Governor's Executive Order 09-05

Washington's Leadership on Climate Change

Report on Section 2(b)

Regional Greenhouse Gas and Vehicle Miles Traveled Reduction Strategies

December 1, 2011

Washington State
Department of Transportation

Table of Contents

EXECUTIVE SUMMARY

On May 21, 2009, Governor Gregoire issued Executive Order 09-05: Washington's Leadership on Climate Change. Section 2 requires the Secretary of the Department of Transportation to:

(a) In consultation with the Departments of Ecology and Commerce, and in collaboration with local governments, business, and environmental representatives, estimate current and future state-wide levels of vehicle miles traveled, evaluate potential changes to the vehicle miles traveled benchmarks established in RCW 47.01.440 as appropriate to address low- or no-emission vehicles, and develop additional strategies to reduce emissions from the transportation sector. Findings and recommendations from this work shall be reported to the Governor by December 31, 2010; and,

(b) Work with the Puget Sound Regional Council, Spokane Regional Transportation Council, Southwest Washington Regional Transportation Council and Thurston Regional Planning Council to cooperatively develop and adopt regional transportation plans that will, when implemented, provide people with additional transportation alternatives and choices, reduce greenhouse gases and achieve the statutory benchmarks to reduce annual per capita vehicle miles traveled in those counties with populations greater than 245,000. By December 1, 2011, the Department will report to the Governor on which regional transportation planning organizations have developed, or are developing, plans with greenhouse gas strategies, which strategies appear to have the greatest potential to achieve the benchmarks, and what policy or funding issues need to be resolved to ensure implementation.

Executive Order (EO) 09-05 responds to legislation that established statewide greenhouse gas (GHG) reduction goals and per capita vehicle miles traveled (VMT) reduction benchmarks. The GHG reduction goals apply to all sources of GHG emissions in Washington and there is not a goal specific to transportation-related emissions. The per capita VMT reduction benchmarks apply statewide and specific benchmarks have not been set for different regions of the state.

In 2010, WSDOT formed an advisory group to help examine the issues and prepare the report specified in Section 2(a) of the Executive Order. The Section 2(a) report was delivered to the Governor on December 29, 2010. The Section 2(a) report is on WSDOT's Planning web page at http://www.wsdot.wa.gov/planning/.

In 2011, WSDOT collaborated with staff from each of the regional transportation planning organizations (RTPOs) to assemble the information identified in Section 2(b) of the Executive Order and to meet with several of the regional transportation planning organization policy boards to communicate the preliminary results of the work performed pursuant to Section 2(b).

Which regional transportation planning organizations have developed or are developing plans with greenhouse gas strategies?

The current regional transportation plans of the four RTPOs identified in EO 09-05 include strategies that can reduce transportation-related greenhouse gas emissions and vehicle miles traveled. The Puget Sound Regional Council's (PSRC) most recently adopted *Transportation 2040* is the only regional transportation plan that includes specific strategies to reduce transportation-related greenhouse gas emissions. Thurston Regional Planning Council (TRPC), Spokane Region Transportation Council (SRTC), and Southwest Washington Regional Transportation Council (RTC) have not developed specific strategies to reduce GHG emissions. Their plans pre-date the state's climate change legislation and EO 09-05. Their plans include strategies to reduce congestion, improve availability of transportation alternatives, and improve air quality. These strategies also have the added benefit of decreasing GHG emissions and per capita VMT.

The four RTPOs agree that a combination of strategies provides better results for reducing greenhouse gas emissions. These common strategies are not new. Rather, the RTPOs have been implementing many of these strategies longer than greenhouse gas emissions reduction has been a policy focus. The strategies also provide many other benefits to the communities they serve.

This report categorizes greenhouse gas emissions reduction strategies common across all four regions into three broad groupings for comparative and reporting purposes:

- transportation demand management:
- strategic transit service expansion and active transportation;[1] and
- growth management and land use.

In addition to these groupings, specific strategies can be unique to a region. For example, PSRC's *Transportation 2040* includes a discussion about electric vehicle infrastructure and tolling strategies. Regardless of which strategies may be included in any regional transportation plan in the future, implementation success and effectiveness differ depending on the characteristics and needs of the region.

[1] Active transportation refers to improving conditions for bicycling and walking.

Which strategies appear to have the greatest potential for achieving the vehicle miles traveled benchmarks[2]?

WSDOT and all four RTPOs agree that there are no "silver bullets" for achieving the statewide per capita VMT benchmarks. PSRC's analysis indicates that pricing strategies have the greatest potential for reducing per capita VMT in their region. PSRC's Transportation 2040 plan projects meeting these benchmarks in their region in 2020 and 2035. TRPC, SRTC, and RTC agree that combining transportation choices with effective land use policies can provide the greatest potential for reducing statewide per capita vehicle miles traveled in their regions. Other strategies such as marketing programs that promote transportation choices and policies that result in more efficient travel called for by the draft 2012 Washington State Energy Strategy could also reduce VMT.

Which policy and funding issues need to be resolved to ensure implementation?

Implementation of regional transportation plans at the local level is important to achieving statutory reductions in vehicle miles traveled and transportation-related greenhouse gas emissions. However, no single entity has the authority to create a regional transportation plan, provide transportation choices, and make land use decisions. The state of the economy and market factors influence transportation and land use decisions. Improving the consistency between land use and transportation decisions is a policy issue that needs to be resolved to ensure implementation over the long term. Individuals make many decisions daily about where to work and live, where to shop, where to seek medical care and where to learn. These decisions drive demand for transportation services and facilities.

Also, eliminating the institutional, economic, political, and technological barriers to the broader deployment of more efficient vehicles and pricing strategies holds great potential for reducing greenhouse gas emissions and vehicle miles traveled.

RTPOs need reliable sources of adequate funding for transportation planning to maintain existing programs. In addition, transportation providers and local governments need reliable sources of adequate funding to implement future strategies intended to increase transportation choices and decrease vehicle miles traveled.

[2] Vehicle miles traveled reduction benchmarks, RCW 47.01.440: per capita vehicle miles traveled reduction of 18% by 2020, 30% by 2035, and 50% by 2050 below 75 billion vehicle miles traveled baseline, less VMT from vehicles weighing ten thousand pounds or more.

I. INTRODUCTION

On May 21, 2009, Governor Gregoire issued Executive Order 09-05: Washington's Leadership on Climate Change. Section 2 requires the Secretary of the Department of Transportation to:

(a) In consultation with the Departments of Ecology and Commerce, and in collaboration with local governments, business, and environmental representatives, estimate current and future state-wide levels of vehicle miles traveled, evaluate potential changes to the vehicle miles traveled benchmarks established in RCW 47.01.440 as appropriate to address low- or no-emission vehicles, and develop additional strategies to reduce emissions from the transportation sector. Findings and recommendations from this work shall be reported to the Governor by December 31, 2010; and,

(b) Work with the Puget Sound Regional Council, Spokane Regional Transportation Council, Southwest Washington Regional Transportation Council and Thurston Regional Planning Council to cooperatively develop and adopt regional transportation plans that will, when implemented, provide people with additional transportation alternatives and choices, reduce greenhouse gases and achieve the statutory benchmarks to reduce annual per capita vehicle miles traveled in those counties with populations greater than 245,000. By December 1, 2011, the Department will report to the Governor on which regional transportation planning organizations have developed, or are developing, plans with greenhouse gas strategies, which strategies appear to have the greatest potential to achieve the benchmarks, and what policy or funding issues need to be resolved to ensure implementation.

RCW: 70.235.020 – Greenhouse Gas Emissions Reduction Goals

The state shall limit emissions of greenhouse gases to achieve the following emission reductions for Washington State:

(i) By 2020, reduce overall emissions of greenhouse gases in the state to 1990 levels;

(ii) By 2035, reduce overall emissions of greenhouse gases in the state to twenty-five percent below 1990 levels;

(iii) By 2050, the state will do its part to reach global climate stabilization levels by reducing overall emissions to fifty percent below 1990 levels, or seventy percent below the state's expected emissions that year.

RCW: 47.01.440 – Vehicle Miles Traveled Reduction Benchmarks

Establish the following benchmarks using a statewide baseline of seventy-five billion vehicle miles traveled less the vehicle miles traveled attributable to vehicles licensed under *RCW 46.16.070 and weighing ten thousand pounds or more, which are exempt from this section:

(a) Decrease the annual per capita vehicle miles traveled by eighteen percent by 2020;

(b) Decrease the annual per capita vehicle miles traveled by thirty percent by 2035; and

(c) Decrease the annual per capita vehicle miles traveled by fifty percent by 2050;

Executive Order (EO) 09-05 responds to legislation that established statewide greenhouse gas (GHG) reduction goals and per capita vehicle miles traveled (VMT) reduction benchmarks (see sidebar). The GHG reduction goals apply to all sources of GHG emissions in Washington and there is not a goal specific to transportation-related emissions. The per capita VMT reduction benchmarks apply statewide and specific benchmarks have not been set for different regions of the state.

In 2010, WSDOT formed an advisory group to examine the issues and prepare the report specified in Section 2(a) of the Executive Order. The Section 2(a) report was delivered to the Governor on December 29, 2010. This report is available on WSDOT's Planning web page: www.wsdot.wa.gov/planning/. See Appendix G for a summary of work completed under Section 2(a).

In 2011, WSDOT collaborated with each of the regional transportation planning organizations (RTPOs) designated in Section 2(b) to complete this report. WSDOT also met with several of the RTPOs policy boards to communicate the preliminary results of this collaboration.

A. Survey Approach

WSDOT surveyed the four RTPOs to:

- identify their transportation-related greenhouse gas (GHG) emissions reduction strategies that were or might be included in current and future regional transportation plans;
- determine which strategies appear to have the greatest potential for achieving the vehicle miles traveled (VMT) benchmarks; and
- report which policy or funding issues need to be resolved to ensure implementation of these strategies.

The survey's 14 questions were categorized into 2 parts: 1) current transportation plan, and 2) upcoming plan update (Appendix B). WSDOT analyzed the survey and used the results to develop this report. See Appendix A for an overview of regional characteristics defined by the RTPOs; Appendix B for the RTPO survey results; and Appendix C for the survey results summary.

B. Regional Transportation Planning Organization Policy Board Engagement

WSDOT collaborated with RTPOs to determine the best communication approach with their policy boards. Staff from the Puget Sound Regional Council (PSRC) and the Southwest Washington Regional Transportation Council (RTC) preferred to be responsible for communicating with their policy boards directly. The Spokane Regional Transportation Council (SRTC) and the Thurston Regional Planning Council (TRPC) invited WSDOT to meet with their respective policy boards to discuss the following:

- state-level findings and recommendations from the Executive Order 09-05 Section 2(a) report;
- requirements of Section 2(b) of the Governor's Executive Order 09-05;
- WSDOT's approach to accomplish Section 2(b); and
- results of the RTPO survey.

II. WHICH REGIONAL TRANSPORTATION PLANNING ORGANIZATIONS HAVE DEVELOPED OR ARE DEVELOPING PLANS WITH GREENHOUSE GAS STRATEGIES?

PSRC is the only RTPO that evaluated GHG emissions and included GHG emissions reduction strategies in their current plan (*Transportation 2040*). TRPC, SRTC, and RTC have not developed specific strategies to reduce GHG emissions. Their plans pre-date the state's climate change legislation and Executive Order 09-05. Their existing plans include strategies to reduce congestion, improve availability of transportation alternatives, and improve air quality. These strategies also serve to decrease GHG emissions.

The regional transportation planning organizations agree that a combination of strategies provide better results for reducing greenhouse gas emissions. These common strategies are not new. The regional transportation planning organizations have been implementing many of these strategies longer than greenhouse gas emissions reduction has been a policy focus. The strategies also provide many other benefits to the communities they serve.

As identified in last year's Section 2(a) report, providing travel options to reduce VMT also reduces GHG emissions. Improving conditions for bicycling and walking, encouraging commute trip reduction policies and programs, encouraging transportation demand management policies and programs, and strategically expanding transit all contribute to reducing GHG emissions by reducing fuel consumption or VMT. Many strategies in the regional transportation plans also promote and encourage effective land use policies such as mixed land use centers, infill redevelopment, and compact communities, which further reduce travel demand and VMT. Additional strategies identified in the regional transportation plans that could reduce GHG emissions include the use of fuel-efficient vehicles or tolling.

Regional Transportation Plans Reviewed in This Report

- Spokane Regional Transportation Council: *Spokane Metropolitan Area Metropolitan Transportation Plan 2008-2030*
- Southwest Washington Regional Transportation Council: *Metropolitan Transportation Plan for Clark County, Adopted 2007*, amended in 2008 and 2010
- Thurston Regional Planning Council: *Thurston Regional Transportation Plan – Guiding Our Future*, adopted in May 2004
- Puget Sound Regional Council: *Transportation 2040*, adopted May 20, 2010

Regional Transportation Plan Update Schedule

- Spokane Regional Transportation Council: January, 2012
- Southwest Washington Regional Transportation Council: December, 2011
- Thurston Regional Planning Council: 2014
- Puget Sound Regional Council: 2014

PSRC's *Transportation 2040* evaluated greenhouse gas emissions using the U.S. Environmental Protection Agency's Motor Vehicle Emissions Simulator (MOVES) software. To estimate GHG emissions, VMT from the regional travel demand model was applied to vehicle type GHG emission rates. Technology and fuel assumptions scenarios were created and further evaluated in relation to the travel demand model results. *Transportation 2040* estimates that its four-part GHG emission reduction strategy (land use, user fees, transportation choices, and fuel efficient vehicles/low carbon fuels technology) will reduce regional transportation-related greenhouse gas emissions in 2040 by 5 to 28 percent from 2006, levels depending on assumptions for the different strategies.

