

CASCADE GATEWAY CIRCULATION ANALYSIS WORKPLAN

19 SEPTEMBER 2007

1 OVERVIEW

- 1.1.1* The Cascade Gateway region continues to grow and develop quickly. Although a border separates the United States and Canadian sides of the Cascade Gateway our economies and social networks continue to couple, to the advantage of all involved. At the same time, constraints gaining access to – and through – the border also serve to limit opportunities for even more growth and bi-national engagement.
- 1.1.2* Responsibility for bi-national infrastructure and operations, policy and regulations falls upon a complex web of many agencies ranging from the senior federal levels, provincial agencies and local municipalities. The affected parties – private sector entities also take an active interest. At times, these agencies develop strategic planning and investment programs in isolation from one another.
- 1.1.3* The IMTC was created to serve as a forum to pursue and align common interests within this wide range of stakeholders, with a view towards maximizing accessibility and minimizing congestion. A key part of the IMTC mandate is to form a collective view of where problems and opportunities lie and – from that point – develop a coordinated plan for provision of infrastructure and technology as well as resolution of policy and regulatory constraints.
- 1.1.4* To this end, the Workplan proposed in this technical note aims to set a path towards a systematic and coordinated Cascade Gateway transportation system plan. Upon completion it is expected that this plan would propose:
- (a) Short, medium and long-term infrastructure plans e.g. provision of additional highway capacity that would connect border crossings or introduction of technology such as an expanded ATIS system.
 - (b) An implementation plan, including consideration of potential funding and delivery models.
 - (c) A plan towards resolution of policy and regulatory constraints, always with an eye towards issues that are reasonably within the sphere of influence of IMTC partners.
- 1.1.5* It is proposed that this workplan proceed in two phases:
- (a) **Phase I** – a comprehensive and systematic review of bi-national infrastructure, traffic, issues and opportunities that would form a common basis for development of a Cascade Gateway transportation strategy
 - (b) **Phase II** – development of a strategy and implementation plan.

2 **PHASE I – DEVELOPING A COMMON BASIS**

2.1 ***Purpose***

2.1.1 The dynamics in the Cascade Gateway are complex and driven by many factors both within the control of the stakeholders, as well as exogenous and outside our control. At this time, it may be fair to suggest stakeholders have particular expertise within their purview, but varying depths of understanding of these dynamics in a comprehensive and systematic sense - how conditions have changed over the last 20 years; what exactly the existing conditions are; and the prospects for the future.

2.1.2 The objective of Phase I is to collectively acquire a systematic and clear understanding of the Cascade Gateway transportation system and potential opportunities. This solid foundation would aid fully scoping and defining the problem statement, and guide future stages of analysis and planning. Intensive investment in front end work is often considered rather mundane and hence abridged or neglected. However, if well done, it anticipates and prepares for the more interesting planning stages and allows these to proceed with purpose, focus and efficiency.

2.1.3 Phase I will be undertaken with a view towards the Phase II final study deliverable – development of a Cascade Gateway transportation strategy that would that enhance border circulation and minimize delay and constraints on cross-border travel. The deliverable from Phase II would be an overall strategy including an Implementation Plan laying out an investment strategy for the short, medium and long term horizons.

2.1.4 The following discreet but interrelated tasks are proposed for Phase I.

2.2 ***Task 1: Cascade Gateway Scope***

2.2.1 A thorough and formal definition of the study scope is a basic but valuable step towards establishing the charter for this complex multi-stakeholder study. It is understood that the multi-dimensional scope may evolve over the course of the study, but it is important to get a good appreciation at the onset of the study such that following efforts will be – to the best that can be anticipated – sufficiently broad and/or focused.

