

SHRP 2 Capacity Project C39A3

**Pilot Testing of the TCAPP
Decision Guide and Related
Capacity Products:
Oregon Metro
Greenhouse Gas Planning**

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Portland, Oregon

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Oregon Department of Land Conservation and Development
Salem, Oregon

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Executive Summary

Introduction

The Policy Consensus Initiative (PCI) in partnership with the Oregon Department of Transportation (ODOT) applied and was granted a contract to test the usefulness of Transportation for Communities—Advancing Projects through Partnership (TCAPP), now known as PlanWorks, with Oregon’s metropolitan planning organizations (MPOs) as they begin to undertake greenhouse gas (GHG) reduction through regional scenario planning. The Oregon Department of Land Conservation and Development (DLCD) served as advisors for the project team. Seven MPOs in Oregon that are in the state’s urbanized areas and that are required by state legislation to set GHG reduction targets participated in the project to test TCAPP. They are Portland Metro (known as Metro), Salem-Keizer, Corvallis Area, Central Lane (Eugene-Springfield area), Rogue Valley, Bend, and Albany. The fundamental purpose and goal of this pilot test was to evaluate and propose enhancements to TCAPP.

Project Background

The Oregon Legislature has set a goal of reducing total GHG emissions to 75 percent below 1990 levels by 2050. Chapter 85 Oregon Laws 2010 Special Session (Senate Bill 1059) anticipates that Oregon’s metropolitan areas will conduct scenario planning to assess land-use and transportation planning alternatives for reducing GHG emissions from light vehicles (10,000 pounds or less).

The state legislation requires Metro and the region’s local governments to develop and select a preferred land-use and transportation scenario that achieves the GHG emissions reduction targets. Central Lane must conduct scenario planning and develop two or more alternative scenarios that achieve the targets but that do not select a preferred one. While the state legislation directed the state’s Land Conservation and Development Commission (LCDC) to set GHG reduction targets, scenario planning is not required for the other four MPOs. Salem-Keizer, Corvallis, Rogue Valley, and Bend are all encouraged to conduct scenario planning. (Albany was added later.)

ODOT and DLCD have recognized the need to build capacity in collaboration and to utilize collaboration resources like TCAPP that can assist ODOT and MPOs in helping to enhance these transportation planning processes.

In assessing TCAPP, PCI and its partners examined the extent to which TCAPP and its collaborative decision-making tools supported the MPOs in their work. Staff and board members from the MPOs and staff from ODOT and DLCD participated in a two-day training of TCAPP and three follow-up virtual seminars. During these events and individual interviews, PCI determined the effectiveness of (1) the Greenhouse Gas Application; (2) the Decision Guide; and (3) the Collaboration Assessments. PCI also provided an assessment of the Collaboration

Assessments by comparing TCAPP’s assessments with the standard practice of conducting assessments in the field of collaborative governance.

Purpose and Scope

This project set out to evaluate the effectiveness of TCAPP in helping Oregon MPOs begin to conduct scenario planning to reduce GHG, with a particular focus on the jurisdictions where there is no legislative mandate to do so. The project team provided ongoing training in collaboration and TCAPP and created a space for a “Community of Practice” for MPOs to learn from and exchange successes and lessons learned with one another. The project included several Oregon MPOs at different stages of addressing GHG scenario planning.

This project provided a unique opportunity to investigate what participants from MPOs who aren’t incentivized or mandated to use TCAPP find both valuable and challenging about the resource. The project also analyzed how trainers new to TCAPP can motivate others to utilize it and documented challenges that need to be addressed to move TCAPP from testing to implementation stages.

Research Approach

PCI worked in a convening role to establish a Regional Community of Practice (RCoP) with ODOT, DLCD, and the Oregon MPOs to evaluate the following components of TCAPP:

Greenhouse Gas Application

- Examples from Practice
- Reference Links
- Greenhouse Gas Process Steps
 - Collect Information
 - Define Goals and Measures

The Decision Guide

- LRP-1: Approve Scope of LRTP (Long-Range Transportation Planning) Process
- LRP-2: Approve Vision and Goals

Assessments

- Partner Collaboration
- Stakeholder Collaboration

The main components of the project included interviews with MPOs, a two-day workshop, three virtual seminars, and online surveys. PCI also conducted an independent evaluation of the MPOs’ use of TCAPP to determine suggestions for further TCAPP

enhancements and how to best prepare and train future users of TCAPP in using the resource in their day-to-day work.

Findings

TCAPP fills a unique and valuable niche by systematically focusing on the collaborative aspects of transportation planning and by formalizing the key decision points in all four major categories of transportation planning.

In its current state, TCAPP will require special incentives to motivate potential users to try it; yet following a successful experience, users may often find other ways to apply and use the resource.

Development of the GHG Application for TCAPP is timely and appropriate given the emerging focus on GHG planning across the nation; however, the application does not yet provide sufficient emphasis on preplanning activities nor address the needs of a diverse range of transportation agencies. The Collaboration Assessments are among the most useful tools offered through TCAPP and provide a strong foundation for future development, enhancement, and use.

High quality, continuous, and project-focused training will be a key success factor in the long-term acceptance and full utilization of TCAPP in transportation agencies.

While TCAPP is rich in content, it is lacking in functionality, ease of use, current information, relevant examples of practice, and contemporary web design elements, all of which would make it more applicable to the needs of MPOs.

Conclusion and Recommendations

In conclusion, TCAPP can be a valuable resource to MPOs and other agencies involved in collaborative transportation planning, and it provides a viable foundation for further development and enhancement. In its present form TCAPP does not fully meet user expectations, but the PCI research team believes attention to several key considerations has the potential to make the next-generation TCAPP a valuable resource for collaborative transportation planning. High-level recommendations are shown below:

Marketing and Training

- Transparently promote TCAPP for what it is and manage user expectations.
- Develop a robust strategy for ongoing, context-oriented TCAPP training.

Content

- Reframe the underlying philosophy about partners and stakeholders throughout the Decision Guide and TCAPP.
- Enhance the Collaboration Assessments and develop guidance and best practices for how they are most effectively administered.

- Enhance the GHG Application to include a focus on preplanning activities and to ensure the content is relevant to a diverse range of MPOs and other transportation agencies.
- Expand and maintain content throughout TCAPP, especially Examples from Practice.

Functionality

- Upgrade and modernize the TCAPP user interface.
- Collaboratively design future functionality of TCAPP, based on results of the SHRP 2 pilot projects and other input, and using information technology (IT) best practices of software design.

CHAPTER 1

Background

Introduction

Resolving transportation issues is one of the most critical challenges facing state and local governments. Increasingly, departments of transportation (DOTs), metropolitan planning organizations (MPOs), councils of governments (COGs), the Federal Highway Administration (FHWA), and conflict resolution organizations are partnering to collaborate in transportation planning. Simultaneously, collaborative technologies have evolved to a point where they are readily available as part of the transportation process leader's toolbox. While collaborative processes and associated technologies are undoubtedly the direction of the future, the combination of the two, and how they work in tandem, creates an emerging opportunity for both transportation process leaders and practitioners in the field of collaborative governance.

The Transportation Research Board (TRB) offered funding to test the resource they have developed to build collaboration into transportation projects, Transportation for Communities—Advancing Projects through Partnership (TCAPP), now known as PlanWorks. The Policy Consensus Initiative (PCI), in partnership with the Oregon Department of Transportation (ODOT), applied and was granted the contract to test the effectiveness of TCAPP with Oregon's MPOs as they begin to undertake greenhouse gas (GHG) reduction through regional scenario planning. The Oregon Department of Land Conservation and Development (DLCD) also served as advisors for the project team.

The Setting in Oregon

Oregon has a long tradition of land-use and transportation planning. Each city and county is already required to have a comprehensive plan and a transportation system plan (TSP), and each MPO must create a regional transportation plan (RTP) with participation from the cities and counties. This system of planning has served Oregon well, designating lands for urban development while protecting farm and forest lands and planning for transportation needs.

The Oregon Legislature has set a goal of reducing total GHG emissions to 75 percent below 1990 levels by 2050. In 2009, with House Bill 2186 (as Oregon Laws 2009, Chapter 754, available at <http://www.oregon.gov/ODOT/TD/OSTI/docs/hb2186/hb2186.pdf>), the Legislature established the Metropolitan Planning Organization Greenhouse Gas Task Force (Task Force). The Task Force concluded that

Revising transportation and land-use plans in metropolitan areas will be a necessary part of a broader statewide effort to meet state greenhouse gas reduction goals. Planning our metropolitan areas in ways that build in transportation options can reduce the need for travel and significantly reduce

greenhouse gas emissions from automobiles. The Task Force acknowledged that revising plans will be a challenging, long-term effort, and concluded that it is also necessary, doable, and should start right now. Done soon, and done well, it can help create safer, healthier, and more prosperous communities and expanded transportation choices for Oregonians, and can avoid the need for more dramatic measures later.

For more information, see <http://www.oregon.gov/ODOT/TD/OSTI/docs/Scenario%20Planning%20Guidelines/ODOT-Guidelines-April2013-red.pdf>.

A subsequent law (Chapter 85 Oregon Laws 2010 Special Session) anticipates that Oregon's metropolitan areas will conduct scenario planning to assess land-use and transportation planning alternatives for reducing GHG emissions from light vehicles (10,000 pounds or less). To support the multiple efforts, ODOT has developed a program referred to as Oregon Sustainable Transportation Initiative (OSTI). For more information pertaining to OSTI, see below and <http://cms.oregon.gov/ODOT/TD/OSTI/pages/index.aspx>.

Oregon's MPOs

MPOs are federally created local decision-making bodies required to carry out various transportation planning and coordination responsibilities. There were six existing MPOs in Oregon when the laws were passed: Portland Metro (known as Metro), Salem-Keizer, Corvallis Area, Central Lane (Eugene-Springfield area), Rogue Valley, and Bend. See Appendix A for a snapshot of these MPOs. Now three others have been added: Albany, Grants Pass, and Walla-Walla (which is shared by Washington State).

Figure 1.1 shows a 2011 map of the six MPOs in Oregon which were in place when the state's legislation on GHG scenario planning was passed along with the 2035 GHG targets for each MPO that were adopted by the LCDC. A description of each of these MPOs in Appendix A describes the major municipalities, populations, and types of roads/transit options.