A. Greenhouse Gas Reduction Strategies

The four regional transportation plans have strategies in common that serve to reduce GHG emissions. Strategies related to improving efficiency of the transportation system and the effectiveness of land use decisions are not new. The RTPOs have been including many of these strategies in their plans longer than GHG emission reduction has been a state policy focus. Also, these strategies provide many other benefits to the communities they serve.

This report categorizes the strategies into three broad groupings:

- Transportation demand management;
- Strategic transit service expansion and active transportation[3]; and
- Growth management and land use

Combining these strategies provides the greatest potential reduction of GHG emissions. These combined strategies also reinforce individual strategies and further reduce greenhouse gas emissions. Specific strategies unique to a region, such as developing electric vehicle infrastructure or tolling, are identified in the plans.

Transportation Demand Management

Transportation demand management strategies often focus on reducing the amount of travel by single occupant vehicles. Examples of transportation demand management strategies identified in regional transportation plans include establishing programs for carpools, vanpools, and rideshare, and adding high occupancy vehicle lanes. Technology-driven strategies, such as electronic tolling and "smart" corridors that provide real-time traffic information may also reduce VMT and GHG emissions.

[3] Active transportation refers to improving conditions for bicycling and walking

Strategic Transit Service Expansion and Active Transportation

Strategic transit service expansion investments range from adopting high capacity transportation (HCT) policies to the development of HCT facilities. SRTC, TRPC, and RTC's plans support adopting HCT corridors as part of local comprehensive plans; development of HCT right-of-way corridor agreements as appropriate; and timely development of short-and long-term access needs for potential HCT corridors. Such policies would help ensure that efficient growth, development, and services are directed toward transportation corridors. For example, TRPC's high frequency transit corridors that connect adjacent city centers to employment and retail centers in the Thurston County region reflect a 24 percent increase in per capita ridership from 1990 to 2008.

Active transportation or non-motorized transportation refers to improving conditions for bicycling and walking. These strategies offer alternatives to driving while reducing GHG emissions and promoting physical health. Examples of active transportation strategies include providing bicycle parking, supporting Safe Routes to School programs, expanding bicycle and pedestrian networks to complete crucial gaps, removing hazardous crossings, and extending transportation network connections to underserved communities. Active transportation can also increase access to and use of transit services.

Strategically expanding transit systems and promoting active transportation strategies provide a viable means of supporting safe, reliable, and healthy mobility options. This is especially important for meeting the needs of an aging population and those who depend on alternative forms of transportation.

Growth Management and Land Use

Growth management and land use decisions that can support multimodal transportation could reduce VMT and GHG emissions. For example, encouraging infill development and increasing density in urban areas makes transit more feasible. Encouraging mixed-use development and improved street network connectivity can shorten the distance between trip origins and destinations and make walking and biking more attractive travel options. When combined with various transportation choices, effective land use decisions can reduce VMT and GHG emissions, traffic congestion, and transportation costs, while promoting active transportation and transit service use.

B. Individual Regional Transportation Planning Organization's Greenhouse Gas Reduction Strategies

Spokane Regional Transportation Council – SRTC's current transportation plan, *Spokane Metropolitan Area, Metropolitan Transportation Plan 2008-2030,* includes the strategies listed in the chart below to reduce VMT and GHG emissions. SRTC expects the next transportation plan update, currently underway and scheduled for completion in January 2012, to include similar strategies. SRTC's website has additional information on these strategies, at www.srtc.org.

	APPROACH	STRATEGIES	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Regional Commute Trip Reduction (CTR) Program	Vanpool, carpool; car-share services; guaranteed ride home services; transit pass subsidies; employer outreach	Reduction of VMT by 7.5 million per year (based on home-work trips only), additional 13% by 2014. Reduction of GHG emissions by 3,801 tons per year with up to an additional 10% by 2014.
	Growth and Transportation Efficiency Center (GTEC) Plan	Includes all commute trip reduction program strategies identified above and targeted to all employers and residents of the GTEC area	Not available
	Active Transportation: Spokane Regional Transportation Council 2008 Regional Bike Plan, 2009 Regional Pedestrian Plan, 2008 SmartRoutes	Add 15.2 miles of infill sidewalks; install new bicycle and pedestrian bridges; extend and connect non-motorized facilities in under-served communities; implement an active transportation marketing campaign; and complete crucial gaps and remove hazardous crossings along the trail system	When implemented, the marketing program could yield reduction of VMT by 44 million (as part of 91 million VMT reduction from broader active transportation strategies).
	High Capacity Transportation (HCT)	Adoption of potential HCT corridors as part of each jurisdiction's comprehensive plans; development of HCT right-of-way corridor preservation agreements when appropriate; timely development of short and long term access needs to potential HCT corridors; and directing future growth/development toward identified transportation and transit corridors	Not available

EXISTING TRANSPORTATION PLAN (continued)	Land Use	Encourage mixed land use activity centers along corridors that can be efficiently served by public transportation; revise parking requirements for new development to reduce minimum parking requirements for existing development as increased levels of transit and pedestrian access are provided; and establish parking lot pricing strategies that provide incentives to high occupancy vehicles	Not available
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Active Transportation	Develop regional complete streets policy and encourage development of policies at the local level; increase bicycle mode share; identify gaps and needs of regional bikeway system; develop pedestrian projects, programs, and plans; increase pedestrian safety, connectivity, and facilities; improve network of paved pedestrian paths to facilitate non-motorized travel; increase percentage of children walking to school	When implemented, an additional VMT reduction of 91 million from 2006 baseline. Reduction of carbon dioxide (CO2) emissions by 58,269 tons per year.
	Regional Commute Trip Reduction Program	Continue and enhance CTR and GTEC strategies identified in the transportation plan	Not available
	High Capacity Transportation	Implement the High-Performance Transit Network (HPTN) featuring all day, two-way reliable and frequent service that offers automobile competitive time savings and improved passenger amenities; invest in targeted improvements to facilitate seamless multimodal travel; use HPTN as a guide for public transportation compatible designs and encourage mixed-use residential development along key corridors	Not available

Southwest Washington Regional Transportation Council – RTC's existing transportation plan, *Metropolitan Transportation Plan for Clark County*, adopted 2007, and amended in 2008, and 2010, includes the strategies listed in the chart below to reduce VMT and GHG emissions. RTC expects the next transportation plan update, currently underway and scheduled for completion in December 2011, to include similar strategies. RTC's website has additional information on these strategies, at www.rtc.wa.org.

	APPROACH	STRATEGIES	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Strategic transit Service Expansion	Fixed bus and high capacity transit including the Columbia River Crossing light rail transit extension and bus rapid transit in the Fourth Plain Corridor	Not available
	Transportation Demand Management	Commute trip reduction program; transportation system management; intelligent transportation system; and congestion management process	Not available
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Continue and enhance strategies as identified in the 2007 plan		

Thurston Regional Planning Council – TRPC's existing transportation plan, *Thurston Regional Transportation Plan – Guiding Our Future,* includes the strategies in the chart below to reduce VMT and GHG emissions. TRPC expects the next transportation plan update in 2014 to include similar strategies. TRPC's website has additional information on these strategies, at www.trpc.org.

	APPROACH	STRATEGIES	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Land Use	Attract well-designed, mixed-use infill and redevelopment along transit corridors; increase densities in suburban residential areas with services for daily living; foster vibrant, mixed-use rural towns, urban neighborhoods, and cities; reduce share of residential growth locating in rural areas; "right size" parking that is tailored to the adjacent land uses and availability of travel alternatives; designate "strategy corridors" that are exempt from vehicular-based concurrency standards; require pedestrian-friendly building design; charge appropriate transportation impact fees to encourage compact, walkable urban form in activity centers and transit corridors. Prime strategies for reduced GHG emissions include integration of electric vehicle infrastructure into existing land use and transportation policy; installation of roundabouts where appropriate to reduce vehicle stops and starts.	Not available

EXISTING TRANSPORTATION PLAN	Multimodal Transportation	Integrate bike lanes and sidewalks into local street standards; concentrate transit services where they are most cost-effective with headways of 15 minutes or shorter on priority corridors; promote vanpools, carpools, and rideshare programs; develop inter-regional transit partnerships; standardize street connectivity; limit widening of arterials to no more than two general purpose lanes in each direction; design streets that reinforce safe driver behavior; complete safe walking routes to all area schools; create "Smart Corridors" with technologies and policies that improve operational efficiency; stimulate transit-supportive land development activities; complete the regional trails system; provide bicycle design requirements and facilities at schools, employment sites, and transit centers; preserve rail right-of-way corridors for future rail or high capacity transit use; determine high capacity transportation role in meeting long term mobility needs; ensure transportation investments reinforce well-planned growth and redevelopment decisions; support effective multimodal transportation safety education and enforcement	Not available
	Transportation Demand Management	Expand commute trip reduction program to smaller employers and all state agencies in Thurston County; reduce or eliminate free parking in activity centers well served by transit; promote active transportation programs that address faculty, student, and family needs at area schools; concentrate redevelopment and growth in mixed-use urban areas, particularly along the old state highway corridor whenever possible; promote telework and teleconferencing alternatives, including rural telework sites	Not available
	Fuel Technology	Prime strategies mostly affecting reduced GHG emissions include biodiesel, electric, and hybrid fuel technology for use in transit vehicles, school buses, and local jurisdiction fleet vehicles	Not available
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Continue and enhance strategies as identified in the existing transportation plan; may evaluate time-of-day lane conversion on I-5 from general purpose to high occupancy vehicle (HOV) or high occupancy toll (HOT) lanes; may evaluate long-term potential of future high-capacity transit alternatives		

Puget Sound Regional Council – PSRC's existing transportation plan, *Transportation 2040*, adopted May 2010, includes the strategies in the chart below to reduce VMT and GHG emissions. The RTPO expects the next transportation plan update in 2014, to include similar strategies. PSRC's website has additional information on these strategies, at www.psrc.org.

	APPROACH	STRATEGIES	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Four-Part Greenhouse Gas Emissions Reduction	Land use, user fees, transportation choices, and technology (fuel/vehicle)	Reduction of 5-28% GHG emissions below 2006 levels; 31-48% below the 2040 baseline
	Transit	Complete Sound Transit 2 package and additional light rail extensions to Everett, Tacoma and Redmond; increases local transit service by more than 100%;	Reduction of GHG emissions by 9% from 2040 baseline. PSRC's adopted transportation Plan *Transportation 2040* shows a VMT reduction by 2040 which exceeds the statutory statewide VMT reduction benchmark for 2035.
	Non-motorized Facilities	Focus bike and walk investments in centers and in proximity to transit station areas; propose Complete Streets treatment in the urban area	
	Tolling	Provide funding for investments and manage demand on the system; transition to a new funding structure based on user fees such as HOT lanes, highway system tools and other pricing strategies	
	Regional Growth (Land Use)	Support Vision 2040 growth strategy; focus growth in the urban growth area, in centers, and compact communities; envision greater jobs/housing balance	Reduction of GHG emissions by 6% from 2040 baseline.
	Technology	Improvements to future fuel efficient vehicles and low carbon fuels	Reduction of GHG emissions by 25-43% from 2040 baseline.

UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Continue and enhance strategies as identified in the *Transportation 2040* plan.		

III. WHICH STRATEGIES APPEAR TO HAVE THE GREATEST POTENTIAL FOR ACHIEVING THE VMT BENCHMARKS?

PSRC developed methodologies to evaluate VMT reductions for *Transportation 2040*. SRTC, TRPC, and RTC each identified strategies with the greatest potential to achieve the VMT benchmarks using best professional judgment.

A. Strategies with the Greatest Potential

Though there are similarities in VMT reduction strategies across the four regions, WSDOT and the RTPOs agree that there are no "silver bullets" for achieving the statewide per capita VMT benchmarks. PSRC's analysis found that pricing strategies have the greatest potential for reducing per capita VMT in their region. Their *Transportation 2040,* plan projects achieving the statewide benchmarks in their region in 2020 and 2035. The three other RTPOs believe that combining transportation choices with effective land use policies may provide the greatest potential for reducing per capita VMT in their regions. In addition, other strategies such as marketing programs that promote transportation choices and policies that result in more efficient travel called for by the draft 2012 Washington State Energy Strategy provide potential VMT reduction. Maintaining and enhancing support for existing strategies is critical to ensure progress towards achieving the VMT benchmarks.

The RTPOs identified VMT reduction strategies in existing regional transportation plans and, when available, in upcoming plan updates. For example, SRTC is looking at a marketing program designed to promote alternative transportation to certain audiences. SRTC estimates this marketing program will reduce 44 million VMT when implemented. In addition, PSRC's *Transportation 2040,* includes an extensive pricing strategy that is expected to reduce VMT while providing funding for investments and managing demand on the transportation system. PSRC estimates pricing, transit, non-motorized facilities, and regional growth strategies will reduce per capita VMT.

