

ROLE OF REGIONAL PLANNING ORGANIZATIONS IN TRANSPORTATION PLANNING ACROSS BOUNDARIES



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Prepared by:
U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology
John A. Volpe National Transportation Systems Center



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The white paper and other resources related to transportation planning research and megaregions are posted on the FHWA Megaregions and Multi-Jurisdictional Planning website (<http://www.fhwa.dot.gov/Planning/megaregions/>) and the FHWA-FTA Transportation Planning Capacity Building website (<http://www.planning.dot.gov/>).

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Introduction

Background

To further enhance the critical role of the U.S. in global trade, it is essential to create partnerships across boundaries that produce economic benefits that extend beyond any one metropolitan area. As a consequence, transportation planners and project managers are looking for opportunities to collaborate across jurisdictional and geographic boundaries to identify opportunities to fund transportation infrastructure investments through related plans and programs. Working on the scale of larger regions, or even megaregions, can increase the economic competitiveness of metropolitan and non-metropolitan areas along major corridors identified as important for current and future freight and passenger flows. This report will focus on megaregions planning and the role of rural areas in supporting transportation planning that benefits the larger region. Megaregions are defined as networks of metropolitan centers and their connecting land areas linked by economy, culture, history, growth patterns, and natural resources. Researchers have further identified a national set of major megaregions based on population, demographic, and economic data. While many corridors and regions may be important scales for transportation planning, this white paper focuses on the major megaregions as significant opportunities for increased economic and other benefits through transportation planning.

As more regions plan their transportation for global competitiveness, planners will increasingly need to incorporate rural areas in their large-scale planning efforts. Rural areas are a critical part of the identities, economies, and infrastructure of megaregions. These areas may be both recipients of the benefits derived from this scale of planning as well as contributors to advancing the larger goals of the region. Rural planning organizations (RPOs), which serve as the designated transportation planners for many rural areas, are part of the transportation networks and economies of surrounding metropolitan and non-metropolitan regions. However, RPOs may not be active participants in megaregions initiatives due to organizational constraints. New transportation legislation defines and provides the option for States to designate regional transportation planning organizations (RTPOs), encompassing transportation roles filled by other types of rural organizations.

This research examines how RPOs and rural interests are integral partners in transportation planning efforts for megaregions and explores methods for their participation. It expands on on-going initiatives by the Federal Highway Administration (FHWA) Office of Planning, including research by Georgia Tech, the USDOT's Volpe National Transportation Systems Center (Volpe Center) and others on the important potential contribution planning can make to meeting the transportation needs of megaregions. This includes a companion white paper on best practices in participation by metropolitan planning organizations (MPOs) in planning for megaregions;¹ a Transportation Planning and Capacity Building (TPCB) peer exchange on MPO planning and megaregions hosted by the Maricopa Association of

¹ Report forthcoming, to be posted at FHWA Megaregions website:
<https://www.fhwa.dot.gov/planning/megaregions/>

Governments in Phoenix in May, 2012;² a TPCB peer exchange on transportation planning for freight in megaregions, hosted by the Atlanta Regional Commission in Atlanta in November, 2013;³ and a series of webinars for researchers and program managers working on transportation and megaregions topics.⁴ FHWA has also been involved in the TRB Megaregions Subcommittee since its formation in 2011.

Rural Definition

While the Census provides a definition of “rural,” this white paper applies a working definition of “rural areas” as all population, housing, and territory not included within a Census-designated urban area. Other characteristics of rural areas include a low population density and small settlements, or they may be agricultural or wilderness lands.