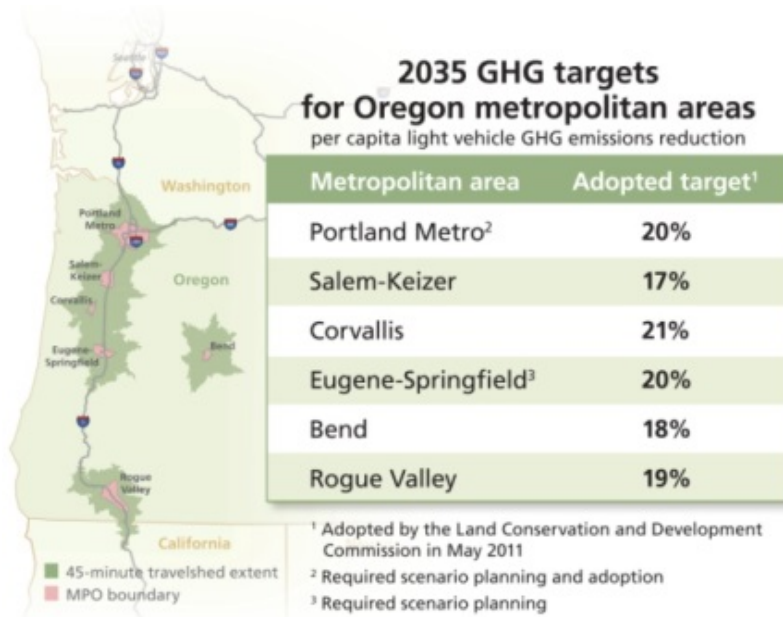


Figure 1.1. 2035 GHG targets for Oregon metropolitan areas.

(Source: Oregon Department of Transportation—<http://www.oregon.gov/ODOT/TD/OSTI/docs/Scenario%20Planning%20Guidelines/ODOT-Guidelines-April2013-red.pdf>.)

The state legislation requires Metro and that region’s local governments to develop, select, and implement a preferred land-use and transportation scenario that achieves the GHG emissions reduction targets. Central Lane is required to conduct scenario planning and develop two or more alternative scenarios, taking into consideration their targets and cooperatively selecting one. While the state legislation directed the state’s Land Conservation and Development Commission (LCDC) to set GHG reduction targets, scenario planning is not required for the other four MPOs, though it is encouraged. At the time of this project, out of the four, only Corvallis had elected to begin a scenario planning process, while Rogue Valley and Bend were still determining whether to move ahead with initial steps, and Salem had decided to not proceed. ODOT and DLCD are also working with the newly formed MPOs to encourage scenario planning in the future. Figure 1.2 shows the status of all of Oregon’s MPOs in GHG scenario planning as of March 2014.

MPO GHG SCENARIO PLANNING PROCESS STATUS

**did not participate in any part of TCAPP project*

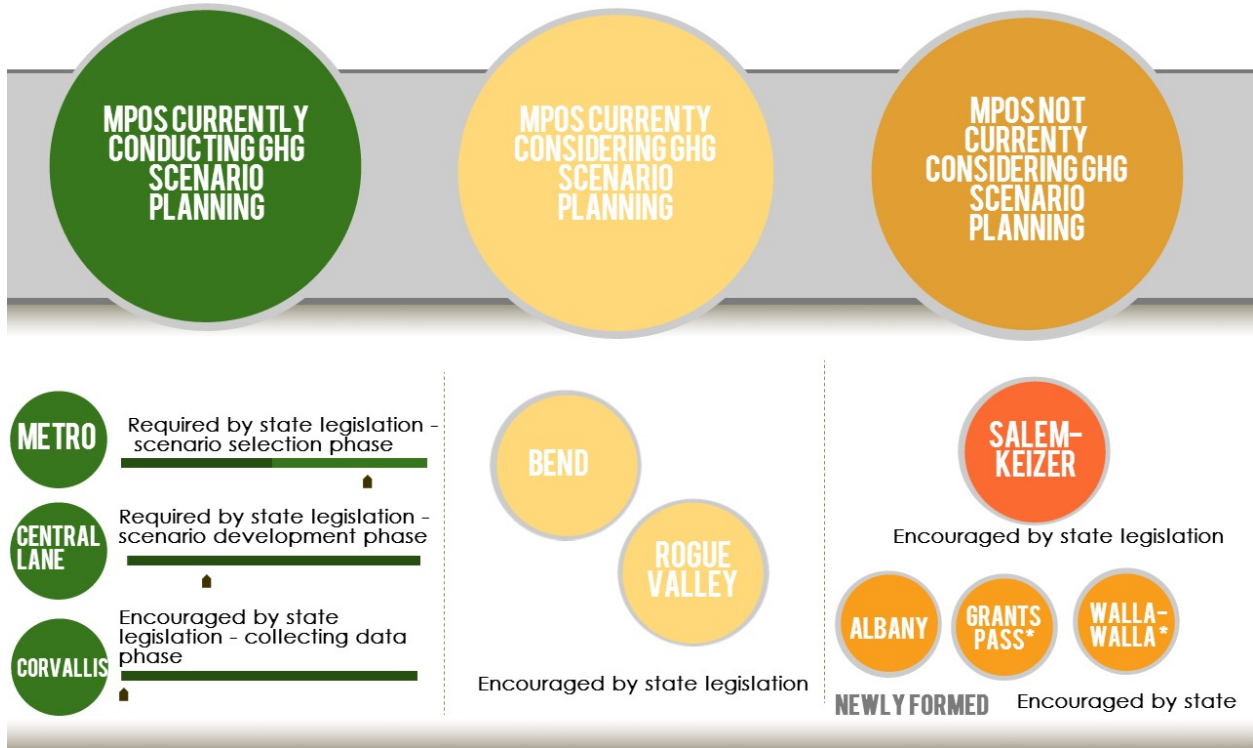


Figure 1.2. Oregon MPO GHG scenario planning process status.

Existing governance structures require that scenario planning be a collaborative effort between MPOs, counties, and cities. While each metropolitan area has an MPO to conduct and coordinate regional transportation planning, scenario planning involves evaluation of land-use choices that are the province of counties and cities. The first, and critical, step in scenario planning will be agreement among MPOs, counties, and cities within each metropolitan area on a process to conduct scenario planning. Arriving at a preferred scenario requires agreement between the MPO, counties, and cities in each area. This can be done by intergovernmental agreement or other mechanisms, but it requires a high level of cooperation among local governments in each metropolitan area as to the scope of the scenario planning effort, including the resources needed and levels of stakeholder involvement.

Oregon’s Tools for Collaboration and GHG Scenario Planning

As part of the state’s efforts to support MPOs and local governments in conducting scenario planning to achieve the goals of GHG emission reductions, ODOT and DLCD, as part of the

OSTI program, developed a guidebook for designing scenario planning processes, *Scenario Planning Guidelines*, available at <http://www.oregon.gov/ODOT/TD/OSTI/Pages/scenarios.aspx>. The guidelines provide a range of recommendations on establishing and structuring a collaborative process around GHG scenario planning. Because Oregon’s MPOs have this resource geared toward them, the guidelines informed the project team’s assessment of TCAPP.

ODOT and DLCD have recognized the need to build MPO capacity in collaboration and to utilize additional collaboration resources like TCAPP that can assist MPOs in helping to enhance these transportation planning processes. These MPOs—the two obligated to conduct scenario planning and the four encouraged to do so by the state legislation—represent a diverse set of communities, all grappling with GHG scenario planning at different points, from whether to embark on a planning process all the way to implementation. Originally, the project focused on the four MPOs encouraged in the legislation to pursue scenario planning as ODOT, and DLCD saw potential value in TCAPP to help those MPOs conduct voluntary scenario planning. Other MPOs expressed interest in participating in the workshop as well and participated at various times throughout the project.

CHAPTER 2

Purpose and Scope

Purpose

This project set out to evaluate the effectiveness of TCAPP in helping Oregon MPOs begin to conduct scenario planning to reduce GHG, especially where there is no legislative mandate to do so. In order to do so, the project team provided ongoing training in collaboration and TCAPP and created a space for a “Community of Practice” for MPOs to learn from and exchange successes/lessons learned with one another.

In assessing TCAPP, PCI and partners examined the extent to which TCAPP and its collaborative decision-making tools supported the MPOs in their work. Staff and board members from the MPOs and staff from ODOT and DLCD participated in a two-day training of TCAPP and three follow-up virtual seminars. During these events and individual interviews, PCI determined the effectiveness of (1) the GHG Application; (2) the Decision Guide; and (3) the Collaboration Assessments. PCI also provided an evaluation of the Collaboration Assessments by comparing TCAPP’s assessments with the standard practice of conducting assessments in the field of collaborative governance.

In addition, this project provided a unique opportunity to investigate what participants from MPOs who aren’t incentivized to use TCAPP as part of a pilot project find more valuable or challenging about the resource. The research team’s assessment of their use of TCAPP aimed to demonstrate a true test of its value for a broad audience beyond a testing market.

The project also analyzed how trainers new to TCAPP can train and motivate others to utilize it and documented challenges that need to be addressed to move from the TCAPP testing to implementation stages. The team hopes that such an assessment is useful to those within state DOTs and MPOs who work within their own agencies to employ TCAPP and who must train fellow staff on using it.

Scope

Originally, the project focused on the four established (as of fall 2012) MPOs that were encouraged but not legislatively required to conduct GHG scenario planning. These four MPOs were Salem-Keizer, Bend, Rogue Valley, and Corvallis. See Chapter 1, Introduction, and Figure 1.2 for a description of each MPO’s status with regard to GHG scenario planning. Even though Salem-Keizer had decided not to move forward with GHG scenario planning, MPO staff and board members were interested in learning how TCAPP might be useful in other projects, particularly a current project related to bridge financing.

Over the course of the project, three additional MPOs joined the Community of Practice at different points. Portland Metro and Central Lane, which are both required to develop scenarios (Metro also must select a preferred scenario), participated in the two-day workshop and

in two of the virtual seminars. The research team also conducted individual interviews with staff from both MPOs, as they were the MPOs most actively engaged in GHG work over the course of the project.

Albany, which was newly established in February 2013, participated in the two-day workshop but not the virtual seminars or any individual interviews.

The inclusion of Metro, Central Lane, and Albany at different times meant that the project captured feedback from a diverse range of TCAPP users, representing communities that vary in geography, community size, culture, staff capacity, priorities, and experience.

