

Washington State Vehicle Miles Traveled Reduction Benchmarks:  
How might they be reached?

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**Abstract**

Washington State Vehicle Miles Traveled Reduction Benchmarks:  
How might they be reached?

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In 2008, the Washington State legislature established benchmarks to reduce vehicle miles traveled (VMT) per capita over the subsequent 40 years as part of the strategy to reach statutory greenhouse gas emissions limits. The purpose of the per capita VMT reduction benchmarks was to encourage implementation of multimodal investments, transit oriented development and transportation pricing. The establishment of these benchmarks was, in part, recognition that the state transportation related greenhouse gas reduction targets could not be met strictly with changes in fuels and automobile technology. Since their adoption, no implementation plan or framework has been adopted to enable the state to meet the benchmarks.

This study sought to identify the challenges to and opportunities for developing an implementation plan for meeting the state per capita VMT reduction benchmarks. Data was collected through stakeholder

interviews and public documents, and evaluated based on multiple streams and consensus building theories' decision criteria.

The analysis found value conflicts among elected state decision makers regarding climate mitigation and the role of the state in transit funding, questions regarding the appropriateness of per capita VMT reduction as a goal and metric and a lack of leadership on the issue as barriers to policy development and to a decision that would support implementation planning for per capita VMT reductions. Other challenges include finding an approach that respects the economic, population and geographic variations between different regions of the state.

Strategies identified that may address these challenges include evaluating and considering alternative metrics, teaming with the regions to develop feasible regional targets, and shifting the problem discussion from VMT reduction to how to develop a more efficient, reliable and financially sustainable transportation system that reduces greenhouse gasses and grows the state economy. Leadership would be needed to advance any of these strategies. Consensus building could support reaching problem agreement as well as developing a broad base of support for a preferred solution. However, stakeholders that see no need for greenhouse gas mitigation may not have sufficient incentive to seek solutions that meet the interests of the other stakeholders. Value conflicts among state decision makers could also be reduced through elections that change the legislature composition.

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## 1 Introduction

In 2008, the Washington State legislature obligated the state to reduce greenhouse gas emissions. The legislature set greenhouse gas reduction targets of 1990 levels by 2020, a reduction 25% below 1990 levels by 2035 and a reduction 50% below 1990 levels by 2050 (RCW 70.235.020). As part of the strategy to reduce greenhouse gas emissions, the legislature also established benchmarks to reduce vehicle miles traveled (VMT) per capita over the subsequent 40 years. The benchmarks call for a reduction from 2007 projected VMT per capita of 18% by 2020, 30% by 2035, and 50% by 2050 (RCW 47.01.440). The purpose of the per capita VMT reduction benchmarks was to encourage implementation of multimodal investments, transit oriented development and transportation pricing. Implementing policies to achieve the VMT benchmarks were projected to reduce total greenhouse gas emissions 36.7 MMtCO<sub>2e</sub> by 2020 (Climate Advisory Team 2008). The establishment of these benchmarks was, in part, recognition that the state transportation related greenhouse gas reduction targets could not be met strictly with changes in fuels and automobile technology (WSDOT 2011).

When the State established the VMT reduction benchmarks, it failed to establish an implementation plan /framework (a plan and program to implement the plan), or a process to build an implementation plan to meet these benchmarks. The legislature did request a plan for meeting the State's greenhouse gas reduction targets be developed by the Department of Ecology, with the participation of key stakeholders (RCW 70.235.020). The resulting transportation section of the plan identified an array of strategies for reducing VMT and transportation related greenhouse gas emissions, but did not propose an implementation plan or mechanism for meeting the VMT reduction benchmarks (Climate Advisory Team 2008).

In subsequent years, there have been efforts to monitor progress towards the benchmarks, and governor directives to the Washington State Department of Transportation (WSDOT) to work with Regional Transportation Planning Organizations (RTPOs) to develop regional transportation plans that are consistent with meeting the State VMT reduction benchmarks (Executive Order 09-05). However, there has continued to be a lack of progress in the development of an implementation mechanism at the regional or statewide level.

No clear path to implementation has resulted in one lawsuit by environmental organizations against the Puget Sound Region Council (Leach 2013). And has created an environment where efforts by local and county governments to reduce VMT are varied, without normalization of planning tools and metrics, and lacking clarity on what actions are most cost effective in achieving VMT reductions.

The challenge of establishing an implementation plan for State VMT reductions is rooted, in part, in the structure of governance in the State and the authority given to local and county governments. Local transportation and land use planning are controlled primarily at the municipal or county governance level ([RCW 35.63](#) and [RCW 36.70](#)). So, any effective State implementation plan to reduce VMT would require the involvement of city and county land use and transportation planning. In a state where transportation and land use priorities differ regionally, reaching agreement on how to or whether to meet the state VMT reduction targets is a significant challenge.

In addition to local governments, there are other entities or groups that would likely have an interest in whether or not the state develops a VMT reduction implementation plan, and could support or try to block plan adoption. These major stakeholders include the Washington State Department of Ecology, Washington State Department of Transportation, regional Clean Air Agencies, environmental organizations, labor unions, large businesses and business groups, transit organizations, the agricultural community, the freight community and licensed drivers in the state. The result is a diverse set of stakeholders whose interests could be affected by the establishment of, and could potentially hinder the development of, an implementation plan for per capita VMT reduction.

My research, based on multiple streams and multi-party consensus building theories, seeks to answer the question of what is needed to develop a feasible and durable implementation plan for meeting the Washington State VMT reduction benchmarks. Using these theories, I seek to answer the following questions:

- To what extent do the decision making criteria for each theory appear to be met?
- What are the challenges facing the development of an implementation plan to meet state VMT reduction benchmarks?
- What needs to occur for the criteria to be met?

To focus the scope of the research, two policy and planning decision making theories were selected for evaluating the case. Multiple Streams and consensus building theories were selected because empirical studies have been conducted using the theories, there have been ongoing discussions of the theories in the peer reviewed literature, and that when the conditions for a decision are not met for one theory it is possible the conditions could be met for the other theory.

To accomplish this, I first provide a literature review that describes multiple streams and consensus building decision making theories and their empirical application. This is followed with background on the development of the Washington State VMT reduction benchmarks and developments since their adoption, which includes description of VMT reduction strategies and the impacts and cobenefits of VMT reduction. Then the research methods are presented, followed by the research findings and conclusions, and opportunities for additional research.

## **2 Literature Review**

This literature review describes multiple streams and consensus building decision making theories and their empirical application. The theory is followed with case background information explaining the development of the Washington State VMT reduction benchmarks and developments since their adoption, including descriptions of VMT reduction strategies, feasibility studies and progress that has been made in planning for meeting the benchmarks and in per capita VMT reduction. This section concludes with a discussion of research related to the impacts and cobenefits of VMT reduction.

### **2.1 Political/Planning Decision Making Theories**

This section provides the theoretical frameworks and literature review for multiple streams and consensus building theories. In addition, the literature describing empirical application of the theories is identified.

#### **2.1.1 Multiple Streams Theory**

John Kingdon's Multiple Stream Theory is adapted from Cohen, March and Olsen's (1972) *Garbage Can Model of Organizational Choice*. Cohen, March and Olsen set about to explain the decision making process in universities, which they refer to as "organized anarchies." These organized anarchies exhibit the characteristics of having poorly defined preferences, processes that are unclear to its members, and fluid or changing participation of members. Preferences vary both between and within individuals, and are discovered for the organization only through decisions and actions rather than an established structure. Members of the organization may know their individual job well but have limited knowledge and understanding of how their work fits into the organization as a whole. And, knowledge of how things work is gained through trial and error, or learning by experience. In addition, members of the organization come and go from the decision making process. And, they dedicate varying amounts of time and have varying amounts of influence (Cohen, March and Olsen 1972; Kingdon 1995).

Kingdon views the federal government possessing similar characteristics. There is disagreement over what the government should accomplish, and decisions are often made before clear preferences are defined. There often is a lack of understanding of how to accomplish what they want to achieve and a limited understanding of the organization they are a part of. In addition, there is high turnover of personnel, and participation varies from decision to decision (Kingdon 1995).

Cohen et. al. identified four different streams flowing through the decision making structure: problems, solutions, participants, and opportunities for making a choice. These streams function, largely, independently. Solutions are generated and proposed based on the interests of particular participants, not in response to an identified problem or upcoming choice. Also, participants enter and leave the decision making process taking their priority problems and solutions with them, and typically not as a function of a problem, solution or upcoming choice (Cohen, March and Olsen. 1972; Kingdon 1995).

Cohen et. al. describe these organizations as “a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might answer, and decision makers looking for work.” In this environment, opportunities for making a choice become “a garbage can into which various kinds of problems and solutions are dumped by participants as they are generated (Cohen, March and Olsen1972).”

The mix of problems and solutions in a single decision making opportunity becomes a function of the number of decision making opportunities, the type of decision making opportunity, the type of problems and solutions being generated, and the speed in which decisions are being made. Problems can be resolved in this system. However, they also may be passed by. Generating an outcome, or the resolution of a problem, depends on the coupling of the problem, solution, participant and choice making streams (Cohen, March and Olsen1972).

Applying this structure to the federal government, Kingdon modifies the streams but maintains the logic of Cohen et. al. In addition, an element, policy entrepreneurs, which catalyze the stream coupling process, is added (Kingdon 1995).

#### **2.1.1.1 Structure of Multiple Streams Theory**

The Multiple Streams Theory includes five elements: the problem stream, the policy stream, the politics stream, policy entrepreneurs and policy windows. Decisions or choices are made when the three streams are coupled or joined together (Kingdon 1995; Sabatier 2007).

##### **Problem Stream**

The problem stream contains the conditions that the public and policy makers want to change or address. Conditions become problems when a condition conflicts with values held by the public and or policy

makers, which generates interest in changing the condition. Policy makers become aware of the conditions through various indicators, focusing events and or policy feedback (Kingdon 1995). Indicators could be financial viability, change in death rates, global average temperature, recorded greenhouse gas emissions or estimated vehicle miles traveled.

Focusing events could be natural disasters, accidents, crime events or a notable system malfunction. In addition, multiple similar events or the aggregation of problem impact can affect problem awareness and definition by suggesting the event represents a systemic problem rather than a unique occurrence (Kingdon 1995).

Formal (systematic monitoring and evaluation studies) and informal (word of mouth) feedback mechanisms bring attention problems in existing programs, and budgets can either promote problems or act as a constraint to problems, thus affecting their place on the decision maker's agenda. Monitoring public comments regarding existing policy also provides feedback as to whether the policy is achieving the objectives it was created for (Kingdon 1995; Sabatier 2007).

The problem load reflects the number of challenging problems that are competing for the attention of policy makers. A heavy problem load leads to poorer utilization of information and improved prediction of an issues place of the decision making agenda (Kingdon 1995; Sabatier 2007).

#### Policy Stream

The policy (or solution) stream contains the assortment of ideas that compete to gain acceptance in policy networks. Policy ideas are typically created by specialists in policy networks, which include bureaucrats, congressional staff members, researchers in think tanks and academics. The network consists to those generally interested in the same area of concern. Selection of preferred policy ideas and development of a viable alternative is base both on technical criteria and value acceptability. Only those ideas that are viable alternatives for decision makers to consider have the potential to get a solid position on the decision making agenda (Kingdon 1995; Sabatier 2007).

#### Political Stream

The political stream contains three components: the national opinion, group campaigns, and legislative and administrative turnover. The interaction of these factors influences the decision makers' agendas.

The national opinion or mood refers to situations where a large number of the public are thinking along the same lines. This is monitored through public opinion polls, town meetings, hearing from constituents, seeing how things are covered in the general media, reading news editorials and hearing from special interest groups. A shift in public opinion in the polls can reprioritize issues in the decision-making agenda. Similarly, interest groups support or opposition can influence politician's perception of support or dissent in the larger public environment (Kingdon 1995; Sabatier 2007).

Another government process found to affect decisions involves jurisdiction. With the passage of law comes the formation of jurisdiction or responsibility for implementing the law. Once a department or agency is vested with the responsibility then it tends to become an advocate for protecting the organizations interests and "turf." As new legislation is proposed it has the potential to affect the interests of agencies or departments. This may result in a conflict over turf, as these departments advocate for their own interests. Turf conflicts are found to restrict the policy options that can be considered (Kingdon 1995).

The change in administration or legislators also may change priorities of issues or values. Similarly, administrative appointments may result in changes in the decision making agenda (Kingdon 1995; Sabatier 2007).

### Policy Windows

Policy windows are limited periods of time when problem, policy and political streams are able to be joined. At these times advocates of particular solutions or pet problems try to draw attention to them. Policy windows open in response to gripping problems, focusing events or changes in the political stream. Policy windows may also open cyclically with the reauthorization of programs (Kingdon 1995; Sabatier 2007).

### Policy Entrepreneurs

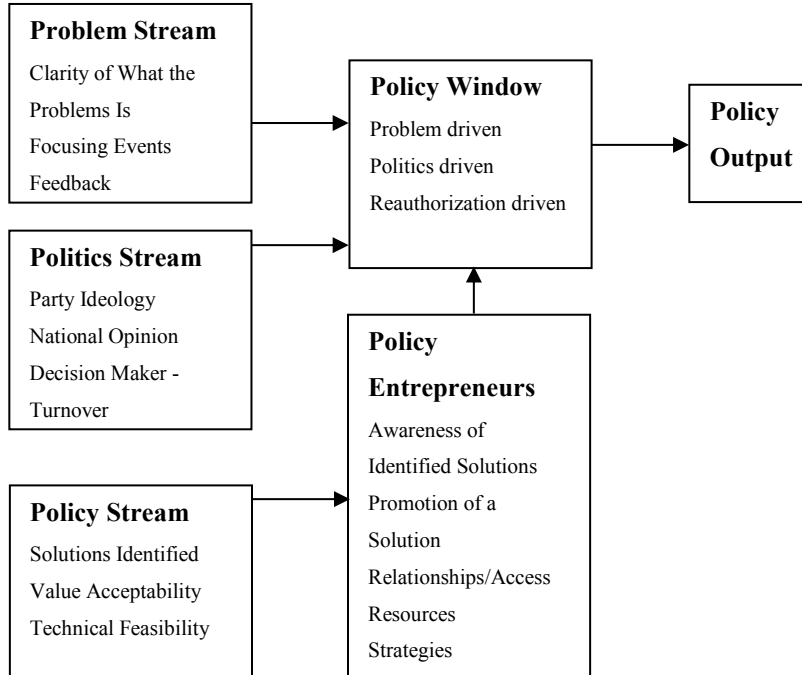
Policy entrepreneurs are people that try to join the three streams. In addition to advocating a particular solution, they function as power brokers and seek to manipulate the decision making the process and participant's preferences. Their effectiveness is a function of the ability to see a policy window opening, developed relationships, available resources, access to policy makers and persistence. Policy entrepreneurs build relationships and seek influence through relationships over time. However, because policy windows may open and close quickly, policy entrepreneurs must act quickly to join the policy streams when the opportunity exists (Kingdon 1995; Sabatier 2007).

The tools used depend upon the position the policy entrepreneur holds inside or outside the government. Examples include the holding of hearings on a topic or presenting of trial bills by senators, and the speech making and convening of commissions to study an issue by the president. The education process takes time, in some cases one administration may start a process that results in a change by another administration (Kingdon 1995)

#### **2.1.1.2 Multiple Streams Theory Function**

The theory is based on the assumptions that the time and attention of policy (decision) makers is limited and the decision making process is messy or unclear. Because decision-makers time and attention is limited, both problems and solutions compete to be prioritized in the decision making agenda. In addition, the time and attention limit causes policy makers to seek and depend on others to provide concise information about problems and solutions. This reliance on others provides opportunity for policy entrepreneurs to influence dialog (Kingdon 1995; Sabatier 2007).

