

Sharing Values with First Nations

CSVA 2011 Conference
Toronto, Ontario
Nov 14 -16, 2011

Rob Kivi, P.Eng.



Presentation Overview

Discover how:

- *Value Engineering was used to build consensus with project stakeholders*
- *VE expedited development of engineering solutions to support decision making*
- *Stakeholder participation in the VE permitted engaged stakeholder consultation*
- *The resulting solution provided a “win-win” outcome*

Presentation Overview

1. Study Background
 - a) Existing conditions
 - b) Reasons for initiating the VE study
 - c) First Nation's Concerns/Issues
 - d) Owner's objectives
2. Methodologies
 - a) Relationship building
 - b) Sharing of concerns and objectives
 - c) Transparent and objective evaluation process
3. Study Results
4. Conclusions

Study Location



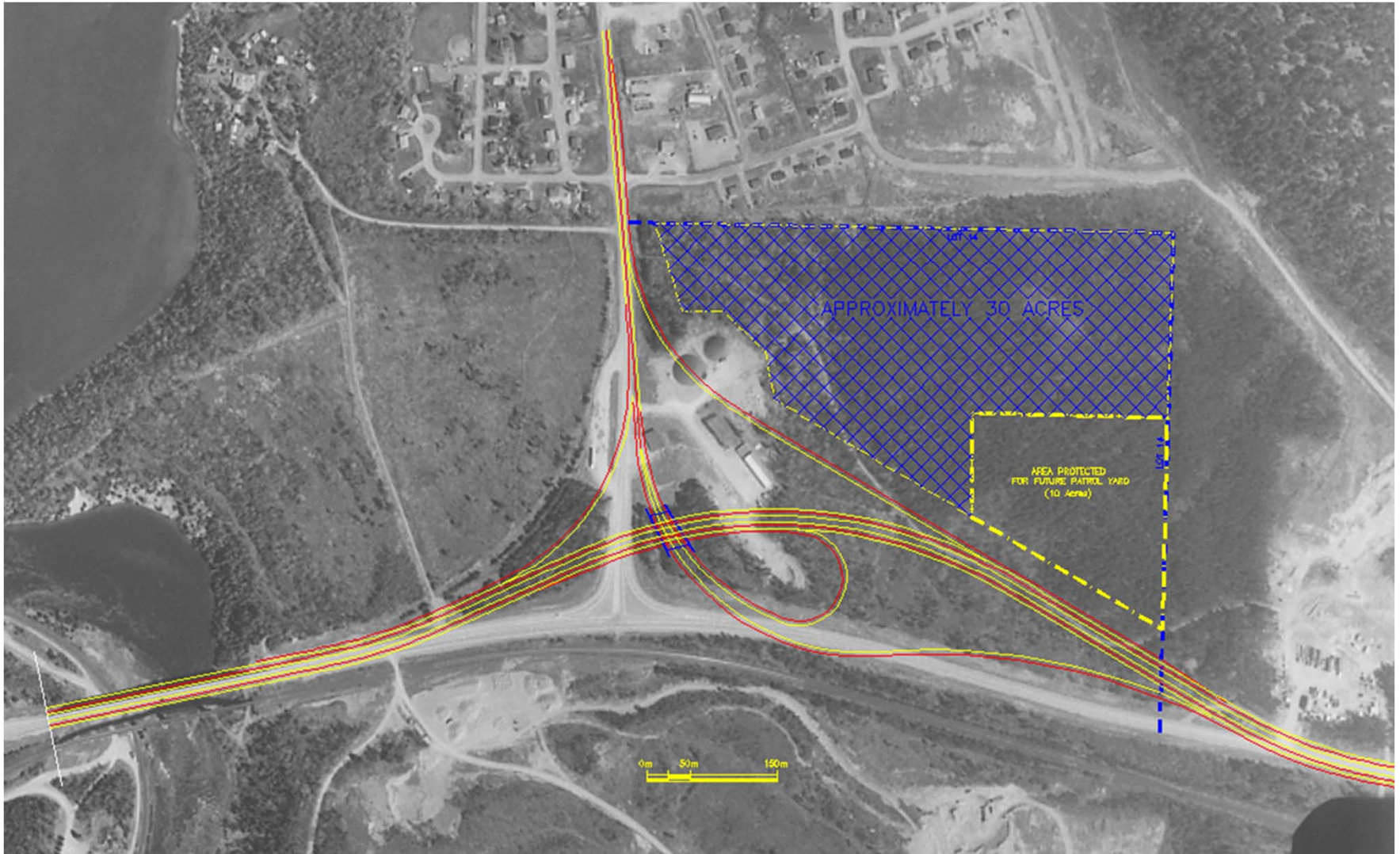
Study Background – Existing Conditions



Study Background

- MTO was protecting Lot 14 for construction of a future interchange at Highway 11 and Highway 17 and associated relocation of the existing maintenance yard
- Property protection was conservatively based on a conceptual design that had not been fully developed

Study Background – Base Case Design



VE Study Objective

To expedite MTO decision making regarding any potential surplus lands by:

