a line of sight to upcoming technical specification development or changes, policy development, innovative projects underway, and/or pilot projects intended to lead to specification / contract management changes that are planned to be posted on the MTO Technical Consultation Portal in the 2023-24 fiscal year.

Alain Beaulieu, P.Eng.
Director
Standards and Contracts Branch
Transportation Infrastructure Management Division

Technical Consultation Portal

Mike Pearsall

Ontario

Ministry of Transportation

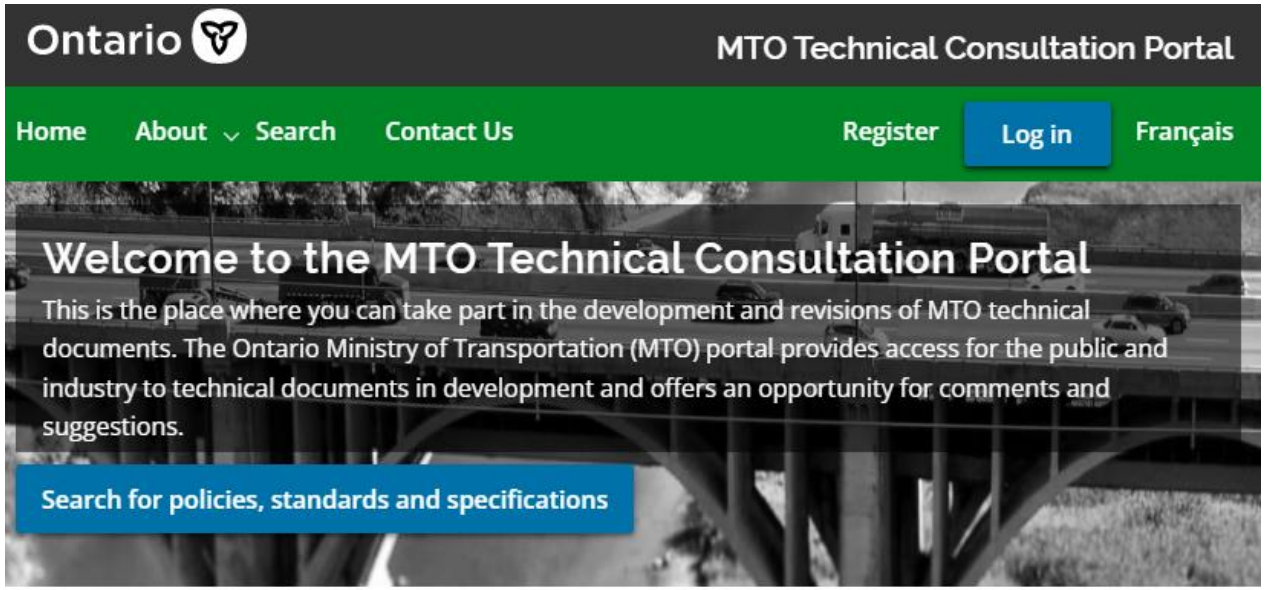
MTO Technical Consultation Portal (TCP)

An open and transparent framework to allow a full cross-section of stakeholders, partners and the public to provide input.

https://tcp.mto.gov.on.ca/

- Register
- Get email notifications for keywords when they appear on notices on the portal

TCP does not replace meaningful discussion with stakeholders.



Recent policies, standards and specifications

OPSS 910 Construction Specification for Stressing Systems for Post-Tensioning

Proposal Closing date: March 15, 2023

Administrative Revisions to SP100S70 Payment for Equipment and Minor Additions to PH-CC-742 Consent to Sublet and PH-CC-762 Subcontractor's Consent to Audit

Proposal Closing date: March 14, 2023

CAIS for AMENDMENT TO OPSS 180, NOVEMBER 2016 (for Excess Soil Management)

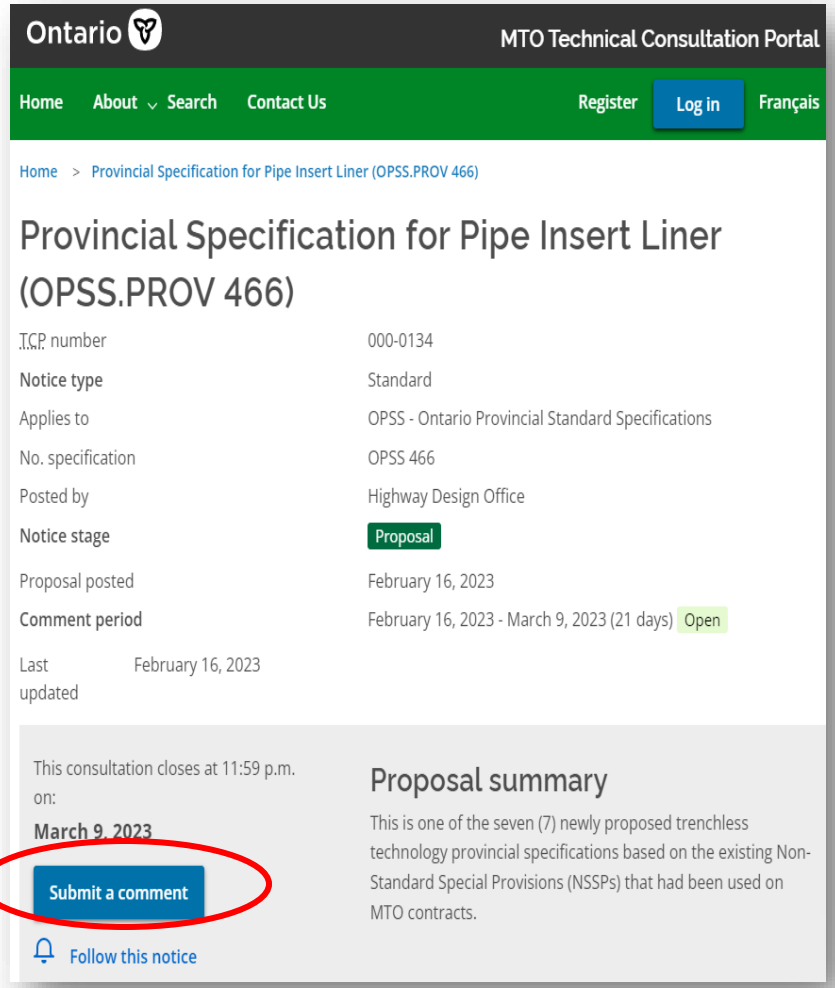
Decision Decision posted: February 17, 2023