B. Individual Regional Transportation Planning Organization's Strategies with the Greatest Potential

Spokane Regional Transportation Council – Specific strategies that have the greatest potential for reducing VMT, especially when combined are:

	APPROACH	STRATEGIES WITH THE GREATEST POTENTIAL	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Regional Commute Trip Reduction (CTR) Program	Data and performance analysis of CTR program on an ongoing basis	Reduction of VMT by 7.5 million per year (based on home-work trips only), additional 13% by 2014. Reduction of GHG emissions by 3,801 tons per year with up to an additional 10% by 2014.
	Active Transportation	Expansion of active transportation programs and projects; alternative transportation commute marketing program	When implemented, the marketing program could reduce VMT by 44 million (as part of 91 million VMT reduction from broader active transportation strategies).
	High Capacity Transportation (HCT)	Support of HCT policies provides the framework for future HCT facilities	Reduction of VMT by 7.5 million per year (based on home-work trips only), additional 13% by 2014. Reduction of GHG emissions by 3,801 tons per year with up to an additional 10% by 2014.
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES WITH THE GREATEST POTENTIAL**	**ESTIMATED REDUCTIONS**
	Active Transportation	Continue and enhance active transportation strategies identified in the transportation plan	When implemented, an additional VMT reduction of 91 million from 2006 baseline. Reduction of CO2 emissions by 58,269 tons per year.
	Regional Commute Trip Reduction Program	Continue and enhance CTR and GTEC strategies identified in the transportation plan	Not available
	High Capacity Transportation (HCT)	As part of the 2012 metropolitan transportation plan update, High Performance Transit Network (HPTN) projects will be modeled to quantify VMT and GHG emissions after the travel demand model update is complete.	Not available

Southwest Washington Regional Transportation Council – Specific strategies with the greatest potential for reducing VMT, especially when combined are:

	APPROACH	STRATEGIES WITH THE GREATEST POTENTIAL	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Strategic Transit Service Expansion	Combined transit and high capacity transit	Not available
	Transportation Demand Management	Commute trip reduction program	Not available
	APPROACH	**STRATEGIES WITH THE GREATEST POTENTIAL**	**ESTIMATED REDUCTIONS**
UPCOMING PLAN UPDATE (Preliminary Analysis)	Plan approval pending (December 2011); expect continuing and enhancing strategies identified in the existing plan		

Thurston Regional Planning Council – Specific strategies with the greatest potential for reducing VMT, especially when combined, are:

	APPROACH	STRATEGIES WITH THE GREATEST POTENTIAL	ESTIMATED REDUCTIONS
EXISTING TRANSPORTATION PLAN	Land Use	Walkable, mixed-use urban development; well-designed and high density suburban residential served by nearby services; mixed-use small cities; low density rural areas predominately dedicated to resource activities and open space	Not available
	Multimodal Transportation	Multimodal street standards; high frequency transit corridors; street connectivity	Annual Bike Commuter Contest: 110,00 miles, 14,000 commute trips; Journey to Work data since 1990: 69% increase in people who commute by bike or walk; 24% increase in per capita transit ridership since 1990.

EXISTING TRANSPORTATION PLAN	Transportation Demand Management	Parking policies	Not available
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES WITH THE GREATEST POTENTIAL**	**ESTIMATED REDUCTIONS**
	Not available; expect continuing and enhancing strategies identified in the existing plan		

Puget Sound Regional Council – Specific strategies with the greatest potential for reducing VMT, especially when combined are:

EXISTING TRANSPORTATION PLAN	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Transit	Complete Sound Transit 2 package and additional light rail extensions to Everett, Tacoma, and Redmond; increases local transit service by more than 100%;	PSRC's adopted transportation plan *Transportation 2040* shows a VMT reduction by 2040 which exceeds the statutory statewide VMT reduction benchmark for 2035
	Non-motorized Facilities	Focus bike and walk investments in centers and in proximity to transit station areas; propose Complete Streets treatment in the urban area	
	Tolling	Provide funding for investments and manage demand on the system; transition to a new funding structure based on user fees such as HOT lanes, highway system tools and other pricing strategies	
	Regional Growth (Land Use)	Support Vision 2040 growth strategy; focus growth in the urban growth area, in centers, and compact communities; envision greater jobs/housing balance	
UPCOMING PLAN UPDATE (Preliminary Analysis)	**APPROACH**	**STRATEGIES**	**ESTIMATED REDUCTIONS**
	Continue and enhance strategies as identified in the plan		

IV. WHICH POLICY AND FUNDING ISSUES NEED TO BE RESOLVED TO ENSURE IMPLEMENTATION?

A. Comparative Analysis of Policy and Funding Issues

While regional transportation plans can include strategies for making progress to achieve statutory reductions in VMT and GHG emissions, no single entity has the authority to create a regional transportation plan, provide transportation choices, and make land use decisions. The economy and other market factors influence transportation and land use decisions and, therefore, the effectiveness of land use strategies. Inconsistencies among the decisions made by land use authorities (local governments), transportation planning organizations, and transportation providers (state and local governments) are a barrier.

Individuals make many decisions daily about where to work and live, where to shop, where to seek medical care and where to learn—decisions that drive demand for transportation services and facilities.

Also, eliminating the institutional, economic, political and technological barriers to the broader deployment of more efficient vehicles, and other pricing strategies, holds great potential for reducing greenhouse gas emissions and vehicle miles traveled.

RTPOs need a reliable and adequate source of funding for current and future transportation planning to develop and refine strategies. State and local governments (transportation providers) need a reliable and adequate source of funding for current and future transportation programs and projects to implement the strategies.

B. Individual Regional Transportation Planning Organization's Policy and Funding Issues

Spokane Regional Transportation Council – These policy and funding issues need to be resolved in order to implement VMT and GHG emissions reduction strategies:

	POLICY ISSUES	FUNDING ISSUES
EXISTING TRANSPORTATION PLAN	Relationship between land use and transportation planning: limited ability to improve the efficiency and sustainability of future land use decisions	Increasing funding competitiveness of present economic climate; Future funding to alternative modes of transportation
UPCOMING PLAN UPDATE (Preliminary Analysis)	**POLICY ISSUES**	**FUNDING ISSUES**
	Relationship between land use and transportation planning: limited ability to improve the efficiency and sustainability of future land use decisions	Increasing funding competitiveness of present economic climate; Future funding to alternative modes of transportation

Southwest Washington Regional Transportation Council – These policy and funding issues need to be resolved in order to implement VMT and GHG emissions reduction strategies:

	POLICY ISSUES	FUNDING ISSUES
EXISTING TRANSPORTATION PLAN	No unresolved policy issues per adopted strategies	Insufficient funding is a major concern
UPCOMING PLAN UPDATE (Preliminary Analysis)	**POLICY ISSUES**	**FUNDING ISSUES**
	No unresolved policy issues per adopted strategies	Insufficient funding is a major concern

Thurston Regional Planning Council – These policy and funding issues need to be resolved in order to implement VMT and GHG emissions reduction strategies:

EXISTING TRANSPORTATION PLAN	**POLICY ISSUES**	**FUNDING ISSUES**
	Alignment among system facilities, pricing mechanisms, and underlying land use and transportation objectives	Need reliable, adequate funding
UPCOMING PLAN UPDATE (Preliminary Analysis)	**POLICY ISSUES**	**FUNDING ISSUES**
	Reconciling issues mentioned above	Need reliable, adequate funding

Puget Sound Regional Council – These policy and funding issues need to be resolved in order to implement VMT and GHG emissions reduction strategies:

EXISTING TRANSPORTATION PLAN	**POLICY ISSUES**	**FUNDING ISSUES**
	Tolling implementation; regulatory changes/improvements specific to federal fuel economy and low carbon fuel standards	Need reliable, adequate funding
UPCOMING PLAN UPDATE (Preliminary Analysis)	**POLICY ISSUES**	**FUNDING ISSUES**
	Tolling implementation; regulatory changes/improvements specific to federal fuel economy and low carbon fuel standards	Need reliable, adequate funding

V. FOUR UPCOMING REGIONAL TRANSPORTATION PLAN UPDATES

Each of the RTPOs is on a different transportation plan update schedule with different processes. The updates are scheduled as follows:

- Spokane Regional Transportation Council: January, 2012
- Southwest Washington Regional Transportation Council: December, 2011
- Thurston Regional Planning Council: 2014
- Puget Sound Regional Council: 2014

ACKNOWLEDGEMENTS

We appreciate and acknowledge the contributions of the following:

Regional transportation planning organizations and their staff:

- Spokane Regional Transportation Council: Kevin Wallace, Mark Rohwer, and Anna Ragaza-Bourassa
- Southwest Washington Regional Transportation Council: Dean Lookingbill, Lynda David, and Mark Harrington
- Thurston Regional Planning Council: Lon Wyrick and Thera Black
- Puget Sound Regional Council: Charlie Howard, and Kelly McGourty

Washington State Department of Transportation

- Eastern Region, Charlene Kay
- Southwest Region, Sharon Zimmerman
- Olympic Region, John Donahue
- Urban Planning Office, Stacy Trussler
- Strategic Planning Division, Brian Smith and Anita Gausepohl
- Public Transportation Division, Kathy Leotta, Keith Cotton, and Jerry Ayres
- Transportation Planning Office, Judy Lorenzo, Jason Beloso, Kathy Murray, Bill Bennion, Adele McCormick, Teri Hotsko, and Bobbie Garver

VI. Appendices

Appendix A

Regional Characteristics

Regional Characteristics: Regional Transportation Planning Organizations

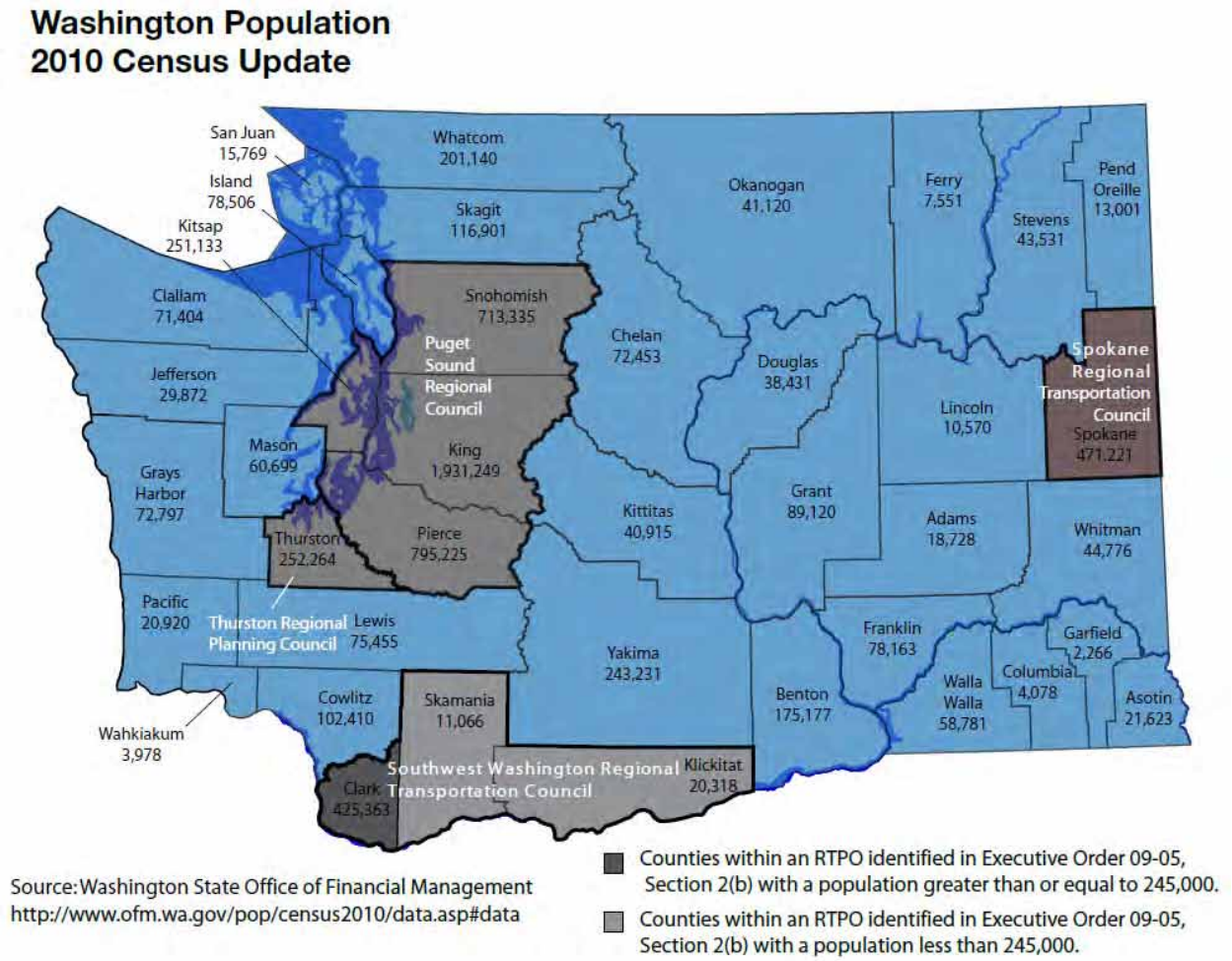
Washington has fourteen Regional Transportation Planning Organizations (RTPOs) and eleven Metropolitan Planning Organizations (MPOs). MPOs and RTPOs serve the same basic transportation planning functions – develop a long-range plan, coordinate within a region, and prepare a transportation improvement program. The federal MPO and state RTPO requirements of these organizations are complementary. The lead agency for an RTPO is also the lead agency for the MPO within the region (except Lewis-Clark Valley MPO because it is a bi-state organization).