For transportation planning purposes rural areas can be discussed by applying three types of attributes:

1. Destination areas that feature natural amenities (e.g., mountains, lakes, or beaches) and attract seasonal residents, retirees, and tourists in support of a recreational or leisure culture;
2. Production communities outside of urbanized settings that tend to be focused on a single industry such as agriculture, manufacturing, or mining; and
3. Exurban areas that are outside of the MPO planning boundaries but which rely on the urbanized area, rather than a local economy, due to convenience transportation access.⁵

MPOs are responsible for conducting multimodal transportation planning for Census-designated urbanized areas. Larger areas (generally those with 200,000 or more residents) are classified as Transportation Management Areas (TMAs). Smaller urbanized areas (with populations between 50,000 and 200,000) are often referred to as “non-TMAs.” Rural areas, including those within MPO planning boundaries, serve critical functions within larger economic and transportation corridors, as they may contain the following:

1. Transportation infrastructure that connects to metropolitan regions;
2. Centers of economic production (specifically industrial, recreational, and agricultural) that may be integrated with the adjacent urban area; and
3. Environmental resources that serve ecological health, self-sustainability, and quality of life.

² Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). 2012. “Megaregions Planning for MPOs and Partners: A Transportation Planning Capacity Building Peer Exchange.” Accessed 24 April, 2014: http://www.planning.dot.gov/documents/MAG_Megaregions_Planning_for_MPOs_TPCB_Peer_Report_May%2012.pdf

³ Federal Highway Administration. 2014. “Megaregions Freight Movement Peer Exchange.” Accessed 24 April: https://www.fhwa.dot.gov/planning/megaregions/reports/freight_movement/index.cfm.

⁴ FHWA. 2014. “Quarterly Workgroup.” Megaregions and Multi-Jurisdictional Planning. Accessed 24 April: https://www.fhwa.dot.gov/planning/megaregions/quarterly_workgroup/.

⁵ Twaddell, Hannah, and Dan Emerine. 2007. Best Practices to Enhance the Transportation-Land Use Connection in the Rural United States. National Cooperative Highway Research Program Report 582. Accessed 24 April, 2014: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_582a.pdf

Transportation planning for rural areas varies by State and regions of the country; for example, it might depend on several organizations with broadly ranging roles and responsibilities or a single large regional planning organization to conduct transportation planning. As indicated previously, MPOs conduct multimodal transportation planning for federally-designated urbanized areas, both TMAs and non-TMAs. Planning area boundaries of MPOs often include small cities, towns, and rural areas, as well as the Census-designated urbanized areas. Federal statute does not require MPOs to conduct transportation planning for areas outside of their planning boundaries, so State Departments of Transportation (DOTs) or regional organizations typically conduct transportation planning for rural areas. There is no one organization, or type of organization, responsible for transportation planning across all rural areas, which means that many parties with an interest in rural transportation may participate and that local jurisdictions that have an interest in rural transportation planning policy and strategy still need to be consulted.⁶

Rural areas actively help define their megaregions through housing economic production centers and transportation infrastructure, providing ecosystem services, and contributing to the social and environmental character of the region. Rural areas both contribute benefits to the larger megaregion and derive benefits from large-scale planning and activities that include metropolitan areas. The research team considers rural areas to be a critical part of the megaregion, not secondary to the metropolitan areas around which megaregions are sometimes defined.

Megaregion Definition

For the purposes of this report, megaregions are defined as networks of metropolitan centers and surrounding areas connected through physical features, geographic, cultural, ecological, and economic characteristics as well as major infrastructure.⁷ The definition is both data driven and defined by geography. America 2050, the author of the map in Figure 1, and other researchers use criteria based on population, demographic, and economic data to identify a national set of major megaregions and to define their borders. As early as 1850, the Census Bureau defined geographic regions of the United States for reporting on population characteristics.^{8,9} (See Figure 2 for a map of the 19 topographical regions of the U.S. following the 1900 census.) These common characteristics have supported the similarities within the geographic regions, which have in turn supported the development of megaregion within those regional subdivisions. These physiographic regions are broad-scale subdivisions based on terrain texture, rock type, and geologic structure and history that have a similarity of resources,

⁶ 23 USC 135 (f), (g) & (m)

⁷ Center for Quality Growth and Regional Development (CQGRD), “History of Megaregions,” Georgia Institute of Technology, 2011. Accessed June 27, 2012: <http://www.cqgrd.gatech.edu/research/megaregions/history>.

