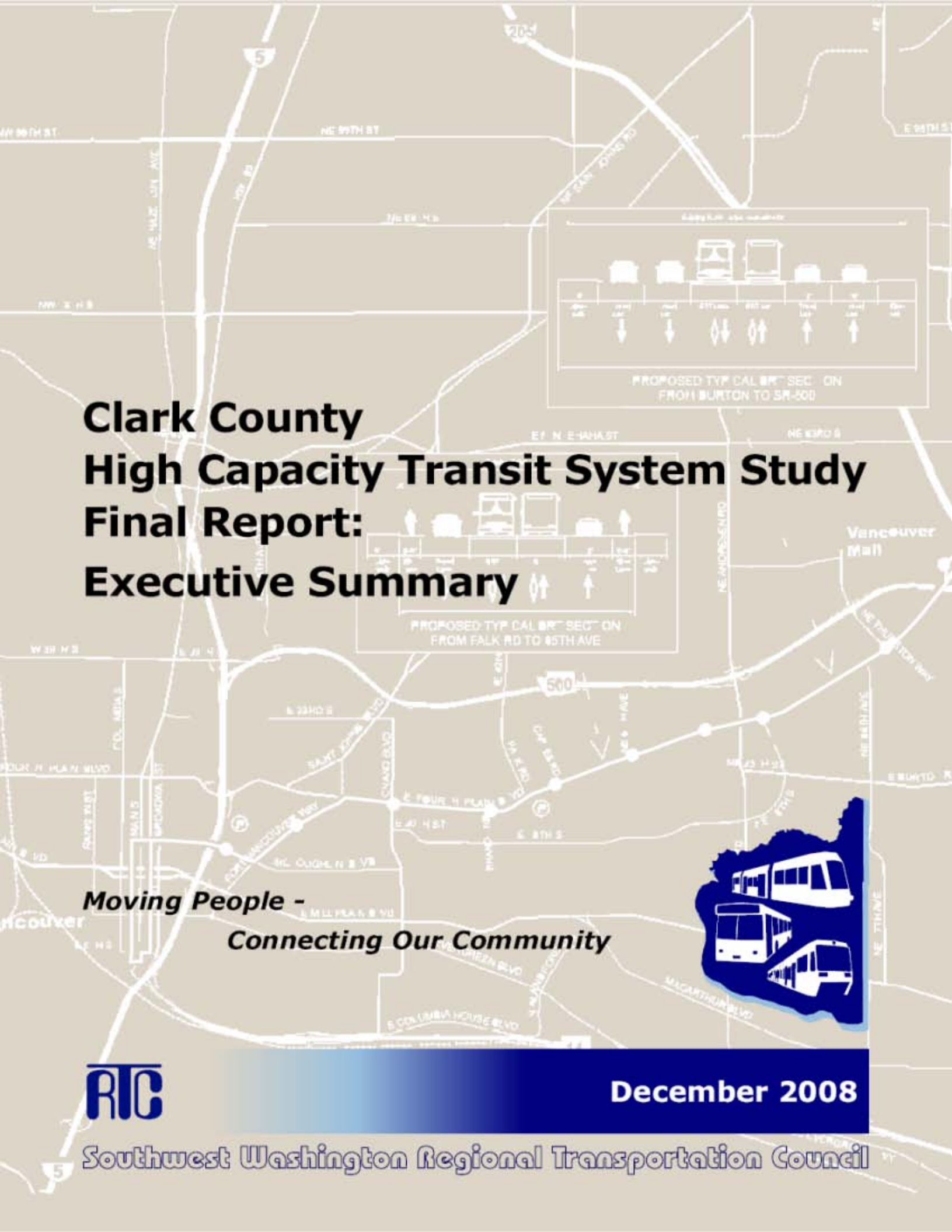


Clark County High Capacity Transit System Study Final Report: Executive Summary

Moving People - Connecting Our Community

December 2008

Southwest Washington Regional Transportation Council

Clark County High Capacity Transit System Study

Executive Summary

Introduction

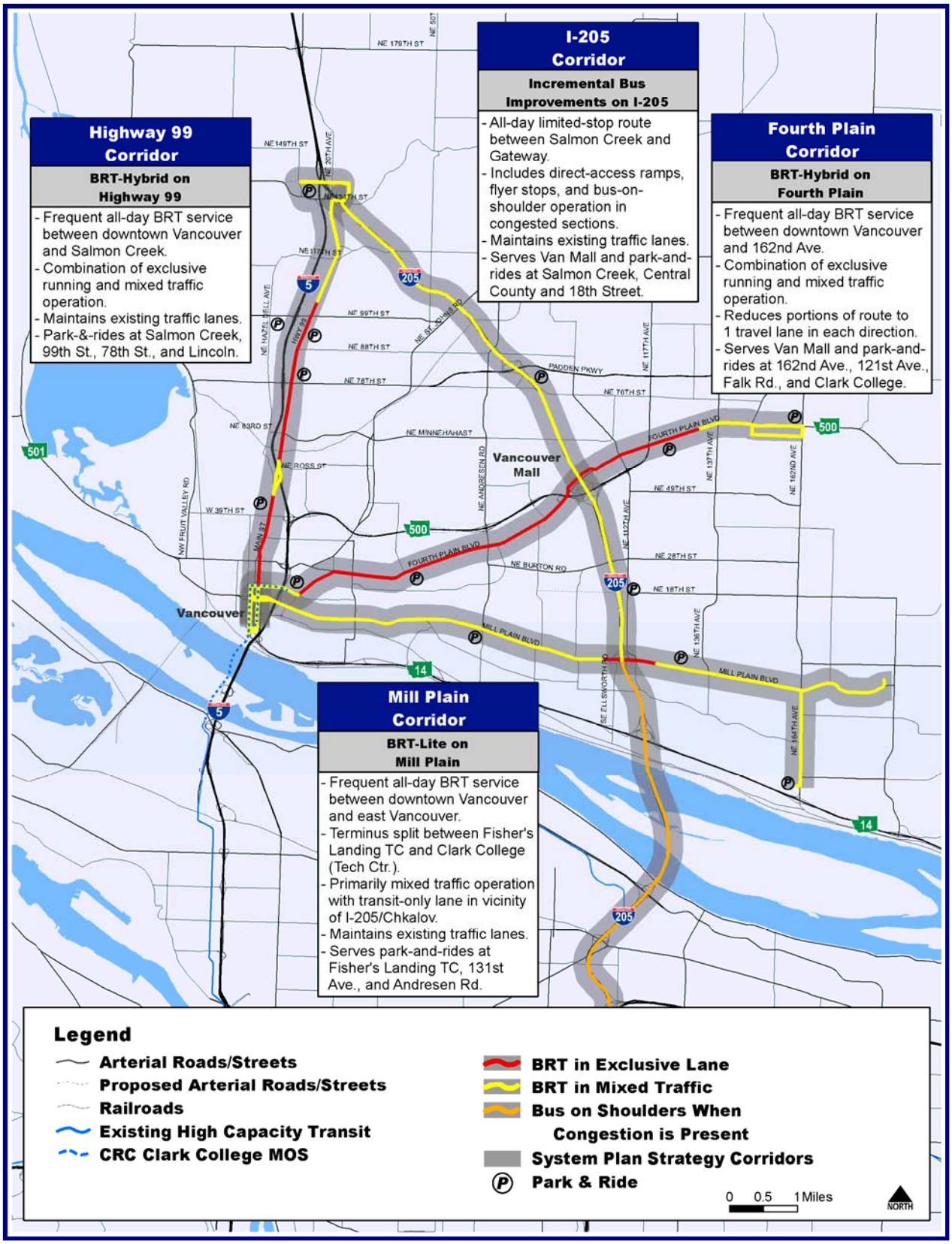
The Southwest Washington Regional Transportation Council (RTC) along with its partner agencies has completed a two-year planning effort to develop a high-capacity transit (HCT) system. The High Capacity Transit System Plan includes bus rapid transit (BRT) improvements in the Highway 99, Fourth Plain, and Mill Plain corridors and significant bus improvements in the I-205 corridor.

