

State & Performance of Canada's Core Public Infrastructure Project

Introduction

- Federal government and partners recognized the need to ensure that its policies and investments in Canada's public infrastructure are evidence-based :
 - Comprehensive objective comparable data on the state and performance of Canada's infrastructure
 - Baseline data to track issues and monitor progress
 - Expanded asset management practices to improve investment effectiveness

- INFC: New research project to improve knowledge on the state, performance & management of Canada's Core Public Infrastructure (CPI) to:
 - Develop tools and methodologies to allow decision makers, owners and operators to assess current state of infrastructure, report on its performance and better manage assets

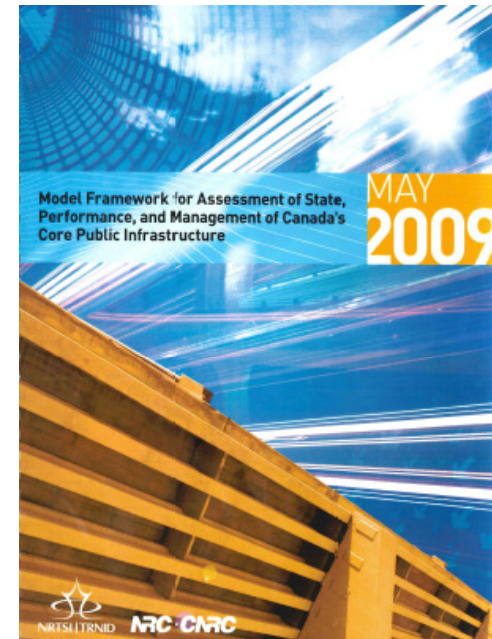
INFC: State & Performance of Canada's Core Public Infrastructure Project

In 2008/09:

- INFC funded the National Research Council (NRC) and the National Round Table on Sustainable Infrastructure (NRTSI) to produce a “**Model Framework for the assessment of the state, performance and management of Canada's core public infrastructure**” (published July 2009 by partners)

In 2009/10:

- New Core Public Infrastructure Survey
 - Survey public asset owners (municipal, provincial/territorial and federal)
 - ✓ questions based on NRC/NRTSI work
 - ✓ validated by the National Advisory Committee
 - ✓ field tested by Statistics Canada
 - Focus on both inventory and condition of core assets (water, wastewater, stormwater, roads, bridges, tunnels, transit)
 - Data to be released at the Federal, Provincial, Census Metropolitan Area/Regional levels



Survey Development

- Started with the end goal – what information does the federal government need to ensure that its policies, programmes and decisions are effective?
- Group effort – significant consultation



