Overview of Planning in the Ministry of Transportation and Infrastructure

Highway planning is a key business function in MoT. Full time staff carry out planning from headquarters, the three Regions, and some Districts. Planning staff work closely with a variety of other business units including engineering (design, traffic, bridge, environmental), property, rehabilitation, project management, and others. Consulting engineers are often retained for a variety of planning services including systems, corridor, and project planning studies, project development, business case preparation, and travel demand forecasting.

Highway planning plays an important role in the ongoing development of the transportation system in British Columbia. One of its principle purposes is to link safety, mobility, and reliability performance problems along the province’s extensive highway network to good capital improvement options, and to recommend and justify a preferred option.

Highway planning is a diverse activity. At the project level, planning is the first step in the project development life cycle, generally preceding preliminary, functional, and detailed design. Planning follows a proven, systematic, and structured problem solving process to identify the worst-performing locations, to understand the root causes of problems, to develop and evaluate a range of good improvement options, and to recommend and justify a preferred option. All of this is summarized in a project business case and used to facilitate good decision making for capital project funding.

Typical improvements resulting from the planning process include specific safety actions, capacity upgrades on our rural two lane highway system (i.e. passing lanes, climbing lanes, and 4-laning), realignments, intersection auxiliary lanes, and interchange improvements.

Highway planning within MoT makes use of a number of important tools, methods and products:

**Project development** refers to the process of moving from an identified problem or problems through to a justifiable project which delivers a cost-effective performance improvement. It involves all of the following:

- **Business cases** are the mainstay of justifying a project for capital funding. They summarize the nature of problem(s) and how/why a particular option would deliver an improvement to performance (e.g. reduced collision frequency and/or severity, higher average travel speed, reduced delay) and whether the proposed investment is cost-effective. They are prepared during “project planning” which focuses on a specific location or area of the highway system. Using “multiple account evaluation” (MAE),
business cases document the anticipated financial costs and customer service benefits over 25 years, and the nature of any impacts (environmental, social/community, economic development) as well as the extent to which they can be mitigated. Risks and uncertainties are discussed, with an explanation of how the cost estimate was developed. Key decision indicators in a business case are the “net present value” and “benefit-cost ratio”. See: http://www.th.gov.bc.ca/publications/planning/index.htm

- MoT’s **System Level Performance Analysis** (SLPA) is carried out periodically to identify and rank safety and mobility problem locations throughout the provincial highway system. The SLPA is a network screening exercise using large datasets and detailed analysis methodologies to identify locations which have a high potential for improvement. Problems identified at the system level need to be confirmed at the project level. System level safety analysis identifies collision prone intersections and collision prone highway segments throughout the provincial highway system. System level mobility analysis identifies passing, climbing, and 4-laning opportunities throughout the provincial rural 2-lane system. The SLPA informs the Unfunded Projects Inventory, and is a useful tool for targeting project development activity. It is also used to update MoT Executive on the state of the highway system’s performance.

- A **Corridor Management Plan** (CMP) is a comprehensive assessment of how a particular numbered highway corridor (or segment of a longer corridor) is operating and performing regarding safety, mobility, reliability, and infrastructure condition. It typically covers an extended length of highway, and therefore does not get into the level of detail that a project level business case would provide, but it presents an overall view of where the problems are and where project development should be focused. Various stakeholders are consulted during CMP preparation, so it is a valuable tool to get input from external sources.

- The **Unfunded Projects Inventory** (UFPI) is a list of projects identified as priorities by the regions with potential for being included in the capital program. The level of project development completed for each project varies from minimal (problems identified but solutions are uncertain) through to well-developed (problems defined and optimal solution identified through a business case). Basic information is recorded for each project such as location, deficiency, scope statement, status, etc. As well, each project is scored under a number of performance and strategic categories to facilitate a high level ranking of the list. The UFPI supports objective decisions regarding the allocation of project development funding, and the programming of capital projects for design, property acquisition, and construction.