The main differences between RTPOs and MPOs are:

- State legislation created RTPOs in 1990
- Federal legislation created MPOs in 1962
- An RTPO includes one or more counties, covers both urban and rural areas, and receives state funding in support of its planning efforts
- An MPO covers an urbanized area with 50,000 or more population and receives federal funding in support of its planning efforts

As per RCW 47.80.010, the state legislature created RTPOs because:

- The transportation system is Washington is owned and operated by numerous public jurisdictions, but it should function as one interconnected and coordinated system;
- Transportation planning, at all levels, should be coordinated with local comprehensive plans;
- Local jurisdictions and the state should cooperate to achieve both statewide and local transportation goals; and
- Transportation planning should be coordination at the regional level.



Spokane Regional Transportation Council: http://www.srtc.org

The Spokane Regional Transportation Council (SRTC) encourages coordination and collaboration between planning and transportation departments of partner agencies and serves as the federally designated Metropolitan Planning Organization for Spokane County. Spokane County is the business, trade, and cultural center of the Inland Northwest. Spokane County is one of four eastern Washington counties along the Washington-Idaho border and comprises a total area of 1,758 square miles. According to the U. S. Census Bureau, Spokane had a reported population of 471,221 in 2010. Forecasts predict a 21 percent growth in population by 2030, to 595,201.

As the transportation hub of Eastern Washington, the Spokane Region has a multimodal transportation system that includes an international airport, rail lines, and a variety of surface transportation facilities that accommodate autos, commercial vehicles, buses, bicycles and pedestrians. Like most communities, the Spokane Region primarily relies on motor vehicles for travel. Countywide daily VMT estimated by SRTC's 2008 travel demand model is approximately 11.13 million. According to the U.S. Census American Community Survey (2005-2009) 5 year estimates, mode splits are 82 percent drive alone, 3 percent transit, 4 percent walking and biking, and carpooling is the remaining 11 percent.

Southwest Washington Regional Transportation Council[4]: www.rtc.wa.org

Southwest Washington Regional Transportation Council (RTC) is the Metropolitan Planning Organization (MPO) for Clark County, Washington, and serves as the state-designated Regional Transportation Planning Organization (RTPO) for the three-county area of Clark, Skamania and Klickitat Counties. RTC is also a part of the larger Portland (Oregon)/Vancouver (Washington) urbanized area. Downtown Vancouver and downtown Portland are less than ten miles apart and only separated by the Columbia River. From the City of Vancouver, Clark County spreads through a rapidly growing suburban band, across agricultural lands and a network of smaller cities to the slopes of the Cascade Mountain Range. In 2011, Clark County ranked fourth in the state of Washington with an estimated population of 428,000. Clark County has experienced an 80 percent growth in population (1990 - 2011) and is forecast to grow another 50 percent by 2035 to a population of nearly 642,000. Over the past twenty years, there has been significant growth in the smaller cities of Clark County and this trend continues. The City of Battle Ground grew by 373 percent from 3,758 in 1990 to 17,780 in 2011 and Camas grew by 189 percent from 6,798 in 1990 to 19,620 in 2011.

The region attracts high tech industries and service sector employment. In 2010, Clark County employment was about 126,500 and is forecast to grow to 256,000 by 2035. The most congested corridors in Clark County are the two interstate corridors, I-5 and I-205. About 30 percent of Clark County's employed residents use these two corridors to commute south to Oregon for employment. These corridors are also the region's busiest freight corridors. Most recent commute to work data indicates a 78% drive-alone modal share (American Community Survey, 2005-2009) with 10.7 percent carpooling, 2.5 percent using transit, 1.6 percent walking and 5.6 percent working at home. Average travel time to work is about 24.9 minutes. C-TRAN provides transit service (6.3 million ridership in 2010) within the more urban areas of Clark County, operating 7 premium commuter express routes to downtown Portland as well as other connecting services to Portland's TriMet transit system.

As part of the Growth Management planning process, Clark County adopted a Community Framework Plan in April 1993 to guide the County's long-term growth over a period of fifty-plus years. The twenty-year Comprehensive Growth Management Plan for Clark County guides the growth of the county toward the future vision. The Board of Clark County Commissioners adopted the most recent changes to the Clark County Comprehensive Plan, 2004-2024, on September 25, 2007. An update to the Metropolitan Transportation Plan (2035 horizon year) for Clark County is currently underway with RTC Board adoption anticipated in December 2011.

Thurston Regional Planning Council: www.trpc.org

Thurston Regional Planning Council (TRPC) fosters the Thurston County region's livability through collaborative, informed planning. It carries out regionally focused plans and studies on topics such as transportation, growth management, and environmental quality. In 2010, the county population was 252,400 and is projected to increase to 373,000 by 2030. Located at the southern tip of Puget Sound, the Thurston County region takes a coordinated, integrated approach to mitigating transportation

[4] RTC's analysis came from Clark County's MPO because their RTP included Skamania and Klickitat counties, which do not meet the 245,00 population threshold

impacts on climate change. With its metropolitan center bisected by Interstate 5 and well within the market influence of the Seattle-Tacoma metropolitan area, managing travel demand is a challenge. However, a long-standing commitment to integrated transportation – land use decision-making, aggressive multimodal investments, innovative Commute Trip Reduction programs, and strategic capacity investments has helped this region accommodate its growth in ways that have reduced per capita vehicle miles traveled over the last 20 years. Projected population increases of 1.7 percent per year and employment growth of 2.0 percent per year will continue to help create vibrant, walkable, transit-oriented urban neighborhoods to augment the suburban residential and small city patterns that characterized much of the region's growth between 1950 and 1990.

Long before climate change was a motivating factor, the Thurston region was intent on reducing the steady increase in demand for drive alone travel while increasing the range of viable travel options available to its public. With an employment base dominated by state and local government, the region historically attracted inbound commuters. Over the last two decades that has changed; a pronounced net outbound commute flow exceeds the number of jobs accounted for by state government. This "bedroom community" characteristic underscores the importance of demand management and transit options as meaningful alternatives to driving. Coupled with the attractiveness of the Thurston region as a residential location for military personnel at Joint Base Lewis-McChord, managing demand for I-5 capacity and its influence on growth patterns in the Thurston region is a primary focus for inter-regional, multimodal efforts. Demand for I-5 travel underscores the importance of transit and vanpools, trip reduction programs, and aggressive land use measures, and stresses the need for more aggressive interstate measures like high occupancy vehicle lanes, managed lanes, and pricing as means of further reducing transportation impacts on climate change.

Puget Sound Regional Council (PSRC): www.psrc.org

The Central Puget Sound region covers an area of 6,290 square miles, includes the largest metropolitan area in the state, and is home to 55% of the state's population. Approximately 3.7 million people live and work in and around the region. The Puget Sound Regional Council (PSRC) projects an increase of 1.5 million people and 1.2 million jobs in the region by 2040 – the planning horizon of the PSRC long-range plan, *Transportation 2040*. In 2010, about 1.9 million people were employed in the region; by 2040, it is projected that the number of people employed will grow to around 3.1 million. Industries that fuel labor markets in central Puget Sound include aerospace, information technology, services, tourism and international trade. With their strategic alignment to the Pacific Rim, the ports of Everett, Seattle, and Tacoma serve as major hubs for freight and goods movement supporting trade to and from other states, Canada, Mexico, and overseas. Recent military expansion of troops stationed at Joint Base Lewis-McChord in Pierce County has brought additional jobs to the region, as well as increased traffic congestion along I-5.

PSRC is a four-county Metropolitan Planning Organization and is federally designated as the Transportation Management Area for King, Kitsap, Pierce, and Snohomish counties. PSRC is responsible for planning transportation efficiencies that support economic vitality, address traffic congestion, provide for the mobility of people and freight and goods, and protect the environment. Currently the region has areas in King, Pierce, and Snohomish Counties designated as National Ambient Air Quality

Standards (NAAQS) maintenance areas for carbon monoxide (CO) and particulate matter (PM10); and a new area in Pierce County designated in 2009 as a nonattainment area for fine particulates (PM2.5). The State Implementation Plan (SIP) for Air Quality stipulates that PSRC must develop a plan that demonstrates how this area will come back into compliance within three years.

It is estimated that about 81 million vehicle miles are traveled in the region daily. Each year the five transit agencies in the region serve about 157 million fixed-route transit trips. Another 20 million trips are taken on ferries. Public transportation accounts for about 8.6% of work trips. Bicycle and walking trips make up another 1% and 3.5% respectively. According to the U.S. Census Bureau, about 5.2% of the people in the region work at home

Appendix B

Regional Transportation Planning Organization
Categorized Survey Results

PART 1 = CURRENT TRANSPORTATION PLAN

Question 1	**What is the title and date of your current transportation plan?**
SRTC	Spokane Metropolitan Area Metropolitan Transportation Plan 2008-2030
RTC	Metropolitan Transportation Plan for Clark County, Adopted 2007, amended in 2008, and 2010.
TRPC	Thurston Regional Planning Council's (TRPC) current transportation plan is called Thurston Regional Transportation Plan – Guiding Our Future. Initially adopted in May 2004, the plan undergoes regular amendments; the current planning horizon is 2035.
PSRC	Transportation 2040, May 20, 2010

Question 2	**Have you estimated transportation-related greenhouse gas emissions as part of your plan development or analysis? Please describe why or why not below.**
SRTC	No
RTC	No, Limited staff resources, uncertain analytical methodologies, and the RCW is directed to state government, not to local governments, or regions, nor is it a regional transportation plan requirement.
TRPC	No, Effective estimation and forecasting of emissions – beyond simple conversion of vehicle-miles traveled (VMT) into greenhouse gas emissions – currently exceeds the technical capacity of the agency.
PSRC	Yes, The issue of climate change and emerging legislation was important to our Board to address as part of our plan update. Further, our regional strategy document, Vision 2040, included addressing climate change and the reduction of GHG emissions as an important regional goal.

Question 3	**If the answer to question 2 is yes, please describe the approach used for estimating GHG emissions. For example, describe: assumptions or data sources for changes to the vehicle fleet and fuels, GHG or related modeling analysis conducted, other approaches, assumptions, etc.**
SRTC	Not available
RTC	Not available
TRPC	Not available
PSRC	At the time we were creating Transportation 2040, EPA's modeling tools for GHG analyses were still being developed. We were able to use a beta version of the EPA's MOVES software to analyze GHG emissions. We utilized the fleet information for the region built into that software, created emission factors from the MOVES software for three categories of vehicles (private, commercial and heavy duty) and applied those rates to VMT by speeds from our travel demand model. We did not make any other assumptions regarding the vehicle fleet as part of this primary analysis, other than what EPA's software assumes for fleet turnover and regulatory improvements. However, we did create two scenarios for technology and fuel assumptions, and post-processed them to our results to determine possible improvements by 2040.

Question 4	**RCW 47.01.440 provides statewide goals to reduce annual per capita vehicle miles traveled by 2050, except for exempt vehicles as indicated in the legislation. For your plan, please describe the strategies that are intended or expected to reduce VMT for vehicles included in the legislation, compared to existing and either future baseline or future no build.**
SRTC	The first strategy to reduce VMT is the continued implementation of the Regional Commute Trip Reduction (CTR) program, including implementation of the Geographical Technical Efficiency Center (GTEC) in the City of Spokane. CTR strategies include vanpooling, carpooling, car-sharing services, guaranteed ride home services, transit pass subsides, and promoting transit and non-motorized methods of commuting at major employers and voluntary employers. GTEC strategies will also include the above methods but the target audience will include all employers and residents within the GTEC. Surveys by the Spokane CTR program indicates VMT was reduced by 7.5 million VMT per year. This measurement only includes the home-to-work trip so it can be considered a conservative measurement. Active transportation strategies to reduce VMT are found in Spokane's 2008 Regional Bike Plan, 2009 Regional Pedestrian Plan and the project and programs outlined in the 2008 SmartRoutes document. Strategies found within these plans and programs include but are not limited to adding 15.2 miles of infill sidewalks, installing new bicycle and pedestrian bridges, extending and connecting non- motorized facilities in under-served communities, implementing an active transportation marketing campaign and completing crucial gaps and removing hazardous crossings along the trail system. Last quantified in 2006, biking and walking modes account for 7.5 million and 18.1 million VMT per year in Spokane County, respectively; equivalent to 25.6 million VMT per year. The active transportation strategies are expected to save an additional 91 million VMT from the 2006 baseline; equivalent to nine days of vehicle traffic in Spokane, Washington. Support High Capacity Transportation (HCT) policies that provide the framework for future development of HCT facilities to provide alternate transportation choices to single occupant vehicles. These policies include the adoption of potential HCT corridors as part of each jurisdiction's comprehensive plans, the development of HCT right-of-way corridor preservation agreements when appropriate, and timely development of short and long-term access needs to potential HCT corridors. Future growth and development should to be directed toward identified transportation and transit corridors to ensure that efficient services can be provided. The current MTP also promotes and encourages mixed land use activity centers along corridors that can be efficiently served by public transportation. Reduce the parking requirements for new development and reduced parking for existing development as increased levels of transit and pedestrian access are provided. Parking lots should establish parking pricing strategies that provide incentives to high occupancy vehicles. Single occupancy vehicle parking spaces should be priced higher than ride-sharing pricing.
RTC	Transit expansion both fixed bus and high capacity transit per the CRC LRT extension and BRT in the Fourth Plain Corridor. Transportation Demand Management strategies, Commute Trip Reduction program, Transportation System Management/Intelligent Transportation System strategies, and the Congestion Management Process.