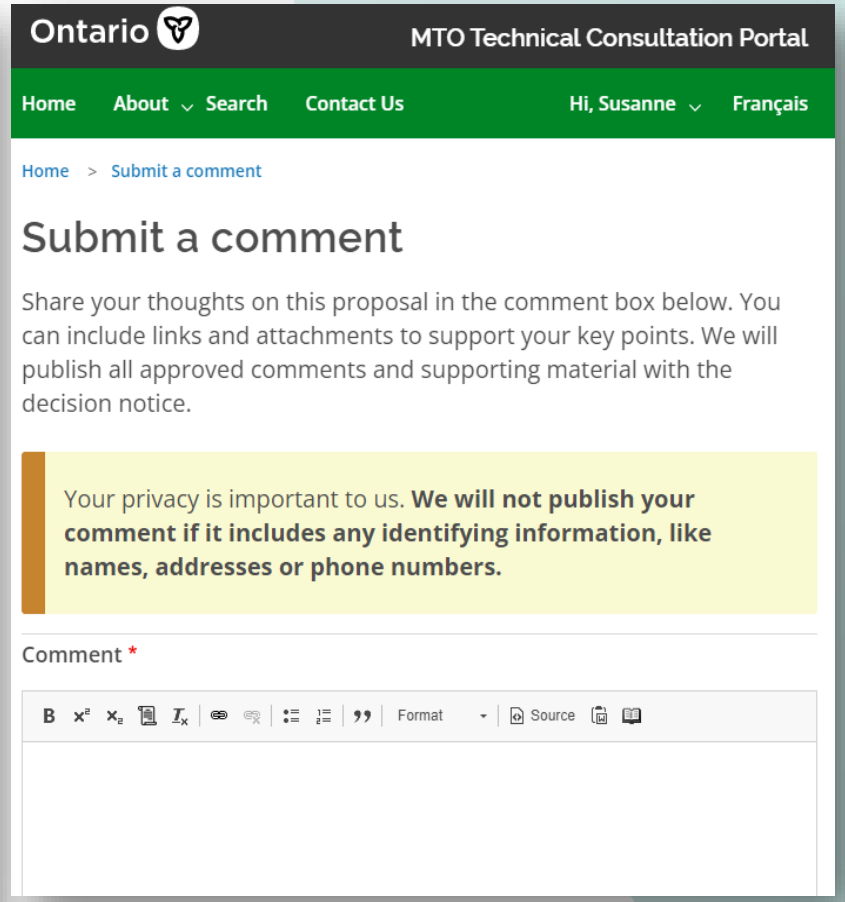
Featured notice

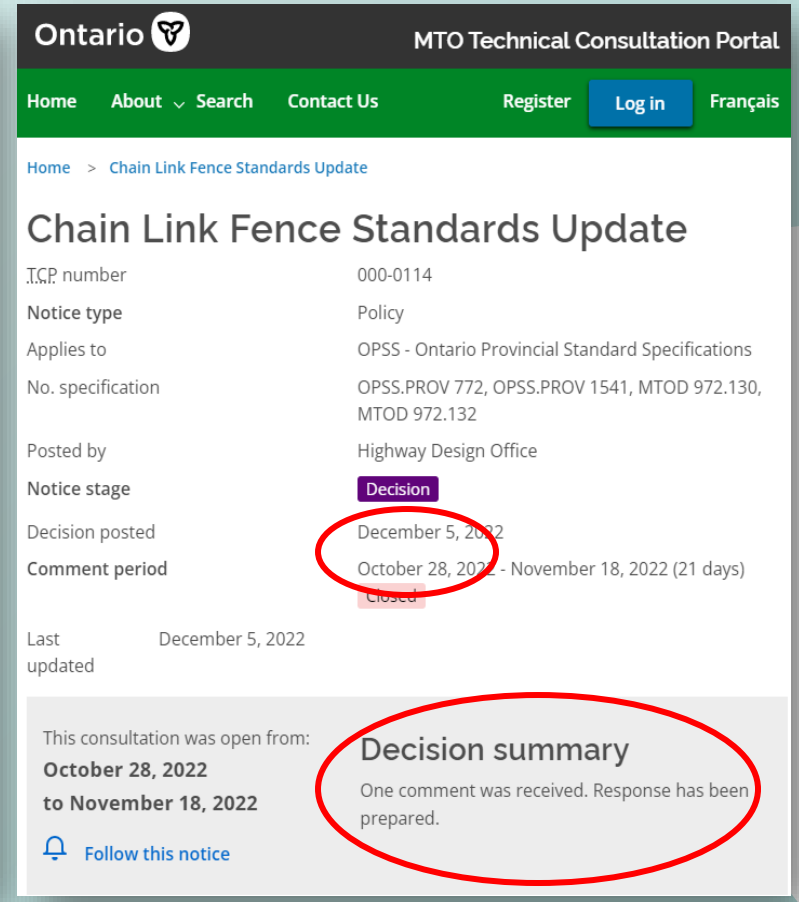
MTO Railway Guideline

A new guidance document targeted at design and construction staff covering how to navigate railway-related aspects of highway projects that

Proposal Stage → Review Stage → Decision Stage







Posting for a minimum of 21 days

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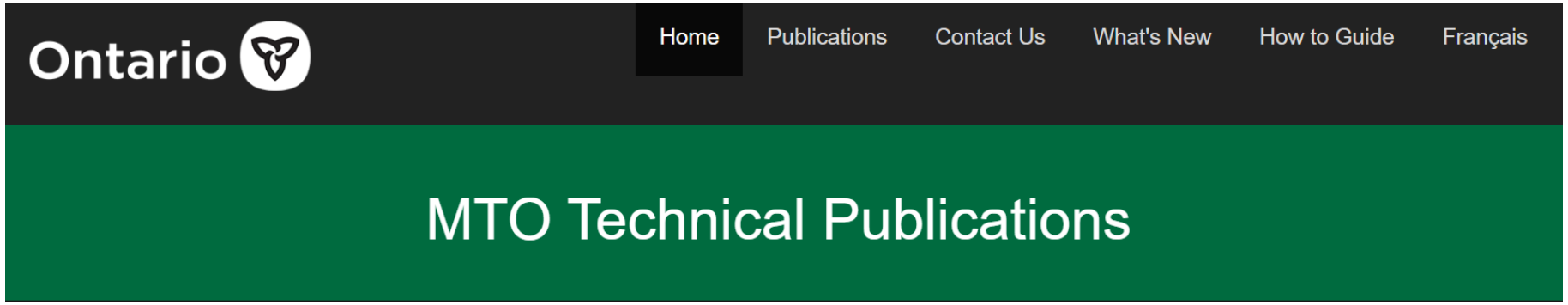
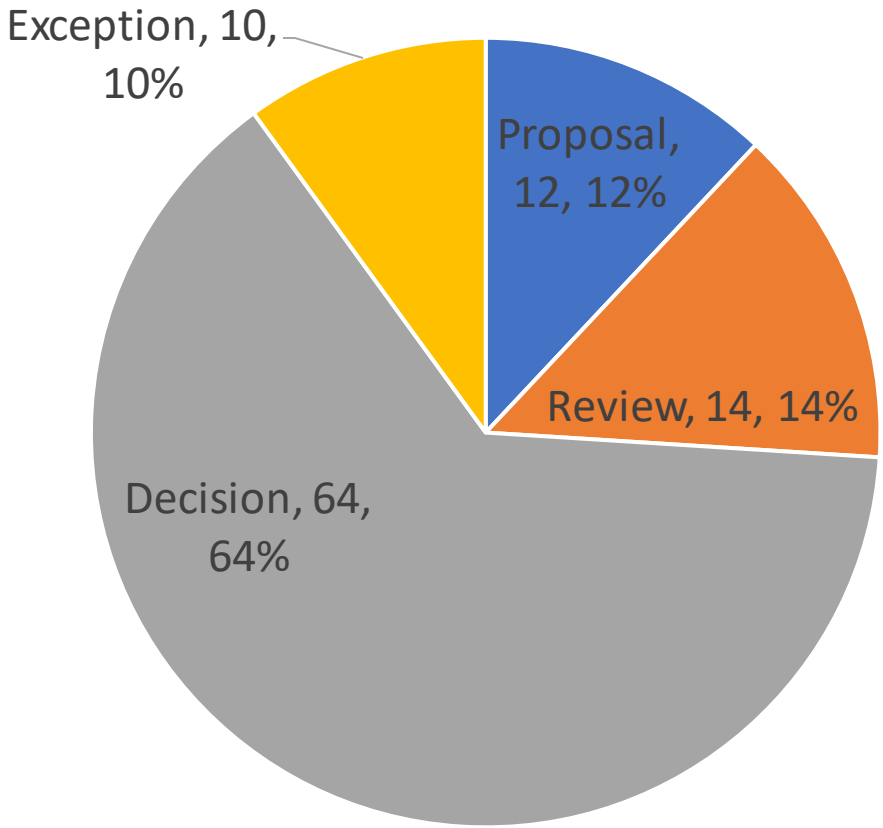
MTO Technical Publications