Appendix B, Participant and Presenter Organizations, describes the different agencies that participated in the project.

CHAPTER 3

Research Approach

Introduction

PCI worked in a convening role to establish a Regional Community of Practice (RCoP) with ODOT, DLCD, and the Oregon MPOs to evaluate the following components of TCAPP:

Greenhouse Gas Application

- Examples from Practice
- Reference Links
- Greenhouse Gas Process Steps
 - Collect Information
 - Define Goals and Measures

The Decision Guide

- LRP-1: Approve Scope of LRTP (Long-Range Transportation Planning) Process
- LRP-2: Approve Vision and Goals
- LRP-3: Approve Evaluation, Criteria, Methods and Measures*
- LRP-5: Approve Financial Assumptions*
- PRO-1: Approve Revenue Sources*
- PRO-2: Approve Methodology for Identifying Project Costs and Criteria for Allocating Revenue*

(*Over the course of the project, due to the timing of the project and where the MPOs were in undertaking GHG scenario planning processes, the team altered the research approach to look at the Decision Guide more holistically while still assessing LRP-1 and LRP-2. The findings reflect this.)

Assessments

- Partner Collaboration
- Stakeholder Collaboration

PCI conducted a series of interviews with MPO staff at several points in the process and hosted a two-day workshop and three virtual seminars on TCAPP for MPOs (staff and elected officials), ODOT, and DLCD. See Appendix C for agendas for the workshop and virtual seminars. PCI also conducted an independent evaluation of the MPOs' use of TCAPP to determine suggestions for further TCAPP enhancements and for best preparing and training future users of TCAPP in using the resource in their day-to-day work. Figure 3.1 illustrates the

elements of the research approach.

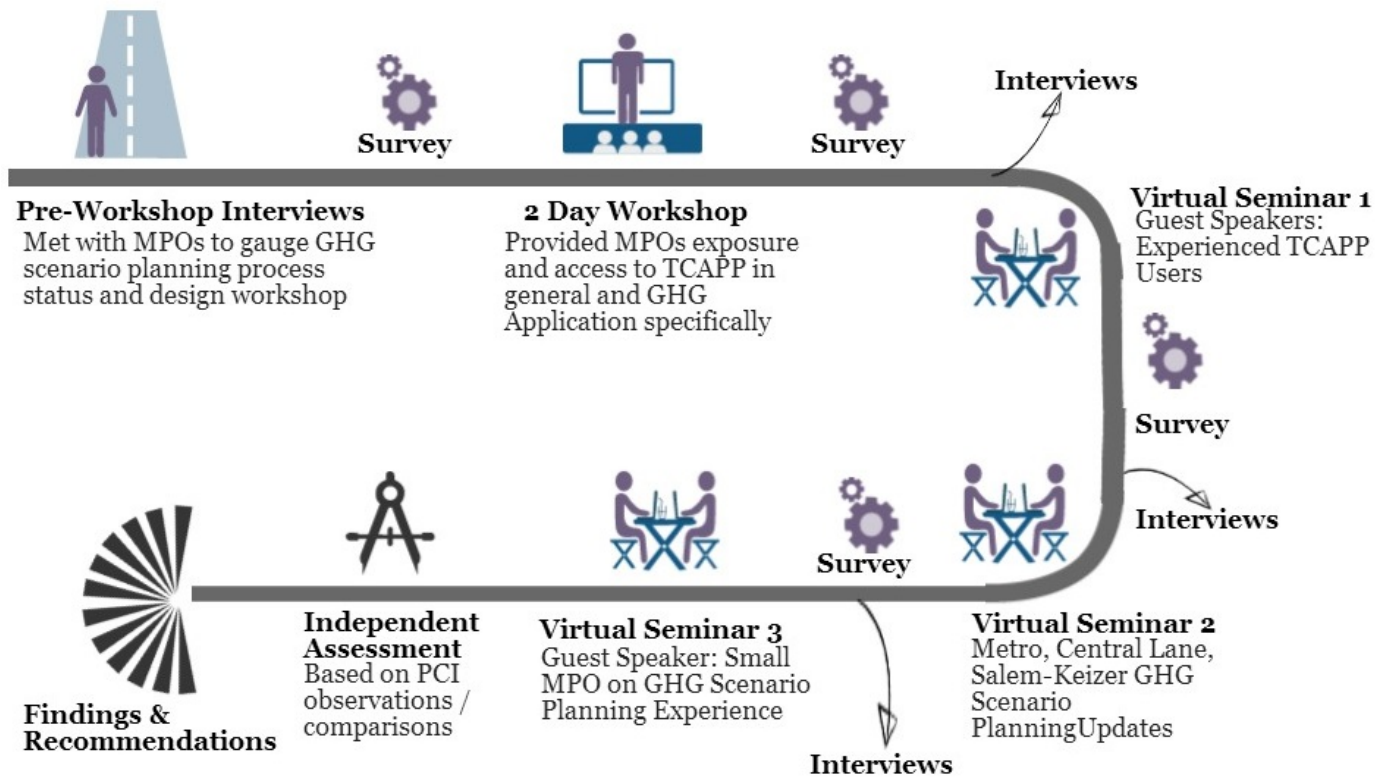


Figure 3.1. Research approach elements.

MPO Interviews

In order for the two-day TCAPP workshop to be useful to the MPOs, PCI staff interviewed the staff of each MPO to assess their needs and desires. Preliminary discussions revealed that some MPO policy committees did not have plans or the desire to engage in GHG planning. To design a custom-fit workshop that responded to the MPOs’ priorities and provide a far richer assessment of TCAPP, PCI staff members conducted face-to-face interviews with personnel from the four MPOs (Bend, Corvallis, Salem-Keizer, and Rogue Valley) that were originally set to work in this project.

The project team conducted in-person interviews with MPO planning directors, appropriate staff, and interested elected officials to introduce the project and assess expectations and desired outcomes of the project components. See Appendix D for the interview questions. During these initial meetings, the team gave the MPOs’ personnel a brief tutorial on TCAPP (navigation to the site and overview of how it works) and asked them to commit to spend some time browsing through it and to begin to think about what features they find interesting, helpful, and valuable at the onset. Input provided by the MPOs during these interviews was used to

further customize the design of a two-day workshop for members of the RCoP, “Getting Started: Collaborative Tools for Scenario Planning.”

This time with the MPOs also allowed for an exploration of the challenges and opportunities these communities cared most about and were most interested in using collaborative tools to address. Finally, very few of the staff members interviewed were familiar with TCAPP, and these interviews served as an entry point to the training. Staff who had heard of TCAPP prior to the interviews took the time to revisit the site as well.

Two of the MPOs indicated that the chances of them participating in a GHG scenario planning TCAPP workshop were exceedingly remote due to board resistance. They did indicate an openness to participate if the workshop covered other topics they were interested in.

The policy committee of one MPO had already committed to doing GHG scenario planning, and their staff was eager to learn to use TCAPP to help them move forward. A second MPO policy committee was evaluating whether to take initial steps in moving forward with GHG scenario planning the week following the interview. (Note: This second committee agreed to move forward but delayed starting over the course of this project due to other priorities in the MPO.)

Two-Day Workshop

PCI conducted a two-day in-person workshop for seven of Oregon’s MPOs, demonstrating the capabilities of TCAPP and in particular its greenhouse gas scenario planning application. Staff from ODOT and DLCD also participated alongside representatives from the MPOs, for a total of 26 participants.

In order to be able to provide all the MPOs with exposure and access to TCAPP in general and also to conduct an evaluation of that component of TCAPP, the workshop was designed to give MPOs an overview of TCAPP in general, as well as focusing some time on specific applications.

All participants received a link to a brief online survey prior to the workshop (see Appendix D). PCI wanted to remind participants of the workshop’s purpose and to prepare the MPO participants for the workshop’s main outcome of creating a plan to use TCAPP in their work.

Workshop Design and TCAPP Evaluation Method

Based on the interviews PCI staff conducted with the original four MPOs, the workshop content provided an overview of collaborative approaches to provide a context for the principles underlying TCAPP. The workshop was designed to enhance the transportation process leaders’ collaboration knowledge and skills while learning how to integrate TCAPP into transportation planning processes. The workshop included the Partner and Stakeholder Assessments, key components of the Decision Guide, and the GHG Application in TCAPP. During the workshop, participants worked in their MPO groups to identify what would be the most helpful next step in

embarking on GHG planning and selected the elements of TCAPP that would apply to their next steps.

The workshop was designed to include a combination of methods for gathering feedback from participants on TCAPP. Following instruction and hands-on time, the project team facilitated both small breakout discussions and large group discussions on impressions of TCAPP. These discussions focused on two guiding questions:

- How might you use this component in your work?
- How might it be improved for your use?

Throughout both days, the project team utilized two different online collaborative tools—MeetingSphere and PollEverywhere—to capture responses. On the first day, participants learned how to use the tools before practicing and then utilized them alongside the facilitated discussions. Comments and observations were then gathered from the facilitated discussions and from the responses that participants entered through MeetingSphere and PollEverywhere tools.

Post-Workshop Survey

At the close of the workshop and then again a week later, participants responded to two surveys and provided an evaluation of the training and their impressions of TCAPP. The evaluation handed out at the close of the workshop focused on the training in general, while the online survey distributed a week later focused on just the TCAPP aspects of the training (see Appendix C). These responses were combined with synthesized workshop notes to form the conclusions and recommendations provided below on TCAPP.

Virtual Seminars

After the initial workshop, PCI convened three virtual workshops with members of the Regional Community of Practice (RCoP) to provide a dialogue for process leaders to discuss their real-world experiences in integrating the selected components of TCAPP in their collaborative processes. Information stemming from these virtual workshops was collected for this report. Between November 2013 and March 2014, PCI conducted three 60–90 minute virtual seminars for the Oregon MPOs and ODOT and DLCDC staff. Over the course of the three virtual seminars, total participation waned (one MPO stated they had other pressing priorities and two other MPOs cited conflicts with already scheduled meetings) but the team continued to have diverse representation of participants from across the seven MPOs and two state agencies. The project team shared presentation materials and notes from the virtual seminars with all attendees from the original two-day workshop via email and the online seminar platform, MeetingSphere.

