Federal Highway Administration

Climate Change Mitigation Peer Exchange Report

The Role of Metropolitan Planning Organizations (MPOs) in Climate Change Mitigation

Held April 12-13, 2012 in Chicago, IL

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Climate Change Mitigation Peer Exchange Report

The Role of Metropolitan Planning Organizations (MPOs) in Climate Change Mitigation

Introduction

On April 12th and 13th 2012, FHWA hosted a peer exchange in Chicago entitled "The Role of Metropolitan Planning Organizations (MPOs) in Climate Change Mitigation." The peer exchange provided an opportunity for representatives from twelve MPOs from a range of metropolitan areas to discuss opportunities for mitigating climate change and analyzing greenhouse gas (GHG) emissions within their regions. The peer exchange included representatives from:

- Baltimore Metropolitan Council (BMC),
- Central Lane MPO,
- Chattanooga-Hamilton County Regional Planning Agency (CHCRPA),
- Chicago Metropolitan Agency for Planning (CMAP),
- Chittenden County Regional Planning Commission (CCRPC),
- Houston-Galveston Area Council (H-GAC),
- Mid-America Regional Council (MARC),
- Missoula MPO,[1]
- North Central Texas Council of Governments (NCTCOG),
- Tri-County Regional Planning Commission (Tri-County RPC – Lansing, MI)
- San Diego Association of Governments (SANDAG), and
- Southern California Association of Governments (SCAG).

For a complete list of participants and contact information, please see Appendix A.

The MPO Peer Exchange consisted of a series of presentations on climate change mitigation activities, GHG analysis strategies, and incorporation of climate change into planning. Participants were encouraged to ask questions and engage in discussion about their current practice, challenges, and opportunities for future activity.

This report summarizes the presentations, participant discussions, and cross-cutting themes from the peer exchange. It also notes additional resources available to MPOs. Workshop materials presented during the exchange are available upon request to FHWA.

Peer Exchange Summary

Over the course of the peer exchange, participants presented on and discussed a variety of issues related to GHG analysis and climate change mitigation. Many of the participating MPOs are conducting GHG analysis, and a smaller number are considering GHG emissions in their project selection criteria – whether through cost-benefit analysis or other project scoring methodologies. MPOs use a range of analysis techniques to quantify emissions from transportation, usually including multiple approaches within each agency, such as using EPA's Motor Vehicle Emission Simulator (MOVES) for emissions analysis and off-model spreadsheet approaches to analyze particular reduction strategies. MPOs are very interested in identifying effective mitigation strategies and in finding ways to implement these strategies where possible. A number of metropolitan areas have found that the highest GHG emissions reductions come from technological advances and legislative activities, including fuel efficiency standards and diffusion of advanced vehicle technologies,

[1] The Missoula MPO representative was only available to call into the meeting for a portion of second day.

though regional land use planning and transportation strategies also offer important GHG reduction potential, as well as other mobility, livability, and environmental co-benefits.

The peer exchange began with welcome by Diane Turchetta of FHWA and Michael Grant of ICF. Diane Turchetta provided a summary of FHWA's GHG mitigation initiatives and participants were asked to introduce themselves and mention what they hoped to discuss during the exchange. Over the course of day one, nine participants presented their MPOs' activities as they relate to climate change. Each presentation provided an overview of each MPO's context, and presentations were grouped into sessions on integration of GHG analysis in planning, incorporation of emissions reduction strategies into planning, and current efforts to reduce GHG emissions.

Day two of the peer exchange began by completing presentations from the previous day. The group discussed financing the transportation system generally and climate change mitigation strategies, particularly co-benefits of mitigation strategies, and outreach related to climate change initiatives. Finally, participants provided feedback to FHWA on what the agency might be able to provide that would be useful to them. Active participation, questions, and discussion were encouraged throughout the exchange. Themes from these discussions and from the presentations are provided in the section Findings and Conclusions. The complete agenda is provided in Appendix B.