This plan provides a blueprint for C-TRAN and the Clark County region as they move forward to implement transportation improvements in the planned HCT corridors. Local jurisdictions and transportation agencies will be asked to consider the ultimate build-out of this plan as they prepare capital improvement programs and work plans.

There are costs associated with implementing this plan. Capital costs will be required to provide substantial segments of exclusive guideway operation where BRT buses can operate separated from adjacent traffic congestion. Preliminary estimates show that future-year transit operating costs could increase with the full implementation of the HCT plan, but will be offset through reliability, travel time savings, and ridership improvements.

Most of the HCT routes identified in this plan represent operational improvements on existing, productive C-TRAN bus routes. As refinement plans/alternatives analyses are prepared in each corridor, they will determine the final mode and alignment issues and include an implementation strategy that could be tied to competing for federal New Starts transit capital grants. The recommended plan is shown in Figure ES-1.

Figure ES-1
Clark County HCT System Plan



Background

The Clark County High Capacity Transit System Study was initiated in late 2006 to develop a plan for HCT to serve Clark County. HCT is service that can improve reliability and carry more people at higher speeds than a standard bus line. Transit passenger capacity can be expanded through increasing the number of vehicles, vehicle size, frequency, travel speed or a combination of these elements.

High-Capacity Transit

HCT is service that can improve reliability and carry more people at higher speeds than a standard bus line.

The potential to extend a high-capacity transit system from Portland into Clark County has been evaluated several times over the last 15 years. The reason for initiating this HCT system planning process was to examine the potential for HCT within and across all of Clark County. The study was also timely in determining how a Clark County HCT system could connect to the Columbia River Crossing Project. The Columbia River Crossing Project's Locally Preferred Alternative identified light rail to Clark College as the preferred method to connect downtown Vancouver to the Portland MAX system. The Clark County HCT System Study builds from this bi-state connection and addresses HCT connections to the Columbia River Crossing Project, within Clark County and the bi-state connection in the I-205 corridor.

Study Process

The Clark County HCT planning process moved methodically from evaluating a wide range of potential HCT modes and corridors to identifying the most promising modes and corridors and then to providing a detailed assessment of the modes and corridors. The study processes included the following steps:

- Adopt Study Purpose Statement and Goals and Objectives
- Identify Promising HCT Modes
- Identify Promising HCT Corridors
- Corridor Analysis
- Corridor Evaluation
- System Plan Scenarios
- Policies and Recommendations

Bus rapid transit vehicle, Springfield, Oregon

Several committees were established to guide and oversee the progress of the HCT study. These included the following:

Steering Committee – Comprised of elected officials and agency directors to provide policy direction for the study and provide recommendations to the RTC Board.

Task Force – Citizen based committee appointed to represent key stakeholders and constituencies in the county.

Sounding Board – At key milestones, active citizens were invited along with the public to hear project updates and provide input.

Purpose, Goals and Objectives

The Clark County High Capacity Transit System Study has employed an extensive public involvement process. The public has been invited to Sounding Board meetings, Task Force meetings and Steering Committee meetings. Public involvement activities also consisted of open house type public events, presentations to neighborhood groups, a traveling display board, Website, e-mail updates, and on-line surveys. In addition, numerous articles about the study have appeared in local newspapers.

The Task Force developed, and the Steering Committee adopted, a study purpose statement that called for the study to "…identify a high-capacity transit system that provides efficient and high-quality transit service connecting county residents with where they want to go."

Locomotive-hauled commuter rail train, Tacoma, Washington

The committees also developed goals and objectives for the study in three major categories:

Transportation – Focused on optimizing travel time, access, ridership and regional connections.

Community – Focused on supporting economic development, livable and sustainable communities and providing a healthy environment.