- Identifying a preferred ultimate design concept based on a grade-separated interchange, including a preferred location for the Patrol Yard,
- Engaging stakeholders in the process, to better consider their needs, help them recognize MTO's needs and build consensus.

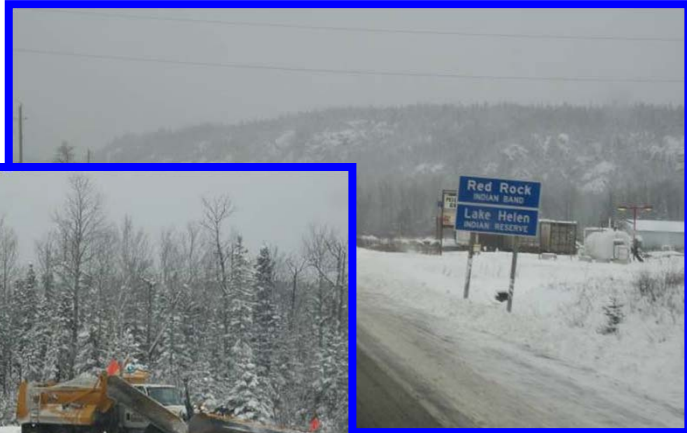
Study Methodology

- Met with Red Rock Indian Band (RRIB) in advance to explain VE process
- Full participation of RRIB representatives in the 5 day VE study
 - Opportunity for RRIB to express their concerns and present issues directly to the VE team
 - Opportunity for RRIB to input to the Function Analysis
 - Participation of all stakeholders in Creative, Development and Evaluation phases
 - Enhanced transparency of evaluation process
 - Opportunity for RRIB to experience the design development process and gain appreciation of standards, constraints and limitations
- RRIB provided opportunity to review and comment on draft Report

Study Methodology

- Information Phase was held at Red Rock Indian Band's Resource Centre
 - Team Introductions and familiarization
 - Overview of the Value Engineering process
 - Reviewed MTO's and RRIB goals and objectives
 - Reviewed Pre-Workshop Information Package
 - Presented Base Case
 - Reviewed constraints on VE recommendation
 - Developed Risk Register
 - Functional Analysis
 - Site visit and tour of RRIB reserve