**Figure 1. Multiple Streams Theory Diagram** *Source: Adapted from Sabatier (2007)*



A policy decision can be driven by a policy window opening from the problem stream, the political stream or a scheduled program reauthorization. When policy window opens from the problem stream then policy makers will seek solutions to the problem. The policy entrepreneurs will step in to provide their preferred solution (policy) if the solution they are promoting can be related to the identified problem. However, when the policy window opens from the political stream, what follows is an effort by policy entrepreneurs to identify the problems that can be matched with the solution that has political support (Kingdon 1995; Sabatier 2007).

### 2.1.1.3 Multiple Streams Theory Empirical Studies

Kingdon grounds Multiple Streams Theory through a series of interviews from 1976 through 1979 in the health and transportation policy arenas of the United States federal government. Interviewees included congressional and committee staff, executive branch appointees and staff, and people outside of the government including: lobbyists, journalists, consultants, academics, researchers and others. The series of interviews enabled Kingdon to track how policy ideas and priorities changed through time, and evaluate why those changes occurred (Kingdon 1995).

Also, a series of 23 case studies were developed of policy initiation and nomination over three decades, which included health maintenance organizations; national health insurance; deregulation in aviation, trucking and railroads; and waterway user-charges. These were based on information from the interviews and publicly available documentation, such as government documents, popular and specialized accounts, and academic writings. And, information was gathered about health and transportation issues that were current. Sources included congressional hearings and committee reports, presidential messages, party platforms, press coverage, and public opinion data. In the second edition of 'Agendas, Alternatives and Public Policies' second edition (1995), Kingdon applies the theory to additional case studies from the 1980's and 1990's, including the Reagan budget in 1981, the Tax Reform Act of 1986, and healthcare reform during the Clinton administration in 1993.

Since the publication of 'Agendas, Alternatives and Public Policies' second edition (1995), Multiple Streams Theory has been used to analyze public policy decision making process in other countries, including Britain, Germany, France and Brazil (Zahariadis 1995; Ahearne 2006; Brunner 2008; Khayesi et. al. 2011). It has also been used in analysis of policy decision making at the city and regional levels of government (Moya 1998, Khayesi et. al. 2011). In addition to healthcare and transportation policy development, the theory has been applied to telecommunications and oil (Zahariadis 1995), cultural and education (Ahearne 2006), growth management (Moya 1998), ecological economics (Farley et. al. 2006), greenhouse gas emissions cap-and-trade (Brunner 2008), and three strikes (Saint-Germain 1996) policies.

As Multiple Streams Theory has been applied to new cases some limitation and alternative uses to the theory have been identified. Moya (1996) found the model limited in its predictive ability. And, Brunner (2008) determined that the model does not adequately address influences of multi-level governance structures, learning processes or networking. However, Saint-Germain (1996) found that, in addition to providing insight into the process of policy change, the model can also be used to evaluate the policy change process.

### **2.1.2 Consensus Building Decision Making Theory**

The development of theory and practice of consensus building decision making has roots in Frankfurt School critical theory, the American pragmatists, and negotiation theory (Innes and Booher 2010). The

theory finds refinement and application in the disciplines of planning, public administration, alternative dispute resolution and consensus building.

### **2.1.2.1 Theory of Communicative Action**

The Theory of Communicative Action (TCA) by Frankfurt School philosopher Jurgen Habermas influenced the development of consensus building decision making theory (Healy 2003 [1996]; Innes and Booher 2010). True to his critical theory roots, Habermas, sees communication under the right conditions as an emancipating act, freeing participants of the power distortions that are a function of economic and bureaucratic structures (Innes and Booher 2010). Habermas was also influenced by the American pragmatist philosophers (Charles Sanders Peerce, William James, John Dewey, and Jane Addams). American pragmatist philosophers believed that communities of inquiry lead to learning and knowing (Innes and Booher 2010).

TCA embraces the following assumptions (Innes and Booher 2010):

- The social economic system and associated power relationships distorts communication and knowledge,
- If communication is structured to neutralize the distortions then communicative rationality can occur (an idealistic condition),
- Knowledge is viewed as emancipator, and
- Communication is a way of acting in the world.

Habermas proposed that when following elements are present the distortions from the socio economic system can be overcome and knowledge will liberate the participants (Innes and Booher 2010):

- Dialogs must be face to face with all of the different interests represented.
- Four speech conditions must be met.
  - Statements must be understandable between and amongst all participants.
  - Statements must be true with logic and evidence.
  - Speakers must be sincere.
  - Each speaker has legitimacy to make the statements they make.
- Participants must be able to develop sufficient understanding (empathy) to be able to visualize themselves in another's position and be mutual understood.
- There is no coercion or domination and all are treated equally with respect and listened to equally.
- All have participant have equal access to information.

- Participants must question assumptions and take nothing for granted, and are persuaded only by the power of the argument.

When these conditions are met then the process is considered ‘communicatively rational’.

### **2.1.2.2 Communicative Action in Planning and Policy**

The ideas of Habermas were introduced to the fields of policy and planning by the academics John Forester, Patsy Healy and John Dryzek. Forester sought to show that the planning practice is a form of communicative action that acted on the world and effected citizens and stakeholders (Forester 1980). Forester argued that systematic distortions in information in planning were the largely a product of the exercise of power (Forester 1982), and made the argument that addressing the distortions in communication could help balance the power amongst parties (Innes and Booher 2010). His later work focused on theory applications through negotiation, mediation and collaboration (Forester 1999, 2009; Innes and Booher 2010).

John Dryzek introduced Habermas’s ideas to the public policy arena. He argues that instrumental rationality is not suited to dealing with complex issues, and makes the case for applying communicative rationality to deciding what desirable actions are. He emphasizes the value in using Habermas’s conditions to avoid decision distorted by the societal distribution of power (Dryzek 1990; Innes and Booher 2010).

Brent Flyvbjerg, however, challenges the use of Habermas’s ideas as a model for civil society. He argues that Habermas’s idealism, lack of understanding of power or of the strategies and tactics that produce a more democratic society, yields a theory that provides poor guidance for how implementation should occur (Flyvbjerg 1998). Huxley and Yiftachel argue communicative planning theory is weak in addressing issues of power, the state, and political economy (Huxley and Yiftachel 2000). Purcell further argues that communicative and collaborative planning that embrace Habermasian ideals, provides and effective way for neoliberals to maintain their dominance and ensure political stability (Purcell 2008).

### **2.1.2.3 Negotiation Theory and Alternative Dispute Resolution**

Parallel to the development and exploration of Habermas’ theory on communicative rationality has been the development of negotiation theory and alternative dispute resolution. Robert Fisher and Bruce Ury’s

book *Getting to Yes* identified the principles that shape alternative dispute resolution and consensus building practices today (Fisher and Ury 1981; Innes and Booher 2010). These principles include:

Participants need to develop and adopt on objective criteria for evaluating and choosing options,

- Discussions need to be civil and focus on the problem at hand not people or personalities in the room.
- Participants need to know what their best available alternative (BATNA) to a negotiated agreement is and what their negotiation limits are,
- For durable agreements participants must know their interests and defend them.

This type of negotiation theory focuses on seeking solutions that meet all parties' interests, and seeks to avoid position based negotiations (Fisher and Ury 1981; Innes and Booher 2010).

Collaborative consensus building decision making is appropriate for problems that may lack clear definition of the problem and the goals to be achieved, that when worked on lack a correct or clear answer, and that traditional methods of decision making (experts, legal or legislative) have not worked (Innes and Booher 2010). However, although participants may hold differing perspectives on the problem, typically there is a common sense of need or urgency to resolve the issue, due to the perceived costs to the participants of not addressing the problem (Cormick 2012).

Collaborative decision making is not appropriate “when the cause and effect relationship are well understood,” “when there is relative certainty of how the decision will play out in the system,” “when and immediate decision is needed to protect life and property” or when the “actors affected are not interdependent and have no reason to engage with one another” (Innes and Booher 2010; Susskind et. al. 1999).

Participation in consensus building decision making needs to be voluntary. The willingness of a party to participate in consensus building decision making process depends on their BATNA, their trust of a neutral facilitator or other parties' willingness to negotiate in good faith, and the perceived legitimacy of the convening agent (Susskind et. al. 1999). In addition, due to the interdependence of the problem and potential solutions, successful consensus building negotiations seek to be inclusive of diverse stakeholders, creating conditions where the negotiated agreement is more likely to address pertinent

stakeholder interests. It also requires leadership by the parties involved to represent their constituents and bring them along in the process (Cormick 2012).

Disputes are based on deeply held values may or may not be reconcilable. Through the consensus building process parties have the opportunity to try and find areas of fruitful negotiation (Susskind et al. 1999).

Consensus building decision making facilitation practitioners view the process through three negotiation lenses: interests, power and relationships (Cormick 2012).

**Interests** are the matters of fundamental importance to the stakeholders that provide the basis for negotiation. They can be thought of as both the objectives that a party wants to achieve and concerns, or those things the party wishes to avoid. Clarity of interests by participating parties is critical for them to represent themselves well in a negotiation. And, understanding the interests of the other parties is critical for being able to make proposals and avoid unexpected reactions (Cormick 2012).

Criteria are used to measure how well interests are being met, both in terms of what a party wants to achieve and in terms of constraints (Cormick 2012).

**Power** in negotiations is the ability to influence the behavior and choice of others. Power relationships are relative in negotiations in that parties have more or less influence over other parties. The amount of influence decreases if the other party has relatively strong options for achieving their interests outside of the negotiations. Equally important, parties need to understand their best alternative so that they do not agree to something that is not in their interest (Cormick 2012).

Increasing pressure may be an effective tool when not achieving compromise from the other party could jeopardize success of the process. However, increasing pressure on other parties can result in those parties also increasing pressure. By proposing strategies that make it easy for another party to agree, resistance is decreased in the power relationship (Cormick 2012).

**Relationships**, the set of expectations, behaviors, authorities and commitments through which others are engaged, are key to accomplishing goals. Formal relationships define parameters of authority and responsibility. However, informal relationships are often most productive in getting things accomplished.

The formality of their relationship will affect the breadth of issues address and the ability to effect change. Participants in a negotiation must ask themselves how important the relationship is with another participant, for the future and for accomplishing their goals. Positive relationships affect power relationships by decreasing resistance (Cormick 2012).

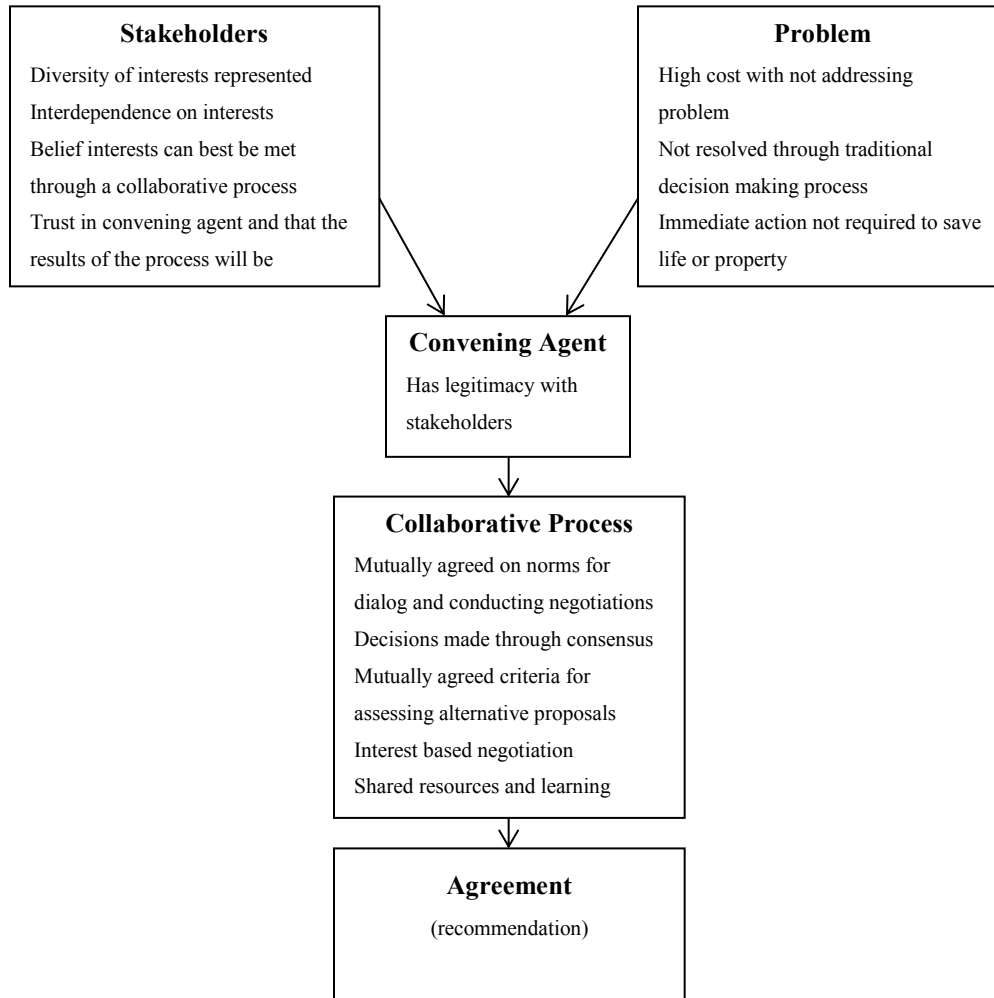
To provide a neutral forum and help ensure dynamics identified in each of the lenses lead towards a mutually beneficial agreement, professional facilitators are often recommended to lead a collaborative decision making process (Cormick 2012).

#### **2.1.2.4 Consensus Building, Alternative Dispute Resolution and Environmental Conflict Resolution**

Alternative Dispute Resolution (ADR) and Environmental Conflict Resolution (ECR) are decision making approaches that represent a broad range of processes. Through ADR, disputes are resolved in non-adversarial processes that may utilize the assistance on impartial third party facilitators. ECR employs ADR processes in the context of environmental conflicts. And consensus building represents one of the processes within the scope of ADR and ECR (Dukes 2004; <http://www.ecr.gov/Basics/Basics.aspx>).

**Figure 2. Collaborative Decision Making Theory Diagram**

Source: Adapted from Innes and Booher (2010)



#### 2.1.2.5 Collaborative Decision Making Empirical Studies

Many case studies of consensus building have been published through research in various disciplines, including collaborative planning, ARD and ECR (Brunner, et al. 2002; Dukes 2004; Forester 2006; Innes and Booher 2010; Koontz 2004; Owen et al. 2008; Scholtz and Stifel 2005; Susskind et al. 1999; Thomas 2003).

Dukes provides an excellent summary, as of 2004, of case study research that compares ECR with other traditional dispute resolution processes (legislation, administrative decision making, and adjudication). The research summarized looked at ECR through the following lenses: settlement rates, evidence of changing participants' relationships and conflict management skills, transaction cost savings, durability of

settlement and recidivism, agreement seeking processes and processes that seek to meet other goals, ECR processes that include third-party assistance and those that do not, public and private sponsorship of ECR, programmatic processes and those that develop organically, upstream (early) and downstream (late) ECR, and impact on socio-environmental systems (Dukes 2004).

Within the realm of collaborative planning, few case studies focused on the process and context that would allow the assessment of why they did or did not work. In an effort to fill this gap, Innes and Booher analyzed six collaboration case studies that varied in the application of consensus building principles. These case studies were used to illustrate the function of their collaborative rationality theory (Innes and Booher 2010).