Presentation and Discussion Summaries

Michael Grant, ICF International, and Diane Turchetta, FHWA, welcomed participants to the exchange and explained the series of FHWA peer exchanges focused on climate change adaptation and mitigation.

FHWA Climate Change-Related Initiatives

Diane Turchetta described the range of activity underway at FHWA related to tools and support for states and regions. FHWA is developing a Handbook for Estimating Transportation GHGs for Integration into the Planning Process, creating a planning tool and analytical framework for quantifying GHG emissions from construction activities, and currently piloting a new tool – the Energy and Emissions Reduction Policy Analysis Tool (EERPAT) – based on Oregon DOT's GreenSTEP model. EERPAT can help with state-level strategy analysis in situations where states would like to examine a large number of strategies quickly. It does not replace more robust models like EPA's MOVES model, and so, can be used rather as a screening tool for MOVES. Unlike other models, EERPAT uses national household survey data to estimate variables such as car ownership and transit ridership, and then generate vehicle miles traveled (VMT) estimates rather than using a network model. Finally, FHWA has released a mitigation reference source book that will examine some areas where MPOs have a greater level of control, such as travel demand management (TDM) and operational strategies.

In the area of sustainability, FHWA has also developed a self-evaluation tool for assessing programs and projects, known as the Infrastructure Voluntary Evaluation Sustainability Tool (INVEST). INVEST, which has been piloted and tested by several State DOTs and MPOs, will not be tied to funding in any way, but rather was developed to help agencies identify characteristics of sustainable highways and provide information and techniques to assist them with integrating sustainability best practices into highway projects and programs. Finally, in the area of adaptation, FHWA has been conducting a climate change vulnerability assessment in the Gulf Coast Region. Phase II of the project, currently underway, examines critical infrastructure vulnerability in Mobile, Alabama, and FHWA is working with local decisionmakers to identify possible responses.

Context for Climate Change Mitigation

Mr. Grant highlighted ways in which GHG analysis can be integrated into metropolitan transportation planning. The presentation also included a summary of responses to a survey that participants had completed prior to the peer exchange. The survey showed that MPOs in attendance ranged in their level of

experience with GHG inventories and mitigation strategy implementation. All participants were asked to briefly introduce themselves and mention key elements that they hoped the exchange would cover. Issues of interest are listed below:

- Tools for addressing multi-pollutant issues
- Discussion of how reauthorization could incorporate reduction targets and performance measures
- Strategies that others are using to reduce emissions, including TDM and "off model" strategies
- Techniques to implement strategies for MPOs without regulatory authority
- Standardizing methodologies for analysis and adapting to changing methodologies and tools
- How to engage other institutional partners to minimize sprawl
- Bridging the gap between rural and urban perspectives and differences between diverse jurisdictions contained in one MPO area.
- Cost-effectiveness and ability to implement strategies
- Pricing and how individuals can be motivated to alter their behavior

Current Efforts to Integrate GHG Emissions into Transportation Planning

Three participants provided highlights of their MPOs' activities relative to GHG mitigation. A brief summary of these presentations is included below:

Baltimore Metropolitan Council: The State of Maryland is tenth in the country in terms of length of coast miles and is at high risk for inundation from sea-level rise. The region depends on the health of the Chesapeake Bay for much of its economic activity and appeal. Cleaning up the Bay and mitigating climate change have been important issues receiving significant attention for some time, with the Governor first issuing an executive order on climate change in 2007. The order established a commission on climate change, and in 2009, the state passed the Greenhouse Gas Reduction Act (GGRA), which set a goal to reduce emissions statewide to 25 percent below 2006 levels by 2020. The state released its draft implementation document on March 21st, 2012. The MPO is currently reviewing this document to determine where its responsibilities lie and what is possible to attain with current funding levels. Therefore, BMC is interested in identifying the most cost-effective emissions reduction strategies available to an MPO.