TRPC	The strategies and policies that support climate change mitigation in the Thurston region have been in place longer than climate change has been a topic of mainstream conversation. That is because these same policies support regionally-agreed upon growth management and livability objectives established in the early 1990s. Land Use Strategies support alternatives to driving while at the same time reducing the travel distance for vehicular trips. • Attract well-designed, mixed-use infill and redevelopment along the region's primary transit corridors where transit, walking, and biking can provide viable alternatives to driving for some or all daily travel needs. • Increase densities in suburban residential areas, and provide for the range of services needed for daily living in close proximity to residential clusters. • Foster vibrant, mixed-use rural towns and cities that enable more people to live, work, shop and recreate within the same small community. • Reduce the share of residential growth locating in rural areas where alternatives to driving are not feasible and where every trip is a long driving trip. • "Right size" parking with parking maximums that are tailored to the adjacent land uses and availability of travel alternatives. • Designate 'strategy corridors' that are exempt from vehicular-based concurrency standards, encouraging growth in these corridors and improving transportation system efficiency through alternatives to driving, parking pricing, and operational measures. • Work to achieve lively, mixed-use urban neighborhood districts around primary transit centers and transfer stations. • Require pedestrian-friendly building design in city and neighborhood centers, and transit corridors. • Charge appropriate transportation impact fees so that there is no disincentive to developing in a compact, walkable urban form in activity centers and transit corridors. Transportation Strategies support a seamless, multi-modal transportation system that provides appropriate travel alternatives in coordination with current and planned land use activities. • Integrate bike lanes and sidewalks into local street standards. • Concentrate transit services where they are most cost-effective, establishing transit headways of 15 minutes or shorter on priority corridors. • Promote vanpools, carpools, and rideshare programs. • Develop inter-regional transit partnerships for long-distance commute trips. • Make street connectivity standard; where full street connections cannot be made, ensure non-motorized connections are available. • Limit the widening of arterials to no more than two general purpose lanes in each direction to avoid destroying neighborhood character, reduce induced demand, and minimize negative impacts on pedestrians and cyclists. • Design streets in a way that reinforces safe driver behavior and which reduces real or perceived dangers to cyclists and pedestrians. • Target investments to complete safe walking routes to all area schools.

• Transform ‘strategy corridors’ to ‘Smart Corridors’ with technologies and policies that improve operational efficiency overall, including Transit Signal Priority and other measures to increase transit reliability and efficiency.
• Explore ways in which transit investments can stimulate transit-supportive land development activities.
• Complete the regional trails system.
• Provide bicycle parking facilities at existing and future transit centers, park-and-ride locations, train stations, and other multi-modal facilities.
• Incorporate bicycle parking and other supporting facilities in the design requirements for schools and employment sites.
• Acquire threatened rail right-of-way corridors for potential future use for trails or high capacity transit.
• Determine the appropriate role that high capacity transportation can and should play in meeting this region’s long-range mobility needs.
• Ensure transportation investments reinforce well-planned growth and redevelopment decisions instead of undermining them.
• Support effective education and enforcement to foster a safe environment conducive to travel by all modes.

Demand Management Strategies reduce the overall demand for vehicular travel.
• Expand Commute Trip Reduction to smaller employers, including mandatory participation by all state agencies in Thurston County regardless of size.
• Reduce or eliminate free parking in activity centers that are well served by transit.
• Promote active transportation at area schools with programs targeted to the needs of students and their families, and school administrators.
• Get the land use right – concentrate growth in urban areas with a mix of uses whenever possible, with a particular focus on the retrofit and redevelopment of the old state highway corridor.
• Promote telework and teleconferencing as alternatives to trip making, including rural telework sites that provide consolidated, remote access opportunities for south county residents.

These are strategies identified in the Regional Transportation Plan, and which are carried out in each local Comprehensive Plan. No one strategy represents a “silver bullet” for curbing growth in VMT; instead, they work together as effective “silver buckshot”, each playing a role and typically contributing to the success of other measures.

PSRC	Transportation 2040 includes significant investment in transit, nonmotorized facilities, TDM programs, etc. For example, it completes the Sound Transit 2 package and additional light rail extensions to Everett, Tacoma and Redmond. It also increases local transit service by more than 100%, focuses bike and walk investments in centers and in proximity to transit station areas, and proposes Complete Streets treatment in the urban area. Transportation 2040 also contains an extensive tolling strategy, which will both provide funding for investments and manage demand on the system. Further, Vision 2040 calls for a Regional Growth Strategy, focusing growth in the urban growth area and in centers and compact communities, and envisioning a greater jobs/housing balance. Transportation 2040 investments support the Vision 2040 growth strategy.

Question 5	**Please describe the strategies included in your plan that are intended or expected to reduce transportation related greenhouse gas emissions compared to existing and compared to either future baseline or future no build conditions (for example, pricing, alternative vehicle and fuel related strategies, traffic management, land use changes, non-motorized strategies, etc.). Citing the same strategies from question 4 above is fine.**
SRTC	Please refer to question 4.
RTC	Transportation Demand Management strategies, Commute Trip Reduction program, Transportation System Management/Intelligent Transportation System strategies, and the Congestion Management Process.
TRPC	All of the strategies identified in #4, above, will be effective in reducing greenhouse gas emissions through reduction in per capita VMT. In addition, the following strategies will help reduce transportation-related greenhouse gas emissions though they have no demonstrable effect on VMT. • Provide for the integration of electric vehicle infrastructure into existing land use and transportation policy. • Install roundabouts where appropriate to reduce vehicle stops and starts. • Support the use of bio-diesel, electric, and hybrid fuel technology in transit vehicles, school buses, and local jurisdiction fleet vehicles.
PSRC	Transportation 2040 has significant investments in transit, nonmotorized facilities, demand management programs, system efficiencies, and a significant tolling strategy as mentioned above. In addition, Transportation 2040 includes a Four-Part Greenhouse Gas Strategy: land use, user fees, choices and technology. The technology component describes two future scenarios for more fuel-efficient vehicles and low carbon fuels.

Question 6	**Of strategies included in your plan, to the extent possible please indicate which strategies appear to have the greatest potential to reduce VMT per capita, and transportation related GHG emissions in your region to the extent possible. Please describe expected VMT and GHG reductions, and relevant modeling or analysis.**
SRTC	Support of High Capacity Transportation (HCT) policies will provide the framework for future development of HCT facilities to provide alternate transportation choices to single occupant vehicles. The impact of HCT policies on VMT and GHG were not quantified during the last MTP.

	The CTR program is a valuable component in the continued reduction of VMT and GHG. CTR analyzes the impacts of the program's trip reduction on a continual basis. The data collected by CTR details the benefits of alternate commutes, including reductions in VMT, and GHG and other pollutants. Continued growth in active transportation is also considered a strong strategy at reducing future VMT per capita and GHG emissions. Active transportation programs and projects in Spokane County have been modeled by Alta Planning and Design, a leader in active transportation planning and engineering. Alta modeled the impact of the implementation of an alternative transportation commute marketing program, SmartTrips, which is aimed at specific targeted audiences. According to the modeling results, this marketing program could yield a reduction of 44 million VMT per year if implemented in 2012. This SmartTrips program is similar in nature to the Smart Trips program developed by WHATCOM Council of Governments.
RTC	The combined transit and high capacity transit along with the commute trip reduction strategies provide the most potential for VMT reductions.

TRPC	At TRPC we underscore the inter-related nature of land use, transportation, and demand management measures. For example, a sidewalk in and of itself does not divert a vehicle trip to a walk trip. In order to realize a reduction in VMT, that sidewalk must connect two or more destinations within a reasonable walk distance, making land use an integral component of sidewalk effectiveness at VMT reduction. That said, if pressed to identify a small number of measures that work together as a foundation for VMT reduction in this region, we would identify a package of land use measures in coordination with multi-modal street standards, high-frequency transit corridors, street connectivity, and parking policies as a powerful strategy combination. • Land use measures inherent in adopted local and regional plans call for walkable, mixed-use urban development, well-designed and high-density suburban residential served by nearby services, mixed-use small cities, and low density rural areas predominately dedicated to resource activities and open space. In developing our long-range plan, we evaluated the consequences if this region is more effective at attracting mixed-use urban development in our city centers relative to what is planned, as well as the consequences if we are less effective. What we found was that when we looked at the effects on VMT at the regional level, differences existed but were nearly indiscernible. There is so much existing traffic pattern already in place that plausible shifts in land use from the base line barely moved the regional VMT numbers down, in the case of more compact urban development, or up, in the case of more low density suburban or rural development. The per capita VMT does change, but the percentage differences are so low that it renders the numbers unpersuasive for general public or policy maker consideration. Differences between high and low regional VMT generated were about 100,000 vehicle miles per day compared to a base line of 2.5 million VMT per day. When we zoomed into the city center geographies, the comparative effects are much more pronounced. While the magnitude of background traffic in the forecast year mutes the changes attributable under each scenario, it is evident that increasing mixed-use urban development decreases the per capita VMT compared to either the base line scenario or the low density suburban / rural development scenario. The changes in mode split are particularly evident. Increasing compact, mixed-use urban development in the city centers as opposed to lower density suburban or rural development resulted in significant modeled shifts from driving alone and driving with others to transit and walking. In particular, the mode share for walking saw the biggest increase in the compact, mixed-use development scenario in terms of real numbers and percent increase. Those same transit and walk trips become long vehicle trips under the low density suburban / rural residential scenario with commensurate increases in per capita VMT. • Multi-modal street standards are now integral to all local agency development requirements in the Thurston region. The Thurston region embraced ‘complete streets’ long before that was recognized planning jargon. No streets are built or improved without ensuring that appropriate bike lanes, sidewalks, or in the case of rural roads, multi-use wide shoulders are added if not already in place. These same street standards are used to calculate development impact fees and mitigations.

Anecdotal evidence suggests that as the multimodal network is more fully built out; more people are taking advantage of it.

o The annual Bicycle Commuter Contest, which will enjoy its 25th consecutive year in 2012, has seen a steady increase each year in the number of participants and in the number of miles logged. In the last six years, miles logged have increased from a little less than 69,000 miles for the month to over 110,000 miles, and the number of commute trips increased from 6,000 to almost 14,000.

o Based on data from the biennial Commute Trip Reduction surveys, the share of workers at affected worksites who are walking or biking to work has increased. The increment of growth for walk trips is small – a one percent increase – since little new housing has been built in the vicinity of major work sites. However, the share of bicycle commuting has nearly tripled between 1993 and 2009.

o Census data reinforces this suggestion that as the supporting infrastructure and land use is in place, more people use alternatives to driving. Journey to work data since 1990 shows a 69% increase in the number of people who commute by bike or walk.

• High frequency transit corridors serve this region's metropolitan area, connecting the three city centers of Lacey, Olympia, and Tumwater as well as the three primary state capitol campuses and other employment and retail centers. High frequency transit in this context refers to 15 minute headways for at least 12 hours a day. This helps to explain a 164% increase between 1990 and 2006-08 as reported by the census. It is reflected in the 24% increase in per capita ridership since 1990, from 15.7 trips per capita to 19.4 trips per capita in 2008. Moderate and low frequency transit service in suburban and outlying areas complements this high frequency corridor service

• Street connectivity policies have resulted in a dense network of four way intersections throughout the metropolitan area, and in the region's smaller cities and towns. This connected street grid provides more direct travel routes for motorized and non-motorized travel and disperses traffic better, reducing the demand for wider streets which in turn can undermine other walkability and livability objectives.

• Each of the metropolitan jurisdictions has established minimum and maximum parking standards tailored to the character of the built environment. In the downtown Olympia core, the only part of this region resembling a truly urban environment currently, all free parking on city streets has been eliminated. These parking policies – in terms of both supply and cost – work in conjunction with land use, transit, and multi-modal facilities – to encourage alternatives to driving. It also reduces the financial hurdle that excessive parking standards impose on infill and redevelopment projects in activity centers with higher land values.

Again, we have to reiterate that these measures work together and over time are instrumental in helping this region to reduce its per capita VMT in addition to meeting many

	other complementary objectives.
PSRC	Of the transportation system investments, tolling appears to be one of the more significant contributors to reducing VMT and emissions. Combined with the remaining investment strategies – system improvements, transit, nonmotorized, etc. – there is an estimated 9% GHG emissions reductions from the 2040 baseline. Land use, i.e. the regional growth strategy, also appears to have a moderate effect on reducing VMT and emissions, with an estimated 6% emissions reduction from the 2040 baseline trend. The strategy that appears to provide the most significant reduction in emissions is technology improvements to future vehicles and fuels. These improvements are estimated to reduce GHG emissions an additional 25-43% from the 2040 baseline. The Four-Part Greenhouse Gas Strategy in Transportation 2040 is estimated to reduce GHG emissions 5-28% below 2006 levels. Transportation 2040 is also estimated to reduce VMT per capita to exceed the 2035 statewide per capita VMT reduction benchmark.