⁸ http://www.census.gov/history/www/programs/geography/regions_and_divisions.html

⁹ U.S. Census Bureau. 2014. Regions and Divisions. History. Accessed 8 May: http://www.census.gov/history/www/programs/geography/regions_and_divisions.html.

ecosystem, agriculture, economic base, history and climate.¹⁰ Because of these similarities, elected leaders and transportation planners focus attention on specific megaregions, multiple megaregions, or even components of megaregions when they see an opportunity to work with neighboring jurisdictions with shared economies, historic trends, cultural aspects, and transportation needs that contribute to joint goals and priorities. Planners and decision-makers direct their attention to megaregions when there is a sense of mutual interest to address important emerging transportation needs and opportunities on a large regional scale, outside the jurisdictions of participating agencies. This focus is voluntary – there are no legally defined jurisdictions, as there are with State or MPO boundaries, nor are there planning requirements, institutional roles and responsibilities, or dedicated funding resources.

There has been extensive research on the relationship between transportation planning and megaregions, listed in [Appendix A: Previous Research on Transportation and Megaregions](#).

¹⁰ U.S. Geological Survey. 2014. A Tapestry of Time and Terrain. Physiographic Regions. Accessed 8 May: <http://tapestry.usgs.gov/physiogr/physio.html>.

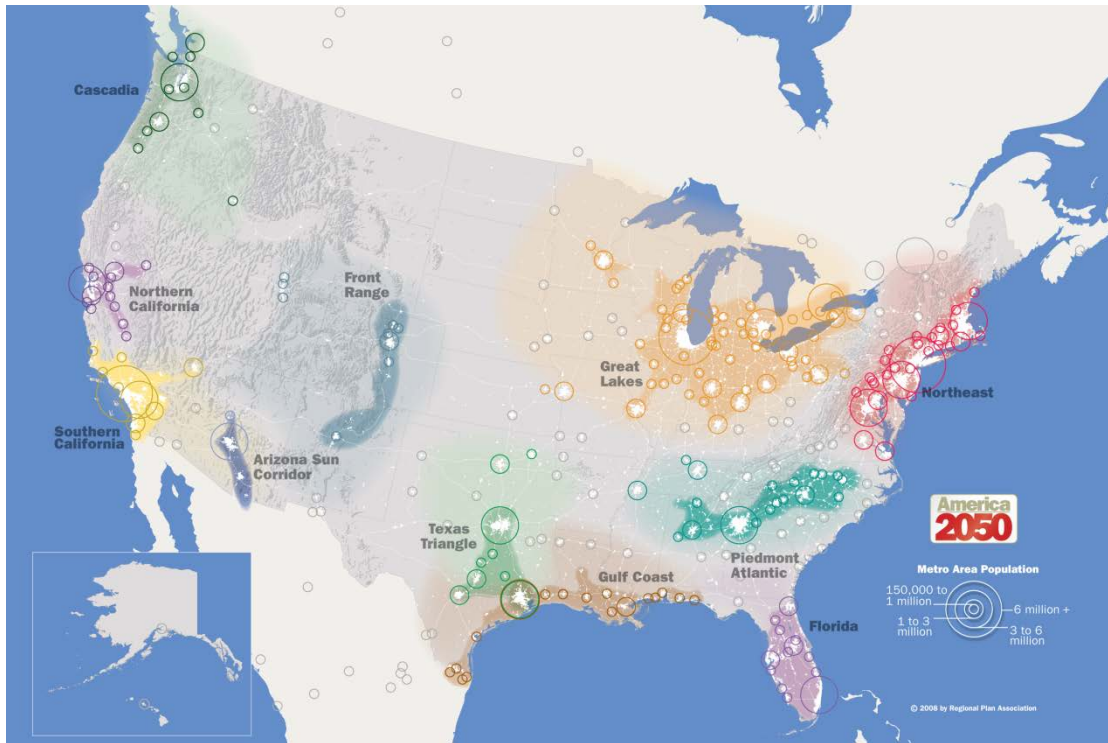


Figure 1: U.S. Megaregions (Courtesy of America 2050)



Figure 2: 1900 Census-defined geographic regions (Courtesy of U.S. Census Bureau)

Rural Planning Organization (RPO) Definition

In this white paper, the term RPO will be used broadly and descriptively to refer to all organizations that conduct transportation planning specifically for rural areas (including RTPOs, those housed within an MPO, and those that have additional functions outside of transportation, but not including State DOTs).