Chattanooga-Hamilton County Regional Planning Agency: CHCRPA is a bi-state MPO, covering part of Georgia in addition to Chattanooga, Tennessee. The area currently has the highest levels of freight through-traffic in the country. CHCRPA started using the MOVES model several years ago for conformity analysis. While one municipality in the region has conducted a climate action planning process, the agency has not conducted a region-wide GHG inventory. With skepticism from some decisionmakers and public, the MPO has focused on livability-related and multi-modal improvements, such as ITS projects, adding sidewalks and bike lanes, launching a bicycle transit system, and a Green Trips incentives program to encourage reduction of single-occupancy vehicle trips. For the new project selection process for the region's Transportation Improvement Program (TIP), CHCRPA will include information on emissions impacts of projects, relationship to land use, and health-related factors when presenting options to its policy board for project prioritization.

Mid-America Regional Council: MARC, the MPO for Kansas City, Missouri has a wide variety of sustainability- and climate change-related initiatives in place. Several of its jurisdictions have GHG inventories and climate action plans, but no regional GHG planning has taken place, as several areas do not prioritize the issue. MARC recently completed a Long-Range Plan (LRP), which includes goals for energy, VMT reduction, and vehicle occupancy. Projections created for the plan forecast massive growth for the region, which the MPO used to create an "adaptive" scenario that focuses on livability initiatives and land conservation measures. MARC received a U.S. Department of Housing and Urban Development (HUD) sustainability grant to create a sustainability plan for six specific corridors and a grant from USDOT for its Green Impact Zone where it will implement multimodal and traffic flow improvements through signal optimization. The region is in attainment, but receives some Congestion Mitigation and Air Quality Improvement (CMAQ) money through

both Missouri and Kansas and has a regional clean air action plan in place. The MPO has been conducting electric vehicle planning for a number of years. In addition to the MPOs direct activities, it works with a variety of local coalitions and non-profits that help to spearhead particular campaigns.

GHG Analysis in Planning (inventories, forecasts, and methodologies)

Michael Grant began with a brief overview of GHG inventory and analysis methodologies, including fuel consumption and VMT methods. This was followed by three participant presentations focusing largely on GHG analysis issues, with questions and discussion integrated throughout.

Chicago Metropolitan Agency for Planning: CMAP has performed three GHG inventories for the years 2000, 2005, and 2010. The agency has faced a tradeoff between accuracy and consistency in methodologies in performing its inventories, as updates in methodology for its most recent inventory changed its understanding of emissions sources somewhat. The overall level of emissions has remained relatively constant through these three inventory years. As similar regions have found around the country, the City of Chicago has lower per capita emissions levels than the surrounding suburban areas. The MOVES model was used to estimate mobile sources GHG emissions. The inventory process showed that transportation makes up approximately 30 percent of regional emissions, and also revealed that approximately 15 percent of transportation-related emissions can be attributed to through trips and only between five and seven percent of emissions are due to congestion.

Chittenden County Regional Planning Commission: CCRPC covers Burlington, Vermont and surrounding areas. Largely due to the use of hydroelectric and nuclear power, which lower emissions from electricity, transportation in Vermont accounts for approximately 47 percent of the State's emissions. The MPO began working on GHG analysis relatively recently and will soon integrate climate change planning activities into a new HUD-funded regional sustainability plan. Vermont's estimate of transportation emissions was based on fuel sales data, and CCRPC's will be based on the travel-based method, which could yield slightly different results but will also serve as a reasonableness check. To perform its inventory, CCRPC will use its regional travel model to generate flows and speeds by individual links. Then it will run MOVES in emissions factor mode using county-specific fuel formulation and vehicle registration data from the State. The emissions factors will then be applied to the travel model output. CCRPC is allocating half of VMT for each trip to origin locations and half to the destination. It has found that there can be a 5-10 percent difference in vehicle emissions depending on the season, with emissions rising in the summer. The results of the analysis will be used to identify promising mitigation strategies.