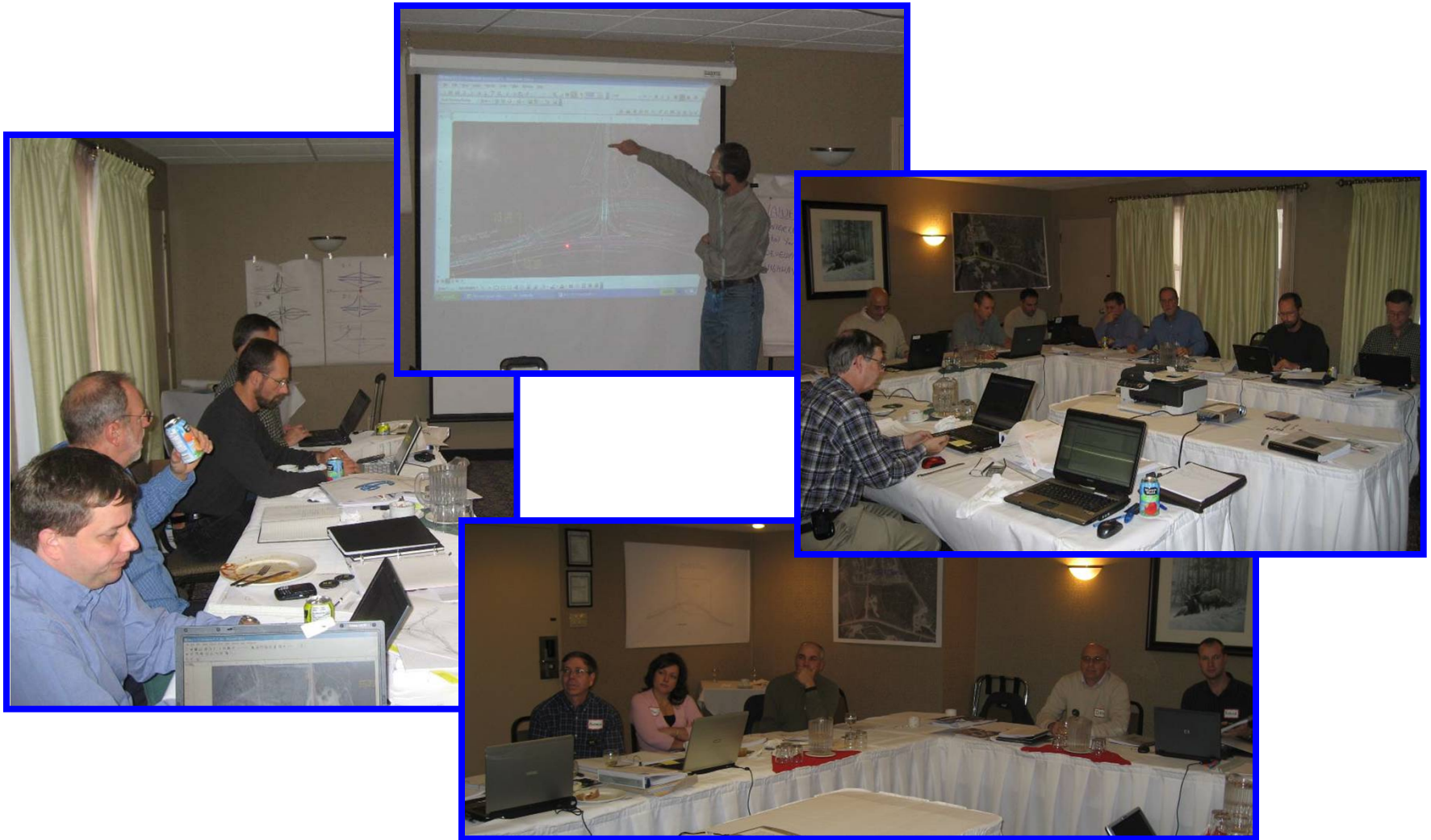
Site Visit and Tour



Study Methodology

- Remaining phases of the study were conducted at a hotel in Thunder Bay.
- Two RRIB representatives participated for the full workshop.
- Senior MTO staff participated in portions of the workshop.

Workshop



Concerns and Issues

- Owner (MTO)
 - Solution must protect for future grade-separated interchange
 - Solution must make provision for maintaining a Patrol Yard in the vicinity of the interchange
- Red Rock Indian Band
 - Existing Reserve is approaching capacity. Desire for expansion to support economic growth and residential development
 - Contiguous expansion is very important
 - Concerns about safety and operations on Highway 11, which bisects community. Local pedestrian and vehicular traffic uses and crosses the highway.