The project team collected feedback on TCAPP from participants during facilitated discussions during the virtual seminars, individual email exchanges, individual in-person interviews, and in online spaces provided through MeetingSphere tools for each virtual seminar.

See Appendix C for questions soliciting feedback both during and after the virtual seminars.

First Virtual Seminar Design

During the two-day workshop, “Getting Started: Collaborative Tools for Transportation Projects,” participants expressed a desire to hear from agencies that had previously made use of TCAPP in their work. Two previous TCAPP pilot projects—Washington Department of Transportation (WSDOT) and Minnesota Department of Transportation (MnDOT)—agreed to present on their pilot projects and to share their insights on how they approached TCAPP.

Between the two-day workshop and the first virtual seminar, PCI staff contacted each MPO to follow up on their use of TCAPP as planned during the workshop. The majority of MPOs responded that they had not made use of TCAPP during the interim. The team then included a discussion on what the barriers had been for those users in the design of the seminar. The primary challenge was that TCAPP seemed overwhelmingly complex and that utilizing it seemed to be more work than added value. The challenges are further described in Chapter 4, Findings.

During the seminar, participants were asked to pose questions about the experiences during the TCAPP pilot projects (by WSDOT and MnDOT). Following the seminar, participants were also asked to review the GHG Practitioner’s Guidebook in the GHG Application and to provide feedback through a session conducted with MeetingSphere (an online collaborative tool that allows each MPO to enter its feedback). PCI staff offered homemade cookies as an incentive for participation in feedback, though this did not prove to be incentive enough, as only one MPO provided feedback through the MeetingSphere tool.

Second Virtual Seminar Design

The team used the second virtual seminar to share and get feedback on the initial findings on TCAPP with the MPOs. Making use of the RCoP, the three MPOs currently engaged in some stage of GHG planning (Metro, Central Lane, and Corvallis) also shared the lessons they had learned so far about collaboration and where they anticipated needing assistance with collaboration in the future.

Third Virtual Seminar Design

For the last virtual seminar, the team brought in a guest speaker, Senior Planner Dan Wayne from the Shasta Regional Transportation Agency (SRTA) in Shasta, California, who had done considerable work on GHG scenario planning in that MPO. The research team had heard from the Oregon MPOs that many of the examples and case studies available (especially on TCAPP) focused on statewide policies or on the work being done in large, very urban MPOs. The smaller MPOs were interested in seeing examples where similar-sized MPOs with less capacity and different cultures had tackled GHG scenario planning. SRTA, like many of the Oregon MPOs, is smaller and is surrounded by rural areas—an island MPO with an independent spirit.

Chapter Summary

The combination of individual interviews over the course of the project, a two-day workshop, and three virtual seminars provided several opportunities to bring Oregon MPOs together in a Regional Community of Practice (RCoP) around both GHG scenario planning and testing out TCAPP. The research team used several methods to gather input from TCAPP users, including interviews, facilitated discussions, and online feedback/survey tools. The findings, conclusions, and recommendations are explored in Chapters 4 and 5.

CHAPTER 4

Findings

This chapter presents findings about TCAPP in six major categories: TCAPP niche, motivations for use, GHG Application, Collaboration Assessments, training, and user experience. Each major category includes a statement of primary finding, followed by a set of associated issues and subordinate findings.

TCAPP Niche

Primary Finding

TCAPP fills a unique and valuable niche by systematically focusing on the collaborative aspects of transportation planning and by formalizing the key decision points in all four major categories of transportation planning.

Associated Issues and Findings

The MPOs were not aware of any other resource that provides a comprehensive framework of transportation-related decisions and identifies the planning purpose, outcome of decisions, roles of partners, questions that policy makers must address to make decisions, and the data, tools, and technology that may be used to support a decision. TCAPP uniquely structures the decision process for all categories of transportation planning (long-range transportation planning; programming; corridor planning; and environmental review/National Environmental Policy Act [NEPA] merged with permitting).

TCAPP has the potential to serve as a gateway to an abundance of rich content created by a variety of organizations (e.g., FHWA, Federal Transit Administration [FTA], other SHRP 2 products, AASHTO) and to provide guidance and information on numerous issues as they emerge. TCAPP may serve a role to unify terminology and planning practices across the federal agencies, states, MPOs, and others who have a role in transportation planning and decision making.

Motivations for Use

Primary Finding

In its current state, TCAPP will require special incentives to motivate potential users to try it for the first time; yet following a successful experience, users may often find other ways to apply and use the resource.

Associated Issues and Findings

This project is the only SHRP 2 TCAPP pilot that was not awarded to an MPO or state DOT or for which an MPO did not receive a direct and significant financial incentive to test it in their organization. The research team found it difficult to discover effective means to motivate the MPOs to use TCAPP, especially given the learning curve involved to get started and the lack of relevance to work at hand.

However, the team did encounter several examples of MPOs that tried TCAPP and subsequently found other ways to use it for different purposes than were originally intended. For example, Portland Metro's interest in TCAPP during the course of this project focused on utilizing it for a Metropolitan Transportation Improvement Program (MTIP). See <http://www.oregonmetro.gov/index.cfm/go/by.web/id/3814> for this particular program. Salem-Keizer was interested in applying aspects of TCAPP to a future bridge financing project.

Situations that appear most conducive to motivating use of TCAPP in its current form include those with the following elements:

- Financial assistance provided to MPOs in getting started with TCAPP on a particular project (e.g., if the team had been able to offer MPOs some seed funding for devoting staff time to an aspect of GHG that made sense for their MPO while utilizing the GHG Application);
- Focused on tailored, high-priority work in an MPO;
- Timed at the beginning of a project;
- Ample opportunity to get past the learning curve;
- A network of peers who have used TCAPP successfully; and
- Management support and encouragement.

In the future, changes that are made to TCAPP that enhance the user experience and make it more dynamic and easy to use will likely be a significant motivation for its expanded use.

GHG Application

Primary Finding

Development of the GHG Application for TCAPP is timely and appropriate given the emerging focus on GHG planning across the nation; however, the application does not yet provide sufficient emphasis on preplanning activities, nor does it address the needs of a diverse range of transportation agencies.

Associated Issues and Findings

GHG scenario planning is an evolving process. Information in TCAPP needs to be current; and case studies, while in demand, need to be kept current and relevant to a variety of types of MPOs (from large ones with many staff members to small ones with little capacity). This will require a continuous and ongoing effort to monitor the status of GHG planning issues across the country; rapidly developing relevant new content to address those issues; identifying and preparing exemplary examples from practice; and uploading information to TCAPP expeditiously. Resources will be necessary in order to sustain such a continuous and ongoing effort.

- *Preplanning*: The project initially focused on the Oregon MPOs that had not yet undertaken any GHG scenario planning, as the team hypothesized TCAPP might be most useful to them. The project did eventually include the two Oregon MPOs that had begun to conduct scenario planning (and are the only two required by state legislation to do so). However, the primary focus was on using TCAPP with the Oregon MPOs that were in the initial stages of GHG planning. Over the course of the project, only one MPO (Corvallis) actually began the GHG scenario-planning process with ODOT and DLCDC. While the first step did overlap neatly with the application’s “Collecting Information” step, the MPO (Corvallis) and state agencies found that signing a memorandum of understanding (MOU) among the three of them was all that was needed to begin the data collection needed at that stage. TCAPP did not offer sufficient capability to warrant its use during preliminary planning.

It would have been useful for the other three MPOs if the application had included more guidance on preliminary planning steps. MPOs could use assistance in weighing whether or not to take the initial steps in GHG scenario planning suggested by their states. This could be a place where the Collaboration Assessments could be useful in determining the willingness of communities to move forward; however, they would need to be reframed as serving the purpose of determining readiness rather than simply being barriers.

If Oregon, one of the states presumably at the forefront of addressing GHG and climate change issues (and one of only five states listed in TCAPP’s “Examples from Practice”), struggles with whether and how to begin scenario planning, other MPOs in other states will surely face the same challenge. For this reason, the GHG Application will be most useful if it helps to guide users through determining the appropriate time and process that will work for their individual communities in initiating a GHG planning process.

- *Diversity of MPOs*: In general, MPOs in Oregon expressed concern that the GHG Application and particularly the “Examples from Practice” are more meaningful to large MPOs and state DOTs rather than smaller MPOs with more rural characteristics and cultures.

- *Alignment with State Processes:* Similarly, the TCAPP GHG planning process is sufficiently different from the Oregon Sustainable Transportation Initiative (OSTI) and *Scenario Planning Guidelines* to cause confusion. One would expect that the broad range of MPOs undertaking GHG planning in the future will also face similar challenges. A means to integrate individual state processes with TCAPP processes would be useful.

The team also found that elements and concepts of the *Oregon Scenario Planning Guidelines* provide a level of flexibility and adaptability that assists in meeting the requirements of a diversity of MPOs. The process, and its direct recognition of the need for a fluid process, is shown below in Figure 4.1. Incorporating these kinds of flexible, iterative approaches into the TCAPP GHG Application would help address the need to align with a variety of state processes.

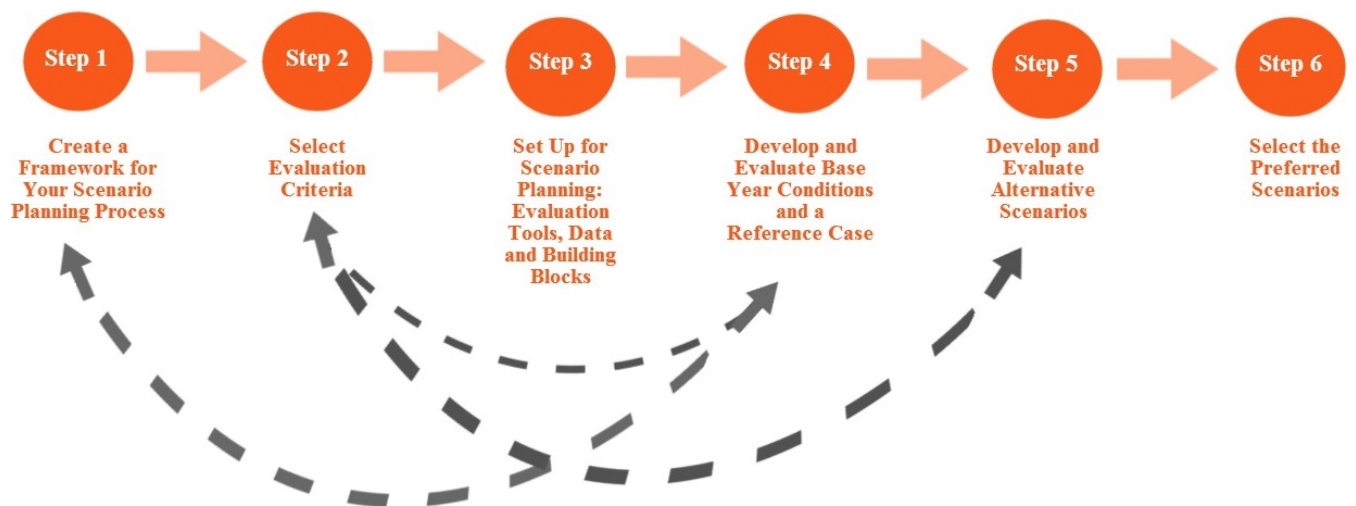


Figure 4.1. Oregon Scenario Planning Guidelines: Adapting the step-by-step process for different planning needs.

