7.0 Partnerships

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7.1 What Is Included?

Virtually all sectors of the economy, whether transportation, industry, agriculture, power production, commerce, etc., emit greenhouse gases (GHGs). State, regional, and local governments have varying roles to play in influencing emissions from these sectors. GHG reduction also is of concern to the public at large and a major focus for some nongovernmental organizations (NGOs). Reducing GHGs will, therefore, require all sectors of the economy—and the agencies and organizations that oversee those sectors—to participate. GHG emissions from the transportation sector are typically one of the largest contributors to overall emissions. Any effort to reduce GHG emissions in a State will include the transportation sector and should include the State department of transportation (DOT) as the major agency responsible for oversight of transportation.

The list of partners in a GHG reduction effort will likely be long due to the scale of effort needed to reduce GHG emissions across a State. The list of potential partners will also vary, depending on the

administrative makeup within the State. For example, land use considerations are an important component in evaluating GHG reduction strategies. In many States, land use decisions are made at the local level; in some States, those decisions are made regionally; and, finally, in a few States, those decisions are made via a statewide entity or process.

Agencies that will commonly partner with a State DOT on climate change issues might include

- Environmental/air quality agency
- Energy agency
- Utility regulators
- Commerce/economic development agency
- Agriculture agency
- Health agency
- Governmental services agency
- Housing agency
- State budget office
- Metropolitan planning organizations (MPOs) and other regional planning agencies

If the GHG emission reduction initiative is led by or involves a commission, council, or steering committee established by the Governor's Office or by State legislation, the State DOT will likely end up partnering with every agency in the group.

Given the substantial contribution of the transportation sector to emissions, the State DOT should play a lead role in a State's GHG reduction effort. The State DOT can do this in several ways:

- Through its own planning and investment programs that direct the overall flow of resources to the State's transportation system.
- By providing data, guidance, and/or other resources to assist regional and local transportation planning and operating agencies in implementing GHG reduction strategies.
- By helping to shape State regulations and policies that affect transportation sector emissions.
- Leading by example—testing and introducing clean vehicles and fuels into its fleets, as well as testing and implementing low-carbon materials and construction and maintenance practices.

- By encouraging employees to participate in programs that reduce emissions associated with their commute, such as telecommuting, transit incentives, preferential parking for clean vehicles, etc.
- By acting on employee ideas/suggestions regarding methods that the DOT could undertake to reduce GHG emissions from its operations or the transportation sector as a whole.

7.2 Why Engage in Partnerships?

Interviews conducted with State DOT staff in 2018 made it evident that the State DOTs with an active role in reducing GHG emissions from the transportation sector (Levels of Engagement 3 and 4) were all in active partnerships. The interviewed staff valued the partnerships, found the discussions highly useful, and appreciated sharing the workload and tasks with partners.

As of 2017, 33 States had completed or were in the process of developing a climate action plan.[1] In a State's comprehensive effort to reduce GHG emissions, agencies will be working together to reduce emissions from the various sectors that are under their oversight. The State DOT should advocate for a meaningful role in this process for a number of reasons, including the following:

- The DOT can help develop transportation strategies that are reasonable and feasible to implement and discourage the pursuit of strategies that may be unrealistic from a transportation perspective.
- The DOT can bring an essential perspective as strategies are developed and implemented for other sectors of the economy and anticipate controversies that could develop.
- The DOT can help facilitate outreach to a range of affected stakeholders, including agencies, corporations, NGOs, and the public at large. The DOT can especially leverage its strong social media and public communications presence relative to many other stakeholders.

A collaborative effort should result in a GHG reduction plan that recognizes the abilities and limitations of the various sectors of the economy to reduce emissions and result in a final plan that is as fair, reasonable, and as cost-effective as possible to all.