San Diego Association of Governments: SANDAG, as with other California MPOs has been significantly impacted by the State's Senate Bill 375 – the Sustainable Communities and Climate Protection Act of 2008. Under this act, each region has been assigned a per-capita GHG reduction target from passenger vehicles and light-duty trucks, using a 2005 base year, and each MPO must prepare a Sustainable Communities Strategy (SCS) to reach that target using land use, housing, and transportation planning strategies. SANDAG recently completed its SCS and LRP for 2050, which shows the region exceeding its targets for emissions reduction in 2020, just meeting the targets for 2035, and showing a slight overall emissions increase in 2050. Modeling for technology improvements is only available through the State's air emissions model through 2040, meaning that the 2050 estimate was uncertain. The plan relies on a combination of active transportation, smart growth, TDM, transit, and managed lanes to achieve its goals. In creating the plan, SANDAG used a composite of its municipalities' land use plans to generate the future land use scenario, as these municipalities have been engaged in "smart growth" planning for several years in conjunction with SANDAG's Regional Comprehensive Plan, which was approved in 2004. As a result, the regional housing growth is expected to be largely multi-family units. At the moment, SANDAG's plan is facing scrutiny – California's Attorney General and a coalition of environmental groups are suing SANDAG and alleging that it did not adequately analyze its plan under the California Environmental Quality Act and are actively seeking to have SANDAG change the

projects approved in its local sales tax measure, which was approved by a two-thirds majority of county-wide voters in 2004.

General Discussion: Participants discussed a number of the technical and model-related considerations that they currently face. Major points from these discussions are included below.

- Changes from MOBILE6 to MOVES have changed emissions estimates significantly for some areas. Similarly, California's targets related to SB 375 were set using a slightly older version of the State's EMissions FACtors (EMFAC) model, although the fleet mix has now changed.
- MOVES allows users to input lots of local data or use defaults, but users may not fully understand the defaults and how to decide which local data is important for accuracy and which variables can be accurately modeled based on defaults.
- Several MPOs have had to develop their own complex off-model analyses to properly account for the nuances of their regions and the strategies they would like to implement. Development of these analyses takes significant amounts of time and expertise.
- MPOs agree that standardization of modeling practices is important, but also must balance that with the ability to adjust models to fit their needs. Ideally, off-the-shelf models should allow for high degrees of customization.
- Any modeling effort has to recognize that projecting emissions involves a high degree of uncertainty, and future models may show very different results.

Greenhouse Gas Mitigation Strategies and Incorporation into the Planning Process

During this session, four participants presented on their mitigation strategies, the related strategy analysis, and links between these strategies and the planning process. Due to time constraints, the second two presentations took place on the morning of the second day.

Southern California Association of Governments: In April 2012, SCAG adopted its RTP/SCS after three years of an extensive bottom-up collaborative process. SCAG covers a very large region – including six counties and 191 cities with over 18 million people – and is projected to add another 4.2 million people by 2035. Transportation currently makes up less than a third of the region's emissions, and fuel efficiency and vehicle technology are projected to be responsible for the majority of SCAG's transportation-related emissions reductions over the coming decades. Activities related to SB375 implementation are projected to account for only three percent of the region's total emissions reductions. Thus, SCAG's RTP/SCS focuses on planning for a sustainable future by conserving land consumption and promoting public health. In drafting its current plan, SCAG performed scenario analysis exploring combinations of development location, neighborhood design strategies, housing mix, and transportation investments. The plan, which is expected to reduce per capita GHG emissions by 16 percent by 2035, will allocate only 13 percent of capital investment to highways, focus half of the growth in three percent of the land area (areas designated as "high quality transit areas" that are within a half-mile of a major transit corridor), primarily in multi-family housing units. SCAG also involved its local municipalities in the planning process by asking each to contribute their land use and growth projections and helping them to focus more future development towards transit corridors.