(Adapted from Oregon Department of Transportation: <http://www.oregon.gov/ODOT/TD/OSTI/docs/Scenario%20Planning%20Guidelines/ODOT-Guidelines-April2013-red.pdf>.)

Collaboration Assessments

Primary Finding

The Collaboration Assessments are among the most beneficial tools offered through TCAPP and provide a strong foundation for future development, enhancement, and use.

Associated Issues and Findings

The Collaboration Assessments are interactive, constructive tools that are helpful at various phases of a project:

- At the onset they help in identifying first steps and priorities.
- In the middle of a project they can be used to stimulate a dialogue about the project's progress.
- At various points and even at the close of a project, they can be used to check on the project's goals and effectiveness.

These tools could be improved by better explaining the reasons for the assessment findings, by providing better tools for “rolling up” results, and by making it easier to do group assessments. More importantly, the tools will be more effective if transportation agencies are provided guidance on how to properly administer and interpret them to reduce bias and ensure impartiality.

- *Guidance on Effective Administration of Assessments:* TCAPP's Collaboration Assessments are helpful tools for self or interinstitutional reflection, but if they are not administered by a neutral forum, then they may lose their usefulness as a tool for true analysis among an entire group of partners and stakeholders. Here the term neutral forum means an institution that has a reputation for impartiality, objectivity, and credibility and the ability and skills to create a neutral space in which leaders can gather participants to address issues. A neutral forum will provide credibility, assure participants that a collaborative process is an unbiased environment suitable for discussion and deliberation, and lend integrity to a collaborative process.

The Oregon MPOs recognize that they often cannot play the role of a neutral party; in fact, many did laud TCAPP's usefulness as a source of neutral information about an MPO's role and responsibilities. When it came to administering TCAPP assessment to partners/stakeholders, however, some MPOs wondered how they would be able to serve in that role outside of their MPO staff. Bringing the Collaboration Assessments to partners and stakeholders seemed awkward and could potentially create additional challenges to moving collaboration forward, if partners or stakeholders mistrusted the MPO's motives or interpretations of the results.

- *Use in External Settings:* During the workshop, when MPOs tested the assessment tools, many found the results helpful as internal diagnostic tools, but once the MPOs tried to consider applying them externally, the MPOs ran into challenges. The tool gave one MPO staff member the result “Change partners,” which he pointed out was

“inconceivable” given the parameters of the project. Without a human expert behind the assessment results, guiding the MPO through the way to make necessary changes, the user may have no sense of how then to move forward. This may be particularly true in GHG scenario planning, especially for the majority of Oregon MPOs, when there is no legal requirement for either the MPO or local agencies to participate.

An assessment conducted by a neutral entity provides a sense of distance and unbiased analysis that can identify communitywide opportunities for and challenges to collaboration. A neutral, third-party assessment can also provide a foundation for elected leaders in moving forward, as they can point to any results for the basis for decisions.

- *Functionality:* The Collaboration Assessment tools could be improved by better explaining the reasons for the assessment findings, by providing better tools for “rolling up” results (summarizing and analyzing), by making it easier to do group assessments, and by having the ability to tailor the questions and findings to individual settings. Many potential TCAPP users have experience using contemporary surveying tools (SurveyMonkey, Google Forms, Qualtrix, etc.) and other business analytics tools that provide considerable flexibility to summarize and edit data. These data analysis capabilities have become the norm and would be a valuable enhancement to the Collaboration Assessments.

Training

Primary Finding

High quality, continuous, and project-focused training will be a key success factor in the long-term acceptance and full utilization of TCAPP in transportation agencies. However, isolated training on TCAPP alone will not be sufficient to realization of the full value of TCAPP.

Associated Issues and Findings

Given the current lack of familiarity with TCAPP by MPOs and other transportation agencies, the team found that training was a crucial first step in overcoming the initial view that the Decision Guide and TCAPP overall are overwhelmingly complex. The PCI research team found that TCAPP is best approached in specific, bite-sized chunks and by stressing how transportation professionals should approach and use TCAPP using project-specific examples.

- *Messages:* The messages that make TCAPP training successful include
 - While TCAPP certainly has the potential to be a shared resource across partner and stakeholder groups (and may actually be a very useful shared information portal), for new users, framing it as an internal resource within their agency (or even within their agency’s team) might alleviate worries about how to introduce

- TCAPP to partners and stakeholders and then use it together.
- TCAPP is not meant to be the comprehensive resource for transportation projects; in fact, it serves as a gateway to much more robust tools and clearinghouses.
 - While every community has unique circumstances, cultures, and directives (particularly from state to state), TCAPP is meant for a general audience across the country.
- *Incentives*: One of the major challenges we encountered revolves around incentives, both for training on TCAPP and simply using TCAPP. Potential users were mildly curious about TCAPP but only mildly. Overall, they were more interested in attending trainings that provided them with general training on collaboration and peer-to-peer learning on GHG scenario planning processes. The two main incentives employed during the project involved paying for travel and lodging to attend the two-day workshop and providing guest speakers of interest from other DOTs and MPOs around the country. At one point, the team even offered homemade cookies as an incentive, but this did not prove as popular as financial incentives and guest speakers. Otherwise, TCAPP is seen initially as creating more work than the value it can provide.
 - *Sustaining Interest*: The team found that interest in TCAPP waned through the course of our project. While the team did not receive direct feedback from all MPOs on why interest waned overall, the team did hear throughout the virtual seminars that one participant had other pressing priorities and two others cited conflicts with already scheduled meetings. This is believed to be due to (1) lack of incentives, as mentioned above; (2) targeting participants at too high a level in their organizations; and (3) lack of a project-specific focus. To be effective, training needs to be focused on uses in real-world applications/projects that use TCAPP and provided to technical staff members who are involved with hands-on, practical aspects of transportation planning activities. The research team believes that having TCAPP training embedded in other training contexts would be more beneficial than stand-alone training about TCAPP.
 - *Training Delivery*: Based on the experience of the workshop and web seminars conducted during this project, the research team identified several effective means of delivering training:
 - Including former/current users of TCAPP, who can share on a peer-to-peer basis with new users, is valuable. Participants wanted to see real-world outcomes from using TCAPP and hear directly from those who could speak from experience.
 - Combining TCAPP training with training on collaboration techniques helps advance a better understanding of TCAPP.
 - Conducting focused workshops in a safe learning environment gives potential

users the opportunity to interact with peers; time to focus on TCAPP; and a setting with no pressure to be applying it and no judgment about their current state of knowledge.

- Follow-up sessions help reinforce concepts and fill knowledge gaps.
- *Train-the-Trainer Model:* The general train-the-trainer model evolved from theories of adult learning and diffusion of innovation. The type of training offered by the model varies, depending on the business or organization. For the purposes of this project, the team considered the train-the-trainer model to be an approach that creates a team of community-based trainers who are adept at using TCAPP and are also equipped to train other community members to be trainers for others within the community. The “community” in this project consists of Oregon MPO staff members. Over the course of the project, the project team saw MPO staff members who took the two-day workshop on TCAPP return to their agencies to share and informally train other staff members within their MPO to use TCAPP. Three new MPO staff members became part of the project through this method, and follow-up interviews with them suggest it was a successful approach to integrating TCAPP into MPO work. Note that this seemed to work when those MPO staff members who received some training on TCAPP were engaged in a project which the trainer thought could benefit from TCAPP. Regardless of approach, there need to be incentives for assuming a training role for TCAPP.

User Experience

Primary Finding

While TCAPP is rich in content, it is lacking in functionality, ease of use, current information, relevant examples of practice, and contemporary web design elements, all of which would make it more applicable to the needs of MPOs.

Associated Issues and Findings

Over the course of this project and throughout the workshop, individual interviews, and virtual seminars, a number of themes emerged regarding the TCAPP user experience.

- *Functionality:* In general, the users viewed TCAPP as an online source of reference material rather than an advanced decision-support tool that enables interactive analysis, structured problem solving, alternatives analysis, and other means to assist decision makers. With the exception of the Collaboration Assessments, TCAPP functions largely as a means to navigate static (albeit valuable) content. These users stated that it is appropriate for junior MPO staff rather than for senior staff and decision makers. Even

given that audience, they did not think that TCAPP was intuitive or fully developed, especially compared with other tools they had used (T-Viz was one example in the transportation field). However, users wanted TCAPP to have greater functionality, including such things as the ability to sign in to an account (where results of Collaboration Assessments could be stored, for example), form groups, share documents, and analyze information.

