Self-Screening Registration Criteria

T02: Forest Road Survey and Design

The Ministry of Forests and Range will only contract with technical services consultants to carry out road survey and design of forest roads under service category TO2, who have the mandatory knowledge and experience as detailed below.

Mandatory Knowledge Requirements

1. have considerable recognized specialization within the discipline of forest road survey and design services as required by the ministry, including:

    - use of survey instrumentation for forest road projects to perform the service to the specified precision for survey levels 1 to 4 as per the *Forest Road Engineering Guidebook*
    - an ability to record detailed field data, including terrain and landform types, geologic processes, soil and construction features (e.g., location of hubs, extent of cross sections and soil classification)
    - an aptitude for mathematics as applied to maintain survey accuracy, and an ability to take and maintain accurate field notes that fulfil input data needs of road design software
    - a thorough applied knowledge of forest road design and road design software (e.g., road design software may be specified as either basic forest road models, such as Road Eng or high end earthworks models with multi- and complex surfacing capability such as EMXS or Eagle Point's Civil Design solutions software packages)

2. have considerable knowledge of:

    - terrain types
    - vertical and horizontal alignment requirements for design vehicle types
    - applied knowledge of forest road construction techniques and equipment capabilities to optimize road design with material movements
    - ability to interpret and incorporate prescriptions for design and construction prepared by a professional
    - soil types, and road drainage
    - stream crossing survey requirements

3. have a working knowledge of:

    - soil and rock mechanics
    - the principles of forest hydrology (both ground and surface water)
    - principles of slope stability
    - construction equipment and construction techniques, including and understanding of the types and limitations of excavation and drilling

4. be familiar with Provincial legislation such as the *Forest Practices Code of British Columbia Act, Forest and Range Practices Act,* and *Water Act,* and associated regulations under those

acts, including the Water Regulation, Forest Road Regulation, and the Forest Planning and Practices Regulation, among other legislation relevant to specific projects in forest road route planning and construction

5. have knowledge and understanding of the principles and best management practices relevant to road survey and design provided in publications such as:

    - Forest Practices Code of BC Fish-stream Crossing Guidebook (March 2002)
    - Forest Practices Code of BC Forest Road Engineering Guidebook (June 2002)
    - Forest Practices Code of BC Riparian Management Area Guidebook
    - Forest Practices Code of BC Fish-stream Identification Guidebook
    - Forest Practices Code of BC Mapping and Assessing Terrain Stability Guidebook (August 1999)
    - Forest Practices Code of BC Gully Assessment Procedure (February 2001)
    - Best Management Practices Handbook: Hillslope Restoration in British Columbia (November 2001) http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/bmp_hndbk_nov_01.pdf

6. in the case of projects that come under the control and administration of BC Timber Sales (BCTS), obtain BCTS Environmental Management System (EMS) Level 3 training prior to commencing work on any BCTS Worksite.

Mandatory Experience Requirements

Consultants providing services for forest road survey and design require a minimum of 5 years of demonstrated relevant experience in survey and design in forestry or related resource industries in British Columbia. The consultant must have specific work experience in the following activities and be able to meet specified precision levels and best practices as identified in the Ministry of Forests and Range Engineering Manual available at the following website: http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual-Posted-June29-09.pdf

- carry out fieldwork for a survey traverse and establishment of survey controls consistent with the requirements of road design outputs
- able to meet specified precision for survey levels 1 to 4
- preparation of geometric road designs including plan profiles, cross sections and road design reports
- stream crossing site plan surveys for bridges and culverts and prepare associated drawings
- carry out road construction surveys including re-design as appropriate and field slope staking