ASSOCIATION OF CONSULTING ENGINEERING COMPANIES ONTARIO

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Ministry of Transportation, Transportation Policy Branch
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Consultation on Road Construction Standards Harmonization in Ontario

ACEC-Ontario Industry Feedback Summary

Summary

Industry feedback highlights that while harmonizing road standards may yield efficiencies and cost savings, uniform approaches also risk unintended cost increases and may prove impractical in certain jurisdictions. Stakeholders also caution that an overly prescriptive framework could "freeze" current practices, stifling design innovation and competition.

As Ontario proceeds with this work, key considerations identified include:

- **Co-Designing Standards:** including municipalities in the standards development process and governance framework ensures changes are realistic and increases likelihood of successful implementation.
- **Phased Adoption:** funding smaller, phased pilot projects for priority standards, rather than implementing sweeping changes provides the opportunity to demonstrate cost, schedule, and safety gains, adjust processes before scaling, and respects municipal resource constraints.
- **Context-Sensitive Approach:** baseline, tiered, or a tunable standards approach, and allowing opportunities for supplementary standards provide flexibility to account for local conditions.
- **Robust Consultations:** engaging municipalities and key stakeholders, such as the Association of Municipalities of Ontario, and the Transportation Association of Canada, early in the consultation process draws on valuable, existing expertise and establishes effective change management processes, increasing the likelihood of achieving successful outcomes.
- **Procurement Standardizations:** explore opportunities to streamline other existing fragmented processes, such as procurement. Standardizing procurement processes for design and construction services can reduce owner risk and provide cost and schedule benefits.

Context

Currently, considerable harmonization already exists on MTO and municipal projects, as road design and construction are governed by MTO policies, standards and guidelines. Many municipalities adopt these standards, with exceptions generally dictated by unique situations that exist across the province.

This is due to Ontario's vast geography, climate and urban landscapes, translating to sometimes vast differences in local needs and standards. Ontario's initiative for further harmonization provides an opportunity to review existing gaps while respecting resource constraints and local conditions.

Benefits and Opportunities

Efficiency & Cost

- Less confusion when one project is covered by a single standard. Currently, some projects have multiple standards for different authorities. This can exist when one contractor does work for MTO and a municipality/Metrolinx/407ETR, etc., on the same project.
- With harmonized standards, there could be more consultants and contractors to bid on work since it will be consistent, and not municipality or region specific. This may result in more competitive prices.

Clarity & Consistency

- Simpler for designers and contractors when one standard applies to the entire project, avoiding conflicts across authorities, reducing rework, RFI's and disputes.
- Transparency and accountability through common file naming, data exchange, and governance.

Safety & Quality

- Consistent standards for active transportation and roadside safety would provide predictable conditions for all road users, including pedestrians and cyclists.

Innovation and Lifecycle Value

- Lifecycle asset management is enabled by standardized data structures.
- Continuous improvement supported by feedback loops, data history, and AI-driven insights.

Challenges and Risks

Context-Sensitive Needs

- Reluctance to abandon well-established local standards used, in many cases, for decades.
- Respecting unique geographies, climates, and urban landscapes across the province is very difficult to achieve with a completely standardized approach.
- Some municipalities selectively apply older MTO standards (e.g., the 1993 Roadside Safety Manual instead of the current RDM), showing that rigid uniformity may not align with local capacity or budgets. A harmonized provincial standard would need greater variation based on road classification, traffic volumes, operating speeds, etc.

Cost & Practicality

- Potential for increased costs: for example, specifying plastic sewers in regions where concrete is cheaper.

- MTO standards can be difficult or expensive for smaller municipalities to achieve without additional resources.

Transition Burdens

- Implementing harmonized standards will require retraining staff, updating specifications, and coordination across multiple agencies, adding significant costs and time.

Innovation Risks

- Overly prescriptive standards could inadvertently limit the adoption of innovative design solutions or context-sensitive approaches.
- Prescriptive language can delay adoption of new technologies, since deviations require lengthy approvals or exceptions.
- If tender documents rigidly reference standards, bidders have little incentive to propose innovative alternatives, which can reduce competition and limit efficiency gains.

