

Strategic Theme 4 :

Quality of Road Infrastructure

Québec City

Coordination meetings

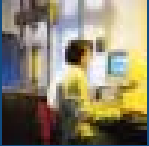
August 9th and 10th



Ms. Anne-Marie Leclerc,
 Strategic Theme Coordinator
 First Delegate of Canada - Québec

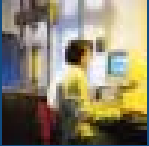
GOAL

- ◆ Improve the quality of road infrastructure through effective management of road infrastructure assets in accordance with user expectations and managers' requests.



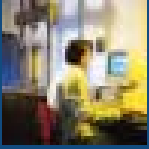
PREOCCUPATION

- ◆ How do the present and projected infrastructures respond to user needs and road asset manager requirements?
 - Reality versus projection;
 - User's expectation versus managers' means.



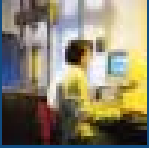
TECHNICAL COMMITTEE (TC)

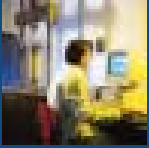
- ◆ TC 4.1 Management of Road Infrastructure Assets
- ◆ TC 4.2 Road / Vehicle Interaction.
- ◆ TC 4.3 Road Pavements
- ◆ TC 4.4 Roads, Bridges and Related Structures
- ◆ TC 4.5 Earthworks, Drainage and Subgrade



TC 4.1 – Management of Road Infrastructure Assets

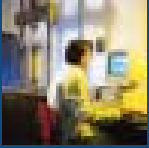
- ◆ Chair: **Mr. Claude Morzier**
- ◆ Issues:
 - Promoting asset management methods
 - Providing integration of condition indicators for road assets as a whole
 - Accounting for expectations of users and residents





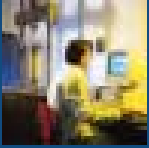
TC 4.1 : Fields of Work

- ◆ Integration of sectorial management systems
- ◆ User cost
- ◆ Planning of road interventions
- ◆ Overall condition indicators
- ◆ Performance indicators



TC 4.2 – Road / Vehicle interaction

- ◆ Chair: **Mr. Bjarne Schmidt**
- ◆ Issues:
 - Having a 20 to 30-year vision of developments in vehicle and road pavement characteristics
 - Reducing road noise
 - Improving the description of pavement surface characteristics

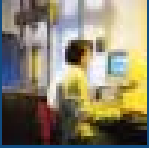


TC 4.3 – Road Pavements

- ◆ Chair: **Mr. Nelson Rioux**
- ◆ Issues:
 - Selecting adequate pavement types and road techniques
 - Maintaining pavements
 - Minimizing the impact of road works on the areas crossed

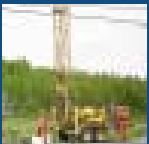
TC 4.4 – Roads, Bridges and Related Structures

- ◆ Chair: **Mr. Rafael Astudillo**
- ◆ Issues:
 - Increasing the durability and safety of structures
 - Evaluating the condition of structures in connection with asset management methods
 - Accounting for environmental and cultural aspects



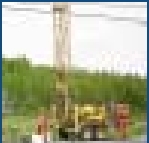
TC 4.5 – Earthworks, Drainage and Subgrade

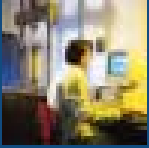
- ◆ Chair: **Mr. Giorgio Peroni**
- ◆ Issues:
 - Promoting optimal use of local materials
 - Having indicators representative of the condition of geotechnical structures for road asset management
 - Anticipating the impact of climate changes



ST 4 Coordinator's Role

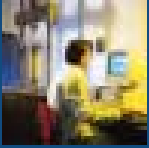
- ◆ To oversee the consistency between the work of:
 - all TC of the ST 4.
 - the ST 4 and the other ST.
- ◆ To report on the status of ST 4 work to the Executive Committee.
- ◆ To plan the ST 4 work program at the 2007 PIARC Congress in Paris.