2.3 ***Geographic Scope***

2.3.1 Consideration will be given to the notion of primary, secondary and external geographic scopes where considerations would include:

- (a) ability to sufficiently capture constraints on bi-national passenger and commercial vehicle traffic e.g. I-5 through Bellingham or Hwy 99 through South Surrey (primary)
- (b) options for future investment e.g. ITS on Highway 1 west of Hwy 11; or south of Bellingham (primary)
- (c) the ‘ends’ of supporting infrastructure such as rail e.g. Main Street station in Vancouver; or ferry points (secondary)

- (d) ITS or hydrogen highway projects along the West Coast from BC to California (external).

2.3.2 Inputs to the definition of the geographic scope could include:

- (a) Application of the bi-national model, using travel demand thresholds and/or network performance metrics
- (b) Review of the latest survey data including CVO manifest data, 2002/2007 passenger surveys and the National Roadside Survey
- (c) General understanding of the transport system including external locations e.g. rail station
- (d) General understanding of potential future plans e.g. ITS on Hwy 1, or south of Bellingham
- (e) Views of stakeholders.

2.4 ***Modal Scope***

2.4.1 This would formally present the potential transport modes to be considered in the study and would likely cover passenger car, commercial vehicle, bus transit, passenger rail, intermodal freight, ferry, air and short sea shipping.

2.5 ***Temporal Scope***

2.5.1 The following time periods could be considered in the study temporal scope:

- (a) *Historical (1988-2008)* – on overview of the last 20 years, perhaps broken into time increments like 5 or 10 years.
- (b) Existing (2008-2009) – the context as we know it know.
- (c) *Future (2013, 2018 and 2031?)* – the suggested future years would enable development of short (5-year), medium (10-year) and long (25-year) term plans.

2.6 ***Special Generators***

2.6.1 It is possible that major special generators within the catchment area could serve to materially influence bi-national traffic demand and – depending upon their plans – local area infrastructure plans. Potential special generators will be identified (e.g. YVR and Abbotsford Airport) and, throughout the course of the study, their influence on the Cascade Gateway transportation strategy will be assessed.

2.7 ***Stakeholder and Issue Scope***

2.7.1 The success of the entire study will rely on active engagement of institutions and stakeholders, and this step of Task 1 will:

- (a) formally establish stakeholder scope

- (b) solicit views regarding the overall scope of issues that could be addressed in this study
- (c) seek comment and insight into changes experienced in the past, and observations regarding opportunities and issues for the future
- (d) identify the institutions/stakeholders responsible for or with an interest in issues raised, policy development, infrastructure funding etc.
- (e) identify the issues and remedies that are reasonably within the sphere of influence of the IMTC partners and hence potentially subject to discussion in this study.

2.7.2 This task will involve consultation with the Project Advisory Committee, individual meetings with stakeholders, and review of existing plans and policy documents. Primary stakeholders will focus on IMTC participants and other potential stakeholders:

- (a) Federal transportation agencies e.g. USDOT and Transport Canada
- (b) Federal border inspection agencies (U.S. Customs and Border Protection, Canada Border Services Agency)
- (c) Federal administration agencies (CBSA, GSA)
- (d) Provincial or state transportation agencies e.g. B.C. Ministry of Transportation and Washington State Department of Transportation
- (e) B.C. regional agencies and border municipalities (TransLink, Surrey, Langley, Abbotsford, others)
- (f) WA regional agencies and border municipalities (Whatcom Council of Governments, Blaine, Lynden, Sumas, Whatcom County, others)
- (g) Private stakeholders such as Cascadia Centre, BC Trucking Association, Shipping Association etc.
- (h) Academic institutions at Western Washington University and University of British Columbia.

2.7.3 It is anticipated that the preceding will give clarity to common IMTC goals and objectives. This will be articulated and used as a backdrop for development of the strategic plan in Phase II.

Deliverable 1: Technical Note: Cascade Gateway Transportation System Plan –Scope

2.7.4 Timeline – by the end of October 2007 an initial package for comment by stakeholders will be distributed. The entire scoping exercise is set for the end of December 2007.