Final documents are posted on MTO TechPubs
www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/TechnicalPublications.aspx



TCP Statistics

TCP Postings Status since September 2021



- Total of 100 postings to-date
- Average 3 comments per posting
- Average 246 views per posting
- Interests from around the world

Country	Users ↓	Sessions	Pages / Session	Avg. Session Duration
	14,854 % of Total: 100.00% (14,854)	24,109 % of Total: 100.00% (24,109)	2.39 Avg for View: 2.39 (0.00%)	00:02:03 Avg for View: 00:02:03 (0.00%)
1. Canada	**12,827** (85.55%)	21,649 (89.80%)	2.47	00:02:10
2. United States	**1,369** (9.13%)	1,589 (6.59%)	1.82	00:01:05
3. Germany	**56** (0.37%)	56 (0.23%)	1.02	00:00:02
4. India	**49** (0.33%)	60 (0.25%)	1.28	00:00:45
5. France	**45** (0.30%)	52 (0.22%)	1.21	00:00:10
6. China	**41** (0.27%)	48 (0.20%)	2.98	00:03:25
7. Russia	**37** (0.25%)	37 (0.15%)	1.00	00:00:00
8. (not set)	**37** (0.25%)	46 (0.19%)	1.93	00:00:56
9. Australia	**35** (0.23%)	35 (0.15%)	1.26	00:00:42
10. St. Pierre & Miquelon	**35** (0.23%)	37 (0.15%)	1.78	00:01:26

Contract Management – Construction

Mireya Hidalgo

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Contract Management – General Conditions Update

- A comprehensive update of the OPSS.PROV 100 – MTO General Conditions of Contract (November 2016) is underway.

  - Phase 1: Administrative Update - April 2023 Implementation

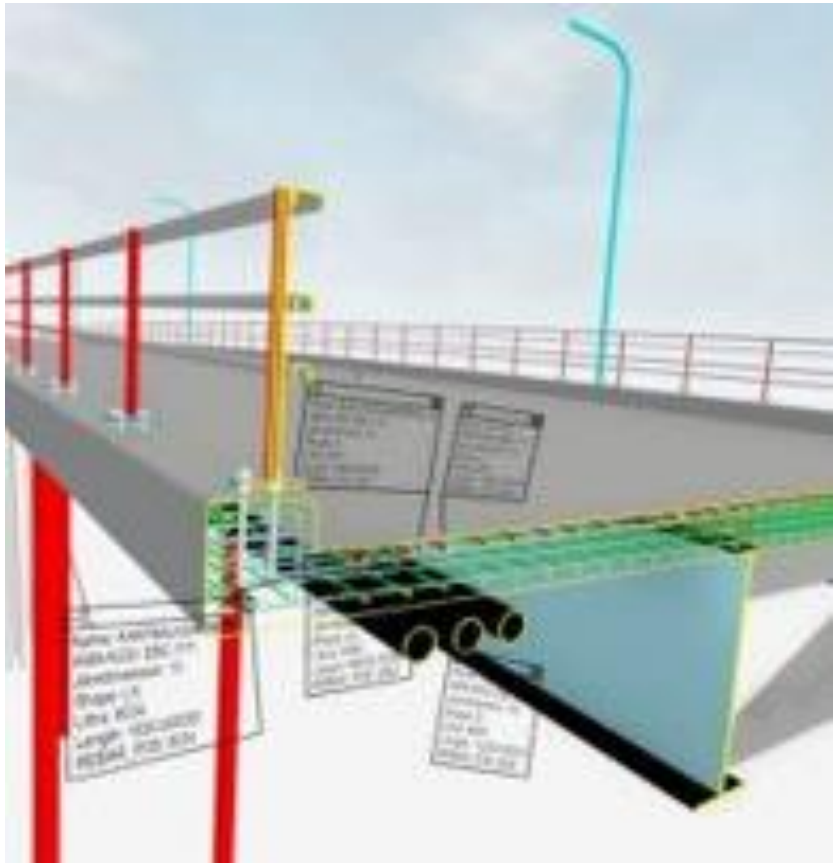
    - The main goal of this phase is to eliminate seven standard 100 series Special Provisions by administratively incorporating them into the current version of the MTO General Conditions. The revised MTO General Conditions will be posted to MTO's Technical Consultation Portal as an exception; since consultation was previously conducted for each of the Special Provisions.

  - Phase 2: Technical Update - Planned for November 2024 Implementation

    - The main goal of this phase is to carry out a more comprehensive technical review of the administratively updated OPSS.PROV 100 (April 2023), by identifying needs, and revising accordingly. The MTO General Conditions will be revised and posted on MTO's Technical Consultation Portal in 2024 to seek comments from internal and external partners.

Contract Management – Building Information Management (BIM)

- MTO's vision for BIM Implementation
  - Digitalizing project delivery, construction, operations, and maintenance for MTO's infrastructure and make information available to anyone who needs it, when they need it.
  - Building digital twin for bridges, structures, roads and utilities.
  - Linking data and 3D model of a project to enhance construction, maintenance, and inspection.
  - Research and Development based on lessons learned and best practices from other jurisdictional experience.
  - Piloting projects with BIM deliverables. Watch out for future implementations in the coming years.



Contract Management – Material Price Indices

The ministry has been working on the language and administrative measures to reduce the risk/cost related to fluctuations in material prices. This review includes new language for steel price index and additional operations where the fuel and asphalt cement price indices apply.

- Steel
  - Additional steel price adjustment is being introduced to risk share on specific steel types include reinforcing steel, H-piles, sheet piles, tube piles, and structural steel.
- Fuel
  - Consideration of additional operations under fuel price index include caisson piles, hot-in-place and rap placements.
- PGAC
  - Consideration of additional operations under PGAC index include granular sealer, tack coat, CIREAM and Cold-In-Place.

The new specifications when implemented will be applicable to new Design Bid Build tenders (not retroactive on any existing contracts).

Contract Management – Excess Soil Regulation

O. Reg. 406/19: On-Site and Excess Soil Management Requirements

- Assessment of Past Uses of the Source Site
- Soil Characterization Report - Sampling and Analysis of Excess Soil
  - Completed only if Step 1 identifies a potentially contaminating activity, OR project area is/was part of an enhanced investigation area (gas station, industrial use, dry cleaners etc.) OR remediation site
  - Specific rules for Stormwater Management Pond Sediment
- Excess Soil Destination Assessment Report
  - Identifies the quantity, quality, and location where the excess soil will be deposited (e.g. Class 1 soil management. site, reuse site), any sensitive land use features, fill management plan etc.
- Tracking System
  - Projects will be required to track each load removed from the site
- Hauling Records
  - Information related to the source site, soil quality and destination location
- Registration – online public registry implemented by Resource Productivity and Recovery Authority (RPRA)

Contract Management - Excess Soil Regulation

- The ministry continues to develop and revise existing documentation to continue to support the implementation of this regulation
- The ministry is currently working on improved design guidance documents to support work impacted by this regulation
- Input and feedback will be sought from impacted stakeholders

Contract Management – Engineering Services

Seyed Tabib

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Contract Management – Engineering Services

Corporate Performance Rating (CPR) Pause

- The CPR is the weighted average of a Service Provider's approved performance appraisal ratings over the last three years.
- The CPR is used by MTO in procuring Service Providers for Planning, Engineering and Contract Administration assignments, generally referred to as 'Engineering Services'.
- The MTO is pausing the use of the CPR from all bid evaluations for Engineering Services assignments.
- Comments were solicited on the TCP in January and the final details will be posted on TCP in March 2023.