## **2.2 Case Background Literature**

This section summarizes information on how the state arrived at adopting VMT reduction benchmarks and how it fits into the state's greenhouse gas reduction strategies, the results of technical work to determine feasibility of meeting the benchmarks and what set of tools communities could use to help achieve VMT reductions, the cost and benefits of VMT reduction, the progress the state has made towards its VMT reduction benchmarks, and other state policy implementation examples that result in VMT reductions.

### **2.2.1 The Adoption VMT reduction benchmarks by the State of Washington**

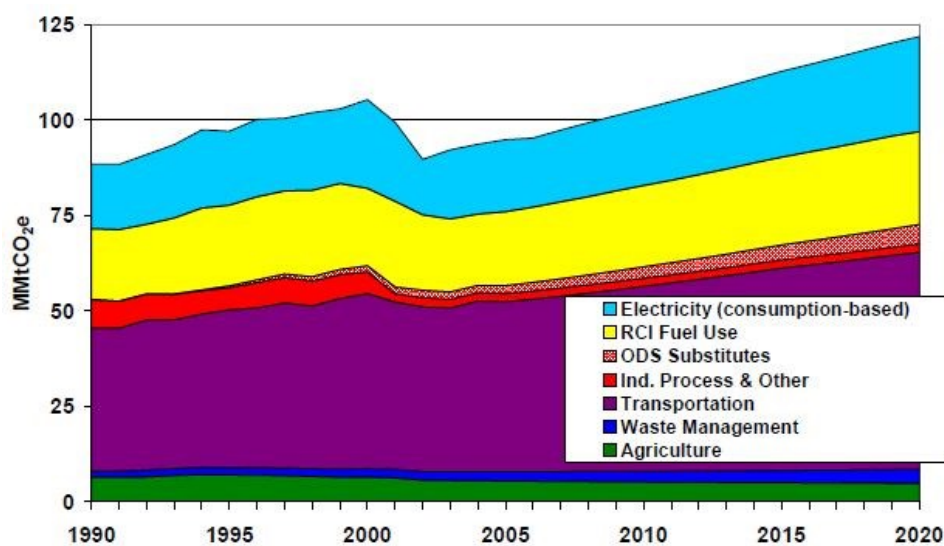
The development of VMT reduction targets in the State of Washington has roots in Executive Order 07-02, Washington Climate Change Challenge, and the *Washington State Greenhouse Gas Inventory and Reference Case Projections 1990 – 2020* (WA greenhouse gas Inventory). Executive Order 07-02 established greenhouse gas emission reduction goals for the state, directed the Departments of Ecology (Ecology) and Community, Trade and Economic Development (CTED) to engage a broad range of stakeholders to develop a Climate Change Initiative to achieve the greenhouse gas emission reduction goals, and identified elements to be address in the process. The WA greenhouse gas inventory provided sector based anthropogenic greenhouse gas emission and sinks from 1990 through 2005, and projected emission by sector through 2020 (Ecology 2007).

### 2.2.1.1 Washington Climate Change Challenge and Green House Gas Inventory

The greenhouse gas inventory showed that between 1990 and 2005 Washington State per capita greenhouse gas emissions were lower than the per capital national average emissions, which is attributed to the reliance on hydro power for state electrical energy needs (Ecology 2007).

The emission inventory broke down emissions into seven sectors: consumption based electricity, residential/commercial/industrial fuel use, ozone depleting substitutes (hydrofluorocarbons and perfluorocabons), industrial processes/other, transportation, waste management, and agriculture. Of these, the transportation sector produced the most greenhouse gas emissions, and was also projected to contribute the most greenhouse gas emissions from 2005 to 2020 (figure 3) (Ecology 2007).

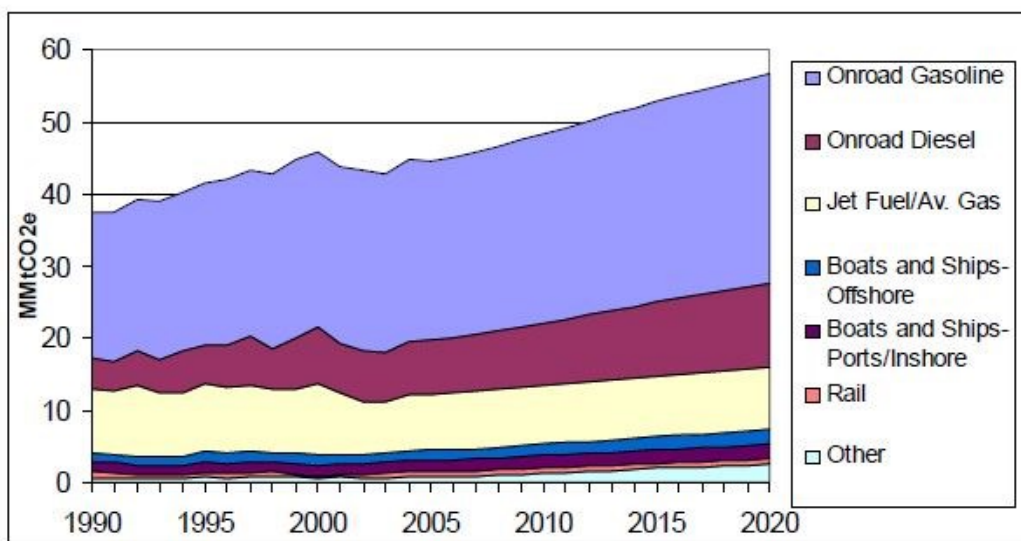
**Figure 3. Washington Gross greenhouse gas Emissions by Sector, 1990-2020: Historical and Projected (consumption-based) Source: Ecology (2007)**



The transportation sector was assessed in terms of different uses, including on-road gasoline, on-road diesel, jet fuel/aviation gas, offshore boats and ships, inshore/ports boats and ships, rail, and other. On-road gasoline usage was found to produce the largest amount of greenhouse gas emissions within the transportation sector, followed by on-road diesel (figure 4) (Ecology 2007, Appendix C).

**Figure 4. Transportation greenhouse gas Emissions by Fuel, 1990-2020**

*Source: Ecology (2007)*



To estimate fuel consumption for on-road gasoline and diesel vehicles, the inventory used WSDOT VMT projections for different types of vehicles, and adjusted the projections based on AEO 2006 fuel efficiency improvement projections. On-road gasoline usage includes heavy duty gasoline vehicles, light duty gasoline trucks, light duty gasoline vehicles and motorcycle. On-road diesel usage includes heavy duty diesel vehicles, light duty diesel trucks and light duty diesel vehicles. Light duty trucks and vehicles generate much greater VMT than heavy duty vehicles. And light duty gasoline trucks and vehicles generate the majority of existing and projected VMT in the state (figure 5). However, the greatest VMT growth rate is expected for light duty diesel trucks and vehicles (figure 6) (Ecology 2007, Appendix C).

**Figure 5. Washington Vehicle Miles Traveled Estimates (millions)**

*Source: Ecology (2007)*

| Vehicle Type                | 2002          | 2005          | 2010          | 2015          | 2020          |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|
| Heavy Duty Diesel Vehicle   | 3,603         | 3,969         | 4,578         | 5,410         | 6,182         |
| Heavy Duty Gasoline Vehicle | 524           | 556           | 595           | 685           | 766           |
| Light Duty Diesel Truck     | 538           | 619           | 845           | 1,200         | 1,668         |
| Light Duty Diesel Vehicle   | 170           | 195           | 267           | 378           | 526           |
| Light Duty Gasoline Truck   | 17,901        | 18,221        | 19,594        | 21,882        | 23,631        |
| Light Duty Gasoline Vehicle | 31,858        | 32,428        | 34,872        | 38,943        | 42,055        |
| Motorcycle                  | 182           | 185           | 199           | 223           | 240           |
| <b>Total</b>                | <b>54,776</b> | <b>56,174</b> | <b>60,951</b> | <b>68,721</b> | <b>75,067</b> |

**Figure 6. Washington Vehicle Miles Traveled Compound Annual Growth Rates**

Source: Ecology (2007)

| Vehicle Type                | 2002-2005 | 2005-2010 | 2010-2015 | 2015-2020 |
|-----------------------------|-----------|-----------|-----------|-----------|
| Heavy Duty Diesel Vehicle   | 3.28%     | 2.90%     | 3.39%     | 2.70%     |
| Heavy Duty Gasoline Vehicle | 1.99%     | 1.38%     | 2.84%     | 2.27%     |
| Light Duty Diesel Truck     | 4.76%     | 6.43%     | 7.26%     | 6.80%     |
| Light Duty Diesel Vehicle   | 4.76%     | 6.43%     | 7.26%     | 6.80%     |
| Light Duty Gasoline Truck   | 0.59%     | 1.46%     | 2.23%     | 1.55%     |
| Light Duty Gasoline Vehicle | 0.59%     | 1.46%     | 2.23%     | 1.55%     |
| Motorcycle                  | 0.59%     | 1.46%     | 2.23%     | 1.55%     |
| Total                       | 0.84%     | 1.65%     | 2.43%     | 1.78%     |

### 2.2.1.2 The Climate Advisory Team

To meet the mandate of Executive Order 07-02, the directors of Ecology and CTED in March of 2007 convened a broad selection of stakeholders to form the Climate Advisory Team (CAT). The CAT formed technical work groups to identify and recommend greenhouse gas reduction strategies for economic sectors of energy supply, transportation, residential/commercial/industrial, agricultural/waste, and forestry. In February 2008 the CAT published their findings in the interim final report, 'Leading the Way a Comprehensive Approach to Reducing Greenhouse Gases in Washington State' (Climate Advisory Team 2008).

For the transportation sector, the CAT recommended the establishment of state, regional and local VMT and greenhouse gas reduction goals and standards, in addition to 11 other policy recommendations identified to reduce greenhouse gas emissions (Climate Advisory Team 2008). The stated CAT VMT target strategy:

“Establishes a schedule of targets for reducing statewide per capita VMT and working alongside local governments and regional planning organizations to achieve those targets. Compared to a business-as-usual baseline, these goals would target a reduction in statewide annual per capita VMT 18% by 2020, 30% by 2035, and 50% by 2050 (Climate Advisory Team 2008, pg. 72).”

The greenhouse gas reduction benefit from implementation of this policy was estimated in units of million metric tons of CO<sub>2</sub> at 6.8 in 2020 and cumulative reductions of 36.7 from 2008 to 2020 (Climate Advisory Team 2008, pg. 72).

### **2.2.1.3 State Greenhouse Gas and VMT Reductions Goals**

In 2008, the Washington State legislature adopted state greenhouse gas reduction goals consistent with Executive Order 07-02 into law (RCW 70.235.020) as part of larger Climate Change Framework (Chapter 70.235). The state greenhouse gas reduction goals called for a reduction to 1990 level by 2020, a reduction 25% below 1990 levels by 2035 and a reduction 50% below 1990 levels by 2050.

During the same session, the Washington State legislature also adopted the CAT recommended state wide benchmarks for the reduction of vehicle miles traveled by 2050. These benchmarks call for the:

- (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;” (RCW 47.01.440).

The statutory benchmarks are based on a 2008 VMT baseline state wide projection of 75 million total VMT for 2020 (Ecology 2010).

With adoption of the state greenhouse gas emissions reduction goals and VMT reduction benchmarks, the legislature also recognized the need for additional planning, and identification of implementation strategies and tools for monitoring and meeting the goals and benchmarks. In addition, they sought information on the potential impacts of policy implementation.

## **2.2.2 VMT reduction planning, tools, and feasibility**

The legislature as part of the 2008 climate legislation and the governor with EO 09-05, tasked the Department of Ecology and WSDOT to develop strategies, tools and plans for meeting and for monitoring the progress towards the greenhouse gas emissions reduction goals and VMT reduction benchmarks (RCW 70.235.020; RCW 47.01.440; Executive Order 09-05).

### **2.2.2.1 Washington State VMT Reduction Planning**

*Growing Washington’s Economy in a Carbon Constrained World* is the State’s plan for meeting the state greenhouse gas reduction goals. VMT reduction strategies are found in the Transportation and Land Use sections of this plan. Although the plan identified strategies for reaching the VMT and greenhouse gas reduction targets and goals, it does not identify or recommend prioritization of strategies, designate roles and responsibilities for implementation, nor identify a process for developing a plan for implementation.

The plan identifies increased transit and rideshare, compact or transit-oriented development, riders' choice, and transportation as primary VMT reduction strategies. If implemented as modeled in the plan, these strategies combined are estimated to reduce CO<sub>2</sub> equivalents by 5.4 million metric tons (Ecology 2008). Within each of these broad strategies, more specific strategies are identified.

The increased transit or rideshare category includes the development and enhancement of a Washington State Transportation Access Network, enhance urban commute trip reduction and rideshare programs, and the development of a statewide residential trip reduction program. The proposed Transportation Access Network would ensure public transportation would exist that provide affordable travel throughout the state, and the proposed residential trip reduction program would create incentive and target non-commute trips (Ecology 2008).

The compact or transit-oriented development and rider's choice categories focus on the promotion and support of housing density, the development of parking incentives and management, encouraging pedestrian and bicycle accessibility, the encouragement of brown field redevelopment, and developing and requiring multimodal concurrency (Ecology 2008).

In the transportation pricing category, most promising strategies include adoption of VMT and greenhouse gas reduction as a WSDOT goal for tolling, using toll revenues to support other mode choice options, use tolling strategies to encourage reductions in individual VMT and applying tolling more broadly (Ecology 2008).

The transportation section of the plan also included recommendations on non-VMT related greenhouse gas reduction strategies, a review of transportation pricing research in the US, a preliminary assessment of the State's ability to measure VMT, VMT best practices nationally and internationally, and summary descriptions of then current projects in the Puget Sound region and the State that reduce VMT (Ecology 2008).

Not all stakeholders that participated in the planning effort supported final transportation recommendations in the plan. There were concerns with the lack of cost benefit analysis associated with the recommendations. Additional concerns included the lack of discussion of implementation timing, the potential impacts on-discretionary roadway users, the effect of market mechanisms on mode choice, the

appropriate source and allocation of transportation funding and potential constraints on future highway construction (Ecology 2008).

The Land Use section of the *Growing Washington's Economy in a Carbon Constrained World* plan identified both unique strategies and overlapping strategies of those included in the Transportation section of the plan. The following strategies are unique to the Land Use section of the plan:

- Amending the Growth Management Act to climate change as an environmental element and require climate change planning as part of comprehensive planning.
- Require counties and jurisdictions within to set policies to address climate change.
- Require the consideration of all modes in local government planning efforts.
- Require consistency between local transportation and regional transportation plans.
- And, provide technical guidance to local governments on concurrency and incentives that can be offered to developers (Ecology 2008, pp 57).

Although the Land Use section of the plan proposed climate change planning to be required of local governments, the recommendations do not propose allocation of responsibility for planning to meet the VMT and greenhouse gas reduction benchmarks and goals, nor the establishment of local or regional VMT and greenhouse gas reduction targets.

#### **2.2.2.2 VMT Estimation and Benchmark Reevaluation**

In response to Executive Order 09-05, WSDOT conducted studies to evaluate methods of VMT estimation and evaluated the need for potential changes to the VMT benchmarks to address low- or no emission vehicles. An assessment of the VMT estimation model used in the 2008 VMT forecast found a greater than 6 percent error the majority of the time and that it consistent over estimation of VMT (WSDOT 2010, Ecology 2010). The VMT estimation model used quarterly forecasts of net fuel gallons purchased, and multiplied this number by net fleet miles per gallon to estimate VMT statewide. Due to the poor level of accuracy of the methodology, WSDOT developed a new model to forecast VMT. The new state VMT forecasting model uses a log-log algorithm and is based on employment, vehicle registrations and gasoline prices in the state (WSDOT 2010).