Tri-County Regional Planning Commission: Tri-County RPC covers Lansing, Michigan and the surrounding region in mid-Michigan. In 2000, the region conducted an extensive and inclusive visioning process that generated its land use vision. The vision has helped the MPO in implementing related initiatives, since it has already achieved buy-in from local governments and citizens. Primary initiatives for Tri-County RPC include street design to improve traffic flow and promote transportation alternatives, such as through road diets, roundabouts, signal timing optimization, and installing bike lanes. Between 1988 and 2010, 15 miles of area roads were slimmed from four to three lanes to allow for bicycling. They plan similar "road diets" on an

additional 18.5 miles by 2020. Additionally, Tri-County RPC is working with Michigan State University to encourage mode shift on campus, and for students and staff commuting to campus. Since 1997, the University has decreased VMT significantly and between 2012 and 2020 it expects to designate some roads as bus-only, remove some on-campus roads, and create new park-and-ride lots. The MPO uses MOVES to model GHG reductions, but has not conducted a regional inventory.

Day Two: Recap and Discussion from Day One

To begin the second day of the exchange, participants completed presentations related to GHG emissions reduction strategies.

Houston-Galveston Area Council: The Houston-Galveston area covers eight counties with six million people. The area is flat with numerous port facilities, and has few restrictions on growth, including no zoning – making greenfield development particularly easy. The region is in non-attainment for ozone under the Clean Air Act and has a long history of implementing voluntary measures and using public-private partnerships to reduce air pollutant emissions. Some of H-GAC's key transportation and air quality-related initiatives include engine replacement programs for heavy-duty trucks and school buses and working with the area's clean cities program and private partners to promote a switch to natural gas through vehicle purchases, retrofits, and installation of fueling stations. H-GAC has also received funding to help convert vehicles in public fleets through proceeds from fines paid by area refineries and factories who exceed their permitted emissions amounts. H-GAC has implemented a loan program for drayage truck owners to purchase cleaner trucks. The program has cost-effectiveness requirements based on the tonnage of the truck and the percentage of VMT driven within the H-GAC region. Other H-GAC initiatives include a commute solutions program, electric vehicle infrastructure planning, and a clean vessels program. While the region has not conducted a GHG inventory, it did release a Foresight Panel on Environmental Effects Report in 2008.

Central Lane MPO: In 2010, Oregon's legislature passed a bill to reduce GHG emissions from transportation, including a goal to reduce these emissions to 75 percent below 1990 levels by 2050. The bill specifically directed the Central Lane MPO to develop multiple land use and transportation scenarios to accommodate population and employment growth while reducing emissions from light-duty vehicles. The MPO has conducted an inventory and is now in the process of examining scenarios for 2035. It will explore three possible levels of implementation of a range of strategies covering community design, pricing, marketing and incentives, roads, fleet, and technology. Central Lane MPO will work closely with Portland Metro, which has finished its initial phase of scenario planning and adapted Oregon's statewide GreenSTEP scenario analysis tool for use by metropolitan regions. This adapted model helped the MPO to test and analyze scenarios. It anticipates that technology and fuel standards will account for about 80 percent of the emissions reduction.

Financing GHG Reduction Strategies

Participants discussed some of the key issues and challenges associated with financing transportation investments that will contribute to emissions reduction. Major points from the discussion included:

- The challenges associated with declining gas tax revenues, particularly since the gas tax is not adjusted to inflation.
- The role of changing fleet mixes and alternative fuels, which do not have to pay the gas tax.
- Difficulties imposing fees or local taxes – local taxes require strong public support and understanding, while freight or port fees can drive economic activity away.
- Opportunities to use mileage fees to increase revenue and encourage reductions in congestion and GHG emissions.

Communication about Climate Change and Co-Benefits of Mitigation Strategies

Mr. Grant set the context for communication challenges in the face of skepticism and misunderstanding about climate science among the public and decisionmakers. Two MPOs presented on their activities relating to GHG emissions, and the group then discussed communication strategies and the role played by co-benefits of mitigation strategies both in decisionmaking and in communicating about climate change.