Contract Management – Engineering Services Appraisals

New Contract Administration Appraisal System

- MTO will be implementing a revised CA appraisal system
- More objective and simpler for users
- Driving consistency and improved communication between MTO and Service Providers;
- Details will be posted on TCP in March 2023

Streamlined Engineering Appraisal

- MTO has implemented a revised appraisal for Preliminary and Detail Design assignments
- Intended to reduce administrative burden and improve rates of appraisal completion
- Posted on TCP in December 2022
- The appraisal will be used for assignments where the RAQS prime specialty is from:
  - 'Highway Engineering' category, or
  - 'Bridge Engineering' category when led by the Project Delivery Office

Contract Management – Business Solutions

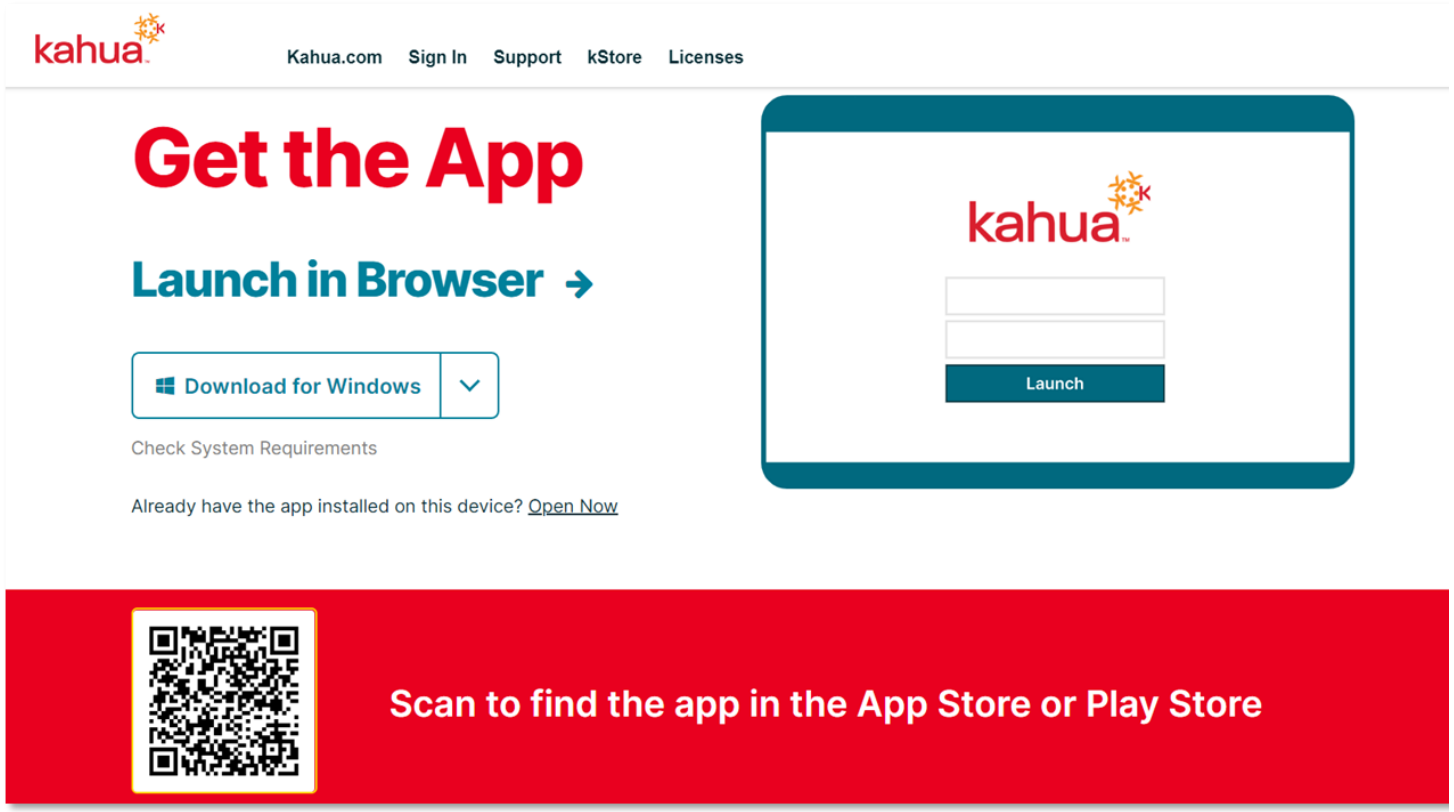
Jamie Lauzon

Ontario

Ministry of Transportation

Contract Management System

- Since 2017, MTO has been administering Construction Contracts using a web-based platform – WBCMS.
- The contract with the WBCMS vendor ended in February 2023.
- In late 2022, MTO entered into a contract with KPMG (supported by Kahua platform) to replace WBCMS and in early January 2023, MTO began development MTO's new Contract Management System.