Question 7	**Please describe any policy or funding issues that need to be resolved to ensure implementation of the strategies identified above to reduce GHG emissions and VMT in your region.**
SRTC	The most significant policy challenge to reduce GHG emissions and VMT faced by the Spokane Region is the relationship between land use and transportation planning. Because transportation and land use are governed separately, transportation planners and decision-makers are limited in their ability to improve the efficiency and sustainability of future land use decisions. Funding challenges are becoming increasingly more competitive during the present economic climate. Future funding to alternative modes of transportation is necessary to strengthen transportation options and begin to balance the region's mode split (82 % vehicle trips).
RTC	No unresolved policy issues per adopted strategies, but insufficient funding is a major concern.
TRPC	A major hurdle this region faces in trying to manage its land use development patterns and associated transportation system is the proximity of this region to central Puget Sound job markets via I-5, and the differential in housing costs between Thurston County and points north. The differential in housing costs makes Thurston County an attractive residential location for a growing number of people working in central Puget Sound. However, there is no HOV system between here and there to support transit and vanpools for these long-distance commute trips so there is no incentive for using transit or vanpools to make these long distance trips. Even absent an HOV system, the introduction of tolls on I-5 between Thurston County and points north would introduce pricing mechanisms to help level the playing field between housing costs up and down the interstate. These issues are beyond the control of TRPC and its local partners, and they exert powerful influences on the development market and individual consumer decisions. Until such time that there is better alignment between system facilities, pricing mechanisms, and underlying land use and transportation objectives, some of the capacity to reduce VMT and greenhouse gas emissions will be diminished.

PSRC	A stable source of transportation funding, tolling implementation and regulatory changes/improvements, specifically federal fuel economy and low carbon fuel standards, are the key factors for implementation of the strategies in Transportation 2040.

PART 2 = UPCOMING PLAN UPDATE

Question 1	**When do you anticipate completing your next plan update?**
SRTC	Dec-12
RTC	The current update to the Metropolitan Transportation Plan for Clark County is planned for December 2011.
TRPC	Our next major plan update will get underway in 2013, with the bulk of the work anticipated for 2014.
PSRC	2014

Question 2	**Do you plan to estimate transportation-related greenhouse gas emissions as part of your plan update? Please describe why or why not below.**
SRTC	Yes
RTC	No. Our response is the same as in part one and includes: limited staff resources, uncertain analytical methodologies, and the law is directed at a state level, not a regional transportation plan requirement. However, given EO-09-05 and the fact that we are updating the MTP, more emphasis and consideration will be given to GHG reduction strategies.
TRPC	Yes. Presumably it will be a requirement. If not, we will probably rely on simple conversion of VMT to greenhouse gas emissions. It is not clear that a detailed modeling effort will provide commensurate value to policy or investment decision-making.
PSRC	Yes. We are committed to continuing our efforts on climate change and the reduction of GHG emissions.

Question 3	**If the answer to question 2 is yes, please describe the approach you are using or plan to use for estimating GHG emissions. For example, describe:** **-Planned assumptions our data sources for changes to the vehicle fleet and fuels,** **-GHG or related modeling analysis that will be conducted,** **-Other approaches, assumptions, etc.**
SRTC	SRTC will be using our 2012 MTP to establish baseline GHG emissions using EPA's MOVES software. The primary data sources for this analysis will be the Department of Ecology (for fuel supply/formulation, vehicle registration information, and I/M program details, etc.) and SRTC's travel demand model (VMT and operating speed). Any data utilized in this GHG analysis will be established using the most current data from the Department of Ecology and the latest planning assumptions pertaining to travel demand modeling. SRTC looks forward to learning more about the transportation-related GHG emissions during the 2012 MTP update process. Where feasible, a quantative GHG analysis of potential capital improvement projects and policy changes will be conducted.
RTC	Not available
TRPC	I cannot say at this time.

PSRC	We will continue to utilize EPA's MOVES software, which is now officially released and is quite robust in its analysis capabilities. We continue to work with EPA, Ecology and our other air quality consultation partners on the appropriate inputs for this work. We will also continue to monitor the implementation of our Four-Part GHG Strategy, including the actions taken in our region to advance technology improvements.

Question 4	**RCW 47.01.440 provides statewide goals to reduce annual per capita vehicle miles traveled by 2050, except for exempt vehicles as indicated in the legislation. If available, please describe the strategies that may be included in the update that are intended or expected to reduce VMT for vehicles included in the legislation, compared to existing and either future baseline or future no build.**
SRTC	Active Transportation Strategies: Additional 91 Million VMT Reduction by 2040 from baseline by decreasing the vehicular mode split - Develop a regional complete streets policy to ensure that all streets are designed and operated to enable safe access for all users. - Collaborate with our partner jurisdictions to encourage the development of complete streets policies at the local level. - Increase the mode share of people who bicycle for transportation. - Identify gaps and needs in the regional bikeway system to encourage. - Support all levels of pedestrian travel by development of pedestrian projects, programs and plans. - Design and/or implement changes into the pedestrian infrastructure to increase pedestrian safety and connectivity. - Support the planning, funding and public knowledge of integrated networks of paved pedestrian paths that serve as an alternative to roadways and facilitate non-motorized travel to and through neighborhoods, shopping, parks, schools and transit accessible areas. - Pursue funding to maintain, enhance and expand pedestrian facilities. - Increase the percentage of children who walk to school by 2 percents from 26% to 28%. Commute Trip Reduction Strategies Reduce drive alone trips from participating employers by ten percent and reduce VMT by 13 percent from baseline levels. - CTR strategies include: vanpooling, carpooling, car-sharing services, guaranteed ride home services, transit pass subsides, and promoting transit and non-motorized methods of commuting at major employers and voluntary employers, education, outreach, marketing, and promotion. - GTEC: Targets the CTR program to a specific geographic area; all residents and employers in the area participate. Transit Strategies - Implement the High Performance Transit Network (HPTN), a network of corridors providing all-day, two-way, reliable, and frequent service which offers competitive speeds to the private automobile, features improved amenities for passengers and works in conjunction with basic fixed-route service. - Invest in targeted improvements to connect between all modes to facilitate seamless travel between destinations to decrease regional dependency on the personal vehicle and related

	infrastructure. - Use the HPTN, based on existing local, regional and state land use plans and goals, as a guide for public transportation compatible designs and encourage mixed-use residential development along key corridors.
RTC	Transit expansion both fixed bus and high capacity transit per the CRC LRT extension and BRT in the Fourth Plain Corridor. Transportation Demand Management strategies, Commute Trip Reduction program, Transportation System Management/Intelligent Transportation System strategies, and the Congestion Management Process.
TRPC	All of the strategies currently being employed today will still be relevant at that time since they were established to achieve other community objectives besides climate change mitigation. Depending upon what happens between now and then, this region may also evaluate the effectiveness of time-of-day lane conversions on I-5 from general purpose to HOV / HOT lane as an interim measure until such time that WSDOT can afford to widen / reconstruct I-5 south of SR 512. We may also be in a position to evaluate the long-term potential associated with future high capacity transit alternatives.
PSRC	Transportation 2040 is extensive and comprehensive in its strategies, and the update will continue to advance these strategies.

Question 5	**If available, please describe the strategies being considered or likely to be included in your plan update that are intended or expected to reduce transportation related greenhouse gas emissions compared to existing and compared to either future baseline or future no build conditions (for example, pricing, alternative vehicle and fuel related strategies, traffic management, land use changes, non-motorized strategies, etc.). Citing the same strategies from question 4 above is fine.**
SRTC	Please refer to question 4.
RTC	Transit expansion both fixed bus and high capacity transit per the CRC LRT extension and BRT in the Fourth Plain Corridor. Transportation Demand Management strategies, Commute Trip Reduction program, Transportation System Management/Intelligent Transportation System strategies, and the Congestion Management Process.
TRPC	Same as response to Questions 4 and 5 in Part 1.
PSRC	Transportation 2040 is extensive and comprehensive in its strategies, and the update will continue to advance these strategies.

Question 6	**Based on your analysis conducted for your update so far, please indicate which strategies appear to have the greatest potential to reduce VMT per capita, and transportation related GHG emissions in your region to the extent possible. Please describe expected VMT and GHG reductions, and relevant modeling or analysis.**
SRTC	Transit SRTC's travel demand model is currently being updated to enhance the transit component and incorporate the 2010 US Census data. The HPTN projects will be modeled to quantify VMT and GHG reductions after this model update is complete and as part of the 2012 MTP update. CTR Surveys by the Spokane CTR program indicates VMT was reduced by 7.5 million VMT per year. An additional 13 percent reduction is expected by 2014. Green House Gas (GHG) measurements indicate a 7,602,623 lbs/year reduction due to CTR implementation. An additional GHG reduction, upward to ten percent, is expected by 2014. Active Transportation The active transportation strategies are expected to save an additional 91 million VMT from the 2006 baseline, equivalent to nine days of vehicle traffic in Spokane, Washington. Also, active transportation changes are expected to reduce NOx by 45,413,189 tons/year, Reactive Organic Gases by 6,609,859 tons/year and CO2 emissions by 58,269 tons/year.
RTC	We are not at point in the update process where we have settled on specific strategies.
TRPC	Not applicable, though would expect the same set of strategies as described for the current plan, Question 6 in Part 1.
PSRC	Of the transportation system investments, tolling appears to be one of the more significant contributors to reducing VMT and emissions. Combined with the remaining investment strategies – system improvements, transit, nonmotorized, etc. – there is an estimated 9% GHG emissions reductions from the 2040 baseline. Land use, i.e. the regional growth strategy, also appears to have a moderate effect on reducing VMT and emissions, with an estimated 6% emissions reduction from the 2040 baseline trend. The strategy that appears to provide the most significant reduction in emissions is technology improvements to future vehicles and fuels. These improvements are estimated to reduce GHG emissions an additional 25-43% from the 2040 baseline. The Four-Part Greenhouse Gas Strategy in Transportation 2040 is estimated to reduce GHG emissions 5-28% below 2006 levels. Transportation 2040 is also estimated to reduce VMT, meeting the 2035 Statewide per capita VMT reduction benchmark.

Question 7	**For your plan update, please describe any policy or funding issues that you expect will need to be resolved to ensure implementation of the strategies to reduce GHG emissions and VMT in your region.**
SRTC	The most significant policy challenge to reduce GHG emissions and VMT faced by the Spokane Region is the relationship between land use and transportation planning. Because transportation and land use are governed separately, transportation

	organizations are limited in their ability to improve the efficiency and sustainability of future land use decisions. Funding challenges are becoming increasingly more competitive during the present economic climate. Future funding to alternative modes of transportation is necessary to strengthen transportation options and begin to balance the region's mode split (82% vehicle trips).
RTC	No unresolved policy issues per adopted strategies, but insufficient funding is a major concern.
TRPC	Reconciling I-5 issues will likely continue to be a consideration when we update our plan in 2013-2014.
PSRC	A stable source of transportation funding, tolling implementation and regulatory changes/improvements, specifically federal fuel economy and low carbon fuel standards, are the key factors for implementation of the strategies in Transportation 2040.