Missoula MPO: Despite representing a smaller region, the Missoula MPO's area has been in non-attainment for PM_{10} and CO due to a combination of geographic location, wood product mills, and continued use of wood stoves. Although the MPO has not conducted an inventory at this time, the City of Missoula and University of Montana have both completed inventories and have climate action plans in place. The MPO recently created a land use and transportation vision (Envision Missoula), which focuses its projected growth in population (likely doubling in the next 50 years) in the urban core and designated corridors and is projected to reduce VMT and congestion compared to other scenarios. Missoula is also in the process of realigning its transit to focus service in the urban core on more heavily-traveled routes to improve efficiency. Looking forward, the MPO is working to develop performance measures related to air pollution and GHG reduction.

North Central Texas COG: NCTCOG represents the Dallas-Fort Worth region. Given regional resistance to address climate change, the MPO has overall not taken significant action directed at mitigation. However, NCTCOG performs significant air quality analysis and planning related to its non-attainment status. In performing scenario analysis, NCTCOG includes projections of CO_2 impacts, although these are not emphasized or incorporated in project prioritization at this time. Current emissions-related initiatives in the region include encouraging municipalities to pass anti-idling ordinances, emissions enforcement for existing vehicles, preferential parking, and environmental speed limits.

General Discussion: As part of the discussions of mitigation strategies, GHG analysis, and incorporation into the planning process, participants discussed a number key issues relating to outreach and education – both to the general public, decisionmakers, and engineers. A few key questions and discussion points emerged, particularly around how regions can engage partners in implementing controversial strategies.

- Some MPOs find "complete streets" to be difficult to communicate to engineers and others, who worry that remaining streets may then be labeled as "incomplete."
- Similarly, roundabouts are new concepts in many places, and therefore they require the development of educational materials. CHCRPA released humorous videos about learning to navigate a roundabout, which helped to engage and inform the public.
- Land use and density-related strategies produce a lower level of emissions reductions than some of the public expect to see from these strategies (particularly compared to vehicle technology strategies, or in comparison to aggressive GHG reduction goals), so explaining their co-benefits can be particularly important when communicating with the public.
- The marketing and outreach techniques that MPOs previously used to promote alternatives to driving may be less effective today. MARC has extensive public marketing and outreach that has been successful using radio and TV spots and social media. It has greatly reduced its use of print materials, since these were no longer as effective. MARC has also targeted events, such as those family and child-focused, to raise awareness.
- Funding marketing efforts through CMAQ or other programs that want a measure of return on investment is challenging, since demonstrating its impact is difficult and resource-intensive. Nevertheless, the outreach to either encourage participation in carpools and other alternatives to driving alone or to educate citizens about a policy decision is critical for MPOs.

- MPOs are not well recognized or understood by the broader public. It may be more effective for them to operate in partnership with others and to brand their programs effectively rather than trying to educate the public about the role of the MPO and its programs.
- Partnerships with private business and non-profits may help to reduce the coordination burden on an MPO. As natural gas and electric vehicles receive more attention, parts and vehicle manufacturers and utilities are becoming more engaged.

MPO Needs for Federal Support

During the peer exchange, participants were asked for areas where they could use additional support from FHWA. MPOs expressed interest in:

- A compendium of resources related to successful outreach strategies for GHG emissions in use around the country that would be tailored to and sorted by geographic contexts, audiences, and program type.
- An update to FHWA's publication on Multi-Pollutant Emissions Benefits of Transportation Strategies.
- Examples of innovative funding structures and partnerships, including non-Federal funding options.
- Best practices associated for GHG analysis and performance measurement.
- Technical resources for analysis and help with applying existing tools, such as through the FHWA Resource Center.

To close, Mr. Grant and Ms. Turchetta thanked the MPO representatives for their participation.

Findings and Conclusions

Over the course of the exchange, the participants discussed barriers to mitigation strategies and challenges associated with reducing transportation-related emissions due to limits on the types of strategies that MPOs have the power to implement and due to through trips or heavy freight traffic in several areas. Regions also identified some of the synergies between strategies and analysis methods used for criteria pollutants and those used for GHG analysis, while acknowledging some of the key differences between these pollutants.