Contract Management System

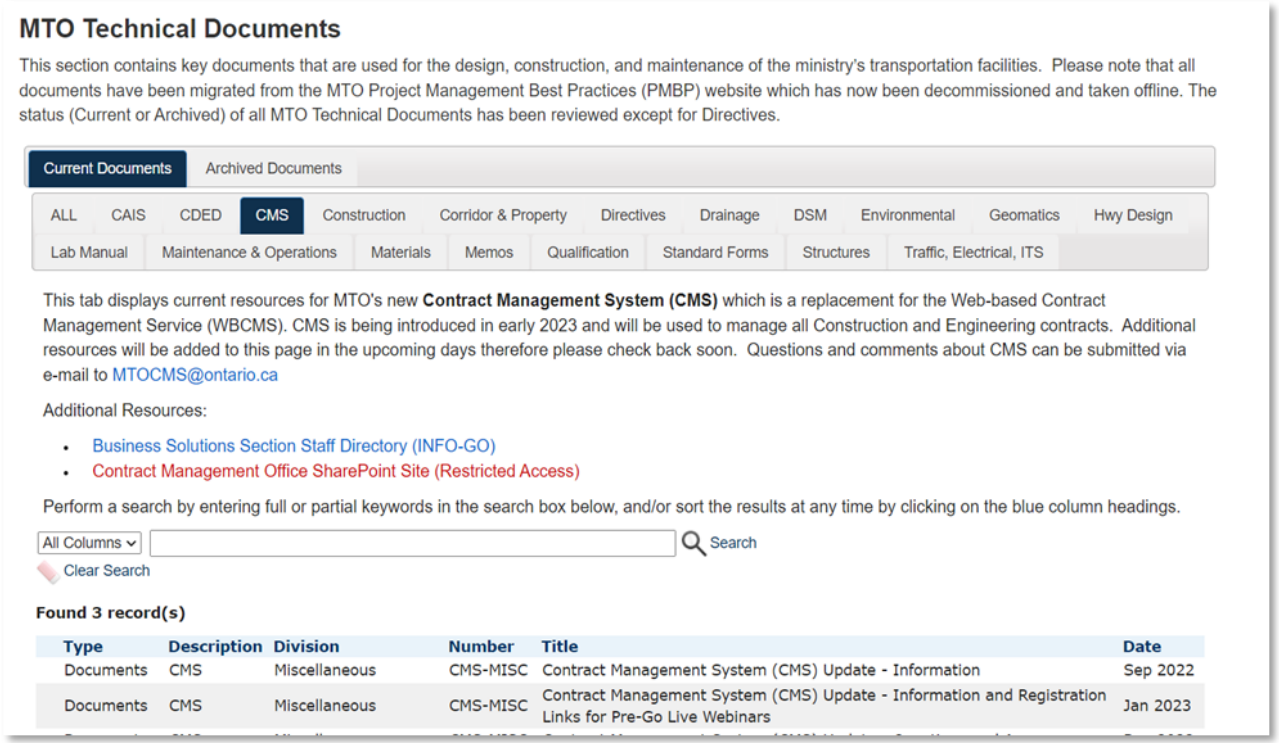
Go-Live February 13, 2023

Existing contracts from WBCMS migrated to new solution

Administer Engineering contracts using CM - target summer 2023

Contract Management System - Training

- Training provided for approximately 2000 internal and external users prior to go live.
- Additional training for external users in March and will continue in April and May.
- CMS training materials and support resources on MTO Technical Publications website.



MTO Technical Documents

This section contains key documents that are used for the design, construction, and maintenance of the ministry's transportation facilities. Please note that all documents have been migrated from the MTO Project Management Best Practices (PMBP) website which has now been decommissioned and taken offline. The status (Current or Archived) of all MTO Technical Documents has been reviewed except for Directives.

Current Documents | Archived Documents

ALL | CAIS | CDED | CMS | Construction | Corridor & Property | Directives | Drainage | DSM | Environmental | Geomatics | Hwy Design

Lab Manual | Maintenance & Operations | Materials | Memos | Qualification | Standard Forms | Structures | Traffic, Electrical, ITS

This tab displays current resources for MTO's new **Contract Management System (CMS)** which is a replacement for the Web-based Contract Management Service (WBCMS). CMS is being introduced in early 2023 and will be used to manage all Construction and Engineering contracts. Additional resources will be added to this page in the upcoming days therefore please check back soon. Questions and comments about CMS can be submitted via e-mail to MTOCMS@ontario.ca

Additional Resources:

- Business Solutions Section Staff Directory (INFO-GO)
- Contract Management Office SharePoint Site (Restricted Access)

Perform a search by entering full or partial keywords in the search box below, and/or sort the results at any time by clicking on the blue column headings.

All Columns | Search

Clear Search

Found 3 record(s)

Type	Description	Division	Number	Title	Date
Documents	CMS	Miscellaneous	CMS-MISC	Contract Management System (CMS) Update - Information	Sep 2022
Documents	CMS	Miscellaneous	CMS-MISC	Contract Management System (CMS) Update - Information and Registration Links for Pre-Go Live Webinars	Jan 2023

Bituminous

Gelu Vasiliu

Ontario
Ministry of Transportation

NSSP BITU0031 (amends OPSS 313)

Mix Performance Testing (MPT) Specification

Additional sampling for mix performance testing for information

Loose mix asphalt samples and pavement cores tested by QA laboratories

Will replace requirements currently under BITU0026 (Regression) BITU0028 (RAC) and BITU0029 (WMA)

Mix Performance Testing (MPT) Specification

TABLE 4A
MPT Testing Requirements

Test	Testing Method	Attributes	Units	Results[1]
Flexibility Index Test (FIT) Using Semicircular Bend Geometry (SCB)	LS-334	Flexibility Index (FI)	-	Testing carried out for information purposes only.
Disk-Shaped Compact Tension (DCT) Test	LS-336	Fracture Energy	J/m^2	Testing carried out for information purposes only.
Hamburg Wheel-Track (HWT) Test	LS-335	Rut Depth	mm	Testing carried out for information purposes only.
		Number of Passes	-	

Note 1: All test results information shall be reported as per REPORT section of respective LSs.

Payment Adjustment for Changes in PGAC Price Index

Has been applied to HMA since 2000s

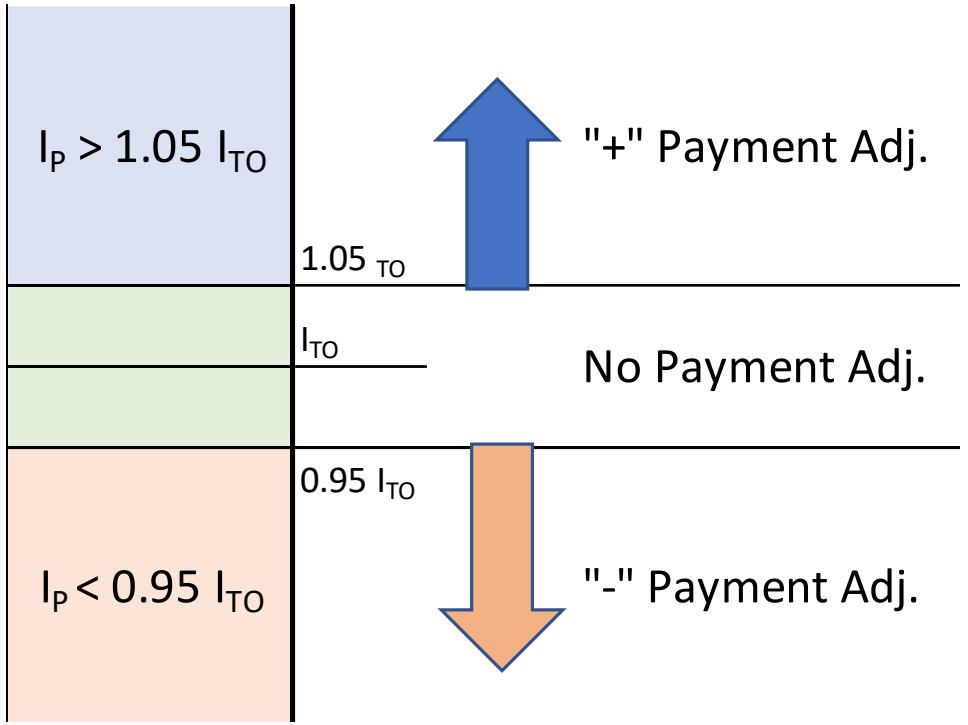
Under consideration for tack coat and granular sealer

Payment Adjustment
=
Change in PGAC Price index
X
Quantity of PGAC in tack coat / granular sealer

PGAC Price index = based on the PGAC price per tonne, excluding taxes, Freight on Board the depots in the Toronto area of PG 58-28, published monthly in the MTO's Contract Bulletin and OAPC website.

Can opt out within 5 Business Days at Start Work

Once opted out, opting back is not permitted



I_{TO} = PGAC price index for the month prior to tender opening

I_P = PGAC price index for the month of application

How to Calculate PGAC in Tack Coat / Granular Sealer?