Appendix C

Survey Summary Matrix

EO 2(b) SURVEY: SUMMARY RESULTS

Part 1 = Current Transportation Plan, Part 2 = Upcoming Plan Update

Summary Response	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
	Part 1: Title and date of current transportation plan **Part 2**: Anticipated plan update	**Part 1**: GHGs as part of plan dev. or analysis **Part 2**: Intend to estimate GHG emissions as part of plan update	**Part 1**: Approach used for estimating GHG emissions **Part 2**: Planned approach estimating GHG emissions as part of plan update	**Part 1**: Strategies intended or expected to reduce VMT compared to existing and future baseline or future no build conditions **Part 2**: If available, strategies that may be included in the plan update that are intended or expected to reduce VMT compared to existing and future baseline or future no build conditions	**Part 1**: Strategies intended or expected to reduce GHG emissions compared to existing and future baseline or future no build conditions **Part 2**: If available, strategies likely/being considered for inclusion in plan update intended or expected to reduce GHG emissions compared to existing and future baseline or future no build conditions strategies	**Part 1**: Strategies with the greatest potential to reduce VMT per capita and GHG emissions (expected reductions) **Part 2**: Based on plan update, Strategies with the greatest potential to reduce VMT per capita and GHG emissions (expected reductions)	**Part 1**: Policy or funding issues needing resolution to ensure strategy implementation for reducing VMT and GHG emissions **Part 2**: Anticipated policy or funding issues needing resolution to ensure strategy implementation for reducing VMT and GHG emissions
Spokane Regional Transportation Council	**Part 1**: Spokane Metropolitan Area Metropolitan Transportation Plan 2008-2030 **Part 2**: December 2012	**Part 1**: GHG emissions not estimated **Part 2**: Yes	**Part 1**: Not available **Part 2**: EPA MOVES	**Part 1**: Commute trip reduction, geographical technical efficiency center, active transportation, high-capacity transportation, mixed land-use centers, parking policies **Part 2**: Enhanced active transportation, commute trip reduction, and transit strategies	**Part 1**: Commute trip reduction, geographical technical efficiency center, active transportation, high-capacity transportation, mixed land-use centers, parking policies **Part 2**: Enhanced active transportation, commute trip reduction, and transit strategies	**Part 1**: High-capacity transportation policies, continuation of commute trip reduction program, growth in active transportation (VMT reduction = 44 million/yr. if implemented in 2012) **Part 2**: Transit, commute trip reduction (VMT reduction = 7.5 million/yr + additional 13% by 2014, GHG emissions reduction = 7.6 million lbs./yr. + up to additional 10% by 2014), active transportation (VMT reduction = 91 million f/2006, CO2 reduction = 58,000 tons/yr.)	**Part 1**: Relationship between land use/transportation planning, funding **Part 2**: Relationship between land use/transportation planning, funding
Southwest Washington Regional Transportation Council	**Part 1**: Metropolitan Transportation Plan for Clark County, Adopted 2007, amended in 2008 and 2010 **Part 2**: December 2011	**Part 1**: No, limited resources, uncertain methodologies, RCW applies to state **Part 2**: No, but w/GHG emissions reduction strategy emphasis	**Part 1**: Not available **Part 2**: Not available	**Part 1**: Transit service expansion, high-capacity transit, transportation demand mgmt., commute trip reduction, intelligent transportation system, congestion mgmt. process **Part 2**: Transit service expansion, high-capacity transit, transportation demand mgmt., commute trip reduction, intelligent transportation system, congestion mgmt. process	**Part 1**: Transit service expansion, high-capacity transit, transportation demand mgmt., commute trip reduction, intelligent transportation system, congestion mgmt. process **Part 2**: Transit service expansion, high-capacity transit, transportation demand mgmt., commute trip reduction, intelligent transportation system, congestion mgmt. process	**Part 1**: Transit and high-capacity transit, commute trip reduction **Part 2**: Uncertain	**Part 1**: Funding is a major concern **Part 2**: Funding is a major concern

EO 2(b) SURVEY: SUMMARY RESULTS

Part 1 = Current Transportation Plan, Part 2 = Upcoming Plan Update

Summary Response	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
	Part 1: Title and date of current transportation plan **Part 2**: Anticipated plan update	**Part 1**: GHG emissions as part of plan dev. or analysis **Part 2**: Intend to estimate GHG emissions as part of plan update	**Part 1**: Approach used for estimating GHG emissions **Part 2**: Planned approach estimating GHG emissions as part of plan update	**Part 1**: Strategies intended or expected to reduce VMT compared to existing and future baseline or future no build conditions **Part 2**: If available, strategies that may be included in the plan update that are intended or expected to reduce VMT compared to existing and future baseline or future no build conditions	**Part 1**: Strategies intended or expected to reduce GHG emissions compared to existing and future baseline or future no build conditions **Part 2**: If available, strategies likely/being considered for inclusion in plan update intended or expected to reduce GHG emissions compared to existing and future baseline or future no build conditions strategies	**Part 1**: Strategies with the greatest potential to reduce VMT per capita and GHG emissions (expected reductions) **Part 2**: Based on plan update, Strategies with the greatest potential to reduce VMT per capita and GHG emissions (expected reductions)	**Part 1**: Policy or funding issues needing resolution to ensure strategy implementation for reducing VMT and GHG emissions **Part 2**: Anticipated policy or funding issues needing resolution to ensure strategy implementation for reducing VMT and GHG emissions
Thurston Regional Planning Council	**Part 1**: Thurston Regional Transportation Plan – Guiding Our Future **Part 2**: 2014	**Part 1**: No, limited technical capacity **Part 2**: Yes, presume requirement, rely on VMT – GHG emissions conversion	**Part 1**: Not available **Part 2**: Uncertain	**Part 1**: Growth management and livability objectives that mutually mitigate climate change e.g., land use, transportation, and demand mgmt. strategies **Part 2**: Continuation of existing strategies, possibility of I-5 HOT lane conversion, high capacity transit alternatives	**Part 1**: Growth mgmt. and livability objectives that mutually mitigate climate change e.g., land use, transportation, and demand mgmt. strategies, plus EV infrastructure, roundabouts, alt. fuel technology **Part 2**: Growth mgmt. and livability objectives that mutually mitigate climate change e.g., land use, transportation, and demand mgmt. strategies, plus EV infrastructure, roundabouts, alt. fuel technology	**Part 1**: Package of land use measures, multi-modal street standards, high-frequency transit corridors, street connectivity, parking policies **Part 2**: Not available	**Part 1**: Alignment between system facilities, pricing mechanisms, land use/transportation objectives for reducing VMT/GHG emissions **Part 2**: Reconcile I-5 issues
Puget Sound Regional Council	**Part 1**: Transportation 2040, May 20, 2010 **Part 2**: 2014	**Part 1**: Yes, important to Board, Vision 2040 included GHG emissions reduction as important regional goal **Part 2**: Yes, continue GHG emissions reduction efforts	**Part 1**: EPA MOVES (beta version) emissions factor for vehicle categories applied to VMT rates, create two technology and fuel assumption scenarios **Part 2**: Continue EPA MOVES, work with partners, monitor four-part strategy	**Part 1**: Transit, non-motorized facilities, transportation demand mgmt. programs, extensive tolling strategy, regional growth strategy **Part 2**: Continue strategies mentioned above	**Part 1**: Transit, non-motorized facilities, transportation demand mgmt. programs, system efficiencies, significant tolling strategy, four-part GHG strategy (land use, user fees, choices, technology e.g., fuel efficient vehicles and low carbon fuels) **Part 2**: Continue strategies mentioned above	**Part 1**: Vehicle/fuel technology improvements = most significant (25-43% GHG emissions reduction from 2040 baseline), tolling = more significant, system efficiency, transit, non-motorized (9% GHG emissions reduction f/ 2040 baseline, includes tolling), land use (6% GHG emissions reduction f/ 2040 baseline), four-part strategy (5-28% GHG emissions reduction below 2006 levels), and exceeding 2035 statewide per capita VMT reduction benchmark **Part 2**: Same response mentioned above	**Part 1**: Stable source of transportation funding, tolling, federal regulatory changes/improvements **Part 2**: Same response mentioned above

Appendix D

Executive Order 09-05:

Washington's Leadership on Climate Change

CHRISTINE O. GREGOIRE
Governor

STATE OF WASHINGTON

OFFICE OF THE GOVERNOR

P.O. Box 40002 · Olympia, Washington 98504-0002 · (360) 753-6780 · www.governor.wa.gov

EXECUTIVE ORDER 09-05
WASHINGTON'S LEADERSHIP ON CLIMATE CHANGE

WHEREAS, Washington is particularly vulnerable to the impacts of climate change, and without additional action to reduce carbon emissions, the severity of the impacts will negatively affect nearly every part of Washington's economy and environment; and

WHEREAS, Washington is already experiencing the effects of a changing climate and needs to address current and future projected impacts; and

WHEREAS, greenhouse gases are air contaminants within the meaning of the state's Clean Air Act and pose a serious threat to the health and welfare of Washington's citizens and the quality of the environment; and

WHEREAS, energy independence and security are vitally important, and maintaining Washington's leadership position in the development of clean energy and green jobs is critical to our economic and energy future; and

WHEREAS, RCW 70.235.020 establishes greenhouse gas emission reduction limits for Washington State, and RCW 47.01.440 establishes vehicle miles traveled benchmarks for Washington State; and

WHEREAS, alternative vehicle technologies can provide economic development opportunities and reduce Washington's transportation sector greenhouse gas emissions, criteria pollutants, and toxic air contaminants; and

WHEREAS, Washington's extensive forest resources play an important role in capturing and storing carbon dioxide; and

WHEREAS, it is critical to Washington's economic future that greenhouse gas reduction strategies be designed and implemented in a manner that minimizes cost impacts to Washington citizens and businesses; and

WHEREAS, President Obama and the United States Congress are actively working to establish a strong federal response to climate change, and regional and state level greenhouse gas reduction programs will inform and complement a federal program; and

WHEREAS, effective and immediate action to reduce greenhouse gas emissions – preferably at the federal level but at the regional or state level as necessary – is essential to the future well being of all Washingtonians.

NOW, THEREFORE, I, Christine O. Gregoire, Governor of the state of Washington by virtue of the power vested in me by the Constitution and statutes of the state of Washington do, effective immediately, hereby order and direct:

1. The Director of the Department of Ecology to:

(a) Continue to participate in the Western Climate Initiative to develop a regional greenhouse gas emission reduction program and to work with the federal Administration, Washington's congressional delegation and appropriate committees to help design a national greenhouse gas emission reduction program that reflects Washington State priorities. Those priorities include: protecting small businesses and families, particularly those with low incomes, in the transition to a clean energy future; investing in clean energy development, demonstration and deployment; ensuring appropriate credit for early emission reductions; providing a level playing field that allows Washington's businesses to fairly compete; recognizing Washington's unique electricity-generating portfolio, its forest industry and other important resources; and ensuring the program spurs the creation of green jobs.

(b) By December 1, 2009, provide to each facility that the Department of Ecology believes is responsible for the emission of 25,000 metric tons or more of carbon dioxide equivalent each year in Washington with (1) the Department's best estimate of each facility's baseline greenhouse gas emissions; and (2) each facility's proportionate share greenhouse gas emission reduction necessary to achieve the state's 2020 emission reduction in RCW 70.135.020; and (3) a request to each facility, or groups of facilities representing a sector of Washington's economy, for any recommended strategies or actions they believe would achieve the needed reductions. By October 1, 2010, the Department of Ecology shall develop emission reduction strategies and actions, including complementary policies, to achieve the state's 2020 emissions reduction targets.

(c) In consultation with business and other interested stakeholders, develop emission benchmarks, by industry sector, for facilities the Department of Ecology believes will be covered by a federal or regional cap and trade program. The Department of Ecology shall support the use of these emission benchmarks in any federal or regional cap and trade program as an appropriate basis for the distribution of emission allowances, and as a means to recognize and reward those businesses that have invested in achieving emission reductions. These benchmarks shall be based on industry best practices, reflecting emission levels from highly efficient, lower emitting facilities in each industry sector. The benchmarks shall be developed to allow their application as state-based emissions standards, should they be needed to complement the federal program, or in the absence of a federal program.

Recommendations on industry benchmarks, and the appropriate use of these benchmarks in achieving the state emission reduction targets, shall be submitted to the Governor by July 1, 2011;

(d) Work with the existing coal-fired plant within Washington that burns over one million tons of coal per year, TransAlta Centralia Generation LLC, to establish an agreed order that will apply the greenhouse gas emissions performance standards in RCW 80.80.040(1) to the facility by no later than December 31, 2025. The agreed order shall include a schedule of major decision making and resource investment milestones;

(e) In consultation with the Department of Natural Resources and the forest carbon sector working group, develop by September 1, 2010, recommendations for forestry offset protocols as well as other financial incentives for forestry and forest products. The starting point for this work should be the 2008 forest sector working group report; and

(f) In consultation with the Departments of Commerce and Transportation, assess whether the California low-carbon fuel standards; standards developed or proposed in other states, provinces or for the nation; or modified standards or alternative requirements to reduce carbon in transportation fuels would best meet Washington's greenhouse gas emissions reduction targets. By July 1, 2010, provide to the Governor a recommendation regarding which standards or requirements should be adopted for Washington, either by rule or legislation.

2. The Secretary of the Department of Transportation to:

(a) In consultation with the Departments of Ecology and Commerce, and in collaboration with local governments, business, and environmental representatives, estimate current and future state-wide levels of vehicle miles traveled, evaluate potential changes to the vehicle miles traveled benchmarks established in RCW 47.01.440 as appropriate to address low- or no-emission vehicles, and develop additional strategies to reduce emissions from the transportation sector. Findings and recommendations from this work shall be reported to the Governor by December 31, 2010; and,

(b) Work with the Puget Sound Regional Council, Spokane Regional Transportation Council, Southwest Washington Regional Transportation Council and Thurston Regional Planning Council to cooperatively develop and adopt regional transportation plans that will, when implemented, provide people with additional transportation alternatives and choices, reduce greenhouse gases and achieve the statutory benchmarks to reduce annual per capita vehicle miles traveled in those counties with populations greater than 245,000. By December 1, 2011, the Department will report to the Governor on which regional transportation planning organizations have developed, or are developing, plans with greenhouse gas strategies, which strategies appear to have the greatest potential to achieve the benchmarks, and what policy or funding issues need to be resolved to ensure implementation;

3. The Office of the Governor shall work with affected state agencies to develop and seek federal funds to implement a project for the electrification of the West Coast interstate highway and associated metropolitan centers, including request for federal funding to purchase electric vehicles and install public infrastructure for electric and other high-efficiency, zero- or low-carbon vehicles. The Office shall invite the collaboration of the states of Oregon and California and participation by the private sector in developing and implementing this project and in requesting federal support.