Partnerships bring a diversity of knowledge and contacts that may be needed to successfully implement strategies that stretch beyond a State DOT's typical domain of expertise. For example, deployment of electric vehicle (EV) charging infrastructure or solar generation in highway rights-of-

way requires electricity sector knowledge that may be held by staff of energy or public utility agencies. Partnerships offer staff an opportunity to interact with peers from other agencies, learn about their functions, and gain perspectives that they would not gain from routine day-to-day work assignments. For example, working with State agricultural staff or utility regulators can be an educational experience for all involved and lead to productive synergies on other topics.

For many State DOTs, a longstanding partnership typically exists with the State air agency because State Implementation Plans are developed to bring one or more nonattainment areas within the State into compliance with the National Ambient Air Quality Standards. Working on a GHG emission reduction plan allows for that relationship to be leveraged and brings new agencies and partners to the development process. Proactive outreach on the part of the DOT can also enhance the agency's credibility as a responsible environmental steward and generally improve relations with regulatory agencies, NGOs, and the general public.

Climate change work presents an opportunity for State DOTs to take existing programs and projects and integrate them into the climate action planning process and develop partnerships to aid and support their implementation. For example, many State DOTs have programs and projects to implement intelligent transportation system (ITS) activities. ITS measures are designed to reduce congestion and smooth out traffic flow, which should be beneficial for GHG reductions. If ITS-type measures can be included in an "approved" climate change/GHG reduction plan, this will give added impetus to those activities and have the support and assistance of the other agencies in the partnership.

Partnerships: Lessons Learned in Practice

During interviews conducted with State DOT staff in 2018, it became clear that most of the States valued the partnerships that were created or enhanced with the objective of addressing GHG emissions. Staff at the State DOTs in California, the District of Columbia, Minnesota, North Carolina, Oregon, Rhode Island, and Washington State all spoke to the working relationships established or expected to be established as work progressed. While the number of partners and agencies represented varied across these States, staff agreed that partnerships were necessary to accomplish the task of GHG reduction and felt their efforts were benefitting from the partnerships.

Other examples of successful partnerships can be seen in a regional approach. The Transportation and Climate Initiative (TCI) is a regional partnership of 12 Northeast and Mid-Atlantic States and the District of Columbia that seeks to improve transportation, develop a clean energy economy, and reduce carbon emissions from the transportation sector. Working collaboratively, the TCI States are addressing clean vehicles and fuels, sustainable communities, freight efficiency, information and communication technology, and a regional approach to cap GHG emissions from transportation. State transportation and environmental agencies share equal responsibilities in this initiative.

Another successful example of a regional partnership is the West Coast Green Highway. This partnership is an extensive network of EV, direct-current, fast-charging stations located every 25 to 50 miles along major roadways in British Columbia, Washington, Oregon, and California. The West Coast Green Highway is a coalition of public agencies and private businesses that will support and, in some cases, fund West Coast Green Highway projects; explore incentives, funding assistance, and marketing for businesses that invest in alternative fuels and infrastructure; identify locations and funding for alternative fuel infrastructure; and create recognizable way-finder signs. The DOTs in these States have a prominent leadership role in this partnership.

7.3 Level of Effort

There may be a modest level of effort required to establish new partnerships and outreach for the purpose of reducing GHG emissions. In cases where the emission reduction effort is established by the Governor's Office with a designated task force, commission, or panel, there should be little effort required on the part of the State DOT to establish the partnership.

As work progresses in the development and implementation of the GHG reduction plan, there may be a more concentrated level of effort to maintain the partnership in a productive and collaborative way. Experience has shown that building upon existing relationships can expedite progress in this regard. Regular meetings between involved staff seeking to advance State GHG reductions can also facilitate progress over the long term.

Partnerships will likely exist at different organizational levels within the State DOT. The executive level will work with counterparts in other agencies. Staff level partnerships or working groups will likely mirror that arrangement and will likely collaborate/meet more frequently. The specific partnerships may depend on the strategies being pursued.

