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Sharing Ideas with First Nations through Value Engineering

Modified Study welcomes new perspectives

The Ontario Ministry of Transportation (MTO) recently embarked on a modified Value Engineering Study with the full participation of the Red Rock Indian Band. The Red Rock Indian Band community had reached development capacity at its Lake Helen land base on Highway 11 just east of Nipigon, Ontario. The First Nation's land base was bounded by Lake Helen on the west and constrained to the north and east by a high rocky ledge. Lot 14, government-owned land in the Township of Nipigon, appeared to be the only opportunity for contiguous expansion but was protected by the ministry for future use. The Band expressed interest in acquiring all or a portion of Lot 14 from the ministry.

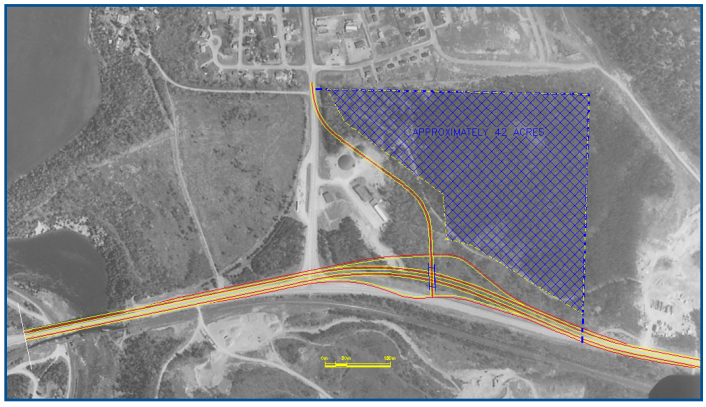
Value Engineering (VE) is a systematic, organized method of investigation led by a trained facilitator. During the process, multi-disciplinary teams investigate and analyze the functional requirements of a project to achieve the essential functions at the lowest total cost (capital, operating, maintenance and societal) over the life of the project. VE teams identify alternatives to reduce overall risk and to improve project effectiveness and sustainability, and/or reduce total project costs using a combination of creative and analytical techniques by seeking optimal value, defined as the ratio of stakeholder needs over resources. Resulting resolutions are built on consensus, transparency and respect.

Future interchange, First Nation expansion or both?

At the time of the study, the ministry was protecting Lot 14 for the future construction of an interchange at the intersection of Highways 11 and 17. By protecting the entire lot from development, MTO could maintain flexibility for the future relocation of an existing patrol yard that was situated on Lot 14, ensuring it would be in close proximity to the proposed interchange.

MTO's property requirements were conservatively based on a conceptual interchange design from the mid-1990s and at that time, it was understood that a design to relocate the existing patrol yard would be required at a later date. When the Red Rock Indian Band requested the ministry's surplus lands be made available for the First Nation's expansion, MTO needed a quick and comprehensive method to identify and confirm ultimate property requirements without the benefit of an updated preliminary design and environmental assessment. Engineering solutions were required to achieve the optimum blend of highway development needs and surplus land.

For this workshop in Thunder Bay, the VE Team included four participants from MTO, two from Red Rock Indian Band, and three consultants from MMM Group, a VE consultant group.



Value Engineering Study recommended scenario. Hatched area denotes potential surplus land.

VE Study Methodology

In a typical VE study, MTO often involves stakeholders such as municipal representatives who are familiar with the planning or design of roads and can readily participate in a technical capacity without previous exposure to the VE process. This particular study accommodated Band members without backgrounds in road planning or previous value engineering experience. Given the unique needs of this First Nation community, MTO invited the Band to participate in a five-day VE study, sharing their ideas >

Modified Study welcomes new perspectives, *continued*

and values while gaining an understanding of the engineering design process. The goal of the study was to support the selection of the best value interchange configuration that would meet the needs of the local community and highway travellers. The study expedited decision making and helped all parties understand different perspectives from the technical constraints of highway design to local community aspirations.

To welcome the participation of the Red Rock Indian Band, the VE process was modified as follows:

- Meeting with the Band in advance to explain the VE process and to start building a relationship between the VE team and Band representatives;
- Using Band facilities for the workshop;
- Using value match processes to assess and agree on the major needs of the stakeholder, enabling all participants to contribute their knowledge and skills;
- Including performance measures that reflected community values such as economic development potential and sustainability to assist the team in understanding the project needs in terms other than cost; and
- Modifying the evaluation of performance measures by using a scale that ranged from excellent to poor, rather than a mathematical scale. This enabled all stakeholder participants to contribute to the evaluation process.

This collaborative approach helped build consensus as the Red Rock Indian Band presented their concerns directly to the VE team; participated in the function analysis; contributed to the creative and evaluation phases; and observed the serious consideration given to their ideas. At the same time, Band members gained a better understanding of the engineering standards and constraints that impact the feasibility of various ideas.

The modified VE process provided the Band with an appreciation that a fair and transparent evaluation was used in selecting the preferred alternative. The process was also considered highly successful by Rob Kivi, Consultant Project Manager, Highway Engineering, MMM Group, who organized and planned the study, "This VE Study was an excellent example of how Value Engineering can be used for consensus building. The workshop provided the opportunity for all stakeholders to understand the concerns of the other parties and to work co-operatively toward a solution that recognized and effectively balanced all of those concerns."

Project Performance Measures

1. Community Development Opportunities
2. Traffic Safety and Operations
3. Patrol Yard Operations
4. Sustainability

Highway 11 alongside Lot 14, facing south toward Highway 17.

A Win-Win Recommendation

This collaborative effort resulted in a recommendation that scored equal to or better than other considered scenarios in all performance criteria and also had the lowest estimated capital cost. Based on the study's recommendations, surplus ministry land within Lot 14 is presently being prepared for transfer to the First Nations.

This study process demonstrated the benefits of including external stakeholders, such as First Nations, as full participants in the VE process to deal with unique stakeholder issues. In September 2011, the American Association of State Highway and Transportation Officials awarded an international Value Engineering Award to the ministry, the Red Rock Indian Band, and MMM Group for this study ●

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