- *Complexity*: MPOs were hesitant even to attempt to use TCAPP, due to an initial response that it was too complex and that the complexity took away from its helpfulness and outweighed the benefits that TCAPP could provide in aiding them through their projects. This response usually came from the user's attempts to move beyond the home page. Despite the Quick Start Guide (and even the Quick Start Guide was seen as too complex for its purpose), the home page seemed to be too big of a hurdle in accessing further parts of TCAPP.
- *Use with Partners and Stakeholders*: MPOs expected TCAPP to be a resource that could be shared with their partners and stakeholders; for instance, local governments. They wanted to figure out ways that TCAPP could be used jointly in projects with partners and stakeholders and also to help explain the MPO role in difficult transportation-related processes. However, they found that TCAPP is strongly focused on use by MPOs and DOTs, which limits its usefulness in collaborative planning with partners and stakeholders. Further, MPOs compare TCAPP with the next generation of online offerings currently available and expect a tool promoting collaboration to function in the same way as other collaborative technologies (such as Basecamp, GoToMeeting or even Google Drive). If TCAPP continues to be a resource that is focused on internal use by MPOs and DOTs only, then work will need to be done to make sure it is appropriately marketed and promoted that way.
- *Examples from Practice*: Over and over again, users were eager to see the "Examples from Practice" section and wanted to find value in these examples but were disappointed by a lack of robust, current case studies that seemed relevant to their particular MPO (especially in terms of size, staff capacity, and culture). The Oregon MPOs were particularly interested in "Examples from Practice" in the GHG section, because, as one MPO pointed out, "it's always good to know that you weren't the first one out there trying to do this." The team wanted to be able to pull "Examples from Practice" in the GHG Application that the smaller MPOs with more rural characteristics and cultures could learn from; however, all of the case studies in this section reflected either state legislation or very large MPOs in major cities. See (http://transportationforcommunities.com/shrpc01/ghg_application_kdps/26/0#regional_c

limate_action_plans).

- *User Interface:* The TCAPP website and the associated user interface seem outdated and generally lacking in common contemporary design elements such as integration of social media; support for mobile devices; modern typography and graphics; and easy-to-use navigation techniques.

A particular challenge with the TCAPP user interface is the approach to the landing page, which presents an excessive amount of information and makes it difficult for users to immediately find content that is relevant to their topic of interest or to their level of work. Presenting the entire Decision Guide on the landing page often leaves a potential user overwhelmed and concerned about complexity. Altering the landing page to serve as an entry portal that aids users in navigating to specific topical areas or to content that is most useful to their level (e.g., early career, senior planner, decision maker) would improve the TCAPP user experience.

- *Role Descriptions in Decision Guide:* While each metropolitan area has an MPO to conduct and coordinate regional transportation planning, scenario planning involves evaluation of land-use choices that are the province of counties and cities. A collaborative planning and decision-making model allows agreement to be reached by each of the jurisdictions within a metropolitan area. For this reason, TCAPP has the potential to be extremely useful for and with local government agencies, particularly in using the GHG Application. It became clear, when looking at particular decision points within the Decision Guide (both LRP-1 and LRP-2), that omitting local transportation agencies from the partner level is a barrier to their using TCAPP and to the collaborative process in general. This may be why MPO users struggled with trying to share TCAPP with their partners, whom they see as very important decision makers in a GHG scenario planning process. One MPO mentioned that it is sometimes advantageous for MPO staff to be in the background (not perceived as the dominant entity) while local agency priorities and projects helped move forward GHG scenario planning.

Because these defined roles permeate the entire Decision Guide and thus TCAPP as a whole, the team sees this issue as bigger than just GHG-Application specific.

Chapter Summary

Overall, while the findings pinpoint barriers to using TCAPP in general and the GHG Application in particular, MPOs were grateful to be able to turn to a trusted place for information on a variety of processes. Many users saw great benefits in this resource for newer MPO staff to turn to as a resource. The following recommendations in Chapter 5 are aimed at ways to ensure appropriate promotion and potential enhancements.

CHAPTER 5

Conclusions and Future Considerations

Introduction

TCAPP has much to offer MPOs and other agencies involved in collaborative transportation planning and provides a viable foundation for further development and enhancement. In its present form, TCAPP does not fully meet user expectations, but the PCI research team believes that attention to several key considerations has the potential to make the next-generation TCAPP a valuable resource for collaborative transportation planning.

Recommendations

Recommendations for moving TCAPP forward and ensuring that the next-generation TCAPP becomes truly a valuable resource for collaborative transportation planning are shown below. These recommendations fall into three major—and perhaps overlapping—categories: marketing and training; content (the information that is contained in TCAPP); and functionality (features and functions that TCAPP performs).

High-level recommendations include the following.

Marketing and Training

- Transparently promote TCAPP as a resource, rather than a high-level interactive tool, and manage user expectations.
- Develop an innovative strategy for ongoing, context-oriented training that also makes use of TCAPP as an educational resource.

Content

- Reframe the underlying philosophy about partners and stakeholders throughout the Decision Guide and TCAPP by adding in partner categories (e.g., municipalities, counties, or tribes) or allowing users to select from a drop-down list.
- Enhance the Collaboration Assessments and develop guidance and best practices for how they are most effectively administered.
- Enhance the GHG Application to include a focus on preplanning activities and to ensure that the content is relevant to a diverse range of MPOs and other transportation agencies.
- Expand and maintain content throughout TCAPP, especially Examples from Practice.

Functionality

- Upgrade and modernize the TCAPP user interface.
- Collaboratively design the future functionality of TCAPP, based on results of the SHRP 2 pilot projects and other input and using IT best practices of software design.

Promoting TCAPP Transparently

If TCAPP continues in its present form, it is important to accurately and transparently market its functionality. As capabilities expand and mature, the marketing message can be adjusted accordingly. The major promotion and marketing messages should convey that TCAPP is:

- A source of reference material, not an interactive and analytical tool;
- A resource to assist collaborative transportation processes, not technical engineering or design software;
- Best used in bite-sized chunks;
- A resource for technicians, not senior managers;
- Ideal for early career transportation practitioners; and
- Useful for internal work; not ready for external activities.

The project team highly recommends promoting TCAPP as “a resource for MPO and DOT staff to improve their collaborative approaches.” Offering TCAPP as a “collaboration tool” or “collaboration resource” may reinforce the idea that it can be a shared tool across different jurisdictions, agencies, and sectors. Instead, “a resource for MPO and DOT staff to enrich their collaborative approaches” might be a more appropriate description.

In addition, TCAPP could be promoted to some audiences beyond MPO and DOT staff. TCAPP could provide valuable content for individuals or organizations like PCI working with MPOs or DOTs on transportation projects. Collaboration professionals might make use of TCAPP by taking an agency that is having difficulty with collaboration through the collaboration assessment exercises available through TCAPP. TCAPP would be especially useful as an education resource for graduate students in public administration, conflict resolution, or other related fields or for facilitators early in their careers who may not have much experience with transportation processes.

Innovative TCAPP Training

As TCAPP is enhanced and improved in the future, the team recommends an alternative view of training be adopted. Specifically, the training effort should be migrated from intensive stand-alone training about TCAPP to an approach that embeds TCAPP in other specific topical trainings (e.g., collaboration principles, GHG, scenario planning, and so on).

The project team strongly recommends a professional training program (such as the Federal Transit Administration Training and Technical Assistance program) be considered to oversee the migration and development of a TCAPP training program and assume the role of training. The elements of a training program should include

- Plans for continuous learning,
- Options for online and blended learning,
- Incorporation of training about collaboration and collaborative process design,
- Train-the-trainer strategies,
- Technical training for transportation planners and other technical staff,
- Awareness training for senior officials,
- Training scenarios about specific real-world projects, and
- Training during and for real-world projects.

Approach to Partner Role

If TCAPP is intended to be used for more than just DOT and MPO practitioners—and the team sees great opportunity with local transportation agency staff and others to make use of the GHG Application—the way TCAPP approaches and describes the role of partners will need to be reframed. Although unintended, the stark and predefined differentiation between stakeholders and partners may convey a ranked attitude toward those agencies that by default are not characterized as stakeholders. This approach may limit the use of TCAPP with external agencies and could also taint the entire collaborative process. While TCAPP trainings thus far have stressed that any stakeholder can be elevated to the partner role, TCAPP is not nearly as effective as it could be if the determination of partners does not have to be reconsidered after the fact.

While the team recommends a holistic reframing of the stakeholder/partner approach, at minimum, local governments and Native American tribes, where appropriate, should be identified as partners by default. As stated earlier in this report, while each metropolitan area has an MPO to conduct and coordinate regional transportation planning, scenario planning involves evaluation of land-use choices that are the province of counties and cities. Similarly, transportation may be a shared responsibility on tribal lands. Reframing of the roles of these partners should be done in consultation with representatives of these groups to ensure accuracy and cultural and political acceptability.

Enhanced Collaboration Assessments and Guidance on Use

The project team advises the use of a neutral forum to conduct or administer Collaborative Assessments and suggests that TCAPP clearly outline when and how a neutral party should be used. PCI has documented the benefits of a neutral forum in “A Practical Guide to Collaborative Governance”:

We use the term neutral forum to mean an institution that has a reputation for impartiality, objectivity, and credibility, and the ability to create a neutral “space” in which leaders can gather participants to address issues. It is not necessarily a particular place or location, but rather is an entity with the credibility to assure

participants that a collaborative process will operate in an unbiased environment suitable for discussion and deliberation. Such an institution lends integrity to a collaborative process.

Neutral forums provide leaders with expertise and capacity to assess, plan, and conduct collaborative governance processes. The staff of a neutral forum knows how to structure processes for ongoing problem solving and implementation. This kind of institution ensures that the collaborative structures and processes developed and conducted under its guidance are carried out according to the principles and best practices of collaborative governance (Carlson 2007, p. 25).

The team also recommends that TCAPP Collaboration Assessments be enhanced to assist users in processes (such as GHG scenario planning) that can be politically challenging, or that are about relatively new and evolving issues, or that are just daunting for smaller MPOs with less capacity. Questions in the assessments could address the following:

- Is there is a critical mass of necessary support for a process? Where is support lacking and why?
- How should we frame the process to best articulate its intent and engage resources and support?
- What other regional priorities in other sectors, such as economic or public health priorities, might be in alignment with a GHG scenario process to leverage support and resources?
- Whose knowledge, diverse perspectives, institutional positions, and/or current or past involvement in work related to GHG emission reduction (air quality, for instance) would be important to moving forward?
- What leaders can help to convene the community—both partners and stakeholders—in order to ensure support?
- Who or what might serve as potential barriers to decision making?

The team recommends that for some processes (such as GHG scenario planning), a tailored collaborative readiness assessment be developed as an extremely useful tool within TCAPP.

Lastly, the team recommends that more sophisticated functionality be incorporated into the Collaboration Assessments that includes better explanations for the assessment findings; improved capabilities for summary and analysis of results; group assessment capabilities; and the ability to tailor questions and findings to individual settings. TCAPP owners also should investigate the possibility of using and customizing commercial third-party software to underpin the Collaboration Assessments.