Major Project Risks

- Risk of not getting future Environmental Approvals for decisions made now
- Risk of adverse impacts on area businesses
- Unknown soil conditions
- Potential for environmental impacts on Gapen's Pool fish habitat
- Safety risk associated with providing high speed ramp entering RRIB community
- Limitation on potential development opportunity at RRIB
- Failure to protect adequate footprint for future interchange

Performance Criteria

<u>Factor</u>	<u>Weight</u>
• Patrol Yard Location	20%
• Development Opportunities	30%
• Traffic Safety and Operations	40%
• Sustainability	10%

VE Ideas and Scenarios

- 55 VE Ideas were generated and 23 Proposals developed and evaluated with input from all study participants
- Ideas put forward by RRIB were developed by the VE team for evaluation
- VE proposals were combined into four Design Scenarios (including Base Case) for development and evaluation
- All scenarios included both interchange and Patrol Yard

Study Results - Evaluation

HOW WELL DOES EACH SCENARIO SATISFY THE VARIOUS PERFORMANCE CRITERIA? INDICATE BY ENTERING THE SCORE (5,4,3,2,1) IN THE APPROPRIATE BOX IN PLACE OF E, VG, G, F, OR P, RESPECTIVELY.	PERFORMANCE CRITERIA	PATROL YARD LOCATION	COMMUNITY DEVELOPMENT OPPORTUNITIES	TRAFFIC OPERATIONS AND SAFETY	SUSTAINABILITY			TOTAL PERFORMANCE SCORE	TOTAL CAPITAL COST (\$M)	PERFORMANCE = P COST = C
		20	30	40	10			100%		
BASE CASE	5	E	E	E	E	E	E			
	4	VG	VG	VG	VG	VG	VG			
	3	G	G	G	G	G	G			
	2	2	F	F	2	F	F			
	1	P	1	1	P	P	P			
	SUBTOT.	40	30	40	20	0	0	130	\$41.10	3.16
SCENARIO 1: Improvements to Base Case	5	E	E	E	E	E	E			
	4	VG	VG	VG	VG	VG	VG			
	3	G	G	G	3	G	G			
	2	2	F	2	F	F	F			
	1	P	1	P	P	P	P			
	SUBTOT.	40	30	80	30	0	0	180	\$38.60	4.66
SCENARIO 2: Diamond Interchange east of existing Highway 11	5	5	E	E	E	E	E			
	4	VG	4	4	4	VG	VG			
	3	G	G	G	G	G	G			
	2	F	F	F	F	F	F			
	1	P	P	P	P	P	P			
	SUBTOT.	100	120	160	40	0	0	420	\$26.80	15.67
SCENARIO 3: Diamond Interchange at existing Highway 11	5	5	E	E	E	E	E			
	4	VG	VG	VG	4	VG	VG			
	3	G	3	3	G	G	G			
	2	F	F	F	F	F	F			
	1	P	P	P	P	P	P			
	SUBTOT.	100	90	120	40	0	0	350	\$30.20	11.59
SEEK THE BEST - NOT PERFECTION										

Why did Stakeholder engagement in the VE study succeed?

- Full participation of First Nations stakeholders helped to build consensus by allowing them to:
 - Present their concerns directly to the VE team
 - Participate in the Function Analysis and ensure that their needs are included
 - Participate in determining Performance Criteria and establishing their relative weightings
 - Contribute to the Creative and Evaluation phases and witness that their ideas are given serious consideration by the VE Team
 - Participate in the Development phase and gain an appreciation for the engineering standards and constraints that impact the feasibility of various ideas
 - Recognize that their concerns are taken seriously and balanced appropriately with other evaluation criteria
 - Better appreciate that a fair and transparent evaluation is used in selecting the preferred alternative

Questions?

Rob Kivi, P.Eng.

KiviR@mmm.ca

(905) 882-7272