The definition is meant to be flexible to recognize the diversity of organizations engaged in rural transportation planning and active in interregional and megaregions-scale partnerships.

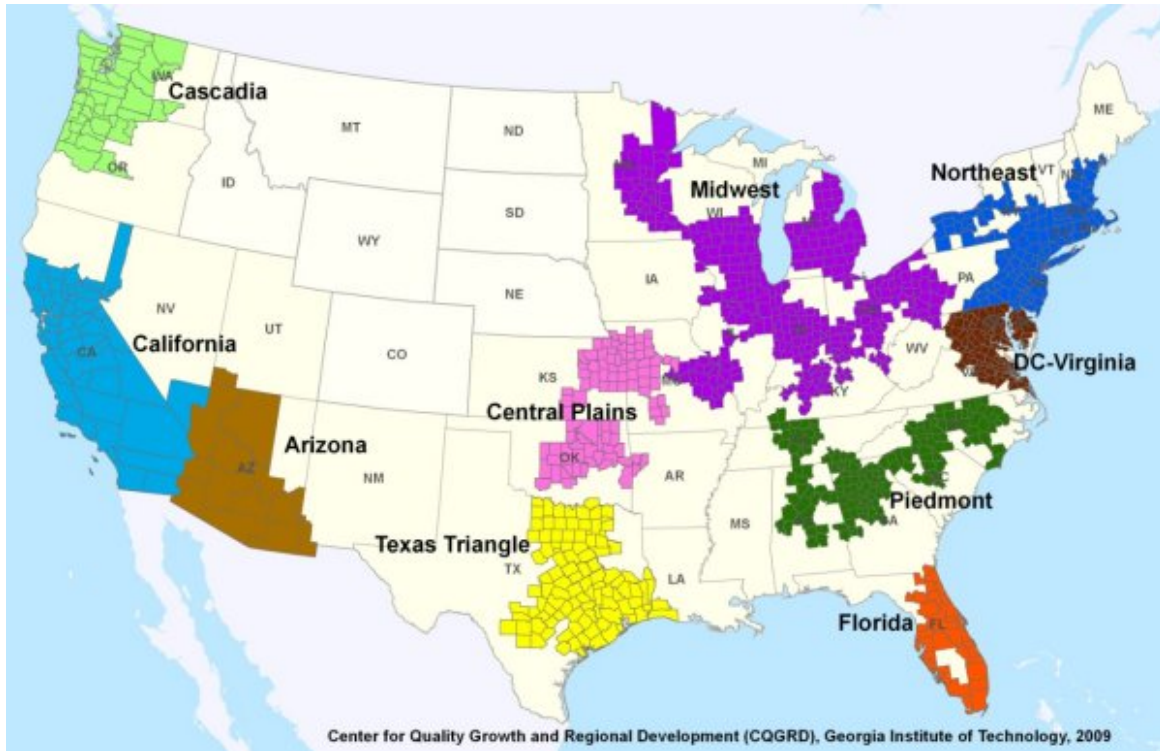


Figure 3: U.S. Megaregions (Courtesy of Center for Quality Growth and Regional Development)

Megaregions provide one very important focus for considering the future and evolution of transportation planning in the U.S., given the increasing globalization of economies and interconnectedness of transportation systems.

This report specifically looks at how rural areas are critical to transportation planning for this larger scale. The RPOs included in this report’s case studies are within the megaregions identified in Figure 1. This paper references “interregional planning” in cases where RPOs participate in planning beyond their own boundaries but at a smaller scale than the megaregion.¹¹

Like DOTs or MPOs, RPOs may be experiencing similar trends and needs as their urban neighbors and would contribute benefits to planning for megaregions when they identify promising opportunities, mutual interests, and partners. Later sections provide examples for peer rural areas of best practices by rural agencies, assessing how and why they are addressing transportation issues outside their boundaries.