ST 4 Mid-term Meeting in Québec City

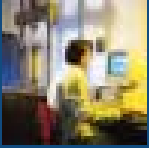
- ◆ As a fringe event of the ISAP Congress:
 - ICAP Quebec
 - August 12 to 17, 2006
- ◆ Goals of mid-term meeting:
 - ST 4 Work Summary
 - Status of international seminar
 - Discussion of goals and cross-cutting sessions for the PIARC Congress in 2007



August 11 AIPCR-Québec Round table on asset management

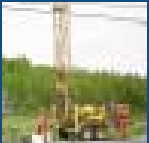
Objectives

- ◆ Sharing knowledge on asset management
- ◆ Connecting technical aspects with management issues
- ◆ Preparing strategic session at 2007 Paris conference



Technical presentations

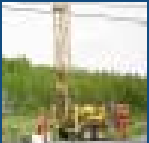
- ◆ Pavements: highways and urban road networks
- ◆ Bridges and structures
- ◆ Geotechnical work: embankment, earthwork
- ◆ Interaction between road and vehicles

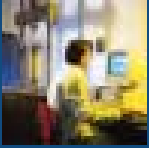


FHWA: David Geiger

◆ AASHTO definition:

- A strategic and systematic process of operating, maintaining, upgrading and expanding physical assets effectively throughout their lifecycle;
- It focuses on business and engineering practices for resource allocation and utilization with the objective of better decision making based upon quality information and well defined objectives.





Challenges

◆ 2025:

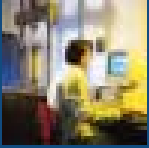
- Aging infrastructures-Preservation
- Population, economic, traffic and freight growth
- Safety improvement
- Funding

◆ Facts:

- Require long term commitment resources
- Key performance measures and indicators
- Think network (get rid of « worst first »)
- Takes cooperation between partners.

Managing highways and urban roadways

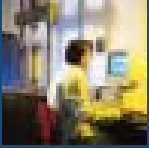
- ◆ Urban: greater challenge because of their diversity of uses and functions (eg. Public transportation, underground networks etc.)
- ◆ Asset management strives to maintain a balance between the cost of the measures taken and the annual loss of infrastructure value
- ◆ Challenges:
 - Optimize in order to reduce impacts,
 - Give more consideration to the needs of users
 - Manage assets as a whole rather than separately



Managing bridges and structures

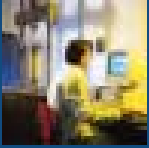
◆ Challenges:

- Reliable data: ISO process reduce the risk of design errors and increase the accountability of inspectors
- Technological watch: build more durable structures
- Economic analyses: buy a value not a price
- Comprehensive data collection: evaluate the needs more precisely
- New structure management system: invest in the most profitable projects.



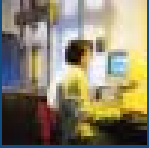
Geotechnical work and asset management

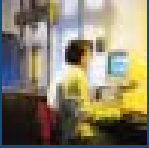
- ◆ New indicators: ensure that key information concerning inventory and condition is collected and used.
- ◆ Risk evaluation based on information, including what, where and when;
 - High risk: process launched to determine the necessary response and timelines;
 - Low risk: proactive approach, including inspection, follow-up or preventive work.
- ◆ Makes it possible to determine the percentage of the network that requires corrective and preventive intervention.



Monitoring the network for asset management

- ◆ Role of road administrations: provide a safe and comfortable road network with the best possible effect/cost ratio:
 - Effect: reduce user costs by improving the condition of roadways;
 - Cost: reconstruction or roadway maintenance.
- ◆ Expectations of road users:
 - Fundamental consideration in the construction and conservation of road network
 - Strategic parameter in asset management.





Round table discussions

- ◆ Promoting asset management methodologies
- ◆ The concept of road corridor
- ◆ Integrating indicators for the condition of all components
- ◆ Expectation of users and local residents.

Round table 1

Promoting asset management methodologies

- ◆ Technical advice can influence decision making:
 - Technical: indicators, performance and service levels;
 - Economical: costs, profitability analyses;
 - Political: benefits, costs, user feedback.