It is critical that the agencies involved in this effort work together collaboratively and in an informed manner. In nonattainment and maintenance areas, State DOTs are typically part of the interagency consultation process in which the roles and responsibilities of the involved parties are laid out and documented. State DOTs may want to expand established venues to include GHG concerns or develop similar arrangements for GHG reduction efforts, especially for those strategies in which they have a lead role. Going into the partnering effort(s), the involved DOT staff should be interested, passionate, and motivated to have the effort succeed; aware of the importance of the work to the DOT, the State, and the public; and prepared to spend the necessary time and energy to work productively on the effort. The specific requirements and duties will be determined by the overall effort and the State DOT's role within that effort.

7.4 Who—Roles and Responsibilities

Executive	Admin	**Planning**	Programming	**Environmental**
Design	Construction	Maintenance	Operations	Regions/Districts

Potential roles for DOT functional units in the development of partnerships for addressing GHG include the following:

- The **Executive** functional area of the DOT will likely take the lead role in creating and managing partnerships, especially with other State agencies.
- The **Planning** functional area will be well-suited to manage partnerships with regional and local agencies, such as coordination of GHG planning activities with MPOs and sharing of data with local jurisdictions.
- The **Environmental** functional area may manage partnerships with other environmental agencies.
- Other functional areas may play more limited, clearly defined roles in partnerships.

Different forms of partnership may arise to meet the specific needs of the overall GHG reduction effort statewide or to develop and implement a specific identified strategy. The exact form of a partnership will likely vary depending upon the institutional and administrative requirements within the overall climate change action planning process.

The role the State DOT will have in the partnership will depend, to a large extent, on the scope and scale of the GHG reduction effort as well as the size and complexity of the State administrative machinery. For efforts that are statewide, the State DOT's role will likely be substantial and may involve many program areas within the DOT.

On a statewide level, the State DOT will likely lead the identification and implementation of strategies to reduce GHG emissions from the State's transportation sector. Depending on the selected strategies and the number of transportation-related strategies, the State DOT role could be substantial. In general, working with its partners, the State DOT will likely

- Assess various transportation strategies.
- Analyze their potential benefits and negative impacts.
- Select and recommend strategies to be implemented.
- Explain and advocate for the selected strategies.
- Prioritize the strategies based on their benefits and/or negative impacts.
- Determine and seek out ancillary requirements for implementation (e.g., State legislation is needed prior to implementation).
- Oversee actual "field" implementation.
- Report and monitor progress and conduct maintenance if the strategy involves equipment or capital construction.
- Interact with NGOs and the general public as comprehensive strategies are developed and implemented.

Depending on the selected strategies, the work effort can be shared with other appropriate partners and stakeholders.

7.5 Types of Partners

7.5.1 State-Level Partners

Partnerships for GHG reduction typically originate in one of two ways. One common way is for the State environmental, air quality, or energy agency to lead an effort to develop a GHG reduction plan and invite DOT participation. Another common method is for the Governor's Office to form a task force, commission, or panel to develop the reduction plan based on a range of interests, including transportation. In the former case, the State DOT air quality or energy staff lead would typically represent the State DOT, with frequent consultation with DOT's upper management. In the latter case, the Commissioner/Secretary, or a designated senior executive, would be the official representative to the newly formed body, with the air quality or energy technical lead providing staff support. In both cases, involvement of interested NGOs and public outreach efforts are often part of the overall GHG program.

In those States in which the State DOT is not a lead entity in the development of a GHG reduction plan by way of membership to a Climate Action Council or similar group, the DOT would still be likely to be involved. This involvement would likely include

- Projecting traffic for future years on a statewide or regional basis through transportation demand models or, if the State does not have a statewide and/or regional model, then through other means of predicting future traffic levels, such as vehicle miles traveled (VMT) forecasts.
- Reviewing and commenting on transportation strategies under consideration for implmentation to reduce GHG emissions. This consultation could include effects on future traffic levels or impacts on the operation and maintenance of the transportation network and infrastructure.
- Engaging NGOs and other stakeholders with transportation interests.
- Interacting with the general public.

