

Best Practice

Full Depth Subgrade Strengthening of Roadways

CONTACT

Rural Municipality of Britannia No. 502

P. 306.825.2610

F. 306.825.8894

E-mail. rm502@sasktel.net

Mail. 4824 47th Street, Lloydminster, SK, S9V 0Y7

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THE PRACTICE

In 2001, the RM of Britannia became the first RM in Saskatchewan to use Full Depth Subgrade Strengthening (FDSS) of Roadways. FDSS is a process that involves mixing the road subgrade into its full depth, providing longer lasting and more durable roadways.

The need for FDSS became apparent when the existing roadways in the municipality could no longer provide long lasting, durable and safe roadways to accommodate increased traffic volume in the municipality. FDSS was believed to be a more cost effective method of road construction for the municipality.

THE PROCESS

Council appraised the RM ratepayers of this new road construction technology, but had limited test data available. Options were limited to conventional methods of construction involving excavating massive volumes of earth, requiring a substantial capital investment in equipment and labour, or to try the new FDSS technology. The RM has established a high level of communication and rapport with the heavy oil industry which contributes to the cost of the road systems through concentrated haul agreements. The RM was willing to proceed with the new technology because of strong theoretical data, which was believed to have strong environmental benefits and be more cost-effective than the existing roadways.

THE RESULTS

Council, transportation service employees and municipal engineers routinely evaluate the effectiveness of the FDSS roadways by visual inspection and by taking core samples. Results indicate this technology withstands high volumes of traffic and weather conditions more effectively than the previous roadways. An additional benefit obtained from the engineers' report indicated an estimated savings of \$135,000 to \$170,000 per kilometer in roadway construction with the new technology.

The new roadways in the municipality are also capable of supporting an increased traffic flow generated from expected growth in the oil and gas industry within the municipality. The improved roads will enhance the transportation system throughout the RM and the cost savings will increase the fiscal capacity of the municipality

LESSONS LEARNED

The RM of Britannia has learned that conventional methods of infrastructure construction are not always cost effective for municipalities. The amount of money saved by the municipality as a result of implementing a new method of road construction has increased fiscal capacity and allows Council to focus on other projects. The success of the new roadways in the RM of Britannia has resulted in other surrounding RMs invest in FDSS.