Enhanced GHG Application

Oregon MPO users suggested that the GHG Application provide specific guidance on how to negotiate resistance to GHG planning and other climate-related initiatives. One model for doing that, as evidenced by Shasta Forward, is to first engage the public in a conversation around values and priorities. Once the community has weighed in, decision makers can then use those agreed upon values and priorities as a frame for talking about the GHG process and for next steps.

The project team envisions a tab ahead of the “GHG Technical Process” tab that might be termed “GHG Assessment Process” and would then lead MPOs through steps to determine a community’s readiness to engage in GHG planning. If the community is deemed ready, then this section would address how to design a collaborative approach to GHG planning (for instance, determining what type of organizational structure to use, what an advisory committee might look like, where the public might provide input, and what other priority regional issues overlap). In Figure 5.1, a screenshot of TCAPP illustrates where a tab with a preliminary lens might go alongside the GHG Technical Process, the Decision Guide and GHG Planning, and Examples from Practice.

The GHG Technical Process provides a step-by-step framework for the analysis of GHG as part of transportation decision making. Although there are many individual steps in this technical process, this high-level framework captures what is common across transportation agencies.

Technical considerations are necessary to: (1) evaluate potential opportunities and (2) inform decision makers. In order for practitioners to take action, policy makers must be convinced of the value and make ongoing decisions that provide support. See the information in the next tab, [The Decision Guide and GHG Planning](#), to see how this technical information can be used to support policy decisions.

Click on each of the steps to understand what activities fit into this part of the process.

Click on a step for more information.

GHG TECHNICAL PROCESS STEPS

Collect Information Define Goals and Measures Identify Options Evaluate Options Select Preferred Option

Did you know?
Greenhouse gases include:

- water vapor
- ozone, carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF₆)

Of these, carbon dioxide is one of the most important human-influenced contributors to climate change.

Collect Information

Information refers to data, tools, plans, reports, stakeholders or other resources that may be used to support consideration of GHG emissions associated with transportation options. Some questions to consider are:

- What are the existing or readily available tools to support analysis?
- What travel data (speeds and VMT), emissions data, other activity data is available and appropriate for analysis?
- What modes are to be considered?
- What analysis years will be considered?
- What will the consideration of GHG cost and what revenue sources might be available?
- What findings are relevant to consider from previous plans and studies?
- Is the planning region or study area identified for project impacts sufficient for the consideration of GHG emissions?
- What is the level of stakeholder interest in reducing GHG emissions?

Figure 5.1. Greenhouse Gas Application homepage.

(Source: TCAPP—http://transportationforcommunities.com/shrpc01/ghg_application_kdps/26/0.)

The GHG Application should be enhanced to assist users in integrating the TCAPP process with state scenario planning processes. The team further recommends that elements and concepts of the *Oregon Scenario Planning Guidelines*, which provide flexibility and adaptability that assists in meeting requirements of a diversity of MPOs, be incorporated into TCAPP.

Improved Content throughout TCAPP

In order for TCAPP to be seen as relevant and useful for a variety of types of MPOs, the project team recommends that the content be expanded to include more case studies demonstrating the work of diverse communities. More importantly, ongoing effort should be devoted to refreshing and updating content. The team recognizes that ongoing resources will be required in order to do so.

Modernized User Interface

The team recommends that the overall TCAPP website be modernized to include commonly accepted web design approaches such as integration of social media; support for mobile devices; modern typography and graphics; and intuitive, easy-to-use navigation techniques. The landing page should be altered to serve as an entry portal that aids users in navigating to specific topical areas or to content that is most useful to their level (e.g., early career, senior planner, decision maker).

Further, the team suggests obtaining the services of a web usability testing lab or, minimally, taking advantage of guidance found at usability.gov.

Collaborative Design of Future Functionality

There were numerous suggestions for additional functionality that could be incorporated into TCAPP to improve its relevance and value to potential users. These ideas have been provided by participants in this project as well as the other SHRP 2 pilot projects that tested TCAPP. The team recommends that these suggestions be synthesized and harmonized, and embellished using a collaborative design process, to develop a specification and plan for future functionality. The team urges that a process employing IT best practices be used and that a flexible design be developed that acknowledges the inevitable advances that will occur in technology; environmental and economic issues of concern; the abilities and expectations of end users; and transportation laws and regulations.

Priorities and Level of Effort

The project team believes that every recommendation presented in this report is important and can be achieved within a reasonable timeframe and with an acceptable level of investment. However, the team recognizes that the recommendations may require prioritization and that their implementation will be impacted by the resources that are available. Table 5.1 lists each key recommendation and provides an estimated level of effort and priority for each.

Table 5.1. Priority and Level of Effort for Key Recommendations

RECOMMENDATION	LEVEL OF EFFORT	PRIORITY
PROMOTING TCAPP TRANSPARENTLY		
Accurate and transparent marketing of TCAPP	Low	High
INNOVATIVE APPROACHES TO TCAPP TRAINING		
Migration from intensive stand-alone training	Low	High
Professional training oversight	High	Medium
Thorough set of training program elements	Medium	High
APPROACH TO PARTNER ROLE		
Holistic reframing of approach to stakeholder/partner roles	Medium	Medium
Default assignment of local governments and tribes as partners	Low	High
ENHANCED COLLABORATION ASSESSMENTS AND GUIDANCE		
Guidance on administration by neutral forum	Low	High
Attention to special challenging situations	Medium	High
Augmented analytic capabilities	Medium	High
Migration to commercial third-party software	Medium	Medium
ENHANCED GHG APPLICATION		
Guidance on negotiating resistance	Medium	High
GHG assessment to determine readiness and collaborative process design	Medium	High
Integration with state planning processes	Medium	High
Flexibility and adaptability	Medium	High
IMPROVED CONTENT THROUGHOUT TCAPP		
Case studies demonstrating work of diverse communities	Medium	High
Routine refresh and update	Medium	High
MODERNIZED USER INTERFACE		
Contemporary web design	Medium	High
Landing page as entry portal	Low	High
Usability testing	Medium	Medium
COLLABORATIVE DESIGN OF FUTURE FUNCTIONALITY		
Specification and plan for future functionality	High	Medium

A Vision for TCAPP

In conclusion, the team's vision for TCAPP is that it joins the ranks of highly successful, transformative technologies that have made an impact on the work of many people (e.g., computers, the Internet, social media, smartphones) and that it fully embraces the role of "collaborative technology tool." Using smartphone technology as a model for TCAPP, the following characteristics are those to which the team aspires for TCAPP:

- **Intuitive to Use:** it does not require multi-day training; knowledge gaps are often filled by user-created, Internet-based media; and commonly accepted icons and terminology are employed.
- **Fun to Use:** it offers a dynamic, fun experience and simple entry points.
- **Performs Useful Functions Easily:** it is useful in the eyes of the user (smartphone examples: weather, alarm clock, camera, language conversion).
- **Provides Unlimited Yet Relevant Content and Apps:** it offers tools from many sources yet content and apps are concealed from those who find them irrelevant; organized for easy access.
- **Users Can Create and Share Content:** (smartphone examples: photos, documents).
- **Tool for Social/Professional Interaction:** (smartphone examples: email, text, phone, tweet).
- **Search Function Is Ubiquitous.**
- **Life Cycle Management:** it sees continuous improvement and innovation; improvement and maintenance are recognized costs of doing business.

Chapter Summary

TCAPP has much to offer MPOs and other agencies involved in collaborative transportation planning, and as a resource it provides a viable foundation for further development and enhancement. In its present form TCAPP does not fully meet user expectations, but attention to several key considerations has the potential to make the next generation TCAPP a valuable resource for collaborative transportation planning.

References

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APPENDIX A

Snapshots of Six Oregon MPOs

Bend

The Bend MPO is located in central Oregon, along the Highway 97 corridor. Bend is the smallest MPO in Oregon in terms of both geographic coverage and population size. The MPO is located in Deschutes County and its boundaries are slightly larger than the urban growth boundary of the MPO's only city, Bend. Within the Bend MPO, there are 34 miles of state roads, 80 miles of county roads, and 468 miles of city roads. For transit, 2009 total ridership was 327,607, plus about 49,426 paratransit riders. The MPO area is covered by the Central Oregon Area Commission on Transportation.

Central Lane

The Central Lane MPO represents the cities of Eugene, Springfield, and Coburg, as well as some outlying areas of Lane County, and encompasses 123.4 square miles. These communities are located along Interstate 5 in the Willamette Valley. Within Central Lane MPO there are approximately 27 miles of county roads and 780 miles of city roads. Lane County in total has 477 miles of state roads within its boundaries, a portion of which lies within the Central Lane MPO. Central Lane MPO is covered by the Lane Area Commission on Transportation.

Corvallis

The Corvallis Area MPO is located in the Willamette Valley, along the Highway 99 corridor. In terms of population, Corvallis is the second smallest MPO in Oregon. Included within its boundaries are the cities of Corvallis, Philomath, and Adair Village, as well as a portion of Benton County. Within the Corvallis Area MPO, there are 29 miles of state roads, 62 miles of county roads, and 232 miles of city roads. The MPO area is covered by the Cascades West Area Commission on Transportation.

Rogue Valley

The Rogue Valley MPO includes the urbanized areas of Jackson County. It is located in southwest Oregon along the Interstate 5 corridor. While the Rogue Valley MPO is the second largest in terms of area (square miles), it is fourth (middle) in terms of population. Included within its boundaries are the cities of Medford, Ashland, Jacksonville, Central Point, Phoenix, Talent, Eagle Point, and the unincorporated area of White City. Within the Rogue Valley MPO, there are 149 miles of state roads, 400 miles of county roads, and 556 miles of city roads. For transit, 2008 total ridership was 792,696, plus about 50,000 paratransit riders. The MPO area is covered by the Rogue Valley Area Commission on Transportation.

Portland Metro

Portland Metro is the governing body for the greater Portland area, including 25 cities, portions of Clackamas, Multnomah, and Washington counties, and representing over 1.5 million people. Transit ridership for 2010 was 104,339,822. In a survey completed in 2011, it was found that automobile commuting has gone down since 1994 and transit and bicycle commuting has increased in the Portland Metro region. Within Clackamas, Multnomah, and Washington counties, there are approximately 4,013 miles of city roads, 3,434 miles of county roads, and 700 miles of state roads. This does not comprise the entire Metro region but does highlight the scale that Metro covers. Portland Metro is not covered by an Area Commission on Transportation but works with Oregon Department of Transportation and the Joint Policy Advisory Committee on Transportation for project planning.