Tack Coat	Tender Item Unit in square metres	$TC_{AC} = \frac{\left(\frac{AC_{TC}}{100}\right) x\ AR_{TC}\ x\ Q_{TC}}{1000}$	TC_{AC} = Quantity of PGAC in tack coat, in tonnes AC_{TC} = % of residue in tack coat emulsion by distillation test, in percent AR_{TC} = Application rate of tack coat, in kg/m2 Q_{TC} = Quantity of tack coat accepted into the Work, in square metres
Granular Sealer	Tender Item Unit in kilograms	$GS_{AC} = \frac{\left(\frac{AC_{GS}}{100}\right)\ x\ Q_{GS}}{1000}$	GS_{AC} = Quantity of PGAC in granular sealer, in tonne. AC_{GS} = % residue in granular sealer emulsion by distillation test, in percent AR_{GS} = the application rate of granular sealer, in kg/m^2 Q_{GS} = the quantity of granular sealer accepted into the Work in kilograms/ square metres
	Tender Item Unit in square metres	$GS_{AC} = \frac{\left(\frac{AC_{GS}}{100}\right) x\ AR_{GS}\ x\ Q_{GS}}{1000}$	

Monthly adjustment calculated using MTO PH-CC forms (*PH-CC-260-TC and PH-CC-260-GS*)

Input quantity for the month, price index, application rate, residue content of emulsion.

Pavements

Stephen Lee

Ontario
Ministry of Transportation

Pavements - NSSP for AC Adjustment for CIREAM / CIR

- MTO recently drafted an NSSP for Payment Adjustment based on Asphalt Cement Price Index for Cold In-place Recycled Expanded Asphalt Mix (CIREAM) and Cold In-place Recycling (CIR).
- The NSSP includes the following for AC adjustment for CIREAM / CIR:
  - A payment adjustment shall be applied based on changes to the ministry's asphalt cement (PGAC) price index unless, the Contract Administrator is notified in writing of the choice to opt out within 5 Business Days of receiving a completed MTO form PC-CC-700, Permission to Start Work.
  - The PGAC price index shall be published monthly in the Owner's Contract Bulletin.
  - The PGAC price index is based on the price, excluding taxes, Freight on Board (FOB) the depots in the Toronto area, of PGAC grade PG 58-28 or equivalent.
  - A payment adjustment per tonne of new PGAC used in the CIREAM / CIR shall be established for each month in which CIREAM / CIR paving occurs when the PGAC price index for the month differs by more than 5% from the PGAC price index for the month prior to tender opening.
  - The payment adjustment for CIREAM / CIR for the month shall be calculated from the following formulas:

I_P	PGAC Payment Adjustment for CIREAM, PA_{CIREAM}
$I_P > 1.05\ I_{TO}$	$PA_{CIREAM} = (I_P - 1.05\ I_{TO}) \times CIREAM_{AC}$
$I_P < 0.95\ I_{TO}$	$PA_{CIREAM} = (0.95\ I_{TO} - I_P) \times CIREAM_{AC}$

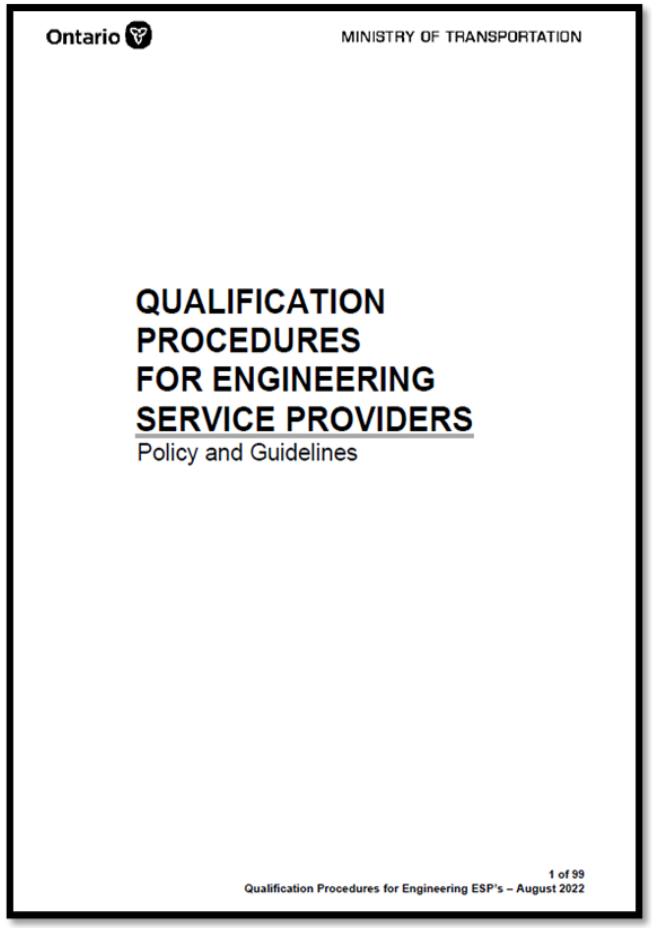
I_P	PGAC Payment Adjustment for CIR, PA_{CIR}
$I_P > 1.05\ I_{TO}$	$PA_{CIR} = (I_P - 1.05\ I_{TO}) \times CIR_{AC}$
$I_P < 0.95\ I_{TO}$	$PA_{CIR} = (0.95\ I_{TO} - I_P) \times CIR_{AC}$

Pavements - NSSP for Triaxial Geogrid

Currently, no DSM list or NSSP for Triaxial Geogrid Product

- The ministry will evaluate the Triaxial Geogrid Product according to:
  - "**Guide to Evaluating Soil and Material Stabilization Products**" developed by TAC
- Evaluation Framework:
  - Supplier/Contractor will
    - complete the **TAC - Product Application Form** for their proposed new soil and material stabilization product to the ministry
  - The ministry will
    - review and evaluate the suitability for ministry application
    - validate the information
    - perform laboratory testing and/or field trials
- NSSP will then be developed for the trial including construction, testing and contract administration requirements

Pavements - RAQS Requirement for Pavement ME Design



Pavement Engineering Category (new requirement)

Pavement Design - Medium complexity

- Intermediate knowledge and application of AASHTOWare Pavement ME design

Pavement Design - High complexity

- Advanced knowledge and application of pavement design method using AASHTOWare Pavement ME Design

Transition period - Two years for medium complexity and one year for high complexity (high complexity RAQS requirement already in place for a number of years) The service providers will be removed from the approved list if the new requirements are not met prior to the end of the transition period.

Soils and Aggregates

Gem Jiang

Ontario
Ministry of Transportation

Soils and Aggregates

Updated SSP 110S16 for Rip-Rap, Gabion, and Clear Stones (modifies OPSS 1004)

- **QUALITY ASSURANCE for Gabion Stone, Rip-Rap and Rock Protection**
  - Physical property tests (Table 7) are waived for Gabion Stone, Rip-Rap and Rock Protection from DSM #3.05.25
    - Specific gravity and absorption, FE and MDA
  - Owner may accept prior data meeting the physical requirements
  - The test data shall be within 12 months of the material being used in an MTO contract
  - CA to carry out gradation testing at the Working Area, with appropriate measuring tools and weigh machines
- **QUALITY ASSURANCE for 19 mm Clear Stone Gradation (Type 1)**
  - Increase the acceptance range of 19 mm sieve fraction from 90% – 100% to 85% – 100%

Soils and Aggregates

Updated SSP 110S17 (Jan. 2023) for Concrete Aggerates (modifies OPSS 1002)

- **Use of aggregate in concrete shall not be permitted unless the aggregate is from CASL**
- **Fine aggregate Grading Requirements:**
  - The mean FM for the lot shall not vary by more than ±0.20 from the FM on Form A accepted by the CA for the corresponding concrete tender item
- **Coarse aggregates for full depth repair shall meet 19 mm aggregate or combined grading requirements; for partial depth repair shall meet 19 mm aggregate grading requirements**
- **Individual FA component and Individual CA component shall contain:**
  - No unacceptable materials: slags, glass wood, clay brick, clay tile, plastic, gypsum plaster, wallboard, roots, organic matters
  - Less than 1.0% of gypsum, anhydrite or other sulphate minerals
  - Less than 0.25% Sulphur for natural sand and gravel (waived for CASL aggregates)
  - Less than 0.60% Sulphur for manufactured sand and quarried rock (waived for CASL aggregates)

