COMPARITIVE STUDY OF CURRENT PRACTICE IN BRIDGE CONDITION ASSESSMENT

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Marwa Hussein, Anjan Bhowmick and Osama Moselhi

UNIVERSITÉ Concordia UNIVERSITY

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PRESENTATION OUTLINE

- INTRODUCTION
- RESEARCH OBJECTIVES
- METHODOLOGY
- FINDINGS OF THE STUDY

INTRODUCTION

Bridge condition Assessment provides decision makers with tools to select the appropriate solution, such as bridge rehabilitation or replacement

Bridge Management System (BMS) requires accurate collection of data pertinent to bridge conditions

The main difficulty in bridge condition assessment is the large number of bridges in the network, lack of fund and shortage of manpower

OBJECTIVES

Provides an overview of current practices in bridge inspection

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comparative study of current practices in bridge condition rating worldwide, with emphasis on the United States and Canada

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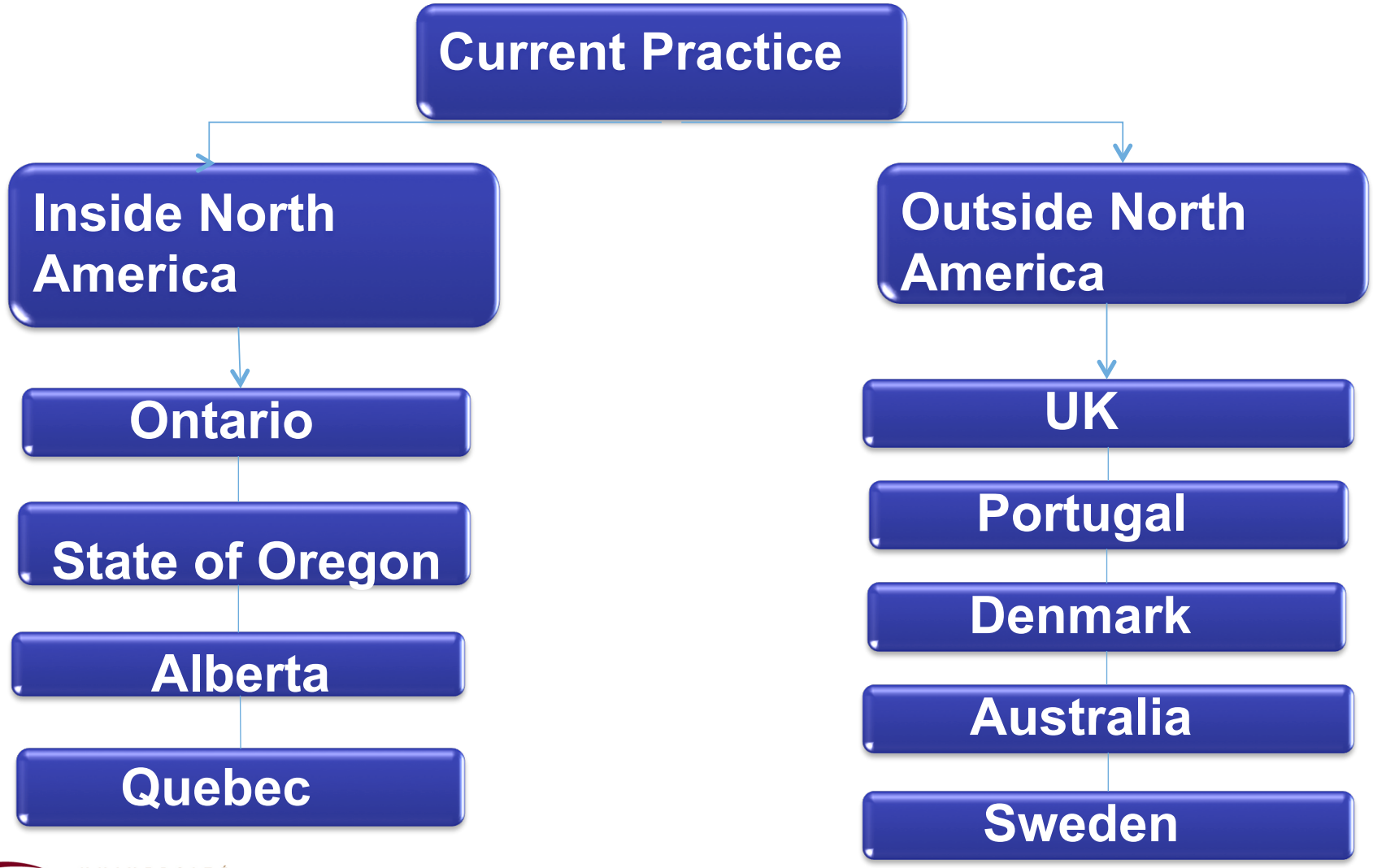
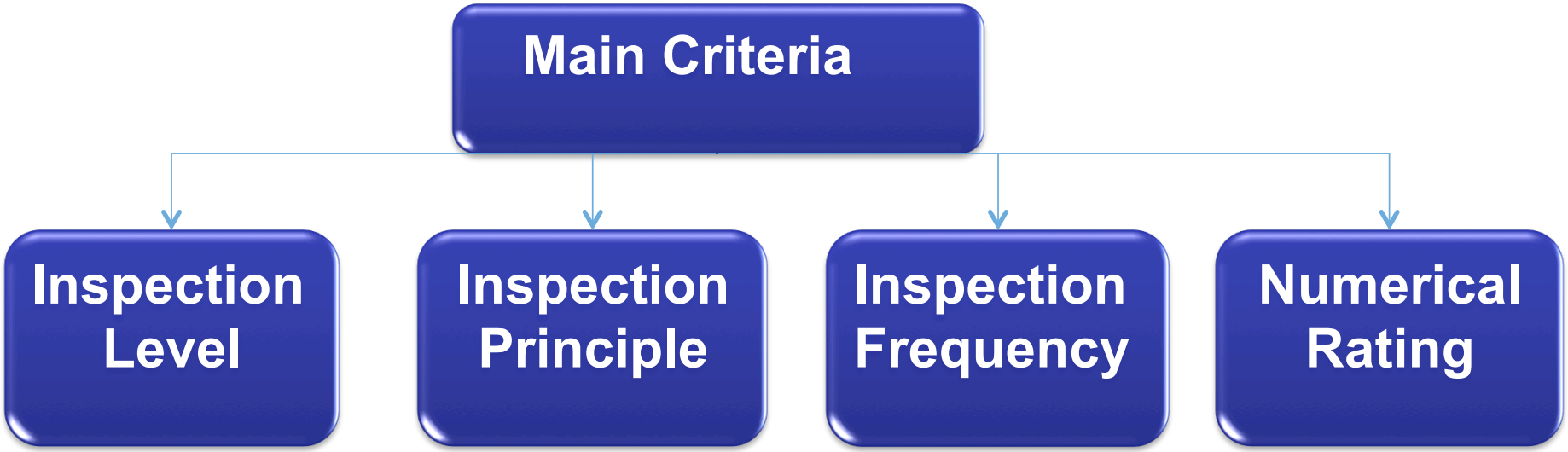
Scope of the study



Condition assessment



Current Practice - North America

Current Practice	Inspection Level	Inspection Type	Inspection Frequency	Numerical Rating
ALBERTA	Level 1 (Routine Inspection)	Visual Inspection	Set up By the Department	1 to 9
	Level2 (Specialized Inspection	In-Depth Inspection	Set up By the Department	Categories. ratings from 9-7, 6-5, 4-3, 2-1
ONTARIO	Routine Inspection	Visual Inspection	Daily, monthly or annually	1 to 6
	Non Routine Inspection	Visual Inspection	When required	-
	Detailed Inspection	Sketches measurement	Two Years	1 to 6
	Condition	In-Depth	Five Years	