Core Public Infrastructure Survey

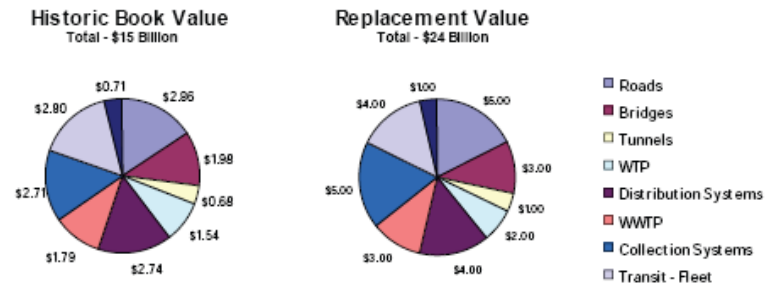
Determining Data Requirements

August 10, 2009

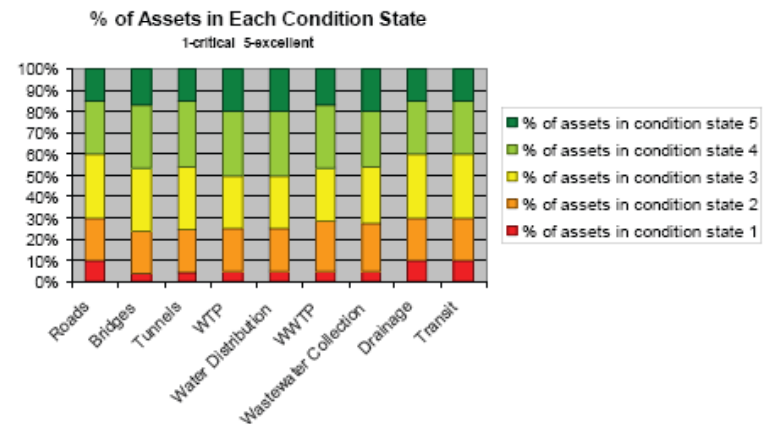
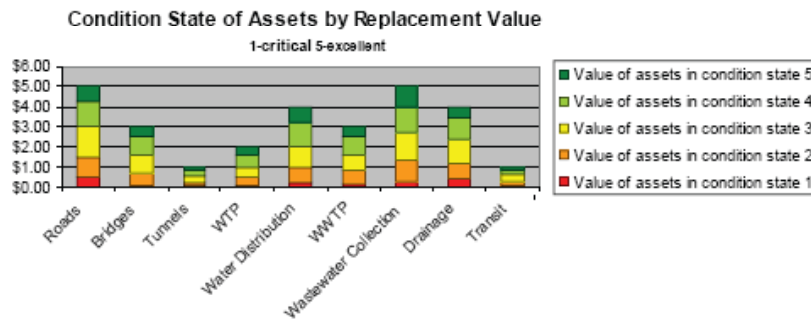
Q1. What do we own?

CPI	Number
Roads	2,000,000 Km
Bridges	70,000
Tunnels	120
WTP	1400
Distribution Systems	2,000,000 Km+1,500 Pump Stations+2,900 Reservoirs
WWTP	1800
Collection Systems	2,000,000 Km+1,300 Pump Stations
Transit	10,000 buses and rail cars
Drainage Systems	2,000,000 Km+280 Pump Stations

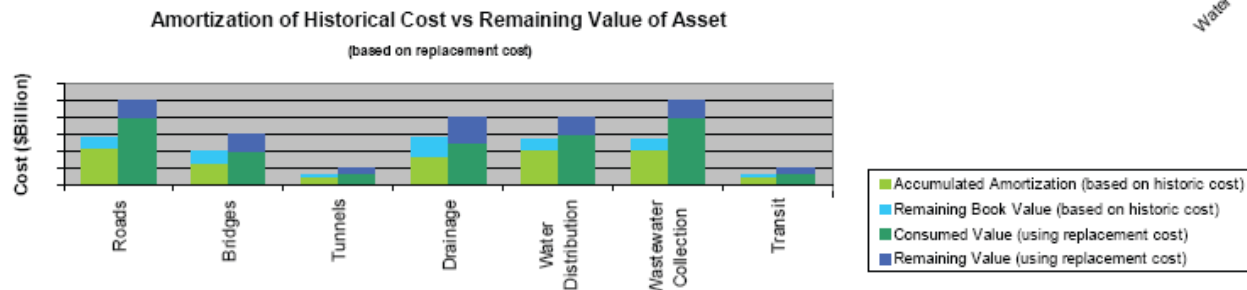
Q2. What is it worth?



Q3. What condition is it in?



Q4. What is their remaining life?



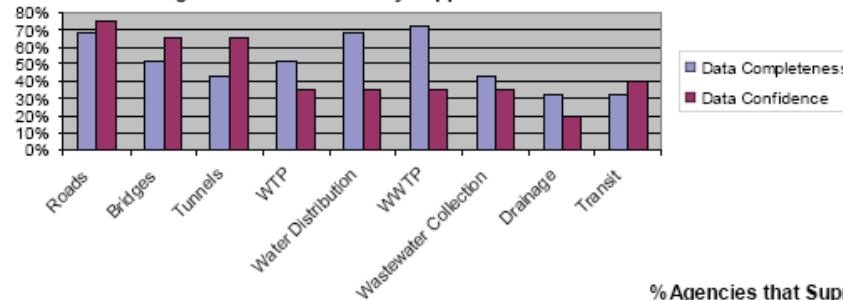
Core Public Infrastructure Survey

Determining Data Requirements

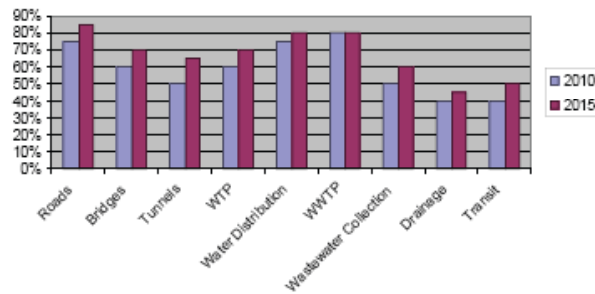
August 10, 2009

Q5. How accurate is our data?