Soils and Aggregates

Updated SSP 110S17 (Jan. 2023) for Concrete Aggerates (modifies OPSS 1002)

- **Payment adjustment for acceptance of gradation:**
  - The lot is rejectable if:
    - The FM of 1 sublot is smaller than - 0.2 from the Form A FM for the corresponding concrete item, and the FM of the other sublot larger than + 0.2 from the Form A FM.
    - The lot is subject to a total payment adjustment factor of more than 15%
  - The payment reduction is calculated based on cubic meter of concrete
  - The reduction in payment shall be capped at:
    - $\$25/m^3$, for Concrete Pavement and Base
    - $\$50/m^3$, for Curb & Gutter, Sidewalks and Approach Slabs
    - $\$130/m^3$, for all other concrete tender items

- **Updated SSP 199S64 (Jan. 2023) Referee Specification**
  - The method of observation for the referee, either remote or in person, shall be selected by the Owner
  - Updated referee test list and the prices of referee tests

Concrete

Melissa Titherington

Ontario
Ministry of Transportation

Concrete

Ultra-high performance fiber reinforced concrete (UHPFRC) overlay trial - innovative bridge deck overlay

- Structures Office and EMO Concrete Section drafted an NSSP for UHPFRC for use as an overlay.
- The NSSP has been included in Contract 2022-4015 for the Snake Creek Bridge on Hwy 28.
- MTO has used UHPFRC in field cast joints between precast bridge components, and there is a DSM for this application.
- UHPFRC overlays require a different type of UHPFRC mix (thixotropic).
- Contract 2022-4015 will be the first time UHPFRC has been used for an overlay by MTO, it has been done in a number of US States
- The cost of a UHPFRC overlay is higher than a regular concrete overlay.
- UHPFRC overlay, is thinner, stronger and does not need waterproofing + asphalt pavement, so it is able to increase capacity of the structure while minimizing / reducing the load (no asphalt).

UHPC overlay on Chillon Viaduct near Geneva - length at 2.2 km
Source: https://www.ductal.com/en/chillon-viaducts

Concrete

Rapid set latex modified concrete overlay trial - innovative bridge deck overlay

EMO Concrete Section drafted an NSSP for RSLMC for use as an overlay.

The NSSP has been included in Contract 2021-5164 for the CPR Overhead Bridge Rehabilitation over Hwy 17.

MTO has used RSLMC in concrete patches, and there are three RSLMC-based products on the ministry's list of concrete patching materials.

The RSLMC is currently limited to concrete patches that are less than 400mmx400mm in size.

RSLMC can achieve the 28-day compressive strength of normal concrete in 4 hours or less. This provides a great advantage when bridge decks require repair in short closures such as overnight closures.

The cost of RSLMC is higher than a regular concrete overlay.

Concrete

Volumetric Mixer Demonstration

- A contractor has approached EMO Concrete Section and proposed to carry out a demonstration of a volumetric mixer.
- The proposal is currently under review.
- The proposal includes casting concrete components from which test samples will be taken for testing of a number of concrete properties.
- Components will be cast using concrete from a volumetric mixer as well as ready mix concrete, using the same mix design.
- Sampling and testing will be carried out at a number of intervals during the production to assess the consistency of the concrete properties.
- MTO does not intend to allow the use of volumetric mixers for structural components.
- Depending on the results of the demonstration, MTO may consider trial use of a volumetric mixer for a low risk non-structural application such as footings for noise barriers.

A Volumetric Concrete Truck

Source: https://www.proallinc.com

Pavement Markings

Updated specification expected by the end of 2023 will incorporate 11 special provisions which include the following:

- New Materials – agglomerate marking, black contrast, black line mask and blackout markings.
- Equipment – recessing equipment; glass bead gun positioning for centreline rumble strips.
- Sampling and application requirements – new sample sizes for lab sample submittal to QA.
- Use of orange pavement markings for temporary, divided highway work zones.
- Recessed pavement markings and recessing equipment – depth of recessed groove, cutting blades and quality of cut specified.
- Pavement marking obliterating by grinding, abrasive blasting and water blasting – different obliterating methods specified depending on whether pavement is final course or interim construction course.
- Retroreflectivity minimum requirements introduced for pavement markings.
- Material Performance grouped into 4 major pavement marking types – (1) Thick durables including tapes, thermoplastic and agglomerate MMA, (2) thin spray field reacted such as spray MMA, (3) premium high build waterborne paint and (4) standard waterborne paint.

Structures

Walter Kenedi

Ontario
Ministry of Transportation

Structures

500W Reinforcement

- Update drawings and specifications to include grade 500W steel reinforcement
  - MTO is updating the Standard Drawings
  - Priorities will be locations were potential weight savings.
  - SSP905S05 and 114S07 have been issued to be used in OPSS905 & OPSS 1440s.

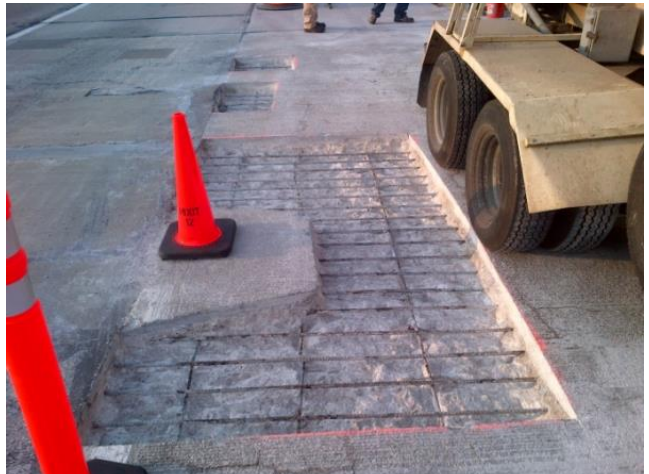
MASH Bridge Barriers

- Begin review of MTO barrier walls and compatibility to new MASH requirement
- Test trucks for some barriers became heavier, faster, higher impact angle.
- Roadside barriers began transition to MASH 7 years ago.
- Will result in larger changes to TL-4 barriers (taller, more robust), and minor changes possibly to other barriers.

NCHRP 350 vs. MASH vehicles		
Vehicle Class	**NCHRP 350**	**MASH**
Small car	820C Weight: 1,809 lb	1100C Weight: 2,420 lb
Pickup Truck	2000P Weight: 4,409 lb	2270P Weight: 5,000 lb
Single Unit Truck	8000S Weight: 17,636 lb	10000S Weight: 22,000 lb

Specifications

- SSP 599S22 - Construction Special Provision for Retained Soil Systems (RSS). Completed TCP.
- OPSS 910 – Construction Specification for Stressing Systems for Post-Tensioning. Currently at TCP.
- OPSS 203 – Construction Specification for Rock Stabilization. Currently at TCP.
- SSP - Drilled Foundations. In progress.
- OPSS 928 and OPSS 930 – Construction Specifications for Concrete Removal and Patching. In progress.



Structural Standard Drawings

- Post and Railing Bridge Barriers.
- Prestressed girders
- Partial Depth Bridge Deck Panels.
- Approach Slabs
- Wingwalls
- Slope Paving.
- Variable Message Sign Supports (VMS's).