All this work will likely result in the formation of new partnerships or the continuation of an existing climate action planning partnership with some, but likely not all, of the member agencies. For example, if a strategy to develop an EV charging network arises out of the GHG reduction plan, the State DOT would likely partner with the utility-regulating agency in the State and local utilities on electric capacity issues, with commerce agencies and local municipalities on charging station location and placement, and with local agencies on EV signage. Another example would be a local farm production strategy adopted to minimize emissions from the transport of agricultural

products. In this case, the State DOT would likely partner with the State agricultural agency, regional farm bureaus, and similar organizations to plan, designate, and provide signage for farm-to-market routing.

Partnerships: Delaware Example

Delaware DOT (DelDOT) partners closely with other State agencies to implement Executive Order 41 (from 2013), which requires State agencies to prepare Delaware for emerging climate impacts and seize economic opportunities from reducing emissions. The Department of Natural Resources and Environmental Control is the lead agency on this effort; 12 State agencies are part of a Governor's Committee on Climate and Resiliency that meets regularly.

DelDOT has three key staff assigned to GHG and climate change activities, representing the Planning division, Maintenance division, and transportation management center. They meet on a bimonthly basis to coordinate activities within the agency and with other agencies working to implement Executive Order 41. In 2020, this included supporting the development of Delaware's climate action plan. Since DelDOT is a relatively small agency and staff have the support of executive leadership to address GHGs, decisions by this group can be quickly translated into practice.

In most cases, the State DOT will maintain its partnership with the State air agency to estimate the GHG benefits of the adopted transportation strategies. This will build upon the existing relationship with the air agency, especially in those States with nonattainment or maintenance areas and State Implementation Plan requirements.

Partnerships: Minnesota Example

Minnesota DOT (MnDOT) established a Sustainable Transportation Advisory Council (STAC) in 2020 to make recommendations to the MnDOT Commissioner to help the agency reduce carbon pollution from transportation. A charter document sets forth the purpose and need for the STAC as well as its scope, membership, organization, meetings procedures, and desired outcomes. The STAC meets approximately every 2 months and may establish work groups to

perform work outside of these meetings. MnDOT provides direction, staffing, and logistical support for the STAC.

Membership on the STAC includes representation from utilities, the businesses community, institutions, municipalities, community and advocacy groups, legislators, and transit agencies. The STAC will prioritize recommendations that value equity and environmental justice and has developed conversation guidelines around racial justice and equity. Work groups have been formed on topics including powering transportation and VMT reduction.

7.5.2 Regional Planning Organizations

MPOs, regional planning organizations, or regional planning councils may be involved in the partnership as well. These agencies bring a regional expertise that may not exist elsewhere and can also represent smaller local agencies and organizations that would not be reasonable or practical to include in a statewide effort. In addition, some of these agencies may have forecasts of future activity that can be used to estimate GHG emissions under various reduction strategy scenarios. For example, MPOs in a State typically have transportation models that can be used to predict future traffic levels to estimate emissions from the transportation sector.

It also is important to consider rural locations and needs in the efforts to reduce GHG emissions from the transportation sector. While metropolitan areas are usually the focus of GHG reduction efforts, due to VMT and congestion levels in those areas, some identified strategies may not be feasible in rural areas. Any statewide strategies should be evaluated for their effectiveness and impacts in rural areas. Transportation strategies aimed at rural areas could also be considered, which may involve partnering with economic development or agriculture agencies.

7.5.3 Public Transportation Agencies

In larger urban areas, regional and local transit agencies may be part of the partnership. Transit agencies bring an expertise and practical perspective often not found in State DOTs. In urban areas, transit strategies may be effective strategies, among others, for reducing emissions. Including

transit agencies in a partnership may facilitate the identification, assessment, implementation, and communication of strategies that may be more difficult for a State DOT.