Mitigation strategies differ greatly in their ability to reduce emissions from transportation.

While land use changes, TDM, traffic flow improvements, transit, and vehicle technology all have the ability to reduce emissions, these strategies do not have the potential to reduce emissions in equivalent amounts. Several MPOs, including SANDAG and SCAG reported that even under scenarios with ambitious land use changes or transit upgrades, these strategies have a limited impact on emissions relative to improvements in fuel economy. Some stakeholders in these and other regions expect greater reductions from these strategies than may be feasible, and so communicating both the importance of pursuing multiple strategies, their synergies where applicable, and their limitations is important.

Changes to GHG analysis methodologies can significantly alter a region's understanding of its current emissions profile, the impact it anticipates from various emissions reduction strategies, and its likelihood of attaining emissions-related goals.

Modeling and inventory methodologies for GHG inventories, forecasts, and strategy analysis are evolving. For instance, EPA has developed its emissions models over time, most recently switching from MOBILE6.2 to the MOVES model. However, changes in methodology can impact the picture of how much a region emits, where those emissions come from, and any progress it has made toward emissions reduction. Participants from CMAP and SCAG particularly noted the changes from one year to the next using slightly different inventory methods. The changes resulting from new methodologies can also affect the MPO's credibility with

stakeholders and the public, who may perceive the previous analysis as an error. Therefore, it is important to communicate what has changed and why.

Several regions reduce GHG emissions primarily through programs targeted at reducing criteria pollutants.

A number of MPOs present at the exchange, such as NCTCOG, H-GAC, and CHCRPA represent regions where climate change mitigation is controversial. Since these areas are not in conformity under the Clean Air Act, however, they still must implement strategies targeting criteria pollutants such as ozone, NO_x, and PM. These include TDM programs, providing infrastructure for transportation alternatives, and programs encouraging the use of cleaner-burning fuels or support of electric-vehicle infrastructure planning.

Messaging and outreach related to GHG emissions and emissions reduction programs requires an understanding of the regional population – best practices in one region may not successfully transfer to another.

Peer exchange participants represented diverse constituencies and reported success with a wide range of messages. For example, a number of regions focus only on air quality and public health issues associated with breathing in polluted air. Others, such as California MPOs and Central Lane MPO communicate directly about climate change; while BMC focuses on improving the health of the Chesapeake Bay. One lesson is to tailor messages to an issue that is important to the region's stakeholders. Additionally, since MPOs often are not widely-recognized or understood by the general public, branding specific programs, initiatives, or concepts instead may be more successful.

Additional Resources

Tools and Resources

Through the peer exchange discussions, FHWA and MPOs presented on tools and specific methodologies, programs, or other reports of interest to those in the rest of the group. Several MPO participants mentioned publications available that they prepared for their regions. Note that several of the websites listed below provide links to a variety of plans and other reports that may be of interest, for example:

FHWA Resources:

- FHWA Climate Change Website: http://www.fhwa.dot.gov/hep/climate/index.htm
- Energy and Emissions Reduction Policy Analysis Tool (EERPAT): http://www.planning.dot.gov/FHWA_tool/default.asp
- Reference Sourcebook for Reducing GHG Emissions from Transportation Sources: http://www.planning.dot.gov/FHWA_tool/reference_sourcebook.pdf
- Sustainable Highways Self Evaluation Tool (INVEST): http://www.sustainablehighways.org/
- FHWA Risk Assessment Model and Pilot Testing: http://www.fhwa.dot.gov/hep/climate/pilots.htm
- Handbook on GHG analysis and Incorporation into the Transportation Planning Process: *forthcoming.*

State and MPO Resources:

- California Interregional Blueprint project information: http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/
- Central Lane MPO Regional GHG Inventory: http://www.thempo.org/what_we_do/greenhouse.cfm
- Chattanooga-Hamilton County Regional Planning Agency: http://www.chcrpa.org/TPO_reorganized/TPO_Air_Quality_and_Congestion.htm