Feasibility – Focused on developing an affordable and implementable plan and providing for the long-term viability of HCT improvements in the county.

Modes

The study team identified nine potential HCT modes to be considered. The modes were evaluated based on how well they met the study purpose and goals, whether they were proven technologies, their economic development potential, their cost and their land use compatibility. Based on the initial assessment, four modes – heavy rail, monorail, personal rapid transit and water (river) transit – were eliminated as not being viable to consider for Clark County. The remaining five potentially viable HCT modes included:

- BRT-Lite (bus rapid transit in mixed traffic)
- BRT-Full (bus rapid transit in exclusive guideway)
- Streetcar
- Light Rail
- Commuter Rail

An additional HCT mode option, BRT-hybrid, was developed later in the study. BRT-hybrid was developed to identify capital improvement strategies that had a lower capital cost than the BRT-full concepts, but could maintain the ability to save significant bus travel time by utilizing cost-effective portions of exclusive guideway.

Corridors

Fifteen travel corridors in Clark County were identified and an initial assessment was prepared measuring their suitability to function as HCT corridors. Based on this initial assessment, five corridors were selected by the Steering Committee as promising HCT corridors that merited more detailed analysis. The five corridors included:

- I-5/Highway 99
- SR-500/Fourth Plain
- I-205
- SR-14/Mill Plain
- Chelatchie Prairie

Representative HCT Concepts

The study prepared representative HCT concepts in order to evaluate the HCT potential in the five study corridors. The HCT concepts included a range of alignment and mode options in each corridor (except in the Chelatchie Prairie corridor which evaluated only commuter rail). The development of the concepts relied on proven engineering principles to identify right-of-way width, structures, signal requirements and other design elements. The concepts provided enough detail to prepare order-of-magnitude capital cost estimates, prepare a planning-level evaluation of impacts and to prepare an operating plan sufficient to analyze the transportation impacts and ridership potential.

Light rail transit with exclusive right-of-way, Portland, Oregon

The concepts were mapped showing the general alignments, stations, park-and-rides and connections to other parts of the transit system. It is important to note that these concepts were intended to provide a representation of how HCT could be developed in the corridors and to provide a reasonable method by which to compare alignments and modes within a corridor and to compare among the corridors.

Corridor Analysis

Transit Ridership – Transit ridership was analyzed using RTC's regional travel demand model for 2030 for each of the concepts.

Land Use – The study examined existing and the future adopted GMA land use characteristics in each corridor using Clark County geographic information system (GIS) data. Residential and employment densities were calculated for an area within a half-mile of each of the alignment concepts.

Environmental Issues – A reconnaissance-level environmental analysis was prepared for each corridor. Because the alignments are only conceptual at this level of analysis, the reconnaissance provided very general findings about the potential for environmental issues and impacts in the corridors.

Cost – The study prepared order-of-magnitude capital cost estimates for each design concept. These cost estimates were based on unit costs from recently completed HCT projects and were intended to provide a general level of comparison among design concepts in a corridor and among concepts in different corridors.

Corridor Evaluation

Modern streetcar vehicle, Tacoma, Washington

The corridor evaluation included comparisons of modes and alignments within each corridor and comparisons among the different corridors.

Based on this evaluation, the Steering Committee approved the draft system plan strategy which identified corridor elements to be considered for inclusion in the final HCT System Plan. The draft system plan strategy included HCT elements on the following corridors:

- I-5/Highway 99
- Fourth Plain
- I-205
- Mill Plain

System Plan Scenarios

A series of five system plan scenarios was developed to test how the HCT treatments in the four corridors would perform as a complete system. The five scenarios are described below:

Scenario 1 – Developed to test an HCT system with limited capital investment focusing on a small set of corridors.

Scenario 2 – Developed to test an HCT system that assumes an aggressive level of capital investment with the goal to maximize transit ridership.

Scenario 3 – Developed to test an HCT system that includes streetcars as a key element serving major travel corridors.