4. The Director of the Department of Ecology shall evaluate the potential impacts of sea level rise on the state's shoreline areas, including the potential increases in storm surge and coastal flooding, increased erosion, and loss of habitat and ecosystems, and develop recommendations for addressing these impacts. The Department shall invite the Washington State Association of Counties and the Association of Washington Cities to collaborate in conducting the evaluation and developing recommendations.

5. The Director of the Department of Ecology and the Secretary of the Department of Health, in consultation with other affected state, local and federal agencies, shall develop specific guidelines, tools, and recommendations to assist the state and its water users to meet the anticipated changes in water resources due to climate change impacts.

6. In implementing all aspects of this Executive Order, the state and its agencies shall consult, on a government-to-government basis with Washington's Native American Tribes.

7. The Director of the Department of Ecology, in cooperation with affected agencies shall provide a progress report to the Office of the Governor by December 31, 2010.

Signed and sealed with the official seal of the state of Washington on this 21st day of May 2009 at Seattle, Washington.

Appendix E

RCW 70.235.020
Greenhouse Gas Emissions Reductions — Reporting Requirements

RCW 70.235.020

Greenhouse gas emissions reductions — Reporting requirements

(1)(a) The state shall limit emissions of greenhouse gases to achieve the following emission reductions for Washington State:

(i) By 2020, reduce overall emissions of greenhouse gases in the state to 1990 levels;

(ii) By 2035, reduce overall emissions of greenhouse gases in the state to twenty-five percent below 1990 levels;

(iii) By 2050, the state will do its part to reach global climate stabilization levels by reducing overall emissions to fifty percent below 1990 levels, or seventy percent below the state's expected emissions that year.

(b) By December 1, 2008, the department shall submit a greenhouse gas reduction plan for review and approval to the legislature, describing those actions necessary to achieve the emission reductions in (a) of this subsection by using existing statutory authority and any additional authority granted by the legislature. Actions taken using existing statutory authority may proceed prior to approval of the greenhouse gas reduction plan.

(c) Except where explicitly stated otherwise, nothing in chapter 14, Laws of 2008 limits any state agency authorities as they existed prior to June 12, 2008.

(d) Consistent with this directive, the department shall take the following actions:

(i) Develop and implement a system for monitoring and reporting emissions of greenhouse gases as required under RCW 70.94.151; and

(ii) Track progress toward meeting the emission reductions established in this subsection, including the results from policies currently in effect that have been previously adopted by the state and policies adopted in the future, and report on that progress.

(2) By December 31st of each even-numbered year beginning in 2010, the department and the *department of community, trade, and economic development shall report to the governor and the appropriate committees of the senate and house of representatives the total emissions of greenhouse gases for the preceding two years, and totals in each major source sector. The department shall ensure the reporting rules adopted under RCW 70.94.151 allow it to develop a comprehensive inventory of emissions of greenhouse gases from all significant sectors of the Washington economy.

(3) Except for purposes of reporting, emissions of carbon dioxide from industrial combustion of biomass in the form of fuel wood, wood waste, wood by-products, and wood residuals shall not be

considered a greenhouse gas as long as the region's silvicultural sequestration capacity is maintained or increased.

[2008 c 14 § 3.]

*Reviser's note: The "department of community, trade, and economic development" was renamed the "department of commerce" by 2009 c 565.

Appendix F

RCW 47.01.440
Adoption of Statewide Goals to Reduce Annual Per Capita Vehicle Miles Traveled by 2050 — Department's Duties — Reports to the Legislature

Revised Code of Washington 47.01.440

Adoption of statewide goals to reduce annual per capita vehicle miles traveled by 2050 — Department's duties — Reports to the legislature

To support the implementation of RCW 47.04.280 and 47.01.078(4), the department shall adopt broad statewide goals to reduce annual per capita vehicle miles traveled by 2050 consistent with the stated goals of executive order 07-02. Consistent with these goals, the department shall:

(1) Establish the following benchmarks using a statewide baseline of seventy-five billion vehicle miles traveled less the vehicle miles traveled attributable to vehicles licensed under *RCW 46.16.070 and weighing ten thousand pounds or more, which are exempt from this section:

(a) Decrease the annual per capita vehicle miles traveled by eighteen percent by 2020;

(b) Decrease the annual per capita vehicle miles traveled by thirty percent by 2035; and

(c) Decrease the annual per capita vehicle miles traveled by fifty percent by 2050;

(2) By July 1, 2008, establish and convene a collaborative process to develop a set of tools and best practices to assist state, regional, and local entities in making progress towards the benchmarks established in subsection (1) of this section. The collaborative process must provide an opportunity for public review and comment and must:

(a) Be jointly facilitated by the department, the department of ecology, and the **department of community, trade, and economic development;

(b) Provide for participation from regional transportation planning organizations, the Washington state transit association, the Puget Sound clean air agency, a statewide business organization representing the sale of motor vehicles, at least one major private employer that participates in the commute trip reduction program, and other interested parties, including but not limited to parties representing diverse perspectives on issues relating to growth, development, and transportation;

(c) Identify current strategies to reduce vehicle miles traveled in the state as well as successful strategies in other jurisdictions that may be applicable in the state;

(d) Identify potential new revenue options for local and regional governments to authorize to finance vehicle miles traveled reduction efforts;

(e) Provide for the development of measurement tools that can, with a high level of confidence, measure annual progress toward the benchmarks at the local, regional, and state levels,

measure the effects of strategies implemented to reduce vehicle miles traveled and adequately distinguish between common travel purposes, such as moving freight or commuting to work, and measure trends of vehicle miles traveled per capita on a five-year basis;

(f) Establish a process for the department to periodically evaluate progress toward the vehicle miles traveled benchmarks, measure achieved and projected emissions reductions, and recommend whether the benchmarks should be adjusted to meet the state's overall goals for the reduction of greenhouse gas emissions;

(g) Estimate the projected reductions in greenhouse gas emissions if the benchmarks are achieved, taking into account the expected implementation of existing state and federal mandates for vehicle technology and fuels, as well as expected growth in population and vehicle travel;

(h) Examine access to public transportation for people living in areas with affordable housing to and from employment centers, and make recommendations for steps necessary to ensure that areas with affordable housing are served by adequate levels of public transportation; and

(i) By December 1, 2008, provide a report to the transportation committees of the legislature on the collaborative process and resulting recommended tools and best practices to achieve the reduction in annual per capita vehicle miles traveled goals.

(3) Included in the December 1, 2008, report to the transportation committees of the legislature, the department shall identify strategies to reduce vehicle miles traveled in the state as well as successful strategies in other jurisdictions that may be applicable in the state that recognize the differing urban and rural transportation requirements.

(4) Prior to implementation of the goals in this section, the department, in consultation with the **department of community, trade, and economic development, cities, counties, local economic development organizations, and local and regional chambers of commerce, shall provide a report to the appropriate committees of the legislature on the anticipated impacts of the goals established in this section on the following:

(a) The economic hardship on small businesses as it relates to the ability to hire and retain workers who do not reside in the county in which they are employed;

(b) Impacts on low-income residents;

(c) Impacts on agricultural employers and their employees, especially on the migrant farm worker community;

(d) Impacts on distressed rural counties; and

(e) Impacts in counties with more than fifty percent of the land base of the county in public or tribal lands.

[2008 c 14 § 8.]

Reviser's note: *(1) RCW 46.16.070 was recodified as RCW 46.16A.455 pursuant to 2010 c 161 § 1217, effective July 1, 2011.
**(2) The "department of community, trade, and economic development" was renamed the "department of commerce" by 2009 c 565.
Findings -- Intent -- Scope of chapter 14, Laws of 2008 -- Severability -- 2008 c 14: See RCW 70.235.005, 70.235.900, and 70.235.901.

Appendix G

Report on Section 2(a), December 29, 2010:
Key Findings and Recommendations

What is WSDOT's current estimate of statewide levels of vehicle miles traveled?

WSDOT estimates that the annual statewide VMT in 2009 was 56 billion or 8,400 VMT per capita. This includes all vehicles, regardless of weight, and is based on data from WSDOT's Highway Performance Monitoring System (HPMS). WSDOT uses this established and consistent methodology for tracking and reporting VMT at the state level.

Findings

- HPMS is an appropriate tool to monitor VMT statewide.
- HPMS may also be an appropriate tool for monitoring VMT at the local and regional levels.

Recommendation

WSDOT recommends the use of HPMS as the appropriate tool to monitor statewide VMT. WSDOT should continue the discussion with the Regional Transportation Planning Organizations (RTPOs) to determine the most appropriate tool for monitoring VMT at the local and RTPO level.

What is WSDOT's current estimate of future statewide levels of vehicle miles traveled?

The statutory VMT benchmarks in RCW 47.01.440 used a baseline of 75 billion VMT for 2020. This baseline for 2020 was established by the February 2008 VMT forecast and serves as the basis for the VMT per capita reductions benchmarks for 2020, 2035, and 2050. Based on a new methodology developed specifically for forecasting VMT, the June 201 0 forecast projects total statewide VMT in 2020 to be 66 billion. WSDOT will update the VMT forecast annually each June.

Findings

- The June 2010 VMT forecasting model uses a new methodology that more accurately forecasts VMT.
- The June 2010 VMT forecast for 2020 is 66 billion, 12 percent lower than the 75 billion VMT baseline set by the February 2008 model.
- Basing reduction target percentages on a forecast is problematic because the forecasts are adjusted annually and create unnecessary confusion.
- Regional transportation planning organizations forecast VMT using very different methodologies than the state. Some regional organizations do not use models and do not have the capability to forecast VMT.
- VMT forecast models are most accurate in predicting VMT in the near-term (within two to four years) and less accurate beyond four years.

Recommendation

WSDOT recommends that the legislature use historical, measured VMT (e.g., 2000, 2005, or 2010 levels), rather than forecasted VMT, to set the VMT baseline.

Do the VMT benchmarks need to be changed to address low- or no-emission vehicles?

If very low-emission or no-emission vehicles become a large share of the vehicle fleet, or low carbon fuels become more prevalent, there may be less need to reduce VMT to reduce GHG emissions from the transportation sector. The Department of Ecology, with assistance from WSDOT, assessed the practicality of low carbon fuels and the feasibility of a low carbon fuel standard for Washington. WSDOT, Ecology, and Commerce examined the market penetration of alternative vehicles and fuels to complement WSDOT's VMT benchmark analysis.

Findings

- Ecology's research showed that projected vehicle technology and fuel changes will occur relatively slowly.
- The rate at which significant vehicle and fuel technology advances and regulatory changes are likely to happen over the next 40 years is highly uncertain.

Recommendation

WSDOT recommends that the VMT benchmarks should not be changed at this time to address low- or no-emission vehicles. In the coming years, the VMT benchmarks may need to be reassessed for numerous reasons. Some potential reasons for further assessment in the future may include more rapid market penetration of low- or no- emission vehicles than expected, better VMT estimates and data, advancements in technology, and the implementation of regional or national policies to reduce GHG emissions.

What additional strategies are available to reduce emissions from the transportation sector?

In 2008, the Climate Action Team's Transportation Implementation Working Group and the Land Use and Climate Change Advisory Committee identified a number of transportation and land use strategies to reduce GHG emissions from the transportation sector. Building on this work, WSDOT reviewed national research that identified additional strategies and evaluated their effectiveness in reducing emissions. WSDOT then applied this information in a scenario analysis to evaluate the possible reductions from different combinations of strategies.

Findings

- Greenhouse gas reduction strategies for the transportation sector fit into four broad categories:
  - Operating the system more efficiently
  - Advancing vehicle technology
  - Improving fuels
  - Reducing VMT
- WSDOT's analysis suggests that there is no silver bullet and major contributions from each of the strategies will be needed to reduce GHG emissions.
- Many of the identified transportation sector strategies would require changes in policy, funding, and authority.

- The state cannot significantly reduce emissions from the transportation sector without collaborative and comprehensive actions by private citizens, businesses, and local governments.
- WSDOT's analysis suggests that implementing combinations of aggressive transportation emission reduction strategies can achieve roughly a ten percent reduction in total statewide GHG emissions compared to the 2050 baseline. Implementing many of these strategies would require changes in policy, funding, and authority, and also assumes ambitious improvements in vehicles and fuels. WSDOT did not assess the political or financial feasibility of implementing the strategies.

Recommendation

WSDOT recommends that the state consider the most viable ways to reduce statewide GHG emissions across all sectors. In 2011, WSDOT continued to work with the four most populous RTPOs identified in the Executive Order as part of the Section 2(b) work, to develop practical approaches for reducing GHG emissions at the RTPO l level.

Appendix H

Abbreviations

Abbreviations

ATM	Active traffic management
BRT	Bus rapid transit
CAT	Climate action team
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
CTR	Commute trip reduction
EO	Executive order
EV	Electric vehicle
GHG	Greenhouse gas
HOT	High occupancy toll
HOV	High occupancy vehicle
HPMS	Highway performance monitoring system
ITS	Intelligent transport system
MPO	Metropolitan planning organization
PSRC	Puget sound regional council
RCW	Revised code of Washington
RTC	Southwest Washington Regional Transportation Council
RTPO	Regional transportation planning organization
SRTC	Spokane Regional Transportation Council
TRPC	Thurston Regional Planning Council
TOD	Transit oriented development
VMT	Vehicle miles traveled
WA	Washington
WSDOT	Washington State Department of Transportation