A revised forecast based on the new methodology projects 66 million VMT to be driven in the state for 2020. This is 12 percent lower than the 75 million forecast by the VMT model used in the 2008 (WSDOT 2010). The new state VMT forecasting model still projects a slight increase in VMT from 2010 onward

(WSDOT 2010). 2011 congestion report data indicates the state has continued to slightly reduce per capita VMT, which suggest the new model may still not be capturing some changes in travel behavior (WSDOT 2012). The VMT projection based on the new methodology indicates the per capita VMT reduction needed to meet the 2020 statutory benchmark is significantly less.

WSDOT assessed whether the VMT reduction benchmarks need to be changed based on low or no-emission vehicles, and found that adoption of vehicle technology and fuel changes are expected to occur slowly, and the rate of advances in technology and adoption of regulations over the next 40 years is uncertain. Because of these conditions, WSDOT did not recommend revising the VMT reduction benchmarks (WSDOT 2010).

To reduce confusion, WSDOT recommends the legislature adopt a VMT baseline based on VMT recorded in an actual year as a replacement for the forecasted VMT baseline (WSDOT 2010). For example, using the per capita VMT for Light Duty Vehicles in 2005, the state would need to reduce per capita VMT by 5.8 percent per capita VMT reduction to meet the 2020 benchmark (See figure 7).

**Figure 7. VMT Benchmarks and Comparative Reductions from Recent Years**

*Source:* WSDOT (2010)

| Comparative Reductions in Per Capita Light Duty Vehicle VMT to Meet VMT Benchmarks |  |                          |                          |                          |
|--|--|--------------------------|--------------------------|--------------------------|
| Year   | Current Benchmarks (75 billion in 2020, as described in statute) | From 2000 Per Capita VMT | From 2005 Per Capita VMT | From 2010 Per Capita VMT |
| 2020   | 18.0%  | 14.1%                    | 10.7%                    | 5.8%                     |
| 2035   | 30.0%  | 26.7%                    | 23.7%                    | 19.5%                    |
| 2050   | 50.0%  | 47.6%                    | 45.5%                    | 42.5%                    |

### 2.2.2.3 Effective Strategies at Reducing VMT

WSDOT also reviewed national studies to try to determine the effectiveness of different VMT reduction strategies. Some strategies were found to be more effective than others for reducing VMT, and the combining of strategies appeared to be most effective. From the literature WDOT concluded:

- **“Transit strategies.** Modest to moderate VMT reductions are possible from transit expansion alone; more significant reductions are possible if accompanied by land use and pricing strategies.

- **HOV and commuter strategies.** VMT reductions for HOV and commuter strategies are similar to transit.
- **Land use/smart growth.** Moderate VMT reductions are possible in the long term; greater reductions are possible if land use strategies are combined with transit and pricing.
- **Non-motorized.** For strategies focusing on pedestrians and bicyclists, modest VMT reductions are possible from expansion of non-motorized facilities; greater reductions if combined with supportive land use, transit, and pricing strategies.
- **Pricing strategies**
  - Studies suggest moderate to major VMT reductions are possible, particularly when combined with land use and transit strategies.
  - Major VMT reductions would appear to require broad-based pricing signals with equivalent fuel prices increased by several dollars a gallon.
  - Studies indicate that an economy-wide carbon price of \$30-\$60/ton CO<sub>2</sub> increases fuel prices only modestly.
  - In addition to reducing VMT, pricing signals could encourage the transition to a more greenhouse gas-efficient vehicle fleet (these benefits could exceed the VMT reduction benefits)” (WSDOT 2010, Appendix C).

#### **2.2.2.4 Estimating Possible VMT Reductions**

Various tools have been developed to help quantify the effects of land use and transportation planning activities on VMT and greenhouse gas emissions. They range from relatively simple spreadsheets to more complex travel demand models. When resources are available, travel demand forecasting models can provide travel behavior information at a regional scale. Traditional travel demand models, however, have limited capacity to account for local changes in the built environment. In addition, they have done a poor job of estimating non-motorized travel scale (Moudon and Stewart 2013). A regional study by U.C. Berkeley (2009) concluded current modeling tools are not effective at evaluating VMT reduction, and usually underestimate the VMT reduction potential, which casts uncertainty upon the estimate (WSDOT 2010, Appendix F).

To evaluate the range of VMT reductions possible, WSDOT developed two scenarios based on the analysis of the study Moving Cooler, a national study by Cambridge Systematics. WSDOT combined light duty vehicle VMT reduction strategies and developed scenarios based on different bundles of strategies. They developed “low” and “high” VMT reduction scenarios, with the “low” representing modest VMT reductions moderate implementation costs and relatively few barriers to implementation. The “high” scenario strove for high VMT reduction, and was characterized by higher cost and more

barriers to implementation. They estimated the “high” scenario would achieve a 28 percent reduction by 2050, and the “low” scenario would yield a 10 percent reduction (WSDOT 2010, Appendix C).

WSDOT determined that there was a high level of uncertainty regarding range of VMT reduction possible in the state. As a result, they concluded that somewhere between 3 and 33 percent reductions by 2050 from the future 2050 baseline of light duty vehicles could be achieved (WSDOT 2010, Appendix C).

Based on the studies reviewed, pricing appeared to have a strong potential for reducing VMT. However, there were questions of public acceptability and social desirability of significant pricing. They concluded that substantial reduction of transportation greenhouse gas emissions would require a collaborative and comprehensive effort by private citizens, businesses, and regional and local governments (WSDOT 2010, Appendix C).

#### **2.2.2.5 Estimating Land Use Effects on VMT Reduction**

To plan for reducing VMT and transportation related greenhouse gasses, it is important to understand how changes in the built environment effect VMT and greenhouse gas emissions. To help WSDOT in this, Moudon and Stewart (2013) summarized the literature that seeks to identify this relationship.

Ewing and Cervero (2010) calculated the weighted average elasticity of VMT, walking and transit use to the built environment variables of density, diversity, design, destination accessibility and distance to transit. The data suggests destination accessibility has a strong relationship with VMT, population/housing density and land use mix have a strong relationship with walking, and land use mix and distance to transit have strong relationships to transit use. Although the study provides a basis for estimating the effect of change of a particular attribute of the built environment on travel behavior, they are limited to that of the residential based trips being assessed with regional scale characteristics and they do not appear to be generalizable to all locations nor all types of travel (Moudon and Stewart 2013, referencing Ewing and Cervero 2010).

A recent study by Frank et. al. (2013) looked at the effects of sidewalks on travel patterns, and relates sidewalk availability to VMT and greenhouse gas emissions. Existing policy and VMT/CO<sub>2</sub> reduction scenarios were developed for two Seattle neighborhoods. The modeling of existing policy yielded 8 percent and 6.75 percent reductions in VMT. The VMT/CO<sub>2</sub> reduction scenarios, which assumed

complete sidewalks, improved transit and changed cost variables, yielded 48 percent and 27 percent VMT reductions. Although the data sets were limited to the more walkable parts of King County, analysis indicated that significant VMT and associated CO<sub>2</sub> reductions may be realized from modest increases in sidewalk infrastructure. And, more aggressive increases in land use mix, transit and pricing may be needed to obtain greater return on investment (Frank et al. 2011).

#### **2.2.2.6 VMT Reduction Monitoring**

To help Washington State meet its legislative requirement to reduce VMT per capita, and to provide state and local government agencies information to support planning and programming, Hallenbeck et al. (2013) proposed a framework for monitoring VMT reduction and demand management performance. The proposed framework involves a two tiered performance monitoring structure, Outcome Measures to describe changes at the state level and Explanatory Measures that describe where travel behavior is changing and if planned growth is occurring in areas with multi-modal travel facilities. The proposed Explanatory Measures rely on MPOs identifying in their regional plans where low VMT per capita is expected based on multi-modal capacity and growth is being encouraged. These areas are then monitored for changes in travel behavior (Hallenbeck et al. 2013). However, the proposal does not address how to obtain participation or commitment of the MPO's in meeting the VMT reduction benchmarks.

### **2.2.2 Progress towards meeting the VMT reduction benchmarks and transportation related greenhouse gas reductions**

Without policy implementation mechanisms in place, the state has had to rely on existing programs (like Safe Routes to School and Commute Trip Reduction), voluntary efforts of local jurisdiction and transportation market drivers for per capita VMT reduction. Executive Order 09-05 directed WDOT to work with RTPO's with counties of populations greater than 254,000 to develop plans to meet state VMT reduction benchmarks and to report on the status of transportation plan development that focusses on meeting the VMT benchmarks and reducing greenhouse gas emissions.

#### **2.2.3.1 Regional and Local Greenhouse Gas Emissions and VMT Reduction Planning Efforts**

In December of 2011 WSDOT reported on the progress of the four state Regional Transportation Planning Organizations (RTPOs) (Puget Sound Regional Council's (PSRC), Thurston Regional Planning Council (TRPC), Spokane Region Transportation Council (SRTC), and Southwest Washington Regional

Transportation Council (SWRTC)) in planning for greenhouse gas and VMT reductions. WSDOT found that all RTPOs included strategies in their plans that could reduce greenhouse gas and VMT. And that, only PSRC, in the recently adopted Transportation 2040, had included strategies to specifically reduce transportation related greenhouse gas emissions and estimates for per capita VMT reduction. However, PSRC was also the only RTPO that had updated their transportation plan since the State's adoption of the VMT reduction benchmarks (WSDOT 2011).

Although multiple local and county governments have adopted smart growth policies that encourage mixed use and transit oriented development, the City of Seattle appears to be the only jurisdiction to adopt VMT reduction targets. Seattle seeks to reduce total VMT of Seattle passenger vehicles 14% by 2020 and by 20% by 2030 from 2008 levels, as part of its plan for becoming a carbon neutral city. To accomplish this, the city plans to expand non-motorized transportation and transit facilities and services, increase transit oriented and 'smart growth land use, and expand use of transportation pricing mechanisms. Funding for transportation infrastructure will be critical for implementing the strategies and meeting the targets (Seattle 2013). The city meeting its 2020 target would significantly help the state progress towards its VMT reduction benchmarks.

### **2.2.3.2 Legal Limitations of State Greenhouse Gas and VMT Reduction Policy**

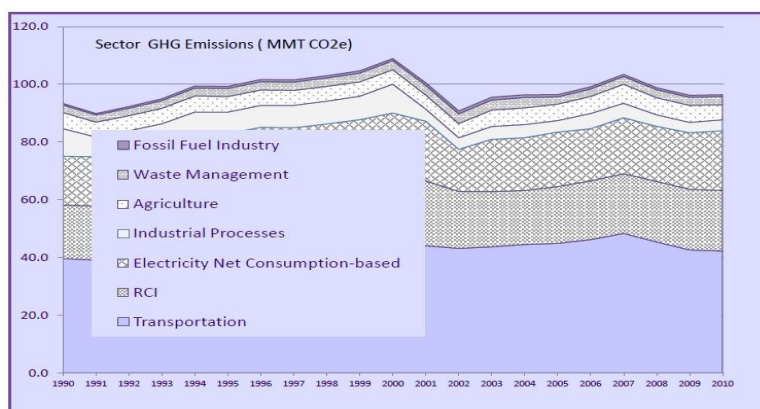
In June of 2010 the Cascade Bicycle Club, Future Wise and the Sierra Club sued PSRC to block adoption of Transportation 2040, the updated regional transportation plan for the four county region PSRC represents. The suit was filed because adoption and implementation of Transportation 2040 would result in the state statutory benchmarks and targets for reducing VMT and greenhouse gas emissions not being met (Greegor 2010). In July of 2013 the State Court of Appeals found that, because the state greenhouse gas emissions and VMT reduction statute did not require proportional emissions reductions and that PSRC hasn't agreed that its planning must comply with the statute, Transportation 2040 is not required to comply with the statute. The Court of Appeals also found that the EIS for Transportation 2040 did not violate the State Environmental Policy Act (Leach 2013). This legal action determined that regional transportation planning organization are not accountable under current law for helping the state meet greenhouse gas reduction goals or VMT reduction targets.

### 2.2.3.3 Progress in Reducing Greenhouse Gas Emission and Per Capita VMT

The Washington State Greenhouse Gas Emission Inventory 1990 -2010 shows an increase in annual greenhouse gas emissions between 2005 and 2007 and a decrease from 2007 to 2010 (figure 8). In 2009 there is a significant drop in emissions that appears to coincide with the economic recession in the state. The transportation sector shows a similar trend. However, during the same time period, on-road gasoline emissions increased slightly in 2006 plateaued in 2007 and then declined. On-road greenhouse gas emissions in 2010 represent a 2.0 MMt CO<sub>2e</sub> (about 8.4 percent) annual reduction (Ecology 2013).

**Figure 8. Total Annual greenhouse gas Emissions (MMt CO<sub>2e</sub>) by Sector, 1990 –2010**

Source: Ecology (2013)



The state currently does not provide updates that assess progress towards meeting the per capita VMT reduction benchmarks for light duty vehicles. The best data available is found in WSDOT's annual Corridor Capacity Report (formerly titled Congestion Report) that provides annual per capita VMT data for all vehicles on the roads as a whole.

State per capita VMT dropped from 8,780 annual miles in 2007 to 8,417 annual miles 2008. This decrease has been attributed to the recent economic recession. Per capita VMT then increased to 8,505 annual miles in 2010 and has subsequently dropped to 8,303 annual miles in 2012, which represents the lowest per capita VMT in the state since 1988 (WSDOT 2012, WSDOT 2013 Corridor Capacity Report). Using this data as a surrogate for the measuring progress towards the state VMT reductions benchmarks, the state could reach the 2020 benchmark with approximately an additional 3.6% decline (291 annual miles) in per capita VMT.

## 2.2.4 Recent State Climate Change Policy Efforts

In 2013 and 2014 there were two climate change policy efforts that had the potential to effect per capita VMT reductions in the state. These included the work of the Climate Legislative and Executive Work Group and the governor's Executive Order 14-05, *Washington Carbon Pollution Reduction and Clean Energy Action*.

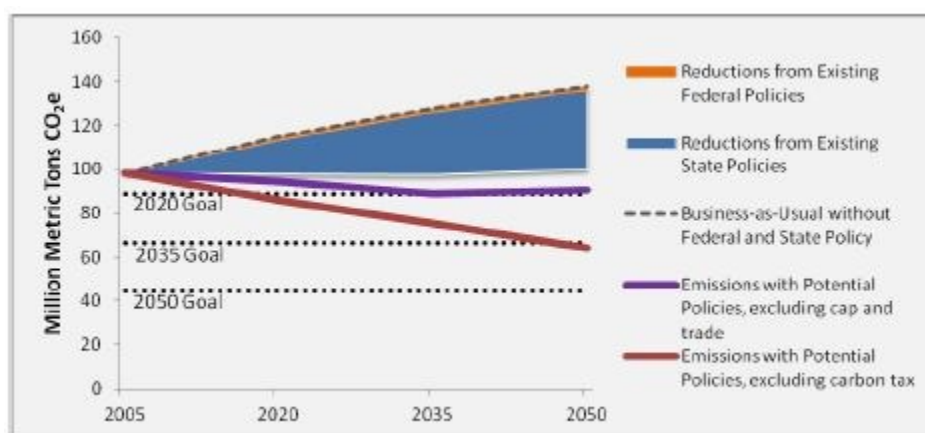
### 1.2.4.1 The Washington State Climate Legislative and Executive Work Group

The Washington State Climate Legislative and Executive Work Group (CLEW), comprised of the governor and leadership of state Legislature and Senate environmental committees, was tasked with evaluating different approaches to meet the state greenhouse gas emissions reduction targets set in (RCW 70.235.020), to prioritize the approaches based on greatest environmental benefit for each dollar spent and with this information make recommendations to the legislature (Liedos 2013).