Designated Sources for Materials (DSM)

- MTO has approved mills listed in DSM List 9.65.80 to supply 500W steel reinforcement.
- MTO has approved 3 new products of mechanical connectors of Grade 500W black steel.
- MTO will be creating a new DSM list for Post-Tensioning (PT) systems.
- MTO is creating new DSM List for Steel Piles.
    - List will include supplier for steel piles and associated driving accessories

Manuals and Guidelines

Structural Manual	Structural Rehabilitation Manual	Prestressed Girder Guidelines	Precast Concrete Box Culvert Manual
• New Bridge Design • In Progress for year end completion	• Rehabilitation Practices of MTO • In Progress for year end completion	• New design guidance for preliminary design of prestressed girders • New “plank” girders, shallow, solid boxes for shorter spans • In Progress for year end completion	• New manual for design of box culverts • Incorporating OPSS 912 and MTO Memo SCB-SO-2021-01 • Use of SS114-03 (Standard Drawing for Box Culverts) and MTOD’s (Rebar layout, waterproofing)

Maintenance Management

Nedim Oren

Ontario
Ministry of Transportation

Highways 11 & 17 New Bare Pavement Standard

- In November 2022, the ministry introduced a new "ON Trans-Canada" standard which requires contractors to clear Highways 11 and 17 to bare pavement within 12 hours of the end of a winter storm, four hours faster than the previous standard.
  - The 12 hours bare pavement standard is intended to enhance winter maintenance services on Highways 11 and 17 while also optimizing the use of resources and protecting our environment.
- Ontario Improving Road Safety in the North | Ontario Newsroom
  https://www.ontario.ca/page/keeping-highways-11-and-17-safe-winter
- The ministry has continued to enhance winter maintenance services to further enhance safety on these and other provincial highways:
  - New contract models that specify equipment, routes and requirements and balance risk allocation for the delivery of maintenance services.
  - Increase in the use of underbody plows that remove packed snow better than conventional plows.
  - Increase in the use of anti-icing liquids before storms to make it easier to clear snow.
  - Route improvements at specific areas to reduce deadheading. Deadheading is the distance travelled by a winter unit from its yard to the start of its designated route of operation.
  - Installing 24 new Road Weather Information System stations (including 8 stations along Highways 11 and 17), for better weather forecasting and response to evolving weather conditions.
  - Geometric improvements, such as rock removal in specific areas, to push back high rock cuts and improve sunlight exposure of roadway sections to help melt the snow and ice faster.

Innovations in Equipment and Materials Technology

- **Extended width winter equipment (Wide Wing Plow)**
  - Ongoing innovative trials in the Kenora, Owen Sound and London Contractor Directed Maintenance Contracts (CDMC) include a wide wing plow from suppliers such as Tenco and Viking-Cives, that enables one plow to clear snow on two lanes with one pass.
  - The wide wing plow services the same lanes as a snow plow that is pulling a tow plow and is operated by an individual with a DZ license. This unit is more maneuverable in existing turnarounds at the end of a route.
  - The Extended Width Winter Equipment Working Group will evaluate the trials to confirm future opportunities to use this equipment.

Innovations in Equipment and Materials Technology

- **Medium Duty Combination Unit**
  - Working Group recommended an innovative trial in the upcoming London CDMC that will include a medium duty combination unit that is less than 11,000kg GVWR and is operated by an individual with a “G” license requirement (no “Z” endorsement required)
  - The medium duty combination unit will service shorter routes with limited turn around locations in urban areas.
  - This trial supports the DZ driver shortage and offers contractor staff transitional training to DZ licensing.
- **Anti-icing Liquids - Potassium Acetate Trial**
  - A Highway Infrastructure and Innovation Funding Program (HIIFP) project has been initiated this winter in the Kakabeka MDMC (Northwestern Region) with the University of Waterloo and IMOS to assess the effectiveness of Liquid Potassium Acetate (KAc) in both Direct Liquid application and Pre-wet application. The findings from this trial will support efforts to expand the use of alternative winter materials.

Maintenance Management – Operator Shortages

- Lack of operators is an industry-wide issue that has a bearing on all sectors that require AZ/DZ licence and has started to the impact the delivery of winter maintenance services, especially in Northern Ontario. Most winter vehicles require operators with an AZ or DZ licence.
- In a joint effort, ORBA has partnered with the Canadian Construction Association to submit a proposal to the federal government for inclusion of winter operators in the seasonal migrant worker program that currently targets the agriculture sector.
- Some maintenance contractors are also enrolling in the ministry's Drivers Certification Program (DCP) that gives ministry-approved organizations permission to train and test (upgrade or renewal) for commercial class licences (A-F), motorcycle licences and air brake endorsement.
- For this winter season, the ministry has developed a guidance document to assist field staff in supporting contractors manage impacts of operator shortages, if ministry assistance is requested.
- MTO/ORBA joint working group has been exploring various options to mitigate operator shortages:
    - Opportunities to include fair wage provisions in new procurements
    - Equipment innovations – wide wing plow and medium duty combination unit
    - Opportunities to increase year-around work
    - Enhanced guaranteed hours and retention incentives

Traffic

Michael Pardo

Ontario
Ministry of Transportation

General Guidelines for the Preparation of Traffic Impact Studies

- For several years MTO has had guidelines in place for Traffic Impact Study (TIS) submission requirements and the process to be followed.
- Evaluation of traffic impacts of proposed development depends upon several assumptions about the type, amount and patterns of traffic expected to be generated as a result of the proposed construction or development.
    - A Traffic Impact Study is required in support of application to MTO for access directly and/or indirectly to a provincial highway. Anyone planning to construct within the permit control area of a provincial highway may require a permit issued by MTO.
    - The primary purpose of a TIS is to identify the impacts of a proposed development or redevelopment and detail how impacts can be mitigated and addressed in a manner that is consistent with the objectives, standards, specifications, guidelines, policies, etc. of MTO.
    - The TIS also serves as the basis for the identification and evaluation of transportation-related improvements or measures to be included as a condition of access approval for a proposed development or redevelopment.

TIS Guideline – Update

- MTO has recently drafted an update to the TIS guidelines which is expected to be made available for use in the near future.
- The guideline includes process information for development proponents and as well as technical information for those preparing traffic impact studies.
- The updated guide provides additional information related to Multiple Development Traffic Impact Studies (sometimes referred to as “Single Studies”).
  - These studies evaluate the extent to which highway improvements are required as a direct result of the combined effects of developments within a single study area.
  - The intent of this is to ensure awareness of Multiple Development Traffic Impact Studies, along with their potential benefits, as an option available to proponents.
  - The guide will provide information on the specific roles for both MTO and the local municipality for these types of studies.

Multiple Development Traffic Impact Studies – Benefits

Pursuing a Multiple Development Traffic Impact Study, rather than an individual study for each proposed development, has potential benefits:

Improved coordination and consistency in transportation and land use planning within the study area, broader stakeholder involvement, and the potential for teamwork in problem solving.

Identification and resolution of transportation deficiencies before they turn into critical issues.

Reduction of the "last in pays all" issue. This occurs when previous development(s) contributed to the overall need for highway improvements. In these cases, the last party involved triggers the highway improvement work and is responsible to pay all expenses.

Supports the development charges by-law process by capturing expenditures related to highway improvements in advance. This enables municipalities to collect development charges earlier in the land use development cycle. It also allows for costs to be shared equitably across multiple developments.

Reduced review timelines and administrative overhead that would otherwise be incurred by evaluating a series of individual development proposals one at a time.

Questions?

Please visit www.slido.com and use code: #MTOMAR28