¹¹ The research team recognizes that there are many types of interregional planning. This white paper prioritizes megaregions planning, while recognizing that some interregional planning at a scale smaller than the megaregion may be a catalyst for RPOs to engage at a larger, megaregions scale.

Purpose

The research team explores the implications and the benefits for the rural area of involvement in regional partnerships and projects, as well as the value of RPO participation to the larger megaregion, including other partners and metropolitan areas. Through assessing and documenting best practices in this area, the white paper examines how RPO participation in initiatives beyond their own boundaries bring benefits in the areas of economic development, freight movement, natural resource protection, and overall transportation system operations. Policies and regulations related to transportation planning for megaregions set a context for identifying how and why rural areas can play a role. In later sections, case studies and other findings can serve as a resource for rural planning agencies and their partners who are interested in participating in planning for megaregions.

In many cases, RPOs have limited involvement in transportation planning at the megaregions scale, although they may be supporting other large-scale initiatives in areas like natural resources or food production. This report examines some of the institutional barriers to RPO participation and considers initial partnerships and cross-regional project examples that might be useful to peer RPOs considering how to play a greater role in megaregions initiatives. In addition recommendations and best practices will help show how rural agencies can partner with MPOs and State DOTs on an interregional or megaregions-scale for this kind of transportation planning and define the potential functions for rural areas within the larger regional framework of economic and transportation system planning.

Audience

The main audience for this report is RPOs and the State and metropolitan transportation planning organizations that partner with RPOs. In this report, RPOs can find examples of peers that have successfully partnered with others in the development of transportation systems and economies of the larger region. Conversely, MPOs can learn how to better partner with RPOs to enhance their own transportation and economic development plans and initiatives. Furthermore, State DOTs and FHWA can apply this information on innovative practices and partnerships in technical assistance to encourage and promote similar methods and approaches by transportation planners throughout the U.S.

Research Questions

The research team addresses the following questions:

- What are the implications of planning on an interregional scale for RPOs, beyond formally established planning boundaries?
- What are the advantages or incentives for rural areas to collaborate with planning partners outside their region and/or within their megaregion? Do rural areas feel like they are part of a more holistic regional approach?
- What are the benefits for State DOTs, MPOs, and other transportation planners to partner with rural stakeholders in their transportation planning processes?
- What are the key interests of rural areas in transportation planning for the larger region, including interests related to economic development, tourism, community preservation and livability, and environmental protection?

- How can rural areas represent their interests to MPOs, DOTs, and other leaders in planning for the larger region and collaborate both institutionally and technically to advance mutual interests?

The research summarizes current Federal regulations that provide a national framework for statewide and metropolitan area transportation planning and allocation of Federal surface transportation funds to areas inside and outside MPO planning boundaries. These regulations set the context for the evolving role for rural areas can play in planning for megaregions. The regulatory framework analysis also considers the current or potential roles of key stakeholders within rural transportation planning, such as State DOTs, regional development and planning organizations, other State or Federal agencies, water management districts or other regional organizations, local governments, and other entities.

Methodology

The methodologies used for this report include a comprehensive literature review of source materials on rural transportation planning including a search of key terms related to economic development, freight, and natural resources. Also the research team held discussions with representatives from the National Association of Regional Councils (NARC) and the National Association of Development Organizations (NADO) to better understand the existing priorities of rural areas and learn about innovative collaborations nationwide between rural areas and participation in surrounding megaregions initiatives. Through these structured discussions, the research team identified three RPOs representing best practices in partnerships and planning with metropolitan and other rural regions. The discussions with these RPOs covered the current and potential role of regional planning organizations, State DOTs, MPOs, transportation providers, cities, towns, and counties, and other public or private sector stakeholders. Through conversations with representatives of rural interest groups, the team developed recommendations and best practices for rural stakeholders.