7.5.4 NGOs

NGOs—especially environmental, sustainability, and/or good-government NGOs—often have an interest in climate change and GHG reduction issues. In some cases, one or more NGOs may be invited to be participants in a statewide Climate Action Council (or similar entity) to develop a climate action plan for the State. These groups may have far-ranging ideas and views on how to achieve climate goals. The State DOT will need to work with these groups to propose, develop, and implement reasonable and achievable transportation GHG reduction strategies. This partnership will likely be a learning experience for both parties. Through such a partnership, the State DOT may better understand the NGO's issues and views and the reasons behind them, and the NGO will likely better understand the practicalities, limits, and concerns of the State DOT. If a good partnership is established, the NGO may also be less willing to challenge the State DOT on other transportation matters.

7.5.5 Academia

Colleges and universities have academics that may be well recognized in the field of climate change and may have done significant research and publication on various aspects of climate change. This work could be in basic climate science or in how GHGs could be assessed and reduced from a particular economic sector. Some universities and colleges have academics that have focused on the transportation sector and have examined strategies to reduce GHGs from the transportation sector to see how successful they might be and what co-benefits and/or impacts might occur. Depending on the State, these academics may be invited to sit on the Climate Action Council (or similar entity) or asked to lead the technical analysis. The State DOT will need to explain and document transportation views and needs from the DOT's perspective and work with academia to ensure a smoothly operating partnership.

7.5.6 Private Sector/Trade Groups

Typically, individual corporations and trade groups will not be part of a statewide Climate Action Council (or similar entity). However, if subgroups within the Council are formed to address a particular economic sector or a strategy within a sector, then an individual corporation or trade group could get involved. For transportation, this might involve a number of different companies or groups, depending on the strategies under consideration. Even if trade groups are not formally part of a Climate Action Council, State DOTs may want to establish partnerships with some companies or trade groups depending on the transportation strategy under consideration for implementation. This might involve companies or trade groups related to automobile manufacturers (related to EV strategies), charging station manufacturers (for EV implementation), heavy equipment manufacturers (for alternative fuel strategies), shipping companies (for freight strategies), etc. The more transportation strategies that are considered or implemented, the greater the number of partnerships the State DOT will end up establishing.

7.5.7 Cities and Counties

Large cities and counties and their appropriate agencies may be included in partnerships also. These entities bring a local perspective and can speak to the potential impacts and benefits of strategies that may be considered to reduce emissions statewide or at a local or regional level for large segments of the population. Further, cities and counties may request the DOT's assistance in determining their own GHG inventories and reduction strategies, as the DOT generally has more resources than smaller communities.

Many cities and counties have developed their own climate action plans. State DOTs can assist these entities in several ways:

- Be aware of city and county climate action plans and what they say about the transportation sector within their jurisdiction.
- Provide State DOT transportation data that is requested by the city or county to develop its action plan.
- Advise on transportation plans, programs, and projects in place for the city or county and how they may interact with local goals and objectives for GHG reduction.
- Provide technical assistance, if requested. This may involve transportation demand modeling or use of other tools to assess local transportation strategies to reduce GHG emissions.

7.5.8 Federal Agencies

Federal agencies may also be partners with State DOTs and other State agencies that may be part of a State's GHG reduction effort. The agencies most likely to be involved are the U.S. DOT, U.S. Environmental Protection Agency (EPA), and U.S. Department of Energy (DOE), although other Federal agencies may also participate. Depending on the State/Federal relationships within a State, Federal agencies may need to be recruited to be part of the effort. The regional or division offices would be the likely participants, although headquarters may also take part, depending on the State or the emission reduction strategy under discussion.