The evaluation concluded that existing state and federal policies are insufficient for meeting Washington State's greenhouse gas reduction targets. It also concluded that the 2020 greenhouse gas targets could be achieved through the implementation of a comprehensive greenhouse gas emissions reduction program (for example a carbon cap and trade program). However, based upon the strategies evaluated and their implementation levels, Washington would require additional measures to meet its 2035 or 2050 greenhouse gas reduction targets (See figure 9) (Liedos 2013).

### Figure 9. Emissions Reductions from Proposed Greenhouse Gas Reduction Policies

Source: Liedos (2013)



Unable to come to common agreement on the most cost effective strategies to recommend to the legislature, the CLEW committee produced two separate sets of recommendations. The perspectives split along party lines.

The recommendations of the Governor and Democrat legislators on the committee called for advancement of five policy actions, two of which would reduce greenhouse gas emissions in the transportation sector: establishment of a carbon cap-and-markets system for the state, and the adoption of measures to modernize the transportation system with a focus on increasing efficiency in the movement of people and goods, and reducing costs and emissions. The call to modernize the transportation system included incentives for purchase of clean cars, accelerating the use of clean fuels, improvements to transportation system funding, greater investment in multimodal infrastructure, and changes to transportation and land use planning. Their recommendations are based on the beliefs that acting now to reduce carbon emissions will cost less than waiting, the state has responsibility to help prevent climate change from becoming worse, and that there are opportunities to be gained by developing a clean energy economy (Triangle and Associates 2014).

The Republican legislative committee members identified six recommended policy actions, none of which were related to reducing emissions in the transportation sector. They framed their proposal in terms of interests in maintaining the vitality and competitiveness of existing businesses in the state, and expressed concern over the economic costs of proposed climate actions, especially under a context where proposed climate mitigation actions would not likely affect global impacts of climate change on the state (Triangle and Associates 2014).

#### **2.2.4.2 Executive Order 14-04**

On April 14 of 2014, Governor Inslee announced his action plan for climate mitigation in Washington State. In Executive Order 14-04 the governor has asked WSDOT, Commerce and Ecology to work with the Regional Transportation Planning Organizations, to develop a program for assisting local governments to update comprehensive plans to improve transportation efficiency, and reduce costs and greenhouse gas emissions. Furthermore the governor asked WSDOT to:

- In consultation with the Freight Mobility Strategic Investment Board, the transportation Improvement Board and County Road Administration Board secure funds to increase multimodal

investment statewide. And identify methods for securing funds to support local governments with plans to improve multimodal transportation systems.

- Develop and implement new multimodal corridor to prioritize transportation choices, foster innovative land uses and reduce transportation emissions.
- Develop and implement a multimodal long-range transportation plan with a focus on increase efficiency and the reduction of both costs and greenhouse gas emissions. The effort will involve exploring alternate revenue sources, transportation pricing, least cost planning, transit oriented land use, and freight corridor development.

### **2.2.5 Impacts of VMT Reduction**

Impacts, both positive and negative, of VMT reduction are a function of what strategies are used and how they are implemented. The majority of literature related to VMT focusses on the costs and benefit of dispersed vs compact land use development, the use of market mechanisms (pricing) in transportation system management, and the use of transit and that of active transportation.

Carlson and Howard (2010) assessed potential economic impacts on small business (including ability to retain workers), low-income residents, agricultural employers and employees, distressed rural counties, and counties with more than 50% of their land in public or tribal lands, from VMT reduction strategies being considered in Washington State. The study also assessed the relative effectiveness of VMT reduction strategies in urban and rural areas.

Carlson and Howard (2010) found that urban areas have the greatest potential for VMT per capita reduction without causing economic hardship, due to the greater ability to cost effectively provide alternative modes in these areas. Residents of rural areas have more limited options for reducing VMT, and thus would more likely experience economic hardship. However, some VMT reduction strategies remain viable in rural settings. Pricing was found to be effective at reducing VMT. However, pricing is also likely to have a disproportionate impact on lower income populations, especially in rural areas that don't have transit access. Because strategies of shifting modes, sharing rides and driving less are more viable in urban areas, Carlson and Howard (2010) recommended activities to reduce VMT be focused on metropolitan areas in the state.

Winkelman et al. (2010) argue smart growth and travel efficiency measures not only reduce greenhouse gasses through VMT reduction but also improve accessibility, improve travel choices and make optimum use of existing infrastructure. In addition, these measures can yield net savings on the total cost of

infrastructure, buildings, land and transportation, including fixed and operating costs (Muro and Puentes 2004; Smythe et al. 1986; Winkelman et al. 2009). Burchell and Mukherji (2003) estimated national cost of smart growth scenarios compared to sprawl from 2000 to 2025, and found that smart growth would yield lower sewer and local road costs, and that total cost would be \$13,000 less per dwelling unit.

Investment in transit infrastructure can leverage private investments. A study by McKinsey & Company determined that combined investments in transit, demand management and freight could net Georgia benefits of \$400,000 billion over 30 years (Winkelman et al. 2010). Little Rock, Arkansas Tampa, Florida and Portland Oregon realized private investment 10 to 30 times the public investment made in street car lines (Ohland and Poticha 2006) (Winkelman et al. 2010).

Reduced emission and active transportation improve public health. Reducing air pollution emissions modestly reduces related illnesses (Bae 1993)(Frank and Engellee 2005). Active transportation, often associated with smart growth, has greater health benefits, including reduces rate of obesity (Ewing et al., 2003), and other health risks including cardiovascular disease, breast cancer and dementia (Woodcock et al. 2009). Maizlish et al. (2011) modeled the health benefits of 15% of all miles traveled by active transportation in the California Bay Area. They found disease reduction of 14% for heart disease, stroke and diabetes; 6-7% for dementia and depression; 5% of breast and colon cancer; and a saving of \$34 billion annually from the costs of cardiovascular disease.

Litman (2012) conducted a planning goals impact analysis of different VMT reduction strategies, including improved mode choice options, transportation pricing and smart growth strategies. He finds that strategies that improve transportation options tend to provide direct user benefits. Distance based insurance and parking cash-out programs provide direct user benefits. Where higher road tolls, user fees and tolls increase user cost but function as an economic transfer. In this situation impact is dependent on how the revenues are used. Compact mixed developments improve access and reduce transportation costs, but can also increase some local congestion and development costs.

### 3 Methods

This research uses two rival decision making theories, through a qualitative single case study approach (Leedy and Ormrod 2005), to assess what is needed for the successful development of a feasible implementation plan for reaching the State's VMT reduction benchmarks. The methods include indicators of criteria, collection methods, and data analysis. The decision making theories were selected, in part, due to possibility that the resolution of a problem could potentially move forward under one theory framework but not the other, or that success under consensus building theory could potentially create the conditions necessary for a policy change within multiple streams theory.

Based on a review of the literature, the following questions are used to direct the research:

- To what extent do the decision making criteria for each decision making theory appear to be met?
- What are the challenges facing VMT reduction implementation plan development?
- In cases where decision making criteria are not met, what more needs to occur for the criteria to be met?

To answer these questions, indicators were identified in the literature for the conditions that need to be met for a decision to be made in keeping with the theory.

#### 3.1 Multiple Streams Theory Indicators

As mentioned above, Multiple Streams theory has unique indicators for the five elements (problem stream, politics stream, policy (solutions) stream, policy entrepreneurs and policy windows) that comprise and drive the theory. The data indicators to be collected of each of these theory elements are as follows:

##### Problem Stream

- Awareness and clarity of problem by stakeholders and academics
- Event(s) that bring focus to the problem
- Studies or reports that provide feedback as to the effectiveness of current policy and draw attention to the problem

##### Politics Stream

- Alignment of elected leaders (decision makers) priorities and ideology with addressing the problem
- State and national opinion polls regarding the problem

### Policy Stream

- Potential solutions identified by academics and stakeholders
- Level of agreement of preferred solution to problem by academics, stakeholders, reports
- Value agreement obstacles identified by academics and stakeholders in proposed solution(s)
- Technical feasibility obstacles identified by academics and stakeholders of identified solution(s).

### Policy Window

- Identification of an event by stakeholders, decision makers, covered in the news, which has brought or could bring attention and prioritization to solving the problem
- Feedback from current program trends identified by stakeholders, decision makers (staff), covered in the news, which has brought or could bring attention and prioritization to solving the problem
- Priorities of elected that set the decision making agendas

### Policy Entrepreneur

- Awareness of problem and preferred solution by decision makers
- Identification of someone promoting a solution to decision makers by decision makers (or staff), committee reports or news articles

## 3.2 Consensus Building Theory Indicators

Consensus building theory contains external and internal conditions (criteria) that need to be met for the convening and implementing of a successful process. Some of the criteria can only be assessed from an ongoing collaborative process, which currently does not exist. Therefore, this study limits the data collection and evaluation to those criteria that can be assessed in advance of the consensus building process. To determine if a collaborative negotiation process is appropriate for decision making, a situational assessment is recommended to determine if the parties are prepared to negotiate with each other (Susskind 1999; Cormick 2012).

The elements to be assessed and their data indicators are divided into threshold elements and process elements. Threshold elements refer to conditions that need to be met for a party to decide to participate in a consensus building process. And, process elements are additional conditions that need to be met for the process to work. Because a consensus building stakeholder process did not exist at the time of the interviews, process elements are not assessed in this study. However, interviewees were asked about what would characterize a good process. These responses have been summarized and included in the document.

## Threshold Elements

- Cost to stakeholders is high for not addressing the problem, of not participating in the process to resolve the problem (fear of inaction) or opportunity is high with participation in process.
- Stakeholders believe they (have to be involved in it to provide information, protect interests, mandated) can better meet their interests through participation in collaborative consensus building negotiations.
- Stakeholder trust in the convening agent
- Inability of the traditional decision making process to address the problem
- Immediate action is not needed to protect property and life
- Stakeholders and decision makers lack clarity or agreement on solutions
- There is an interdependence of the stakeholders interests with regards to the problem

### 3.3 Data Collection

To assess the indicators and answer the research questions, semi-structured interviews and review other relevant data sources (opinion polls, Governor’s messages, committee hearings/reports, and published studies/reports) were conducted.

#### 3.3.1 Interviews

An Interview Guide, based on decision making theory indicators, was used for the interviews.

Interviewees all interviewees were ask questions related to both Multiple Streams and collaborative consensus building criteria. The following kinds of questions were asked.

Questions related to Multiple Streams criteria:

- What major problems are you and others in the transportation (Climate Change) area most occupied with currently?
  - Have you listed them in order of importance?
  - Has there been a change in the last year regarding what is being paid attention to? If there is a change, why has that change occurred?
- Why are these receiving attention?
- What proposals have the most support? Why?”
- Where are the major disagreements? Why?

- Looking to the future, which problems and proposals concerning transportation and climate change do you think will be prominent (two year, five years). Why?
- Has there been any discussion on how to develop a plan to get to the state VMT reduction targets adopted in 2007? Why or why not?
- What do you see as the challenges that need to be overcome to develop and implementation plan for meeting the state VMT reduction targets?
- Who are the likely sources of new ideas or political leadership on key issues related to transportation and climate change in the near future? Why?

Questions related to collaborative consensus building criteria:

- How would you describe the importance of Washington State meeting its greenhouse gas reduction targets? Why?
- How would you describe the importance of developing and implementing a feasible VMT reduction implementation plan? Why?
- What would be the effect of not achieving the greenhouse gas reductions? Are you okay with this outcome?
- What would be the effect of not developing the VMT reduction implementation plan? Are you okay with this outcome?
- What would make taking action to develop a VMT reduction implementation plan urgent?
- Have you ever participated in a taskforce that uses a collaborative consensus building process to make plan or policy recommendations? (Briefly describe consensus building process for those that have no experience with the process.)
- What are the organizations that need to be involved in a collaborative consensus building taskforce process for the successful development a VMT reduction implementation plan?
- Of the organizations you have listed, who are the people you would want in the dialog? Why?
- What are the key questions to address in the development of a VMT reduction implementation plan?
- Any thoughts about the process that would lead to a successful outcome?
  - Criteria that characterize a good process
  - Technical info
  - Level of government involved
  - Realistic timeline
  - Appropriate convening agent
- What could be the best possible outcome? Why?
- What could be the worst possible outcome? Why?
- What factors do you think would motivate participation in the successful development and implementation of VMT reduction implementation plan?
- To what extent are those factors present today?
- What would it take to put in place those factors, and who could best do this?
- Do you see another way to develop a feasible VMT reduction implementation plan without involving all these people?
- Why would you participate? How would you handle this otherwise?

- Do you see another way of achieving what you are interested in?

The research involved 27 interviews of stakeholder group representatives. To obtain a broader characterization of stakeholder perspectives, I sought to interview representatives from public (state and local), business and environmental organizations with different geographical and or political perspectives. I initially identified interviewees based on the participant list of the Transportation Implementation Work Group of the Climate Advisory Team process (Climate Advisory Team 2008). To this list I added the leadership of the transportation and environment legislative committees and policy advisors to the Governor. Some representatives of stakeholder groups from this initial list were not available for interviews. In an effort to address potential gaps in representation, I conducted ‘snowball’ methodology to identify additional interviewees.

The following organizations participated in the research:

|  |                                      |
|--|--------------------------------------|
| Governor’s Office                        | City of Snoqualmie                   |
| Legislative Representative House (Dem)   | City of Seattle                      |
| Department of Ecology                    | Transportation Choices Coalition     |
| Department of Transportation             | Washington Bike Alliance             |
| Puget Sound Clean Air Agency             | Sierra Club                          |
| Cowlitz-Wahkiakum Council of Governments | Washington Trucking Association      |
| Yakima Valley Council of Governments     | Washington Farm Bureau               |
| Puget Sound Regional Council             | Automobile Association of America    |
| Spokane Regional Transportation Council  | Association of Washington Businesses |
| Snohomish County Public Works            | Washington Round Table               |
| King County Metro                        | Boeing                               |
| Port of Seattle                          | Seattle Chamber of Commerce          |
| Washington Association of Cities         | Sightline Institute                  |

I conducted interviews in person and by phone, and recorded and described in field notes and transcriptions. Digital recording equipment was used when consent was provided by interviewee. To maintain participant confidentiality, interview data was numerically coded and recordings erased after transcription. Interviewees comments were kept confidential and their names are not included the final report.

The following procedures were used to conduct the interviews:

1. Notification and solicitation to participate in study
2. Follow-up scheduling of interview

3. Send out interview preparation information
4. Conduct interview (time allotted 30 to 45 minutes)
  - a. Introduction
  - b. Explain process
  - c. Conduct semi-structured interview with recorder and field note taking
  - d. Conclusion of interview
5. Transcribe taped interview into field notes as soon as possible
6. Code information of interview
7. Summarize findings of interview

### **3.3.2 Documents, Reports, Opinion Surveys**

I collected additional data from Governor's messages, legislative hearings and committee reports, other government documents, public opinion data, news coverage, and academic documents.

### **3.4 Data Analysis**

I sorted the interview and other data by the themes related to the indicators for the criteria of each decision making theory. I then summarized the information in terms of the applicable indicator. These summaries were then compared to the criteria indicators to assess whether conditions are supportive or not for the criteria to be met, and to identify the obstacles and opportunities for reaching a decision.

Table1 identifies the metrics used for each indicator and assumptions applied to the metric.

