

### 2.4.3 Implementing the Canadian National Road Network linear referencing data model at New Brunswick DOT

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As part of a long term project to develop a Canadian Geospatial Data Infrastructure the Center for Topographic Information (CTI) of Natural Resources Canada (NRCan) has provided a standard network data model called the National Road Network (NRN) that includes road network topology and linear referencing. The model provides raw material for individual provincial highway agencies to adapt to their route and asset data maintenance business needs. It also imposes standard reporting requirements. Each province now faces the challenge of how to implement the NRN and incorporate NRN data maintenance into its business processes.

New Brunswick Department of Transportation (NBDOT) decided to implement its version NRN data model, the New Brunswick Road Network (NBRN) as part of a project to integrate spatial and logical network and asset data and replace the separate legacy systems used to maintain each. Spatial data was migrated from a Caris-based system (HDM) and logical route data was migrated from a custom Oracle data management application (TNMS). Both were combined in an integrated Exor database where they are now maintained together.

The adoption of the NRN data model standards imposed a number of design decisions on the project team, and required significant restructuring of the network data to remove many network breaks that were not at real intersections—a requirement of the model. This paper describes how these decisions were balanced with NBOT business requirements and some of the technical issues addressed in the network restructuring.