- CMAP GO TO 2040 Regional Plan: http://www.cmap.illinois.gov/2040/main
- H-GAC Foresight Panel on Environmental Effects Report: http://www.h-gac.com/community/environmental-stewardship/fpee/default.aspx
- MARC Clean Air Action Plan: http://www.marc.org/environment/airq/clean-air-action.htm
- Maryland GHG Reduction Act Statewide Implementation Plan: http://www.mde.state.md.us/programs/Air/ClimateChange/Pages/Air/climatechange/index.aspx
- *GHG Modeling & Analysis Tools, Report* by the Oregon Sustainable Transportation Initiative providing information on the primary models used within the state: *http://www.oregon.gov/ODOT/TD/TP/docs/Toolkit/ModelAnalysisTool.pdf*
- Portland Metro's Climate Smart Communities Scenarios Project *Understanding our Land Use and Transportation Choices: http://www.oregonmetro.gov/index.cfm/go/by.web/id/36945*
- Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy: http://www.sacog.org/2035/mtpscs/
- SANDAG 2050 Regional Transportation Plan (RTP), available for download at: http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail
- SCAG 2012-2035 RTP, available for download at: http://rtpscs.scag.ca.gov.

Appendix A: Participant List

FHWA Climate Change Mitigation Peer Exchange

Participant List

The Role of MPOs in Climate Change Mitigation

Chicago, Illinois

April 12-13, 2012

Name	Affiliation	Email
Participants		
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*Presented remotely and participated in discussions on April 13th.

Appendix B: Agenda

FHWA Climate Change Mitigation Peer Exchange

Agenda
Chicago, IL
April 12-13, 2012

April 12, 2012

	Day 1
9:00 AM	Welcome and Purpose • Introductions • Presentation of Current FHWA Initiatives (Diane Turchetta)
9:45 AM	Current Efforts to Integrate GHG Emissions into Transportation Planning - National context (Michael Grant) - Highlights of MPOs experiences from: • Melissa Taylor, Chattanooga • Todd Lang, Baltimore Metropolitan Council • Amanda Graor, Mid-America Regional Council
10:45 AM	Break
11:00 AM	Challenges and Opportunities for Addressing Climate Change in the Planning Process – Roundtable Discussion
11:45 AM	Lunch Break
12:45 PM	GHG Analysis in Planning (Inventories, Forecasts, and Methodologies) - Brief Overview (Michael Grant) - Highlights of MPOs experiences from: • Jesse Elam, Chicago Metropolitan Agency for Planning • Michele Boomhower, Chittenden County Regional Planning Commission • Charles "Muggs" Stoll, San Diego Association of Governments - Discussion.
2:30 PM	Break
2:45 PM	Greenhouse Gas Emissions Reduction Strategies, and Incorporation into the Planning Process - Brief Overview of Strategies (Michael Grant) - Highlights of MPOs experiences from: • Huasha Liu, Southern California Association of Governments • Hary Prawiranata, Tri-County Regional Planning Commission • Shelley Whitworth, Houston-Galveston Area Council • Josh Roll, Central Lane MPO

	- Discussion.
3:45 PM	Break
4:00 PM	Wrap-up Discussion – Key Issues, Other Topics
4:30 PM	Adjourn

April 13, 2012

	Day 2
8:00 AM	Brief Recap from Day 1
8:20 AM	Co-benefits of climate change mitigation strategies and communicating about climate change. - Overview by Michael Grant - Highlights of MPOs experiences from: • Ann Cundy, Missoula MPO • Chris Klaus, North Central Texas Council of Governments - Discussion.
9:45 AM	Break
10:00 AM	GHG Mitigation Strategies – additional discussion. - Roundtable discussion of new or emerging mitigation strategies (e.g., electric vehicle infrastructure, sequestration etc.).
11:00 AM	MPO Needs – What do you need from FHWA?
11:45 AM	Adjourn