Scenario 4 – Developed to test an HCT system that focuses major capital improvements on the bi-state corridors (I-5 and I-205).

Scenario 5 – Developed to test an HCT system that includes BRT capital improvements in each of the four major corridors.

Based on this evaluation, a recommended system plan was developed that maintained a strong level of transit ridership while minimizing the total operating and capital cost.

HCT System Plan and Policy Context

One of the study's underlying findings is that while the design of a good HCT system is critical, it is not enough to ensure successful HCT project implementation. A well designed set of HCT facilities needs to be complimented by the following:

- Transit-supportive land use strategies
- Collaboration among public agencies
- Commitment to the project at both political and staff levels
- Continued public engagement and support
- Actions by public agencies to amend and implement HCT policies

HCT System Plan Recommendations

The Clark County High Capacity Transit System Plan recommendations are shown as Figure ES-1 on Page ES-2. The following describes these recommendations by corridor:

Highway 99 Corridor – HCT in this corridor needs to serve both intra-Clark County trips and bi-state trips. Recommendations in this corridor include the following:

- Frequent all-day BRT service on Highway 99 between downtown Vancouver and Salmon Creek
- Combination of exclusive and mixed traffic operation
- Maintain existing traffic lanes
- Park-and-rides at Salmon Creek, 99th Street, 78th Street and Lincoln

Fourth Plain Corridor – HCT in this corridor should focus on serving intra-Clark County trips with the ability to accommodate some bi-state trips. Recommendations in this corridor include the following:

- Frequent all-day BRT service between downtown Vancouver and 162nd Avenue
- Combination of exclusive and mixed traffic operation
- Reduce portions of route to one travel lane in each direction
- Serve Van Mall and park-and-rides at 162nd Avenue, 121st Avenue, Falk Road and Clark College

Bus rapid transit with exclusive right-of-way/lanes (BRT-full), Bogotá, Colombia

I-205 Corridor – HCT in this corridor needs to serve both intra-Clark County trips and bi-state trips. Recommendations in this corridor include the following:

- All-day limited-stop route between Salmon Creek and Gateway
- Includes direct-access ramps, flyer stops, and bus-on-shoulder operations
- Maintain existing traffic lanes
- Serves Van Mall and park-and-rides at Salmon Creek, Central County and 18th Street

Bus rapid transit with exclusive right-of-way/lanes (BRT-full), Los Angeles, California

Mill Plain Corridor – HCT in this corridor should focus on serving intra-Clark County trips with the ability to accommodate some bi-state trips. Recommendations in this corridor include the following:

- Frequent all-day BRT service between downtown Vancouver and east Vancouver
- Terminus split between Fisher's Landing Transit Center and Clark College (Tech Center)
- Primarily mixed traffic operation with transit-only lane in vicinity of I-205/Chkalov
- Maintain existing traffic lanes
- Serves park-and-rides at Fisher's Landing Transit Center, 131st Avenue and Andresen Road

Table ES-1 summarizes the daily HCT ridership and order-of-magnitude capital cost for the recommended System.

Table ES-1
HCT Corridors Summary

HCT Corridor	Daily Ridership	Capital Cost
Highway 99	9,120	$115 million
Fourth Plain	9,480	$152 million
I-205	6,109	$80 million
Mill Plain	8,260	$60 million

HCT System Policy Recommendations

Listed below are the central HCT policies that apply across the system and to individual projects.