2.8 ***Task 2: Data Assessment and Plan***

2.8.1 Full appreciation of border circulation problems and opportunities rely upon transport data sets that fully describe the existing situation, enable comparison to historic data to identify trends and potentially key variables, and give a window into future. Robust data

sets enable impartial and systematic identification of constraints and opportunities, and insights into potential remedies.

2.8.2 This task is proposed simply as an assessment of the efficacy of the data to support the study goals and objectives. The purpose of the data assessment and plan is to – in the context of other Tasks in Phase 1 – review existing data sources, identify potential data gaps, and propose a data collection plan that would serve to inform all stages of the study and establish a basis for ongoing monitoring of the Cascade Gateway Transport System.

2.8.3 This task would build upon previous efforts of the IMTC, and avail a number of recent studies and data collection initiatives that form parts of the overall study and work program:

- (a) Passenger car O/D Survey – WWU and WCOG
- (b) Pacific Highway Commercial Vehicle Border Operations Survey – WWU, WCOG and Transport Canada
- (c) National Roadside (Commercial Vehicle) Survey – Transport Canada
- (d) Greater Vancouver Freight Study – ongoing (BC MoT, TransLink and Transport Canada)
- (e) Traffic operations data collection programs e.g. counts, travel time.

2.8.4 It is expected that this task would be initiated early in the study, and continue throughout Phase 1. In other words, other tasks in Phase 1 (e.g. a comprehensive and systematic understanding of the project scope, overall goals and objectives, development of supply inventories, assessment of demand, requirements for analytical tools at our disposal, and an enhanced understanding of the Phase 2 work program) first of all rely upon identification and compilation of data sets; subsequently execution of these Phases would lead to a proposed data collection work plan, if required.

Deliverable 2: Technical Note: Cascade Gateway Transportation System Plan –Data Assessment and Plan

2.8.5 Timeline – an interim progress technical note is set for the end of November, with full delivery of this task by April 2008.

2.9 *Task 3: Transport Supply Inventory*

2.9.1 The purpose of this task is to fully take stock, describe and document the supply side of the Cascade Gateway Transportation System including recent investments, the existing situation in 2008/2009 and the base future years (committed plans). This would involve all aspects including, but not limited to

- (a) Border stations: Facilities, modes, FAST/Nexus, lanes / booths, staffing / typical operating booths, hours of operation, processing rates, broker

functions, other features like parking, duty free etc, future facility plans etc.

- (b) Road Network: Existing and planned road network and hierarchy, existing and planned ITS
- (c) Other modes: Existing and planned transit, rail, short sea shipping and ferry services
- (d) Existing and planned rail
- (e) Existing and planned short sea shipping.

2.9.2 The product of this stage would be a comprehensive, systematic and graphical presentation of the existing and planned transport supply inventory.

Deliverable 3: Technical Note: Cascade Gateway Transportation System Plan –Transport Supply Inventory

2.9.3 Timeline – the timeline is set for the end of November 2007

2.10 ***Task 4: Transport Demand and Operations Review and Assessment***

2.10.1 Understanding the nature of bi-national demand is key to evaluating transport strategies in Phase 2. The purpose of this task is undertake a systematic and comprehensive review of travel demand, with a view towards identifying factors, methods and risks associated with forecasting future bi-national demand and operations. This would in turn inform the level of risk associated with transport strategy evaluation to be undertaken in Phase 2.

2.10.2 This task would involve a preliminary review for input into the scoping process (Task 1), followed by a detailed review of travel demand and operations. Where possible, this would drill down in to seasonal variation, trip purposes profiles, potential relationships to macroscopic factors such as GDP growth, exchange rate etc.

2.10.3 As the catchment area extends beyond the border directly, information that describes changes in traffic demand and operations on major routes within the primary catchment area will also be sought and described.

2.10.4 To the degree that information is available, the border transport operations for passenger and commercial vehicles will also be reviewed using indicators such as delay, queue etc.

2.10.5 In order to get a preliminary understanding of the scope and magnitude of transport demand and operational constraints for the future year base condition, forecasts will be produced based using existing tools. Depending upon the evaluation of analytical tools, these preliminary forecasts may be superseded after the analytical tool development task in Phase 2.

