COMPREHENSIVE LRT/RAIL FEASIBILITY ASSESSMENT Attachment # 1
POTENTIAL SCOPE OF WORK

OVERVIEW

Development of a comprehensive LRT/Rail feasibility Study would be a significant undertaking in terms of time and resources. Based on previous studies and similar undertakings in other jurisdictions, the order-of-magnitude cost for such as study would be between $200,000 to $400,000 depending on level of analysis, field work and engineering. The CRD already has some planning components underway, including the calibration of the transportation model, updates to the regional population and demographic profile, and preparation of the regional land use model – which would contribute to the project and reduce the cost of the undertaking.

To provide the Committee members information about the potential scope of the work, this attachment outlines the *potential* work steps associated with a generic transportation feasibility study. It is recognized that the study approach developed by BC transit may differ from what is outlined here.

Feasibility studies usually involve five steps:

1. Pre-plan (pre-contract tender)
2. Needs assessment and project Justification
3. Route & station options identification
4. Option evaluation & identification of preferred option
5. Detailed assessment

The phasing and process set-up is not dissimilar to the Regional Growth Strategy review and previous studies – such as the TravelChoices Sub-Strategy. The project would require a senior level steering committee, an inter-jurisdictional technical committee, and significant consultation and outreach opportunities. It would be carried out by a consulting team or consortium under the direction of the project sponsor.

PHASE 1: PRELIMINARY PLANNING

The preliminary planning stage is a "getting ready to plan stage". It provides the opportunity for the affected decision-makers to agree on purpose, roles and responsibilities (who participates, who funds, who manages the project, etc.) project scope, goals and objectives, and anticipated outcomes, etc. prior to contracting with the consulting team.

A starting point for the project should include establishment of the project goals and objectives. The list of goals and objectives should be shared by all members of the inter-jurisdictional steering committee. An example is included below:

PRIMARY GOALS	CRITERIA
Increase Transportation Choice	▪ Increase transportation choice. ▪ Results in auto trips being converted to transit trips. ▪ Increase the people-moving capacity in the chosen corridor. ▪ Integrate travel modes and provide connectivity to the wider transit network. ▪ Ensure speed and reliability of the system.
Support Growth Management	▪ Support municipal growth management targets established by the region's regional growth strategy. ▪ Contribute to community building by stimulating mixed use development. ▪ Can influence urban form ▪ Provides increased accessibility to regional centres and major destinations.
Support Sustainability Initiatives	▪ Contributes to economic prosperity ▪ Support provincial climate action goals by reducing regional car trips. ▪ Meet regional and local environmental objectives to preserve green space, improve air quality, etc. ▪ Contributes to increased quality of life and visual attractiveness ▪ Positive cost-benefit ratio – considering triple bottom line cost assessment.

POTENTIAL CRD ROLE:

Contribute to the development of the project goals and objectives by incorporating relevant input from the Regional Growth Strategy, TravelChoices, and the Community Energy Plan.

PHASE 2: NEEDS ASSESSMENT & JUSTIFICATION

This is the background and technical review step. Activities include:

- Confirmation of study areas and routes to be considered.
- Review of previous reports and relevant documentation.
- Update of population, demographic profile and growth projections.
- Identification of travel characteristics (traffic counts, O-D survey, occupancy counts)
- Review of alignments: characteristics, opportunities & constraints
- Mode assessment: establishment/confirmation of assessment criteria (e.g. ridership, land use, financial, sustainability, etc.); review of mode options (e.g. LRT, guided bus, bus rapid transit, commuter rail, etc.)
- Preliminary feasibility assessment of ridership and cost
- Outcome: confirm preferred technology and route

POTENTIAL CRD ROLE:

- Contribute population and growth projections from Census and RGS
- Contribute information from the transportation data management program (this includes the $300,000 Origin-Destination Study) which includes traffic counts, mode share figures, occupancy and traffic counts.
- Contribute the information from the recalibrated regional transportation model

PHASE 3: ROUTE & STATION OPTIONS

This phase examines the route and station opportunities and utilizes modeling and scenario testing to short-list options. Activities include:

- Establishment/confirmation of objectives and detailed evaluation criteria (should cover ability to shape land use; ridership; the four sustainability elements: social, cultural, environmental and economic); and the likelihood of deliverability.
- Identification of opportunities and constraints pertaining to land use, development, community design, environment, traffic and network configuration, and policy.
- Application of evaluation criteria to develop short list of options for routes and station locations
- Application of the demand forecasting approach and model
- Application of the land use model
- Application of the financial model – to assess financial implications, funding and subsidy levels, expected revenue & cash flow.

Outcome: short list of preferred routes and stations

POTENTIAL CRD ROLE

Contribute the findings of the Regional Corridor Management Plan. The work steps for the Corridor Management plan include the following:

- Establish/confirm the criteria for identifying the regional corridors
- Identify and document the declared projects that are proposed or underway on the regional corridors
- Utilize the regional land use model and populated traffic zone data to identify activity areas such as major centres, other mixed use nodes, employment centres, institutions, and industrial areas. Incorporate the existing regional land use pattern to identify both transit-oriented and auto-dominated land uses.
- Undertake a detailed gap analysis to identify extent of alignment between defined goals and objectives and corridor and land use development.
- Utilize both the transportation and the land use model to scenario-test corridor and supportive land use options. The exercise will examine what type of land use pattern is required to support a comprehensive multi-modal corridor network – and what type of corridor network is required to support a climate-sensitive/carbon-neutral development pattern.

PHASE 4: OPTION ASSESSMENT PROCESS

This phase is used to select the most appropriate alignment and operating strategy for the chosen technology. It builds on the findings of phase two and examines the preferred option and station locations in much more detail. Activities include:

- Detailed description and evaluation of short-listed route options
- Assessment of transportation & land use integration effects
- Detailed evaluation of ridership estimates for each option
- Confirmation & application of detailed evaluation criteria and criteria weightings for each short-listed option
- Sensitivity testing
- Detailed cost-estimating
- Assessment of operating options (examines degree of integration along alignment with conventional bus transit network; degree of redundancy along alignment; intermodal interchanges, etc.)

Outcome: preferred route & station locations

POTENTIAL CRD ROLE

Contribute/undertake refinements of the model and the scenarios.

Assist/Coordinate input from the member municipalities on model and scenario refinement

Phase 5: Detailed Assessment of Preferred Option

This phase addresses:

- Detailed ridership assessment using sensitivity testing (evaluate different travel behaviour assumptions such a changes to fuel costs, parking availability, congestion levels)
- Detailed assessment of the economic, social and environmental benefits using a comprehensive multiple-accounts assessment approach. This looks at site specific environmental impacts, carbon reduction, hydrology, land use, construction impacts, visual impacts, etc. Social impacts usually cover accessibility, employment opportunities, tourism impacts, cultural implications and visual and noise impacts.
- Detailed transportation impact assessment and corridor-specific modeling
- Detailed risk assessment
- LRT/rail implementation plan – covering business case development, construction, procurement, project delivery and commissioning.
- Outcome: Project reference design and specifications; information for bid documents.

POTENTIAL CRD ROLE

- Assist/Coordinate input from member municipalities and relevant CRD departments on the multiple accounts assessment.
- Assist/Coordinate reporting to CRD Board on options.