Priorities: What to Standardize First

- **Pavements**: types of hot mix use in pavements (some organizations still use the old HL designations).
- **Electrical**: varying standards for electrical work between MTO and some municipalities (while both were safe, variation did cause some confusion and additional expenses).
- **Cross-boundary elements**: elements that frequently cross municipal boundaries—pavement markings, traffic signals, signage, drainage infrastructure—should be early priorities to avoid mismatched designs at jurisdictional limits.
- **Aesthetics and Active transportation**: i.e. boulevard, curb, crosswalks. Ontario lacks a cohesive provincial framework for implementing cycling and pedestrian facilities in both urban and rural settings. Harmonization could be modeled after OTM Book 18 but expanded into practical provincial-level design standards and drawings, similar to OPSDs. Consistency in signage should be prioritized as a first step.
- **Roadside safety in construction zones**: current MTO Roadside Design Manual guidance is geared toward high-speed highways. A harmonized standard for low-speed municipal settings would provide appropriate, cost-effective, and safer practices for pedestrians, cyclists, and drivers.
- **Drafting / software standards**: required deliverables (OpenRoads/Civil3D), contract development software (although there are many other complexities with this one).
- **Digital delivery**: standards that enable digital delivery and long-term asset management. Embedding information management standards aligned with ISO 19650, using common asset classification frameworks such as Uniclass or OmniClass, and integrating BIM-GIS for corridor-wide visibility. Moving away from 2D toward model-based delivery (3D/4D/5D) can streamline collaboration, reduce duplication, and ensure specifications directly support construction and

operations. A Common Data Environment (CDE) should serve as the single source of truth for all stakeholders.

- The UK's Digital Roads 2025 program demonstrate how digital-first standards can transform national infrastructure.
- OhioDOT has pioneered model-as-legal-document delivery.

Governance & Oversight

Primary governance options identified:

- MTO-led central body (building on OPS/OPSD structures)
- Independent/unbiased body (potentially TAC)

Key features recommended regardless of model:

- Stakeholder representation (municipalities, consultants, contractors, industry associations, academia with strong civil engineering programs). Organizations such as MEA and ACEC-Ontario sit on existing OPSS Standards Committees to ensure robust industry input.
- Clear update cycle
- ISO 19650 digital requirements (EIR, AIR, OIR)
- A CDE framework managed directly by MTO to ensure consistency and accountability
- Standardized file naming conventions to streamline delivery and reviews
- A standing committee responsible for maintaining and updating standards as BIM lifecycle, Digital Twin, AI and other digital practices evolve.
- Alignment with Canadian standards bodies such as CSA and NRC, while drawing from proven international models (UK National Highways, OhioDOT, and others), to ensure governance is scalable, collaborative, and future-ready.
- Develop "baseline provincial standards" applicable across Ontario, with an allowance for municipalities to add context-sensitive supplements where necessary.

Other Considerations

Resource & Delivery

- Sourcing: A big cost and challenge in construction is the locations of gravel pits. If these pits could be strategically located, there could be more consistent prices and faster builds.
- Procurement: Design standards are not as big an issue for faster delivery of projects as procurement is. Time would be better spent on developing and harmonizing more efficient procurement methods for design and construction services.
- Pilot projects: Select pilot corridors (including both municipal and provincial roads) could be used to test harmonized standards before broad rollout.

Expertise & Governance Support

- TAC: The committee should consider engaging TAC to help answer the questions posed. TAC has dealt with these same questions on a national level, and their advice and insights will help in not "reinventing the wheel".
- Retired MTO Employees: In a similar vein, MTO could be reaching out to recently retired employees who have many years of experience in managing provincial standards and specifications.

Technology & Future-Readiness

- At a practical level, automating processes such as manual quantity entry into the Contract Preparation System (CPS) through model-based reporting can significantly improve accuracy and efficiency.
- Establishing road standards that are digital-ready from the outset can enable proactive safety monitoring, sustainability performance tracking, and long-term asset management.

Should there be any questions regarding the points raised above, or requests for further information, please contact Laura Lambie, ACEC-Ontario's Director of Government and Stakeholder Relations at llambie@acecontario.ca.