Overall HCT Policies

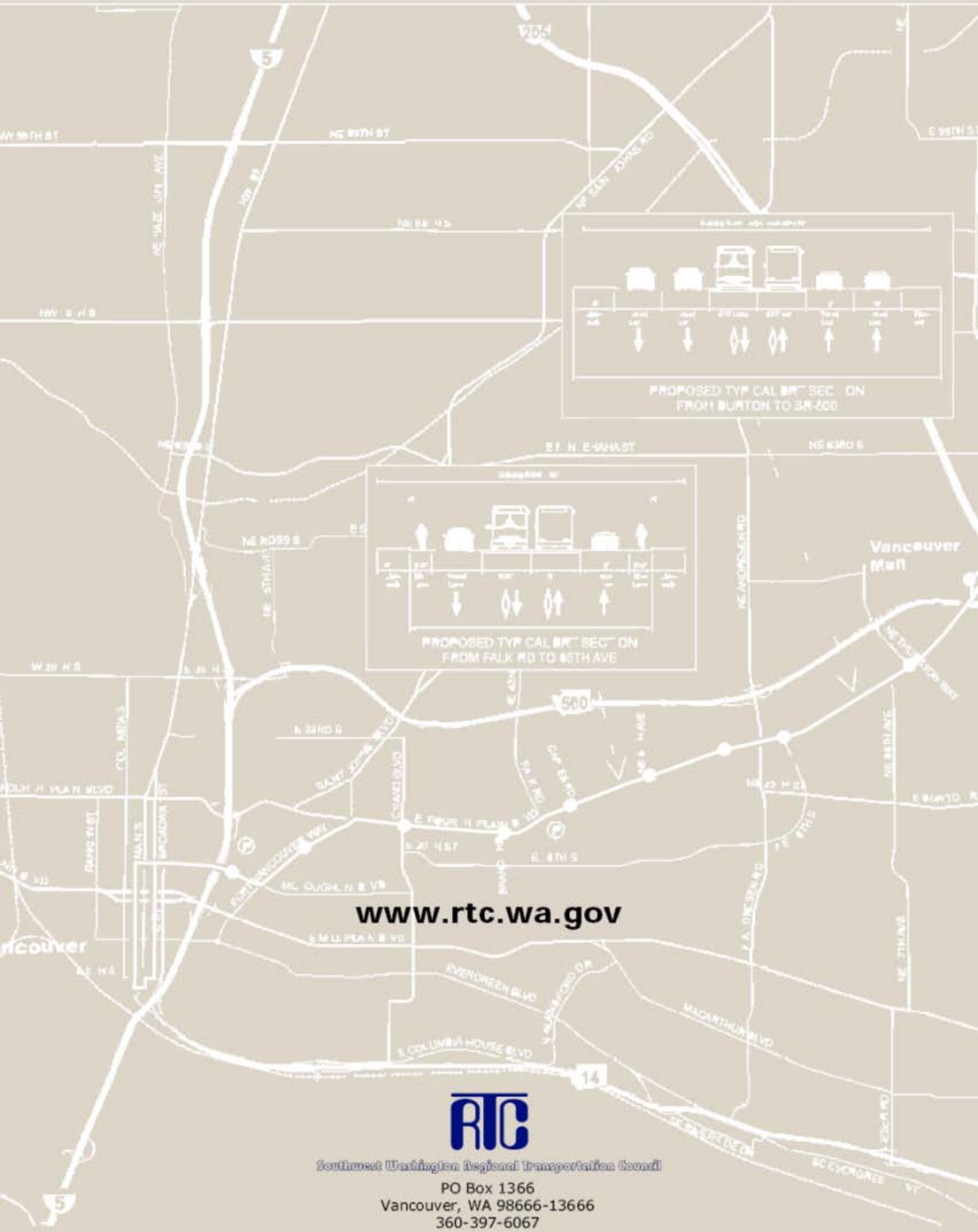
- HCT needs to maximize ridership by serving both intra-county and bi-state transit trips
- HCT system needs to move transit vehicles through corridors faster than conventional bus
- Maximize access to the HCT system by locating stations within walking distance of major activity centers and park and rides
- Balance the trade-offs between ridership and cost

HCT Land Use Policies

- Transit-supportive densities
- A mix of land use
- Transit-oriented pedestrian environment
- Parking management strategies
- Transit-oriented urban design

Next Steps

- Selection of a Priority Corridor
- Prepare a New Starts/Small Starts Strategy for HCT Corridors in Clark County
- Alternatives Analysis for Priority Corridor
- Prepare an HCT Funding Strategy



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