**Table 1. Indicator Metrics and Assumptions**

| <b>Indicators</b>   | <b>Metrics</b>   | <b>Assumptions</b>  |
|---|--|---|
| <b>Multiple Streams</b>   |  |   |
| <b>Problem Stream</b>   |  |   |
| Awareness and clarity of problem by stakeholders and academics.   | Positive if a simple majority of interviewees agree on need to develop and implementation plan for meeting the state per capita VMT reduction benchmarks.  | Metric is based on it being plausible that a preferred solution could be developed if a majority of stakeholders agree that the problem needs to be addressed.            |
| Event(s) bring focus to the problem   | Positive if interviewees perceive an event has brought attention to the lack of plan for meeting the state VMT reduction benchmarks.   |   |
| Studies or reports provide feedback as to the effectiveness of current policy and draw attention to the problem     | Positive if reports make clear current policy is inadequate to meet state's per capita VMT reduction benchmarks.   |   |
| <b>Politics Stream</b>  |  |   |
| Addressing problem aligns with priorities and ideology of elected leaders in control of the decision making process | Positive if addressing VMT reduction benchmarks aligns with priorities leadership of Executive and both Legislative branches based on interviews, reports and proposed legislation.  | Metric based on the assumption that legislative action would be necessary to delegate implementation responsibility or at least allocate funding for plan implementation. |
| State and national opinion polls regarding the problem  | Positive if opinion polls indicate the state population wants the government to act to reduce per capita VMT.  |   |
| Turnover in elected and appointed state personnel   | Positive if personnel change aligns leadership priorities of Executive and Legislative branches with addressing the problem  |   |
| <b>Policy Stream</b>  |  |   |
| Potential solutions identified by academics and stakeholders  | Positive if interviewees or academics identify potential implementation approaches for meeting VMT reduction benchmarks.   |   |
| Preferred solution to problem identified by a majority of academics and stakeholders                                | Positive if a simple majority of interviewees agree on an implementation approach for meeting the state VMT reduction benchmarks.<br>If negative for Multiple Streams' Theory then positive for Consensus Building Theory. | Metric is based on it being plausible that a preferred solution could advance if a majority of stakeholders agree on the solution.  |

| <b>Indicators</b>   | <b>Metrics</b>   | <b>Assumptions</b>  |
|---|--|---|
| <b>Policy Stream Continued</b>  |  |   |
| Preferred solution in value agreement with public, stakeholders and decision makers   | Positive if preferred solution is in value agreement with majority of interviewees and the leadership of the executive and legislative branches of government.   | Metric is based on it being plausible that a preferred solution could advance if a majority of stakeholders are in value agreement with the solution, and based on the assumption that legislative action would be necessary to delegate responsibility or at least allocate funding for plan implementation. Requires the existence of a preferred solution. |
| Technical feasibility of preferred solutions determined   | Positive if preferred solution is assessed as feasible by interviewees and reports.  | Requires the existence of a preferred solution.   |
| <b>Policy Window</b>  |  |   |
| Identification of an event by stakeholders, decision makers (staff), which has brought or could bring attention and prioritization to solving the problem | Positive if interviewees perceive an event has brought attention to the lack of plan for meeting the state VMT reduction benchmarks.   | Indicator overlaps that in the Problem Stream because policy windows can open as a function of conditions in the Problem Stream.  |
| Feedback from current program trends identified by stakeholders, decision makers, which has brought attention and prioritization to solving the problem   | Positive if reported performance of existing policy clearly brings attention to the need for an implementation plan for meeting the state VMT reduction benchmarks.                                    |   |
| Priorities of elected that set the decision making agendas are aligned with resolving problem   | Positive if priorities of Executive and Legislative branches of government, as indicated by interviews and public documents, are aligned with developing a plan for meeting the VMT reduction targets. | Metric based on the assumption that legislative action would be necessary to delegate responsibility or at least allocate funding for plan implementation.  |
| <b>Policy Entrepreneur</b>  |  |   |
| Decision makers are aware of problem and solution(s)  | Positive if the Executive and Legislative branches' leadership are aware of the problem and potential solutions.   |   |
| Identification of someone promoting a solution to decision makers by decision makers  | Positive if majority of interviewees identify someone promoting a solution.  | Requires the existence of a preferred solution that can be promoted.  |

| <b>Indicators</b>  | <b>Metrics</b>  | <b>Assumptions</b>  |
|--|---|---|
| <b>Consensus Building</b>  |   |   |
| Threshold to Participate Indicators  |   |   |
| Cost to stakeholders is high for not addressing the problem, of not participating in the process to resolve the problem (fear of inaction) or opportunity is high with participation in process. | Positive if majority of interviewees perceive their interests threatened by not developing an implementation plan for meeting the VMT reduction benchmarks.             | Metric is based on the assumption that others may participate to better meet their interests. |
| Stakeholders believe they can better meet their interests through participation in collaborative consensus building negotiations.  | Positive if a majority of interviewees believe they can better meet their interests related to VMT reduction through a collaborative process.                           | Metric is based on the assumption that others may participate to protect their interests.     |
| Stakeholders trust the convening agent   | Positive if a majority of interviewees are able to identify a common trusted convening agent.   |   |
| Inability of the traditional decision making process to address the problem  | Positive if the legislative process has failed to produce an agreed upon solution.  | If positive for Consensus Building then negative for Multiple Streams Theory.                 |
| Immediate action is not needed to protect property and life  | Positive if problem is not being addressed through an emergency response.   | Emergency response is defined an immediate action to protect life and property.               |
| Stakeholders and decision makers lack clarity or agreement on solutions  | Positive if there is no preferred solution identified by interviewees or public documents for developing an implementation a plan to meet the VMT reduction benchmarks. | If positive for Consensus Building then negative for Multiple Streams Theory.                 |
| There is an interdependence of the stakeholders interests with regards to the problem  | Positive if interviewees perceive their interests can only be met through support from other stakeholders.  |   |

The research material to include in the data analysis was a moving target in and active policy environment, the work of the CLEW was concluding and Executive Order 14-04 was issued. The decision was made to include the document from the CLEW process but exclude that of Executive Order 14-04 from the data analysis. This choice was made because interviewees were aware of the results of the CLEW process and largely unaware of Executive Order 14-04 at the time of the interviews. However, because Executive Order 14-04 has the potential to affect the policy environment of the research topic it is addressed in the Discussion section of the report.

#### 4 Case Findings

The following assessment is based on stakeholder interviews and case documentation. The nominal data findings are presented in Table 2 to facilitate comparing and contrasting the extent criteria indicators are present between multiple streams and consensus building decision making theories. This is followed by narrative description of each assessed indicator and what that says about the research questions.

Most multiple streams theory indicators are negative or not supportive of a decision being made (See Table 2). In the problem stream there is still lack of agreement on whether per capita VMT reduction is the appropriate transportation and land use planning design goal to achieve greenhouse gas emissions reductions. In the politics stream, taking action to meet the climate change goals or VMT reduction benchmarks does not appear to align with the priorities or ideology of legislative leaders. In the policy stream, although VMT reduction strategies and monitoring methods have been identified, little effort has been given towards developing an implementation mechanism. Events or feedback mechanisms have not opened a policy window to address the lack of planning for meeting the VMT reduction benchmarks. And, although there is potential interest by junior legislators in addressing the problem, no solutions are available for policy entrepreneurs to promote. In contrast, many of the threshold indicators for a consensus building theory are positive (See Table 2). However, leadership appears lacking to initiate a consensus building process and a few stakeholders appear to lack sufficient incentive to seek solutions that would meet all stakeholder interests. Detailed findings are described below.

**Table 2. Results**

| <b>Indicators</b>   | <b>Multiple Streams</b> | <b>Consensus Building</b> |
|---|-------------------------|---------------------------|
| <b>Multiple Streams</b>   |                         |                           |
| <b>Problem Stream</b>   |                         |                           |
| Awareness and clarity of problem by stakeholders and academics  | +                       | 0                         |
| Event(s) bring focus to the problem   | -                       | 0                         |
| Studies or reports provide feedback as to the effectiveness of current policy and draw attention to the problem     | -                       | 0                         |
| <b>Politics Stream</b>  |                         |                           |
| Addressing problem aligns with priorities and ideology of elected leaders in control of the decision making process | -                       | 0                         |
| State and national opinion polls regarding the problem  | ?                       | 0                         |
| Turnover in elected and appointed state personnel   | -                       | 0                         |
| <b>Policy Stream</b>  |                         |                           |

|  |   |   |
|--|---|---|
| Potential solutions identified by academics and stakeholders   | + | 0 |
| Preferred solution to problem identified by a majority of academics and stakeholders   | - | + |
| Preferred solution in value agreement with public, stakeholders and decision makers  | - | 0 |
| Technical feasibility of preferred solutions determined  | - | 0 |
| <b>Policy Window</b>   |   |   |
| Identification of an event by stakeholders, decision makers, which has brought attention and prioritization to solving the problem           | - | 0 |
| Feedback from current program trends identified by stakeholders and decision makers, which has brought prioritization to solving the problem | - | 0 |
| Priorities of elected that set the decision making agendas are aligned with resolving problem  | - | 0 |
| <b>Policy Entrepreneur</b>   |   |   |
| Decision makers are aware of problem and solution(s)   | ? | 0 |
| Identification of someone promoting a solution to decision makers by decision makers   | - | 0 |
| <b>Consensus Building</b>  |   |   |
| <b>Threshold to Participate Indicators</b>   |   |   |
| Cost to stakeholders is high for not addressing the problem, or opportunity is high with participation in process.                           | - | + |
| Stakeholders believe they can better meet their interests through participation in collaborative consensus building negotiations.            | 0 | + |
| Stakeholders trust the convening agent   | 0 | + |
| Inability of the traditional decision making process to address the problem  | - | + |
| Immediate action is not needed to protect property and life  | 0 | + |
| Stakeholders and decision makers may have clarity of the general problem/crisis but lack clarity or agreement on solutions                   | - | + |
| There is an interdependence of the stakeholders interests with regards to the problem  | 0 | - |

Table key: 0 = not applicable; + = criteria appears to be met; - = criteria appears not to be met; ? = not enough information to determine.

#### 4.1 Multiple Streams Theory Findings

The following findings seek to address the research questions and are based on the information collected through interviews and public documentation, as analyzed through the indicators and criteria of multiple streams theory.

#### **4.1.1 Problem Stream Findings**

The Problem Stream requires agreement and clarity on what the problem is, value conflict between the problem and the public and decision makers, and requires something to focus attention on the problem so that it will be worked on. Based on the indicators the Problem Stream criteria appear partially met. A majority of stakeholders are aware of the problem and see need for action. However, attention is not being brought to the problem, which limits the potential for it to be addressed.

##### **4.1.1.1 Awareness and clarity of problem**

All except one of the interviewees were aware of the state VMT reduction benchmarks. However of these interviewees, several did not have a clear understanding of what the actual reduction benchmarks are (percent reduction by year) and to what vehicles the benchmarks apply. A majority of the interviewees thought it is important to develop and implementation plan for meeting the VMT reduction benchmarks. Thus the problem stream indicator for this criteria appears to be met. Several interviewees acknowledged the need to reduce greenhouse gas emissions in the transportation sector, but questioned the value of the per capita VMT reduction benchmarks or reduction of VMT. And a few interviewees indicated that some of their constituents did not believe in anthropomorphic climate change, and thus did not seeing a need for meeting the VMT reduction benchmarks.

Reasons given for needing to develop an implementation plan for meeting the VMT reduction benchmarks varied amongst interviewees, touching on themes of climate mitigation and adaption, transportation efficiency, reliability and fiscal sustainability, and economic, ecosystem, community and human health.

The following comments capture the perspectives of interviewees that see developing and implementing a plan to reduce VMT as being important for meeting the state greenhouse gas reduction goals and climate mitigation:

“It is pretty clear you can’t get to the kind of emissions reductions we need without both fuel efficiency and driving decreases... It is virtually impossible to get to our emissions reduction targets without reductions in VMT. It is probably mathematically possible, but you would have to make some pretty heroic assumptions.”

An implementation plan for VMT reduction is “critical (for greenhouse gas reduction) because changes in fuels and technology will roll out slowly.”

“VMT needs to be part of the measurement toolbox. (VMT reduction) needs to be in the top three or four reduction strategies. Even if your fuel economy gets better, if you don’t address VMT then you are really not making progress in reducing greenhouse gasses.”

“Also, the real environmental impacts of climate change are scary. We can see real sea level rise happening.”

Several interviewees commented that the importance is less about the actual amount of greenhouse gas reductions, but more about demonstrating leadership to the nation and world that greenhouse gas reductions are possible without damaging the economy.

“If we succeed we will not solve the climate problem. We will show you can address climate change and succeed politically, economically and (provide) a quality of life message to future generations.”

One interviewee thought that developing an implementation plan for VMT reduction “very important because compact development is important for climate adaptation.”

Several interviewees related the development of an implementation plan to transportation system costs and efficiency.

An implementation plan to reduce VMT “from our perspective has to do with the cost of infrastructure, and more and more people living in urban areas. You can’t continue things the way they have been going. There have to be other ways of getting around.”

“It is paramount to the success of the transportation system. If we can spread demand into alternatives avenues, then it dominoes in to the relief of a lot of different things: congestion, the need for new infrastructure, which is costly, and the environmental benefits.”

Several interviewees see addressing transportation related greenhouse gas emissions through per capita VMT reducing measures (TDM, increased transportation choices and land use changes) necessary to sustain and grow the regional economy, with the projected population growth and anticipated increases in fuel costs.

In addition, a few interviewees aligned taking action to reduce VMT and transportation greenhouse gas emissions with the desire to build infrastructure for the new information technology economy, and the living preferences of ‘Millennial’ and retiring ‘Baby Boom’ generations. Actions to reduce VMT were framed as freeing people from dependency on the automobile. Another interviewee sees the VMT reduction as inevitable. It is just a question of it being directed or a consequence of population growth and projected worldwide energy shortages.

Referring to Shell Oil’s global energy projections, “and there are things we can do to reduce that shortfall. But if we don’t, it will happen anyway in the form of reduced economic growth, living standards, and that is what we are trying to avoid, achieving the goals in an involuntary way.”

Several interviewees questioned whether VMT should be the metric used or what the VMT benchmarks were based on. These interviewees fell into two groups: those that perceived VMT as a “blunt instrument” that lack distinction between low and high emissions vehicles and lacks distinction between beneficial and wasteful trips to the economy, and those that framed per capita VMT reduction in terms of VMT negatively impacting businesses and taking away the freedom to drive where you want. Several interviewees suggested metrics directly related to greenhouse gas emissions or that evaluated the efficient movement of people and goods, as opposed to vehicles, may be more useful.

“VMT has always been questionably linked to greenhouse gas emissions. Seems obvious, but as the fleet ages there is a disassociation.”

“Greenhouse gas reduction is more important than VMT reduction. You could reduce a lot of VMT and not make progress on greenhouse gasses if from electric vehicles.”

Interviewees that questioned the value of reducing per capita VMT, framed VMT reduction in terms of limiting the right to drive and that some users (businesses and rural communities) do not have transportation alternatives.

“This is more how are you to tell me when and where I can drive. It is more of get the government out of my personal travel choices.”

Although a majority of stakeholders see a need to address VMT reduction, support for taking action to reduce VMT is limited due to differing perspectives of how VMT affects businesses and the economy,

and lack of clarity on how VMT reductions are needed to achieve state greenhouse reduction goals.

Broadening and reframing the problem may create an opportunity for greater support. As one interviewee stated,

“If you get the legislature talking about the economic benefit of mobility options, then we could accomplish this goal without having the philosophical fight of environment verses growth. You would be framing in terms of mobility options and tied to economic growth, and then the benefits would reduce costs.”

Also, clarifying the relationship of VMT reduction to greenhouse gas reduction and using metrics more closely aligned with transportation system efficiency, and cost and greenhouse gas reduction could broaden support.