- ◆ A link is required between the technical and the political levels: the managers can serve as a translator



Round table 1

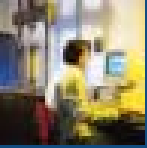
Promoting asset management methodologies

◆ Keys to asset management:

- Communication;
- Understanding performance indicators;
- Understanding the needs of the users
- Consequences of decisions.

◆ Challenges:

- Internal effectiveness (minimum cost for optimal level of service);
- Maximize benefits;
- Long-term commitment.



Round table 2

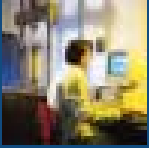
The concept of road corridor

◆ Definition:

- Road: link between 2 points;
- Global approach: including all infrastructures;
- Corridor: includes surrounding environment.

◆ Integrated into asset management systems:

- Coordination with other stakeholders, global vision, reduce impact on users and local residents;
- Approval and acceptance of interventions within the corridor;
- Cohesiveness and quality of standards and information provided to users;
- Taking safety and risk problems into consideration.

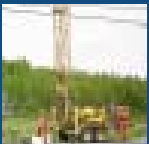


Round table 3

Integrating indicators for the condition of all components

◆ Risk indicators:

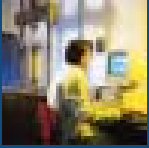
- Ensure that the competence and experience of personnel is adequate;
- Use quality historical and current data;
- Unadapted traffic damage roads;
- Action plans for organizing unexpected situations;
- Handle risk probability effectively.



Round table 3

Integrating indicators for the condition of all components

- ◆ Linking technical and management indicators – influencing decision-making:
 - Link indicators to visual situations, present information on network;
 - Link technical indicators to cost of accidents, service levels, risk to human life and social cost;
 - Link technical indicators to users' perception of safety, comfort etc.

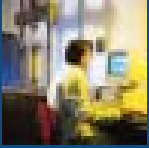


Round table 4

Expectations of users and local residents

- ◆ For users and residents, highways are both a way to optimize travel and a source of nuisance

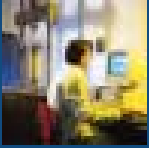
- ◆ Take the needs of users and local residents into consideration in managing road assets:
 - Improve the identification of their expectations and needs;
 - Filter contradictory expectations;
 - Increase their participation in decision-making process;
 - Explain the work of road administrator in detail.

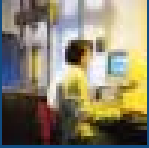


Round table 4

Expectations of users and local residents

- ◆ Cooperation between the various administrative levels according to the expectations of users and local residents:
 - Use of the same information at every administrative level, without leaving room for interpretation (consistency)
 - Standardize:
 - Identification of needs;
 - Definition of the responsibilities of each administrative levels;
 - Agreements between the various administrations.





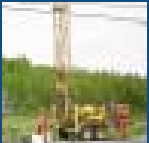
Plenary

- ◆ Road heritage management:
 - Intended to guarantee mobility, life span and optimal use of resources;
 - Relates to social, economic and environment aspects;
 - Participates in sustainable development.
 - Systematic approach:
 - Needs and expectations;
 - Target, decide and act;
 - Results;
 - Assess

Conclusion

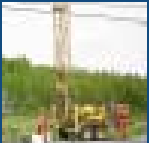
- ◆ Quality of data
 - Actual and predicted asset condition, making informed decisions and the consequences of the decisions, increased effectiveness and risk management.

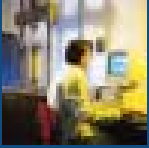
- ◆ Road users and local residents expectations
 - Importance of maintaining good relationship with the public, keeping them informed, taking their comments and their needs into consideration.



Conclusion

- ◆ Sharing information between the technical and the political levels
 - Ensure understanding of performance indicators; managers are strategic translator;
 - Cooperation among stakeholders is crucial: share information and ensure that decisions are well communicated and understood.





Discussions-Questions

◆ See you in Paris