2.10.6 One of the objectives of this task is to isolate the variables that have in the past – and others that may in the future – influence travel demand. This task would also identify and seek estimates of future year independent drivers of transport demand at a resolution

appropriate for the Cascade Gateway scope. For example, it is expected that population and employment forecasts would be an independent driver; other factors could include GDP growth; economic forecasts etc. The suitability for application for use in binational transport models would also be evaluated in collaboration with Task 6.

Deliverable 4: Technical Note: Cascade Gateway Transportation System Plan –Transport Demand and Operations Review and Assessment

2.10.7 Timeline – an interim report is set for January 2008, with the technical note set for April 2008.

2.11 ***Task 5: Institutional and Policy Parameters***

2.11.1 This task addresses two themes: **1)** institutional and policy parameters that affect our ability to analyze, forecast, and manage cross-border transportation demand and **2)** institutional and policy parameters that shape our collective approach to funding and managing the delivery of identified infrastructure, operations, and information-technology system improvements.

2.11.2 System monitoring and management: This task will inventory known variables and articulate their plausible range of effect on cross-border travel. These include issues like changing travel-identification requirements and options, inspection-operation policies, changes to import-entry information and information-submission media, trade-policies (i.e. softwood), mode-specific policies (i.e. new rules for rail operation), national monetary policy, market price control policy, industry specific employer/labor actions, etc.

2.11.3 Delivery of identified Cascade Gateway transportation system improvements: Over the last ten years, U.S.-Canada border gateways and gateway regions have been the focus of federal funding programs in both countries. The U.S. Coordinated Border Infrastructure Program and the Canadian Border Infrastructure Fund are two examples (there are more) that illustrate this. Our two countries' transportation agencies also signed a Memorandum of Cooperation in 2003 aimed at enhancing collaboration on transportation system improvements. U.S. and Canadian border inspection agencies have also continued to increase program integration under jointly-administered programs like NEXUS and FAST.

2.11.4 This task will complete an assessment of the federal, state, provincial, and industry political environment and develop a strategy, based in the existing IMTC framework, for funding and delivering the set of strategic improvements that this Cascade Gateway Circulation Analysis will generate.

2.11.5 Review and documentation of federal, provincial, and state business-case information needs that should be incorporated into phase II work on identifying near-term and future system improvements.

Deliverable 5: Technical Note: Cascade Gateway Transportation System Plan –Institutional and Policy Parameters

2.11.6 Timeline – end of December 2007.

2.12 ***Task 6: Analytical Tool Assessment and Development – Phase I***

2.12.1 The Phase 1 effort described in previous tasks is largely preparation for definition and evaluation of policy and infrastructure alternatives in Phase 2. Part of this evaluation would require technical evaluation of travel demand as well as potential projects and policy initiatives using transport models. The purpose of this task is to review the capability of these models in anticipation of model preparation and scenario development/evaluation in Phase II. Specific tasks to be addressed are:

- (a) Data evaluation – in collaboration with task 2 (data) understand available data sources, in the context of identifying potential additional data sources that would support development and monitoring.
- (b) Assessment of existing transport models – a review of existing demand and traffic models, and their ability to support technical evaluation in Phase 2. This could include:
 - (i) Existing transport demand models e.g. the bi-national model (including model platform), econometric models etc.
 - (ii) Micro/queue models e.g. existing discreet event models, potential micro-sim models, and the potential role of microsimulation in Phase 2 Work Program
 - (iii) Review of Border Wizard – if and how it may be incorporated into the Work Program.

2.12.2 Parts of Task 6 may be undertaken concurrently with other tasks, while other parts would benefit from insights from other tasks e.g.:

- (a) Task 4 – understanding of variables driving historic change in demand
- (b) Task 5 – understanding of potential infrastructure and policy levers that will be subject to evaluation

2.12.3 A secondary objective is to produce preliminary forecasts of travel demand and performance metrics as an input into ‘future year base conditions’ analysis. This would be undertaken with existing tools. These estimates could be superseded after the analytical tool development task in Phase 2.

