Saskatchewan Municipal

Best Practice

SASKATCHEWAN MUNICIPAL AWARDS 2007 WINNER MUNICIPAL SERVICE EXCELLENCE

Full Depth Subgrade Strengthening of Roadways

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THE ISSUE

The RM of Britannia No. 502 used a new method of rehabilitating roadways to produce long-lasting, safe, and durable roadways at a very significant cost-savings than using conventional construction methods. By mixing road subgrade to full-depth, with cementitious and granular material, watering and compacting the blended layer, sealing with bituminous prime coat and aggregates and either a hot or cold mix bituminous surface.

THE NEED

The practice was necessary due to the rising costs for fixing roads and excavation was extremely intrusive to the environment. The goal was to provide cost-effective way to produce long-lasting, durable, safe roads to accommodate high volume, heavy traffic generated by the heavy oil industry.

CREATING THE PRACTICE

To help with the design of the practice, information was obtained by researching options and costs, and apprising ratepayers of new technology. Options were explored through theoretical data, visual inspection and by taking core samples.

APPROVAL

The Council apprised ratepayers of the Full Depth Subgrade Strengthening of Roadways in order to gain their buy-in to the project. The Council members were willing to proceed with the new technology because theoretical data and common sense indicated that it was worth at least testing.

CONSULTATION

As part of the consultation process, ratepayers were advised of the choices, and the related costs. After researching and examining all options, the council's decision was to proceed.

IMPLEMENTATION

To implement the practice, the council researched options, chose this one, completed detailed soil testing, and did a test section. The RM Council members were responsible for organizing and implementing the necessary work to make the practice succeed.

RESOURCES REQUIRED

Budget

Council spent $190,000 to $230,000 per kilometer to complete the roadways and saved between $135,000 to $170,000 per kilometer over using the conventional surfacing system. In the long run, there will be fewer road maintenance costs.

Staff

Human resources required to complete the project included the RM Council, transportation services employees and municipal engineers to routinely evaluate the effectiveness of this process.

Infrastructure

The estimated total cost by conventional method is $7,975,000, compared to $4,620,000 with FDSS, saving the RM over $3.3 million.

EVALUATION

There were many benefits of initiating this practice for the RM of Britannia No. 502. They include: much less cost to repair roadways; better roads; fewer failures of driving surfaces; easily repaired surfaces; no need for right-of-way widening and associated responsibilities, such as legal land survey, land purchase or easement, registration of land titles, removal and reconstruction of fences, reseeding ditches and backslopes, possible installation of culverts or bridges, etc.; and it eliminated need for environmental assessments, particularly for adjacent water bodies, wetlands/habitat for aquatic birds/animals. The practice also established a high level of communication and rapport with the heavy oil industry, who contribute to the cost of the road system through concentrated haul agreements.

LESSONS LEARNED

Through this process, the municipality learned that council members, administrators, and governments have a responsibility to be ever vigilant in identifying and implementing new and innovative ways of doing business to the benefit of ratepayers and constituents.