

COURSE PROFILE

Managing Your Road System – Risk and Performance

A road system is so much more than just the pavement, maintains Dave Anderson.

It is an intricate geometric design of curves, rises and falls. It is a complex structure subject to dynamic loading and environmental degradation. It is a communication system of lights, signs and markings. It is a municipality's most expensive asset and it's most costly system to maintain. It provides enormous economic benefits and exposes a municipality to equally enormous risks and liabilities.

It is, in short, a complex system of interrelated elements and you can't deal with any one element in isolation, he says. You need a holistic approach to maximize performance and minimize risk.

For more than 30 years, since his first job as a surveyor in the Region of Halton to his last municipal position as manager of transportation operations in the Region of Waterloo, Dave Anderson has been involved in the management and maintenance of municipal roads. It has been, he says, both rewarding and frustrating at the same time – rewarding because the work has enormous benefits to the community; frustrating because inappropriate decisions waste resources and expose a municipality to unnecessary financial risk.

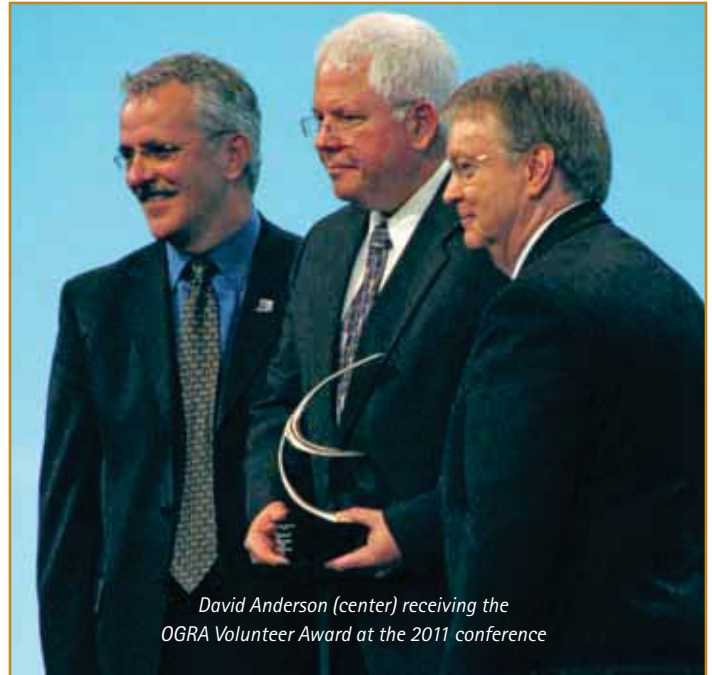
“I started getting involved with road needs studies and pavement management in the 1980's when I was working with a municipality that was experiencing significant development growth. That's when my Scottish blood kicked in,” he recalls.

“I realized the cost implications of the new roads that we would have to pave in 20 years. For the most part the capital program was structured around a worst first approach and consumed the majority of the resources. There was the realization that we should be looking at the system as a whole and better allocate the resources.”

It was also an approach that Anderson felt was putting municipalities at financial risk and not just from an operational point of view. There were legal ramifications as well.

Take for example, the recommendation to reconstruct a road section due to a number of critical factors such as pavement distress, pavement width, poor drainage and substandard alignment. If due to budget limitations the municipality elects

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David Anderson (center) receiving the OGRA Volunteer Award at the 2011 conference

InSight

Managing Your Road System – Risk and Performance

A municipal road management course that takes a systems approach to improving performance and minimizing risk

Content

- Inventory Manual for Municipal Roads overview
- Asset identification
- Existing road conditions
- Traffic volumes, types, and growth
- Point ratings of road elements
- Type, timing and costs of improvements
- Interpreting data
- Liability exposure
- Managing pavements
- Capital and maintenance budgets
- Other right-of-way assets
- Pavement defects and treatments
- Urban and rural road case studies

Date: May 23 - 24

Class size: 30

Target participants:

Road managers and engineers, technologists and technicians responsible for capital planning and road system management.

Location: To be announced

Cost: \$465 (course only)

Course instructor

Dave Anderson – Asset Management Specialist, Stantec Consulting

More Information:

check out the education section of OGRA's website ogra.org

to only improve the pavement distresses, it may well be exposing itself to risk.

From a financial perspective, failing to correct the drainage problem could lead to pavement failure and expensive reconstruction costs. From a risk perspective, failing to address the substandard width and alignment (even though the municipality is aware of the deficiencies) could create a safety hazard.

“Municipalities are sued with alarming regularity and the first question in discovery is always ‘were you aware?’,” Anderson points out. “If you can’t raise the bridge, lower the water. If the budget is the limiting factor in the selection of rehabilitation treatment, consider other ways to mitigate the risks such as additional signage and speed zone reductions.”

What municipalities needed to be aware of, he realized, was the need for a more holistic approach to managing the road network, a process that considers all aspects of road design and performance.

At 162 pages, the Inventory Manual for Municipal Roads can be a bit intimidating, Anderson says, but there is nothing quite like it for ensuring a complete and thorough needs study.

The Ministry of Transportation of Ontario issued the first edition of the manual in the 1988 when it was still in the business of funding municipal roads. In order to ensure that funding was appropriate, justifiable and equitable, all municipalities

were required to use the manual to develop a standard roads inventory. The inventory covered six critical road management areas: capacity, surface type, width, geometry, structural adequacy and drainage – exactly the holistic approach that Dave Anderson says needs to be taken.

However, when MTO stopped funding municipal roads directly, some municipalities let the needs study slip. It was, Anderson claims, a short-sighted move.

“The needs study provided a rational approach for measuring and monitoring road conditions,” he says. “It not only helped MTO develop its funding priorities but also, because the information was standardized, it helped municipalities organize their asset management systems, develop trends, track improvements and set budgets and capital plans.”

Two years ago, Anderson, who is now an asset management specialist with Stantec Consulting, developed a new course for Ontario Good Roads Association, “Managing Your Road System – Risk and Performance” based in part on the Inventory Manual for Municipal Roads.

“Even though the last version of the manual was issued in 1991, it is still as relevant today as it was 30 years ago,” he says. “The manual establishes the broad decision matrix that road managers need. We cover, for example, how to interpret

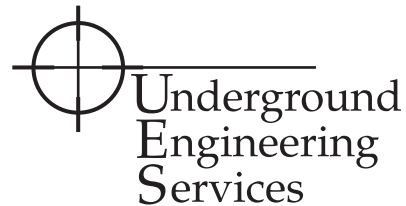
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the ratings in the Inventory Manual for Municipal Roads; how to recognize the implications of defects within the road allowance with respect to liability exposure and performance; how to make decisions regarding road rehabilitation treatments; and how to differentiate between structural and non-structural defects.”

But given the holistic objectives of the course, the technicalities of road management are only part of the approach. After 35 years of presentations to municipal councils, Anderson is convinced that managing a road system has to be a team effort and council is part of the team.

“Council has to have the information at the right level to understand and make decisions,” he says. “Once you have systematically identified the gaps in the road system, you have to advise council on the costs, the risks and the benefits so that they can address the issues. It’s an important role for any road manager and developing the right techniques to bring council on board is an essential component of the course.”

The two-day course, designed for road managers responsible for capital planning and network management, includes lectures, workshops and case studies.

“My objective is to show road managers how all the various parts of the system interrelate and that performance and risk are two sides of the same coin,” concludes Anderson. “For the participants, the revelation is that it’s not as complex as it sounds. We have a straight forward methodology to assess road systems in a holistic way.” **M**



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