re:invent

Experimentation in Action at Calgary Transit – Integrated Data for Condition Based Decision Making

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Once upon a time, Calgary had a lovely LRT system. To serve their citizens even better, they increased train frequency, added longer trains and extended service later and later into the night and earlier and earlier in the morning. The commuters and riders loved this, but having trains on track at nearly all hours of the day made it difficult for transit workers to safely and routinely measure and monitor conditions. When they did measure, it was done by hand, in shorter segments and could not be measured with the load of a train. Also, it was a bit difficult to compare results with previous measurements, or discuss how the LRT infrastructure functioned as a complete assembly. Workers found themselves reacting to trouble spots rather than following an efficient maintenance plan.The system was still great at moving people, and it was growing, but they needed new tools to stay 'on Track'.

Fortunately, visionary leaders in the CT Infrastructure team proposed and selected a rail borne, integrated, non-contact Infrastructure Inspection and Measurement System, to be built, installed, and calibrated by MerMec Inc. With the system running, Scout could collect data correctly and consistently, while driving at the same speed as the LRT trains. MerMec also makes the data easier to understand and interpret by providing analysis and graphing tools that would be the icing on the cake.

Calgary Transit's Infrastructure Engineering Support team carefully supervised the installation of such a system on an underused LRT car, and validated the initial results so they really understood what the system could and could not do. The next step was to clearly define the State of Good Repair for the Track and Overhead Contact wires by workshopping with stakeholders.

With these parameters in hand, the testing could proceed – just like a science experiment, the scope is defined, and the recording of data proceeds, FAST! Reporting based on the pre-defined parameters is quick and the workers can get on with addressing identified issues. In the future, results might even be integrated into the City's Asset Management system.

Safety, Comfort and Efficiency have all benefited from this data based approach which also helps the Senior Leadership Team to make decisions for investments in maintenance and life-cycle replacements based on quantitative, clear business cases.

Such a data based approach, making use of 'decisions before testing' can be applied to nearly any municipality. Integrated data, consistently collected, forms the backbone of this condition based process, and enables rapid, effective and efficient application of City resources.

Start eyes wide open
We see the work to be done
Swiftly we engage.