#### **4.1.1.2 Bringing focus to the problem**

Interviewees did not identify any events that have brought attention to the lack of an implementation plan for meeting the VMT reduction benchmarks, and thus the indicator is not met for the criterion. Most interviewees struggled in identifying an event or events that would bring attention to the need to develop an implementation plan to reduce per capita VMT. This difficulty was attributed to the incremental changes over time characteristic of climate change, or that climate change and per capita VMT reduction were not issues that needed addressing.

No reports were identified that clearly draw attention to the lack of an implementation plan for meeting the states VMT reduction benchmarks, the status of the state’s progress toward the VMT benchmarks or the need for per capita VMT reduction in the state. Thus this problem stream indicator is not met for this criterion.

Reports that exist focus on the effectiveness of existing and proposed policy for meeting the state greenhouse gas reduction goals (Leidos 2013, Ecology 2013). The majority report from the CLEW proposed actions that would enable the state to meet its 2020 greenhouse gas reduction target, however it also indicated other unidentified actions would be needed in the future to meet the 2035 and 2050 Goals. Although the report does not speak in terms of per capita VMT reductions, they have brought attention to

the need for transportation efficiency and improved modal choice investments that would reduce greenhouse gas emissions (Triangle and Associates 2014).

Due to the nature of the problem most interviewees thought political leadership would be required to bring attention to the development of an implementation plan to meet the per capita VMT reduction benchmarks. The governor's office and the legislature were seen as the most likely source of this leadership. Other interviewees thought the leadership could come from local elected leaders or perhaps research institutions in the state. Broadening the problem discussion so that it was more directly tied to climate change, regional roadway congestion and or transportation system funding might bring it more attention. Several interviewees indicated that a locally experienced extreme weather event might bring focus on the problems of climate change and thus VMT reduction. Others suggested that severe road congestion could bring attention to the need for per capita VMT reduction and a shift of transportation modes. At least one interviewee indicated that a more severe transportation funding crisis could also bring focus on the need to reduce per capita VMT, as the crisis would illuminate lack of financial sustainability of current automobile centered approach to mobility in the state.

WSDOT or Ecology publishing reports that describe progress being made towards the VMT benchmarks, how transportation mode choice is shifting and quantification of related greenhouse gas reductions would also help bring attention to the problem.

#### **4.1.2 Politics Stream**

In the Politics Stream, the alignment of priorities and ideology of decision makers with addressing the problem, public and stakeholder opinion, and personnel turnover determine if conditions are right for addressing the problem.

##### **4.1.2.1 Alignment of Priorities and Ideology with Solving the Problem**

The priorities and ideology of our state elected decision makers are split and do not appear to have alignment with finding a way to meet the per capita VMT reduction targets. Thus the indicator for the criterion does not appear to be met.

Presently there is a split in the priorities and ideology of the state's elected leaders with regards to climate change. The governor and the Democrat leadership, which controls the House, see it as imperative that

the state act to mitigate climate change. They also see a need for some of the greenhouse gas emissions reduction coming from transportation efficiency and connecting transportation and land use planning. The Republican led ‘majority coalition,’ which controls the Senate, stated concerns are primarily with the financial impacts climate mitigation strategies could have on local business, labor and the economy. The climate mitigation strategies supported by the republicans are primarily those that encourage and depend on the development and adoption of technology to reduce greenhouse gasses. The CLEW final report illustrated this split (Triangle and Associates 2014).

In addition, interviewees indicated that there is also a split with regards to transit funding. The state House supports greater state funding for transit and the Senate supports more local funding options for transit. One interviewee indicated that both the House and Senate transportation package proposals, for the 2014 legislative session, were not aligned with climate mitigation strategies or goals. The interviewee indicated that these packages called for investing a very large percentage of the revenue towards projects that build new road capacity, and small percentages towards road maintenance, transit, bicycle and pedestrian infrastructure.

A couple of interviewees indicated that they thought climate change mitigation and per capita VMT reduction could align with republican interests in maintaining and growing a healthy business environment. However, they did not see this perspective having support within the party leadership at this time.

Given the current split in legislative leadership, broadening the VMT reduction discussion to that of improving transportation infrastructure to support regional and state business may result in greater support for addressing the problem.

#### **4.1.2.2 Public Opinion**

Both state and nation public opinion surveys indicate the public appears to be supportive of addressing the climate change (Krosnick 2013; Borick 2013). However, survey data is not available regarding VMT reduction, transportation efficiency and land use planning related policy options for mitigating climate change. Therefore there is not sufficient information to determine if this criterion is met.

This lack of data provides a research opportunity to clarify the public perception of the issue.

#### **4.1.2.3 Personnel Turnover**

Interviewees see the election of governor Inslee as reinvigorating the policy discussion around climate change. And the governor's appointment of Lynn Peterson to Secretary of Transportation, with her experience in helping develop Oregon's approach for reducing transportation related greenhouse gas emission, gives some interviewees hope that the administration will take similar actions in Washington State.

In addition, the relatively recent election of a few young legislators is seen to have brought more attention to the issue. However, interviewees expressed doubt that any significant policy related to climate change or per capita VMT reduction would be adopted without further changes in the makeup of the legislature. Therefore the indicator for this criterion is not met.

#### **4.1.3 Policy Stream**

For policy to move forward the solution must be identified and preferred among the policy development community. In addition, the solution must be in value agreement with decision makers and the public, and have technical problems identified and resolved.

##### **4.1.3.1 Potential solutions identified**

Interviewees identified several implementation approaches or mechanisms the state could take for meeting the per capita VMT reduction benchmarks. Therefore this indicator for the criterion appears to be met.

Survey interviewees suggested that Washington State could learn from approaches taken by the California Air Resources Board, or the State of Oregon, which engaged local and regional transportation and land use planning organizations in the development and implementation of plans to reduce greenhouse gas emissions from vehicles. Other mechanisms proposed by interviewees to help implement the per capita VMT reduction strategies includes the state Growth Management Act, the State Environmental Protection Act, the Washington Transportation Plan, and or the establishment of criteria for how state legislature can allocate funds to transportation projects.

#### **4.1.3.1 Preferred solution identified**

Although interviewees can identify potential approaches for meeting the state per capita VMT reduction benchmarks, no one solution was clearly preferred amongst those identified. Therefore this policy stream indicator and criterion are not met.

Getting to a preferred solution will require identification of goals and objectives the implementation mechanism would need to achieve, assessing different approaches and options for meeting the goals and objectives, and communicating the rationale for high performing mechanisms to stakeholders and decision makers. A majority of interviewees preferred a collaborative consensus building taskforce approach for identifying a preferred solution, and a couple of interviewees thought technocrats could better identify and develop a preferred implementation mechanism.

#### **4.1.3.2 Value agreement and technical problems**

During the period of interviews there were no implementation proposals to evaluate for value agreement or technical problems. Therefore this indicator and criterion are not met.

Lacking a preferred solution to evaluate, interviewees were asked to identify issues that would need to be addressed in a successful proposal. Values that emerged included responsibility for a healthy environment and economy, responsibility for current and future population wellbeing, respect for differences in economy, population density and geography, and equity in who pays and who benefits.

More specifically, interviewees indicated that regional reduction targets would need to be established in ways that reflect the differences in population density, economy and geography across the state. The regional targets also need to be technically achievable. Working with the regions to develop the targets was proposed as the best way to identify viable targets. Interviewees also indicated that VMT related greenhouse gas emissions reduction strategies within regions need to be neutral or supportive to the regional economies. Based on interviewees and past collaborative planning efforts, available funding critical to enable regions to implement the emissions reduction strategies; for example infrastructure for TDM and transit (Ecology 2008, Ecology 2010). Interviewees also identified funding as critical to implementation and an important incentive to gain implementation participation from regions of the state

that may not value climate mitigation. And, if a new metrics are selected, then methods of monitoring and evaluating progress would need to be developed, as was done for VMT.

Several interviewees associated any implementation per capita VMT reduction plan with an implementation of a VMT tax, of which there is a multi-stakeholder group currently investigating. To implement the VMT tax they anticipated privacy concerns about individual driving data collection and technical challenges of how to collect data and tax only on driving within the state.

A preferred solution would likely gain support if it addresses the values expressed by the interviewees. Building on the work done by state agencies, researchers and stakeholders to identify strategies that transportation and land use planning organizations could use to shift mobility choices and reduce per capita VMT (Ecology 2010), implementation regions that minimize potential hardship and to maximize cost effectiveness (Carlson et.al. 2010), development a means of monitoring per capita VMT both regionally and at the state level (Hallenbeck 2013) and learning from the experiences in California and Oregon, it is likely that technical problems can be addressed.

#### **4.1.4 Policy Window**

Policy windows can open due to attention drawn to the problem because of events, feedback on policy performance and priorities of elected leaders whom set decision making agendas.

##### **4.1.4.1 Attention brought to problem by and event**

The indicator for this criterion was not met as interviewees were unable to identify any event that had brought attention to the problem. Most interviewees struggled in identifying an event or events that could bring urgency to the problem of climate change and a need to reduce per capita VMT. This difficulty was attributed to the incremental changes over time characteristic of climate change, or because they thought that climate change and per capita VMT reduction were not issues that needed addressing.

Several interviewees indicated that a locally experienced extreme weather event might bring focus on the problem of climate change and thus VMT reduction. Others suggested that severe road congestion could bring urgency to the need for per capita VMT reduction and a shift of transportation modes. At least one interviewee indicated that a more severe transportation funding crisis could also bring focus on the need

to reduce per capita VMT, as the crisis would illuminate lack of financial sustainability of current automobile centered approach to mobility in the state.

#### **4.1.4.2 Current program trends bringing attention to problem**

As mentioned above under the problem stream findings, no reports were identified that clearly draw attention to the lack of an implementation plan for meeting the states VMT reduction benchmarks, the status of the state's progress toward the VMT benchmarks or the need for per capita VMT reduction in the state. Thus this policy window indicator is not met for this criterion.

#### **4.1.4.3 Priorities of elected leaders align with solving problem**

With the current divide legislative leadership, agenda priorities do not align with addressing the VMT reduction issue. Thus this indicator and criterion are not met. The state's lack of progress towards meeting its greenhouse gas reduction goals, and the governor's agenda on climate mitigation has increased the attention given to climate mitigation strategies. And the CLEW 'majority report' identifies transportation efficiency and land use strategies as an important climate mitigation policy direction (Triangle and Associates 2014). Based on this information, it is not clear if this will result in policy action aimed at reducing per capita VMT and meeting the benchmarks. Even if it the policy direction in the CLEW 'majority report' is turned into specific policy proposals, it does not appear likely that the state Senate leadership would prioritize the proposals.

Many interviewees indicated that leadership by the governor was the most likely means of creating urgency to address per capita VMT reduction planning. However with the different priorities of the leadership of the Senate, several interviewees thought, even with the governor's support, nothing will likely happen until there is a change in the makeup of the legislature.

#### **4.1.5 Policy Entrepreneur**

Policy entrepreneurs take advantage of policy windows to connect preferred solutions with identified problems and foster the political support. In the absence of a preferred solution, the indicators and criterion cannot be met for the policy entrepreneur.

Although a preferred solution has not been identified, interviewees were able to identify potential policy entrepreneurs, decision makers interested in actions that would drive changes in transportation and land use planning and would result in a decrease in greenhouse gas emissions and per capita VMT.

## **4.2 Consensus Building Theory Findings**

The following findings seek to address the research questions and are based on the information collected through interviews and public documentation, as analyzed through the indicators and threshold criteria of consensus building theory. To assess the threshold indicators interviewees were asked contemplate the development of a state per capita VMT reduction implementation plan through a collaborative consensus building taskforce process.

### **4.2.1 Threshold Elements**

#### **4.2.1.1 Cost high to stakeholder interests for not addressing problem or benefit for participating is high**

The majority of interviewees thought an implementation plan for per capita VMT reduction could help meet their organizations' interests. However, many of the stakeholders also identified other means in which their organizations could pursue the organizations' interests. This indicator and criterion for consensus building is marginally met because a majority of interviewee organizations would see good faith participation in a consensus building process as beneficial to their organizations' interests. However, for most interviewees the cost of inaction was viewed as impacting the community, region and world more than that of the interviewee organizations.

Although a majority of interviewees' organizations interests align with developing and implementing a plan to reduce per capita VMT, it is likely that additional interest in participation could be found if the goals of the effort were broadened to include economic vitality, and transportation funding, system efficiency and fiscal sustainability.

#### **4.2.1.2 Cost not to participate high**

Of the interviewees that did not see a need for an implementation plan to meet the state per capita reduction targets, almost all thought it was in their organizations interest to participate in a collaborative

consensus building taskforce focused on the issue so that they could protect their organizations interest. Therefore this indicator appears to be met.

These interviewees indicated an interest in the economic wellbeing of non-discretionary roadway users. The primary concern focused on how policies that would reduce per capita VMT might impact different types of businesses. This included concern that some policies could place Washington State businesses at a competitive disadvantage to businesses in other states and countries.

Several interviewees indicated that their organization would participate if invited and if it was likely that the recommendations produced would affect policy. In a few cases interviewees indicated that their organizations perspective and interests could possibly be represented through another organization. And if that was the case, they may not participate. A few interviewees also indicated that because of the mission of and or responsibilities place on their organization, the organization would be obliged to participate.

A few interviewees expressed skepticism for the collaborative consensus building taskforce process. Their concerns included the process taking too long when action is quickly needed or that the product can be of low quality (“the lowest common denominator”) as a result of everyone coming to agreement.

#### **4.2.1.3 Stakeholder trust in the convening agent**

The governor and or legislature were identified by most interviewees as credible entities to convene a collaborative consensus building taskforce with the purpose of developing an implementation plan to meet the benchmarks. Thus the indicator for this criterion is met.

WSDOT and the Washington State Transportation Commission were also identified as entities to which the governor or legislature could delegate convening responsibility. At least one interviewee expressed concern about the governor’s office being able to set up an unbiased process. This interviewee’s preference was for both the governor and legislature to delegate convening to a state agency.

#### **4.2.1.4 Inability of the traditional decision making process to address the problem**

This indicator is met. The traditional political process has not produced an agreed upon approach or action that would enable the state to meet the per capita VMT reduction benchmarks.

Because of the many stakeholders affected by the issue, interviewees expressed doubt that a feasible and durable per capita VMT reduction implementation plan, which actually would be funded and implemented, could be developed through a process other than a collaborative consensus building taskforce.

#### **4.2.1.5 Immediate action not needed to protect property and life**

The problem of not having an implementation plan to meet the state per capita VMT reduction benchmarks does not require emergency action to protect property or lives. Therefore this indicator and criterion are met.

Although increased severity and frequency of extreme weather events has been attributed to climate change (US National Climate Assessment 2014) and some events result in loss of life or livelihood, in these cases emergency action is in response to the weather event not climate change or lack of VMT reduction.

#### **4.2.1.5 Stakeholders and decision makers lack clarity or agreement on solutions**

Although a majority of interviewees think the state should develop an implementation plan to pursue the per capita VMT reduction benchmarks, there is no agreement on what form the implementation plan should take. The lack of agreement on a solution is supportive of this indicator and consensus building criterion.

Potential approaches for an implementation plan of framework identified by interviewees are described in the Policy Stream Findings section of this report.

#### **4.2.1.6 Interdependence of stakeholders' interests**

There appears to be interdependence of stakeholder interests among those who value the development and successful implementation of a plan to meet the state per capita VMT reduction targets. And this appears to be the perception of the majority of interviewees. It is not clear, however, that those that see no need for an implementation plan have interests that are dependent on the other stakeholders. Therefore this indicator and criterion is not met.