Current Practice - North America

Current Practice	Inspection Level	Inspection Type	Inspection Frequency	Numerical Rating
State of OREGON	Level 1 Routine Inspection	Visual Inspection	2 Years	1 to 9
	Level2 Inspection	In-Depth Inspection	5 Years,	-
QUEBEC	Routine Inspection	Visual Inspection	Once a Year	1 to 6
	General Inspection	Visual Examination, destructive test	3 to 5 Years	-
	Special Inspection	Sketches measurement	As Required	1 to 6

Current Practice outside North America

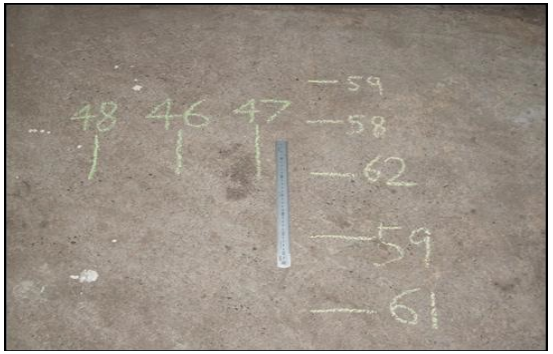
Current Practice	Inspection Level	Inspection Type	Inspection Frequency	Numerical Rating
United Kingdom	General Inspection	Visual Inspection	2 Years	1 to 5
	Principal Inspection	In-Depth Inspection	6-10 Years,	1 to 5
Denmark	Routine superficial Inspection	Visual Inspection	Annually	Final condition rating is based on
	Principal Inspection	Visual with investigation inspection	3 Years	importance of element
	Technical Inspection	In-Depth Inspection	As Required	-

Current Practice outside North America

Current Practice	Inspection Level	Inspection Type	Inspection Frequency	Numerical Rating
PORTUGAL	Ordinary Inspection	Visual Inspection	3 to 6 Years	1 to 7
	Principal Inspection	Visual Inspection and tests	3 Years	1 to 7
SWEDEN	Regular Inspection	Visual Inspection	Quick visit monthly	0 to 2
	Superficial Inspection	Visual Inspection	Once a year	-
	General Inspection	well trained inspector	3 Years	0 to 3
	Major Inspection	Complete Examination	6 Years	-

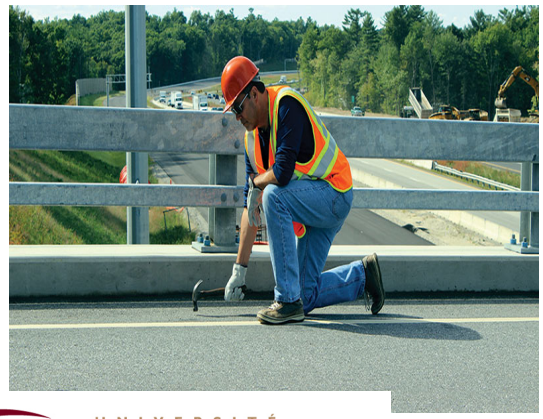
Observed Limitations

CURRENT PRACTICE	SHORTCOMING
ALBERTA	Level 1 is visual inspection, subjective. Chloride test is time consuming. CSE test, reading should be verified
ONTARIO	The detailed condition survey use destructive methods. Interpretation of NDE results requires training



Shortcoming of Current Practice

CURRENT PRACTICE	SHORTCOMING
STATE of OREGON	Chloride test, depth of carbonation and core tests are destructive. Hammer sound and chain dragging are time consuming.
QUEBEC	Load carrying capacity and material behavior are not included in the inspection. In depth inspection is not clearly defined



Characteristics of Current Practice Outside North-America

- There are three levels of inspection : Short interval check of safety, medium interval of maintenance needs and long intervals.
- There is less use on nondestructive evaluation methods in the special inspection.
- MRWA Australian manual incorporates the use of NDT methods.

FINDINGS of The Study

- Integration of Different NDE Methods is recommended in level 2 inspection
- The main Challenges of Using NDE Methods is Interpretation of results
- Condition driven frequency

Thank You