For State DOTs, the Federal agency that will most likely participate in the GHG reduction effort is the Federal Highway Administration (FHWA). FHWA assistance can take several different approaches:

- FHWA has been involved in the development of several tools for the evaluation and quantification of GHG reduction strategies. Quantitative tools include the Infrastructure Carbon Estimator (ICE), which is most commonly used at the project level, and the Energy and Emissions Reduction Policy Analysis Tool (EERPAT) and VisionEval, which support planning level analysis. FHWA's *Handbook for Estimating Transportation Greenhouse Gases for Integration into the Planning Process* (FHWA, 2013a) provides further information on methods and tools to quantify GHG emissions and evaluate mitigation strategies. (See Appendix B for more information about these tools.) FHWA assistance can take the form of guidance, implementation, and/or interpretation of models and the model results.
- FHWA is implementing the Alternative Fuels Corridor Program and encouraging State DOTs and MPOs to integrate alternative fuel considerations into the transportation planning process and State Freight Plans in an effort to displace petroleum-based fuels from the transportation sector. FHWA is working in coordination with DOE's Clean Cities Program to provide information and technical assistance to State DOTs to promote the use of alternative fuel vehicles and accelerate the installation of infrastructure.
- FHWA can be a resource for a State DOT to learn about GHG reduction efforts, success, problems, quantification, etc. in other States and work to apply those lessons in its State.

7.6 Sharing of Data and Outreach

Sharing of data and public outreach in a GHG reduction plan will be required for an open and smoothly functioning development process. The State DOT will likely be the source of transportation data. This could include current and future transportation demand, mode share, speed data, vehicle classification, etc. Transportation management centers may be asked for real-time and historical data. In addition to being asked to provide the data itself, the State DOT will likely be asked to explain the data and its meaning in nontransportation language.

The State DOT may also be asked for nontransportation data, such as its policy and procedures for various aspects of its oversight of the statewide transportation network. For example, the State's policy and procedures regarding obstructions in the right-of-way may be requested for consideration of siting solar arrays in the roadway right-of-way.

The State DOT should be forthright in seeking and sharing data from other involved agencies. It is incumbent on the State DOT to understand and be knowledgeable about the discussions on GHG reduction strategies in all sectors of the economy under consideration and the interests of a wide range of stakeholders. This is needed so the State DOT can meaningfully participate in informed decision-making about transportation emission reduction strategies when compared to strategies affecting all stakeholders.

7.7 Coordination and Communication Methods

In most cases, the State DOT will not be the lead agency for developing a GHG emission reduction plan. The lead agency for the development of the plan should promote frequent, open, clear communication channels among the members and stakeholders and coordinate needed tasks and data from the members. If the State DOT is not satisfied with the coordination methods and communication channels, it should seek improvement.

If the State DOT becomes a lead agency for an ancillary task or an implementation strategy (e.g., development and implementation of an EV network), it should be transparent in dealing with its partners and proactive in engaging stakeholders. It could set up regular meetings and/or conference calls with the partners, be prepared to deal with inquiries from the public or elected officials, and develop regular progress reports. The State DOT would typically involve its Communications and Public Outreach staff in this aspect of the work.

7.8 Synergies with Related Partnership Activities

State DOTs already have established partnerships with other agencies in varying degrees. As mentioned above, State DOTs often work with State air agencies on State Implementation Plan issues and strategies. In nonattainment areas, State DOTs work with various agencies and stakeholders through the interagency consultation process to establish the conformity of long-range transportation plans and transportation improvement programs. In States that have an energy planning process, State DOTs may work with energy-related agencies to develop a State energy plan.

Working with partners on GHG reduction plans allows the State DOT to establish new working relationships or to improve existing ones. It also allows a State DOT to more effectively engage stakeholders, as well as promote policies, programs, and projects that have a co-benefit of reducing emissions.

7.9 Self-Assessment: Partnerships

A self-assessment worksheet is provided to assist State DOT staff in determining where their agency falls on the GHG engagement spectrum for partnerships, and what additional actions they may wish to take to support GHG emission reduction efforts through partnerships.

Click to download – Self-Assessment: 7.0 Partnerships

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[1] Center for Climate Strategies—see http://www.climatestrategies.us.

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