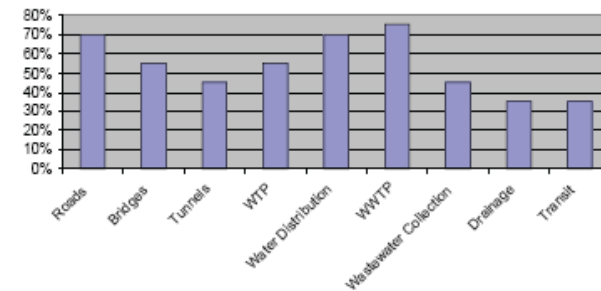
How Complete is the Data and How Confident are Agencies in the Data they supplied?



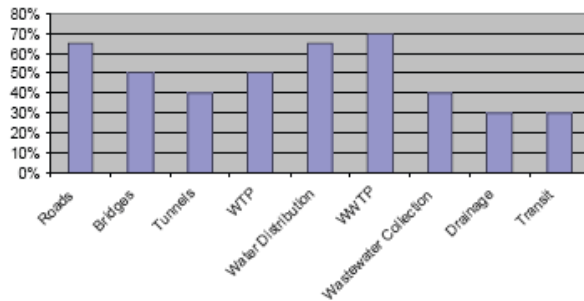
% of Agencies with Inventory Data 2010 vs 2015



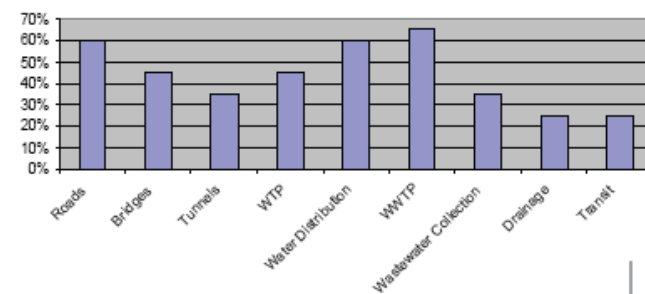
% Agencies that Supplied Asset Age



% of Agencies that Supplied Rating System Info



% Agencies that Supplied Asset Condition Data



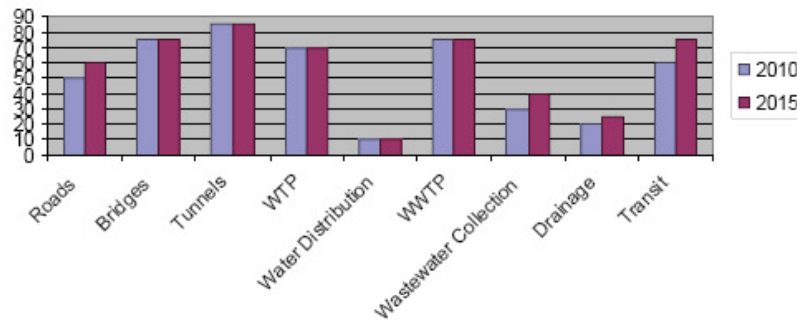
Core Public Infrastructure Survey

Determining Data Requirements

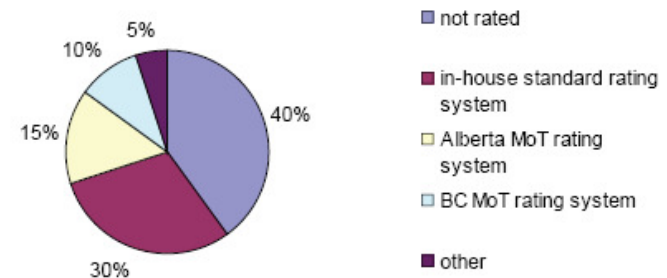
August 10, 2009

Q6. What are current asset management practices?