For those that want a implementation plan to meet the state VMT reduction benchmarks there is clear interdependence of stakeholder interests. The responsibility of local land use and transportation planning resides primarily with local planning organizations (RCW 35.63). So, any plan to reduce per capita VMT will largely be implemented by these same organizations. The implementation of a plan that will reduce per capita VMT will likely require significant investment in transit, bicycle and pedestrian infrastructure. Local governments rely on the state and federal government for much of their transportation funding and funding mechanisms. In the legislature, support from local governments, environmental groups, the business community and labor would likely be necessary to pass legislation that would support and fund implementation of a per capita VMT reduction plan.

However, for those that see no need for an implementation plan to meet the state VMT reduction benchmarks and for greenhouse gas mitigation, there is no apparent motivation for finding problem solutions that meet the interests of the other stakeholders that would be in the process. As one interviewee mentioned “ultimately the process needs to provide a credible threat to bring them (stakeholders) to the table” to negotiate in good faith.

Interviewees identified a threat of unilateral action by the governor or the potential allocation of funding for transportation as strong drivers for participation.

#### **4.2.2 Process considerations**

This assessment did not attempt to evaluate the case with criteria of a successful consensus building process. However, the interviewees were given the opportunity to characterize elements of what they view as a successful consensus building process and provide insight into the issues that would need to be addressed in consensus building process.

##### **4.2.2.1 Interviewees perspectives on successful consensus building**

The following are interviewee perspectives on the characteristics of successful collaborative consensus building stakeholder process.

One interviewee said “you need a lot of education process with the stakeholders to understand and agree on what the problem is. And to do this they need consensus about the data, and the group needs to agree on what a successful outcome is.”

Several interviewees indicated that the commitment and schedule, timeline, who would be involved, the feedback and how it would be processed needs to be clearly outline for the participants, and that participants need to know why we are doing it and who it is for.

Interviewees said the selection of who is in the room is important. “You need decision makers in the room, and these people need to have different or contrasting perspectives and can take a collaborative approach.” Other interviewees indicated that you need maintain the same people together because you have to establish trust between those people, and that it’s important for everyone to understand each other’s starting point and perspectives. This was seen as laying the foundation for the discussion of exploring options, so that everyone can take ownership of those small decisions along the way.

The list of participants with the Road User Charge Work Group was recommended as a list of participants for developing a per capita VMT reduction plan. Others identified road user groups, business, labor, environmental advocates, the tribes, cities, counties, metropolitan planning organizations, state departments, the Environmental Protection Agency, health advocates, transit organizations and the disabled advocates as needing a voice at the table.

Perspectives varied for how long the process would take, with most describing a time frame within 9 months to 2 years. One interviewee though you could accelerate the process to 3 months if a lot of prep work was done in advance and the size of the group was streamlined. The group would need to do outreach to stakeholders that were not in the room.

Interviewees indicated that a successful process requires a great facilitator perceived as being neutral and able to get everyone to participate. And that it is helpful if they are knowledgeable about the issue. Third party professional facilitators were recommended that are not biases with regards to the issue, private consultant or non-profit like the Ruckelshaus Center. Also, concerns were expresses about the effectiveness of a process facilitated by WSDOT. Furthermore, interviewees expressed a need for fairness and transparency in the process.

Having a core team that is crunching the data that can be reported back and give information to the group in advance of meetings is seen as important. This core team needs to be able to provide information about and impacts of different strategies. In addition, the taskforce group needs access to technical experts.

One interviewee indicated that there needs to be a consequence of not engaging in the process that is worse than a process outcome, and that someone needs to want the process.

A couple of interviewees indicated that they preferred technocrats develop a well thought out proposal and how to sell it, and then have those in leadership positions try to earn support the proposal. Another interviewee expressed pessimism about another collaborative consensus building process because the recession reduced the public's belief in our capacity to resolve large problems.

#### **4.2.2.2 Issues that would need to be addressed**

The following issues would need to be addressed by a consensus building taskforce responsible for developing an implementation plan for achieving the state's per capita VMT reduction targets:

There are questioned among interviewees whether VMT is the best metric tracking reductions in greenhouses gasses from changes in transportation mode choice and land use. To gain good faith participation this question will need to be addressed early in the consensus building process when participants are helping define what a successful outcome for the process is.

Participants will need background information on what the legislation says, what the relationship is between VMT and greenhouse gasses in the fleet through time, and what proportion of the state greenhouse gas reductions are needed from the transportation sector to address this concern. In addition, information regarding projected regional population and economic growth impacts on transportation demand, transportation system capacity, adoption rate for clean vehicles, and the amount of greenhouse gas reduction that can be met through clean fuel and clean car technology. This information will also help identify the scope of the challenge.

Finding an approach to address economic, population and geographic regional variation is another issue identified as needing to be addressed. A couple of interviewees recommended planning structures similar to those used in California or Oregon, where regional targets are developed in partnership with the regions, based on what feasible within the regions. The regions then would be responsible for selecting preferred VMT or greenhouse gas reduction strategies for the region, sensitive to local economies and populations. If this approach is used, then a state consensus building taskforce may limit its focus to creating the framework, and identifying resources and technical support for the regional planning.

Technical support may include tools to assess cost effectiveness of different reduction strategies, identify cobenefits, assess impacts to disadvantaged populations and monitor implementation effectiveness.

Interviewees also identified the need to address funding of planning and implementation. To be successful the effort would need to be coordinated with other transportation funding discussions, like that of the Road User Charge Assessment. Possibly related to funding, the consensus building taskforce would need to identify an incentive structure to that would effectively encourage regions and local jurisdictions to participate in implementation.

In addition and with the help of technical staff, a consensus building taskforce would need to identify elements of the implementation plan that require legislative action and those that can be acted on through executive or regional authority.

## 5 Discussion

Based on the indicator assessment results and in accordance with multiple streams theory, many conditions would need to change for a policy to be adopted that would result in a plan for meeting the state per capita VMT reduction targets. Given the divided government leadership in the state legislature, adoption of policy would likely require broad stakeholder support, gained through a broadening of the problem definition or identification of cobenefits. A collaborative consensus building taskforce may provide a viable means of obtaining that support, if the problem can be defined in a way that avoids value conflicts and if the consequences of inaction can be brought to bear on all stakeholders.

### 5.1 Multiple Streams

Although the VMT reduction benchmarks were adopted as a tool to encourage the development of multimodal transportation infrastructure and transit oriented development, differing perspectives on the role of VMT in the economy has polarized the discussion around trying to achieve the benchmarks, and has brought use of the metric into question. Even with this polarization, a majority of interviewees agreed on the need for an implementation plan to meet per capita VMT reduction benchmarks. For these stakeholders, VMT reduction is seen as a tool for mitigating climate change, improving transportation reliability and access, strengthening the economy and community, meeting changes in mobility preferences, and moving towards a sustainable transportation system. Several agreed on the need for greenhouse gas reduction in the transportation sector but were uncertain about VMT as the appropriate metric for the reductions. And those that questioned the need for an implementation plan were concerned about impacts to businesses and nondiscretionary users, or questioned the value of, or need for, greenhouse gas reductions. Broadening the problem discussion to one of how do we build a transportation system that will strengthen the economy and reduce greenhouse gas emissions, would likely increase support for actions that would reduce VMT.

In the politics stream, taking action to meet the climate change goals or VMT reduction benchmarks aligns with the priorities or ideology of the executive branch and house legislative leaders, but not the leadership of the state senate. Although there is apparent alignment with the executive branch, climate change priorities appear to be focused on other strategies. Thus leadership has been lacking on VMT reduction.

The CLEW process illustrated the climate change mitigation priority and philosophical disagreements within the legislative leadership. Under these conditions substantive policy action to reduce per capita VMT or mitigate the climate is believed to be unlikely. Agreement appears unlikely unless the problem definition is broadened, events or conditions change stakeholder and legislators perspectives and priorities, or there is a change in composition of the legislature. This split of priorities and ideology is also manifest in transportation funding discussions. An implementation plan to meet the state VMT reduction targets would require additional funding of multi-modal infrastructure. It is not clear that agreement can be reached with the current legislature to provide the necessary funding.

The philosophical disagreements in the CLEW, also reflected in the stakeholder interviews, illustrate a “free rider” market failure of economics. In this case, some decision makers and stakeholders are not compelled by the market to pay the fair share cost of greenhouse gas pollution. Unmitigated, this condition can lead to degradation of the resource or a shifting of the burden onto other parties. Government policy, through taxation or regulation, is a common approach to mitigate this type of market failure (Harden 1968).

In the policy stream a lot of work has been done to identify VMT reduction strategies, how to monitor VMT reductions and determine what the potential impacts are. However, limited effort appears to have been put into developing an implementation mechanism across the state. Achieving broad stakeholder support will require a plan that is sensitive to regional economic and population density differences, is neutral or supportive of business, does not increase regulatory burdens, and puts the state on track to meet its greenhouse gas reduction targets.

Even with reports that indicate the state is not on track to meet the greenhouse gas reduction limits, the current divided legislature is not conducive to creating a policy window that would support action on per capita VMT reduction planning. Severe weather events associated with climate change, greater road congestion and a crisis in transportation financing could increase urgency to take policy actions that would reduce per capita VMT as a means of reducing greenhouse gas emissions. However, a change in the political composition of the legislature is more likely to create conditions supportive for passing VMT reduction or climate change mitigation legislation.

A lack of viable proposals to bring in front of the legislature has resulted in little or no action by policy entrepreneurs. However, there are a few potential policy entrepreneurs likely to champion proposals once preferred solutions are identified.

## **5.2 Consensus Building**

In a collaborative consensus building taskforce process, the participants would need to come to agreement on what they are trying to accomplish. This may not be accomplished with the existing value disagreements around per capita VMT reduction and climate change mitigation.

Common concern regarding the economy and transportation funding possibly could bridge these value disagreements if changes in the transportation system can be shown to benefit the economy and provide for a more sustainable transportation funding structure. However without common concern by stakeholders that see no need for an implementation plan to meet the state VMT reduction benchmarks and for greenhouse gas mitigation, there is no apparent motivation for finding problem solutions that meet the interests of the other stakeholders that would be in the process. If common concern is not reached through broadening the problem definition, it is not clear if conditions could be put in place, for example through executive action or funding incentives, that could motivate these stake holders to find a solution that addresses all stakeholder interests.

Among stakeholders that value climate mitigation, it is plausible that agreement could be reached on alternative metrics to VMT and targets for the transportation sector, in addition to an implementation structure to reach the targets. It is not clear, however, if an agreement among stakeholders that value climate mitigation would have broad enough support to influence legislative leadership in the state senate.

## **5.3 Washington Carbon Action Pollution Reduction and Clean Air Action**

The Washington Carbon Action pollution Reduction and Clean Air Action (Executive Order 14-04) was issued at the conclusion of the research interview period for this thesis, and thus was not included in the research analysis. However, because Executive Order 14-04 has elements that relate to per capita VMT reduction and will likely change the policy decision making landscape, I discuss the potential decision making implications of the action.

Executive Order 14-04 shifts the problem discussion away from VMT and towards the efficient movement of people and goods, system cost reduction and greenhouse gas emissions reduction. This shift may overcome concerns about VMT as a benchmark and metric, and foster broader agreement on what the state should be trying to achieve.

The governor has directed WSDOT to engage local jurisdictions with planning, technical assistance and incentives for transit system development, develop a multimodal transportation plan for the state and develop new transportation funding sources that include transportation pricing.

In the near term, the executive action avoids the need legislative decisions. However, eventually the legislature will weigh in on whether and how to fund the proposed multimodal transportation system, planning and technical assistance, and transit incentives. Broad stakeholders support for changes in transportation revenue sources and expenditures will likely be needed to enable legislators to make what are likely to be challenging decisions.

Executive Order 14-04 avoids near term discussion of performance targets for system efficiency or greenhouse gas reductions. However, there is mention of scenario planning, and if scenario planning is implemented as done in Oregon, then some regional targets or system efficiency and or greenhouse gas reduction would need to be developed. As described, Executive Order 14-04 appears to be flexible to regional differences and avoids additional regulatory burdens. It is not clear how receptive stakeholders and legislators vested in the highway system will be to increased investment in multimodal infrastructure.

The executive order also directs WSDOT to investigate system wide transportation pricing. It is not clear if this directive refers to the ongoing Washington Road User Charge Assessment or not. There is a growing acceptance among interviewees that transportation pricing will be necessary to sustain transportation funding. However, the proposal will likely raise stakeholder concerns regarding impacts to nondiscretionary users and disagreements in the legislature over appropriate funding mechanisms for transit.

The governor's approach through Executive Order 14-04 appears to avoid the problem definition challenges of the VMT reduction benchmarks and near term legislative decisions. Also, the proposed

outreach to local jurisdictions could broaden support for future legislative action and provides the opportunity for changes in legislative personnel prior to future funding decisions.

## 6 Conclusion

### 6.1 Summary of findings

This study used multiple streams and consensus building theories to evaluate the challenges and opportunities for developing an implementation plan to meet Washington State's per capita VMT reduction targets. The analysis found that value conflicts regarding climate mitigation obstruct opportunity to develop an implementation plan that would meet the state VMT reduction benchmarks. Also, the imperfect nature of VMT as a surrogate metric for tracking greenhouse gas reduction as a function of changes in transportation mode choice, and varied perceptions of the relationship of VMT to economic growth, have hindered discussion of how to reduce greenhouse gas emissions from the transportation sector. The resulting situation is a lack of agreement on what the problem is that needs solving. In addition, a lack of leadership hinders problem resolution and preferred solution development. Furthermore, value conflicts over the role of the state in funding transit pose a barrier to prospective solutions.

Shifting the problem discussion to other metrics and the pending transportation revenue crisis may create opportunity for varied interests to align. The interests in new revenue sources, more cost effective transportation, and more efficient and reliable movement of people and goods could align with interests in reduced greenhouse gas emissions. Also, leadership will be required to obtain problem resolution, preferred solution development and to create a window of opportunity for a policy change.

Consensus building can support the multiple streams theory by providing a tool for clarifying agreement of the problem as well as developing a broad base of support for a preferred solution. However, in this case, stakeholders that see no need for an implementation plan to meet the state VMT reduction benchmarks or for greenhouse gas mitigation pose a barrier to problem definition and solution development. This is due to the absence of motivation for finding problem solutions that meet the interests of the other stakeholders engaged in the process. Broadening the problem definition or increasing the cost of not reaching an agreement may encourage good faith engagement.

## **6.2 Limitations of Study**

I made the effort to capture a broad cross section of stakeholder perspectives. However, with the limited scope of the study and scheduling conflicts, I was unable to interview representatives from several important stakeholder groups. A more comprehensive list of interviewees would include representatives from tribes, labor, health and disadvantaged advocacy, and more diverse representation of cities, counties, businesses and legislators. As a result the findings are preliminary.

In addition, the decision making theories used in this research are a product of the culture in which they were developed. It is not clear that they are transferable to command governance systems, where stakeholders have little influence in the decisions made.

## **6.3 Potential for future studies**

Ex ante policy research is a little explored practice that holds great research opportunity, with the potential to inform and affect policy development and decisions. Currently there are many social, economic and environmental policy challenges facing local, state and federal governments where this type of research could be pursued. For example, in Seattle there is the opportunity to evaluate the decision making barriers and opportunities for developing a policy that meets the city's housing affordability objectives. In addition, there are other decision making theories that focus on power or coalitions that could be utilized in ex ante policy analysis.

This study uncovered an information gap in public opinion research regarding climate mitigation strategies in the transportation sector. No opinion surveys were found that assess support for improved transportation mode options or land use zoning as strategies to reduce greenhouse gas emissions. Public opinion research to obtain the information could prove useful to planners and decision makers for identifying viable climate mitigation options.

Also, there is opportunity for a follow up study assessing how Executive Order 14-04 may have changed the dialog, barriers and opportunities for policy adoption that will help the state meet its VMT reduction benchmarks and greenhouse gas reductions goals.

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