Salem-Keizer

The MPO for Salem-Keizer is referred to as the Salem-Keizer Area Transportation Study (SKATS). SKATS is located in the mid-Willamette Valley, along the Interstate 5 corridor. Its population size is smaller than that of Metro but similar in size to Central Lane MPO (about 237,000 people). SKATS includes the cities of Salem, Keizer, and Turner, and its boundaries encompass parts of Marion and Polk Counties. Within the boundaries of SKATS, there are 93 miles of state roads, 348 miles of county roads, and 655 miles of city roads. For transit, 2009 total ridership was 4,200,000, plus about 107,000 paratransit riders. The MPO area is covered by the Mid-Willamette Valley Area Commission on Transportation.

APPENDIX B

Participant and Presenter Organizations

City of Bend

Central Oregon Intergovernmental Council

Oregon Department of Transportation

Corvallis Area Metropolitan Planning Organization

Portland Metro

City of Keizer

Cascades West Council of Governments

Oregon Department of Land Conservation and Development

Oregon Department of Transportation

Bend Metropolitan Planning Organization

City of Salem

Mid-Willamette Valley Council of Governments

Salem-Keizer Area Transportation Study

Association of Oregon Counties

Rogue Valley Council of Governments

Lane Council of Governments

Minnesota Department of Transportation

Washington Department of Transportation

Central Lane Metropolitan Planning Organization

Shasta Regional Transportation Agency

APPENDIX C

Agendas: Workshop and Virtual Seminars

Workshop

September 17

Begin at 8:30 a.m.: Portland State University, Smith Memorial Student Center, Room 294

Overview, Objectives, Purpose, and Logistics

- Welcome
- Introductions
- Pilot Project Overview
- Workshop Framework and Objectives
- Overview of Agenda
- Online Polling Exercise: Ground Rules

MPO Snapshots

- Introduction to MeetingSphere/Review responses to pre-workshop survey
- Mixed MPOs Breakout—Share responses to pre-workshop survey
- Discussion/Share
- What are the similarities/differences?
- Where is there overlap or where is there regional distinction?

Break (& Technology Troubleshooting as Needed)

Opportunities for MPOs to Catalyze Collaboration

Leaders as Conveners

- Case Study: Wasatch Front Regional Council Transportation Plan/Envision Utah
- Discussion

Lunch: Panel Discussion: Bringing the Team Together

Elected regional and local leaders—Metro Councilor and former Sherman County Commissioner/Association of Oregon Counties Director

TCAPP

- What is TCAPP?
- TCAPP Quick Start Guide

- Key Decision Points Demonstration
- Role Definitions Used in TCAPP
- Discussion: What do you want to know more about? What's puzzling you about TCAPP from this level? Initial impressions on role definitions and the Quick Start Guide.

Beginning to Build the Framework

- Highlight the Assessment tools
- Hands-on Exercise: TCAPP Partner Collaboration Assessment
- Breakout: Results Discussion in MPOs: What stands out for you? What applications do you see for this information?
- Discussion: What might you use the TCAPP Assessment for in your work? How could this tool be improved?

Morning of September 18: Beyond the Team

Begin at 8:30 a.m.: Room 294

Review Key Learnings

Welcome back, address questions, recap key learnings (refer to MeetingSphere results) from yesterday

Understanding the Space for Collaborative Decision Making

- What do we mean when we talk about collaboration?
- Phases of Collaboration
- Roles in Collaborative Decision Making: Leading when you're not a decision maker
- How TCAPP Supports Collaborative Decision Making

Demonstrations/Breakouts for TCAPP Applications of Special Interest

- Applications Demo
- Application Breakouts (using MeetingSphere during exploration: what do you like/what's valuable? What could be changed/improved?)

Application 1: Visioning and Transportation/Application 2: Greenhouse Gas Emissions

- Demonstration
- Exploration
- Discussion: What pieces seem the most useful? What are you struggling with? How might this application be useful for your key challenges?

Lunch: MPO Breakout: Next Steps and Plans to Use TCAPP (Post Plans Using MeetingSphere)

Next Steps

MPO Report Out: Share plans with Other MPOs

Making Use of Your Community of Practice

- Online Exercise Poll Using MeetingSphere
- Virtual Workshops: Topics and Order

Evaluation & Wrap Up

First Virtual Seminar: Experienced TCAPP Users

1:00 p.m.–2:45 p.m., November 14

- MeetingSphere Check-in
- Agenda and Overview (summary from Getting Started Workshop)
- Updates from MPOs: How have you progressed with your plan to use TCAPP in your work? What challenges/surprises/uses have you encountered?
- Former TCAPP Pilot Project Experiences
 - Brief Introductions
 - Washington Department of Transportation
 - Minnesota Department of Transportation
 - Q&A/Discussion
- Action Items
 - Review the Practitioner's Guidebook
<http://transportationforcommunities.com/shrpc01/cases/pdf/Practitioners%20Handbook%20for%20Greenhouse%20Gas%20Planning.pdf>
 - Test out the Collaboration Assessment Tool
http://transportationforcommunities.com/shrpc01/collaboration_assessment with either your Partners or your Stakeholders]
 - Use MeetingSphere to share your experiences with the Practitioner's Guidebook and the Collaboration Assessment Tool
(<https://us01.meetingsphere.com/49588508/tcapp1>). As a thank-you for sharing, you'll receive a box of homemade cookies to brighten your November/December days!
 - Second Virtual Seminar in Mid-January: Greenhouse Gas Application

Second Virtual Seminar: Scenario Planning

9:00 a.m.–10:00 a.m., January 22

- MeetingSphere Check-in
- Agenda Overview and Introductions
- What’s been working the best in your collaborations around GHG scenario planning? What are you discovering? Central Lane, Metro, and Corvallis
- Discussion: all MPOs
- Where can TCAPP fill in with existing Oregon tools to help overcome challenges with scenario planning ODOT and DLCD
- Findings so far for report to TRB
- Action Items:
 - Use MeetingSphere to comment on findings for report to TRB (<https://us01.meetingsphere.com/49588508/tcappv2>)
 - Possible Topics for Third Virtual Seminar in Early March

Third Virtual Seminar: GHG Scenario Planning Outside Oregon and Project Findings Feedback

1:00 p.m.–2:00 p.m., March 31

- MeetingSphere Check-in
- Agenda Overview and Introductions
- Guest Speaker: Dan Wayne, Senior Planner from Shasta Regional Transportation Agency in California on Scenario Planning
 - Discussion
- Findings so far for report to TRB
 - Discussion: With FHWA taking over TCAPP (to be renamed Plan Works), is there anything you think is missing? Are there modules that would be helpful for you in addressing a particular area of your work? What kind of peer support could be helpful to you in moving forward with collaboration in general and scenario planning specifically?
- Wrapping up the Project and Oregon Solutions Network Resources
 - Action Items:
- Use MeetingSphere to comment on findings for report to TRB (<https://us01.meetingsphere.com/49588508/tcappv3>)

APPENDIX D

Interview, Survey, and Discussion Questions

MPO Interviews:

1. How long have you been working at the MPO and why did you take the job here?
2. What have been the top issues you have encountered that made planning challenging in your area?
3. What are a couple of the biggest challenges this community faces over the next 2–4 years?
 - a. Which would benefit from collaboration?
 - b. What do you need to collaborate effectively?
 - c. What are some of the biggest obstacles the MPO faces?
4. What are some of the MPO's/your personal/community priorities right now?
 - a. Which would benefit from collaboration?
 - b. What do you need to collaborate effectively?
5. How long have your policy committee members been serving? Stability/turnover?
6. What are the working relationships like among your policy committee members?
7. How much do you know about TCAPP?
 - a. What benefits would you expect from a collaborative tool that fits into your normal planning processes?
8. Has your MPO been doing any scenario planning? If not, how interested are you?
 - a. Would it be worthwhile to use a scenario-planning tool that provides information on outcomes of decisions?
9. What are the prevailing community attitudes regarding greenhouse gases (GHG)?
10. What is your policy committee's prevailing attitude regarding GHG?
11. Is there anything else you think I should know?

Pre-workshop Survey Questions:

1. What is your MPO's top priority that you'd like to focus on for this workshop? What stage are you in with that project?
2. What is the biggest challenge that you think collaboration and collaborative tools could help address?
3. How do you see collaborative technology like TCAPP addressing that need?
4. What are the unique characteristics of your region and of your MPO? How will those unique characteristics create opportunities and challenges for collaborative work?
5. What would you want to know from other MPOs/participants that would be helpful to you?

Post-workshop Survey Questions:

1. We will be holding the first virtual webinar in November. Please indicate your availability by selecting the dates/times you would be able to participate. Mark your preference in the text box below the data/time you prefer by writing “prefer.”
2. How does your experience of the TCAPP component of the training compare with your expectations? You could comment on such things as the following: type of materials; skills or issues covered; structure of the sessions; opportunity to practice skills; resource persons; co-participants, etc.
3. Please assign an overall rating to the following TCAPP training elements on a 5-point scale, where 1 is “poor” and 5 is “excellent.” Feel free to add in any comments in the text boxes under each element. Elements include: training content, quality of training team, quality of coaching/feedback, written materials, and training facilities.
4. What part of the TCAPP training was the most useful to you? Please explain.
5. What part of the TCAPP training was least useful to you? Please explain.
6. Was there anything not touched on during the TCAPP training that you expected or needed? If so, please explain.
7. What suggestions do you have to improve this training on TCAPP?
8. Other comments or reflections on TCAPP/the TCAPP training?

Virtual Seminar #1 Questions:

1. How have you progressed with your plan to use TCAPP in your work?
2. What challenges/surprises/uses have you encountered?

Virtual Seminar #2 Questions:

1. What’s been working the best in your collaborations around GHG scenario planning? What are you discovering?
2. Where can TCAPP fill in with existing Oregon tools to help overcome challenges with scenario planning?

Virtual Seminar #3 Questions:

1. With FHWA taking over TCAPP (to be renamed Plan Works), is there anything you think is missing?
2. Are there modules that would be helpful for you in addressing a particular area of your work?
3. What kind of peer support could be helpful to you in moving forward with collaboration in general and scenario planning specifically?