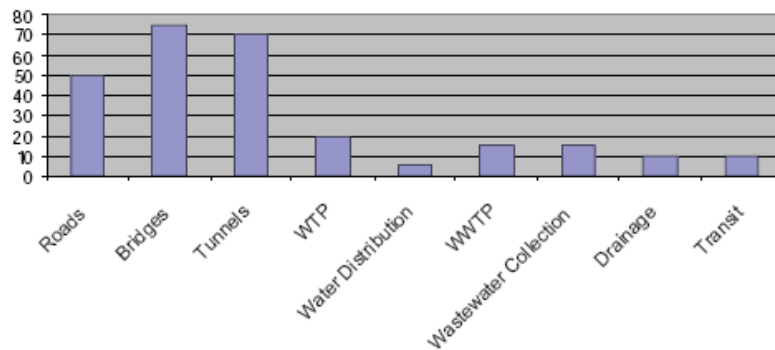
% of Assets that are Regularly Inspected 2010 vs 2015



Rating Systems Used for Bridge Condition Assessments



% of Assets that are Rated by a Standardized Rating system



Survey Development

- Based on the end goal – what data is required?
- What data is already available?
- What new data is required
- Developed survey questions
- Developed supporting survey glossary

Survey - CPI



Bridges
Roads
Transit
Tunnels
Water Distribution
Water Treatment
Wastewater Collection
Wastewater Treatment
Stormwater Collection



Survey

Final for Cognitive Testing

This section is about roads.

Instructions

Please respond to all questions, as they pertain to the core public infrastructure (CPI) systems for which your organization owns. Please note that the national road inventory is being compiled separately using the National Road Network and therefore no questions on the length of roadways have been repeated as part of this survey.

Question 3.1 Which of the following best describe(s) your organization's primary method(s) for evaluating your road assets' physical condition?

Not Applicable

Pavement Management System	In Use?	Years in place
Computer-based pavement management system		
Paper records of pavement inventory and inspections		
No Pavement Management System		N/A
Other, please specify below		

If other, please specify: _____

Question 3.2 What is the percentage (based on replacement value) of your organization's road pavements that are in the following condition states? Detailed definitions about the 1-5 condition rating system can be found in the glossary.

Question 3.3

Percentage can be determined based on replacement value, 2-lane equivalent length etc. Please indicate method used _____

Rating	1 = Very Poor	2 = Poor	3 = Fair	4 = Good	5 = Excellent
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Condition State Asset Type	Not Applicable	Assessment Not Presently Possible	1	2	3	4	5	What is the source of your data?		
								Recorded data	Estimate by qualified rep	Other
Rural Roads										
• Highways / Expressways	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Arterial	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Collector	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Local	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Urban Roads										
• Highways / Expressways	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Arterial	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Collector	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Local	<input type="checkbox"/>	<input type="checkbox"/>	%	%	%	%	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If other, please specify: _____

Question 3.4 *What is the average expected service life and age of your organization's road assets?*

Asset Type	Average Expected Service Life (years)	Average Age of Your organization's Inventory (years)	How do you determine expected useful life?			
			Data analysis	Industry standards	Qualified Rep	Other
Rural Roads						
•Highways/Expressways						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Arterial						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Collector						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Local						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Urban Roads						
•Highways / Expressways						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Arterial						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Local						
○ Road subgrade			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
○ Pavement structure			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 3.5 In 2009, what are the values of the asset portfolio under your organization's ownership?

Valuation Method	Roads
Estimate of Current Replacement Value	\$
Please refer to your Statement of Tangible Capital Assets for PSAB 3150 for the answers below	
Historical Value (Cost)	\$
Accumulated Amortization (end of year 2008)	\$
Remaining Book Value (end of year 2008)	\$

Question #1

- Would the survey results be of benefit to you? If so, then how?



Question #2

- What type of support (data/tools/guidelines etc.) would help you the most in the management of your assets?