2.12.4 Finally, in collaboration with development of the Phase 2 work program, suggestions for further development of the analytical tools may be proposed. Alternatively, it is conceivable that this could be limited to standard updating, where the evaluation of projects in Phase 2 could rely more upon formal Risk Analysis rather than attempting to produce precise forecasts of travel demand and operations.

Deliverable 6: Technical Note: Cascade Gateway Transportation System Plan – Analytical Tool Assessment and Development (Phase 1)

2.12.5 Timeline – an interim note at the end of January, and a final technical note in March 2008.

2.13 ***Task 7: Problem Definition and Phase II Scope / Work Program***

2.13.1 Based upon the product of the preceding tasks the first objectives of this task is succinctly summarize a ‘problem definition statement’, with a focus upon understanding contextual issues reasonably outside our sphere of influence; and opportunities reasonably within our sphere of influence.

2.13.2 This will be cross-checked with agencies to gauge if – over the course of this study – goals and objectives have been modified.

2.13.3 The secondary objective of this task is to propose a scope and work program for Phase II of this study.

Deliverable 7: Technical Note: Cascade Gateway Transportation System Plan – Problem Definition and Phase II Scope / Work Program

2.13.4 Timeline – a cross-check interim note in February 2008 with a final technical note in May 2008.

3 PHASE 2: STRATEGY DEVELOPMENT AND IMPLEMENTATION PLAN

3.1.1 As Phase I is yet to be initiated, only preliminary thought has been given to the Phase II work program. In general it is conceived that it would continue to follow a standard strategic planning approach along the following lines:

- (a) Data collection – if required, and as proposed in Phase I
- (b) Analytical tool development – if required, as proposed in Phase I
- (c) Option development – fleshing out potential strategies that could be reasonably implemented by IMTC stakeholders and subsequently evaluated
- (d) Scenario development – development of scenarios to be evaluated
- (e) Option screening – potential screening out of options
- (f) Scenario evaluation – technical and qualitative scenario evaluation
- (g) Strategy Development –
- (h) Delivery models – project funding considerations
- (i) Implementation Plan – development of short / medium and long term plans

3.1.2 Phase II timing depends upon timely initiation and completion of Phase I, and determination of the scope and Work Program for Phase II. It may be possible to undertake some Phase II tasks concurrently with Phase 1. A preliminary date is the end of 2008 / early 2009.

4 **PROJECT ADMINISTRATION**

4.1.1 Project Management: The project will be managed by the Whatcom Council of Governments. The project manager will be Hugh Conroy.

- (a) Funding: The amount of funds made available to this effort to-date is listed by source below. Additional funds are still needed to execute Phase II. Other IMTC partners are continuing work to identify funds from their respective agencies.

Partners	\$	@ CAD/USD: 1.0204	
		USD	CAD
BC Ministry of Transportation	CAD	\$49,000	\$50,000
City of Abbotsford, BC	CAD	\$24,500	\$25,000
City of Langley, BC	CAD	\$24,500	\$25,000
City of Surrey, BC	CAD	\$24,500	\$25,000
Western Washington University	USD	\$80,000	\$81,632
Whatcom Council of Governments	USD	\$30,000	\$30,612
Transport Canada/WCOG/WWU/ June 2006 Commercial Vehicle Evaluation	USD	\$28,975	\$29,566
Transport Canada & BC MoT October 2006 National Roadside Survey (commercial vehicle intercept survey).			

- (b) In-kind assistance: IMTC partner agencies will be contributing staff-time and other, in-house resources to the completion of this study as shown in the Project Workplan gant chart.

4.1.2 Stakeholder involvement: As indicated in this document and on the workplan gant chart, this work will emphasize the role of stakeholders through scheduled workshops and meaningful consultation.