Project: Developing a Rating System to Facilitate Greener Road Projects

Executive Summary

The University of British Columbia (UBC) and City of Vancouver (the City) afforded the opportunity through the Greenest City Scholar program, to research and develop a tool applicable on the City's capital utility and road infrastructure projects to achieve the objectives outlined in City of Vancouver's Greenest City 2020 Action Plan, Green Operations Plan, and Transportation 2040 Plan. A common focus of all the aforementioned actions and plans is the need to assess infrastructure sustainability. In this context, the City did not have a sustainable infrastructure rating system. Thus, this research outlines a rating system to track sustainability of the City's projects and to provide directions to future projects.

The paper has been complied and a rating template has been developed through literature reviews, interviews and the application of a developed rating system over an ongoing project, as a pilot study. The research encompasses road utility applicable on single discipline project or multi-branch projects comprising primarily utility and road works (sewer, water, and streets). The developed rating system is applicable in design phase as well as construction phase. It is designed for level 2 and 3 projects (normally $2M+ defined by the City's Project Management Framework.

There have been a number of existing sustainability infrastructure rating systems in North America. This paper reviews four systems in detail: Envision™, Greenroads™, INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) and CGGR (Canadian Guide for Greener Road). All of these systems cover one or more aspects and does not apply as a whole on road utility projects. Thus, given the targeted scope of work, an in-house rating system was developed which is applicable to road utility projects with the City.

The paper speaks about an in-house rating system consisting of a rating template and analysis tools. The rating template is an interactive Microsoft Excel tool. To better fulfill the objectives, over 40 people were contacted to provide expertise on the design of the rating template. After the rating template was developed, it was used to assess a recent project in the City. The pilot study provided useful feedback on the design of the rating template. Work was also done to develop an analysis tools, as demonstrated in the report, but the tool is a preliminary version.

At last, the report recommends that the developed rating system needs further development. Firstly, due to consideration of usability, some sustainability issues were removed from the rating template. It is discussed that whether those issues should be added to the rating system in the future. Moreover, recommendations are given on how to increase the usability and data quality and how to better implement the rating system. There are also some high-level suggestions, i.e. increasing the design team involvement in the selection of sustainable materials and encouraging public engagement.