Structure

The first section contains background on rural involvement in transportation planning, including information on the planning processes defined by Federal legislation and the formal and informal roles of rural stakeholders and their partners. It also covers current models for rural participation in statewide and regional transportation planning, including interregional planning. The second section explores several issues that are critical both to rural transportation planning and to megaregions planning: economic development, freight, and natural resources. Three case studies, featuring examples of RPOs that are actively engaged in planning beyond their boundaries, are accompanied by a synthesis of implications based on the research, with findings. Finally, the report concludes with suggestions for further advancement of the megaregion or multi-jurisdictional approach to planning.

Background on Rural Transportation Planning

Small towns and their surrounding rural areas have long been important to the U.S. economic and social fabric. With increasing urbanization throughout the 20th and 21st centuries, the role of rural regions has

shifted and evolved. While many rural regions are losing population, rural areas (outside of TMAs) still contain 20 percent of the U.S. population, nearly 60 million people,¹² and continue to attract new residents due to the presence of specialized job sectors and quality of life factors.

Rural regions can be classified into two types by population growth; this classification can indicate how transportation systems can be used as tools to achieve regional goals. The first type of rural region has stable or declining population levels -- people in these areas look to transportation to induce growth. The second has a growing population -- local leaders in these areas seek transportation and land use policies to manage growth while preserving rural character and livability.¹³ Rural regions therefore can value transportation as a means to both facilitate growth and control its pace and patterns of development. Although many rural regions lack the formal transportation planning processes and multidisciplinary capacities of MPOs or State DOTs, they still need transportation planning to help their regions realize common goals.

Transportation in rural areas can also help regions meet mobility and economic development goals. Since the resources for infrastructure are increasingly limited, rural transportation must be versatile and serve a continuum of needs. The same infrastructure must accommodate the production-oriented resource-based economies and dispersed development patterns of rural areas as well as the mixed-use, consumption-oriented markets of the urban fringe and urban cores.¹⁴ Rural transportation systems should be multimodal and flexible to accommodate the diverse needs of rural regions on limited infrastructure.

The statewide and metropolitan area transportation planning processes, as defined in 23 USC § 135(m), provide multiple opportunities for participation by RTPOs or nonmetropolitan officials with responsibility for transportation participation. The section includes an overview of relevant planning regulations, roles of key participants, and current examples of rural participation in transportation planning.

Policy and Regulatory Overview

The formal recognition of rural transportation planning in the Federal transportation planning framework has evolved over time. The surface transportation reauthorization bill Moving Ahead for Progress in the 21st Century (MAP-21) (H.R. 4348), signed in July 2012, establishes a formal definition and scope of work for RTPOs to serve areas outside of MPO regions:

“A State may establish and designate regional transportation planning organizations to enhance the planning, coordination, and implement of statewide strategic long-range transportation

¹² U.S. Census Bureau, “2010 Census Urban Area Facts,” 2012. Accessed January 16, 2013: <https://www.census.gov/geo/reference/ua/uafacts.html>.

¹³ Kidder, *The Challenges of Rural Transportation*, Western Rural Development Center, 2006. Accessed October 2, 2013: http://wrdc.usu.edu/files/publications/publication/pub_9373753.pdf.

¹⁴ USDA and USDOT, *Study of Rural Transportation Issues*, 2010. Accessed July 30, 2012: <http://www.ams.usda.gov/RuralTransportationStudy>.

plans and transportation improvement programs, with an emphasis on addressing the needs of non-metropolitan areas of the State.”¹⁵

MAP-21 also reaffirms the responsibility, established in previous transportation bills, of State DOTs to work with nonmetropolitan officials with responsibility for transportation in considering their areas’ needs during the development of the Statewide Long-Range Transportation Plan.¹⁶ In States that choose to establish or designate RTPOs, the RTPOs shall form a policy committee and carry out certain activities in the realm of planning and coordination.¹⁷ MAP-21 also outlines the duties of RTPOs that include development of transportation plans and programs, coordination with local planning, and coordination with State DOTs, MPOs, and other RTPOs.¹⁸

Prior to MAP-21, planning statute as found in 23 U.S. Code 135 called for States to consult with non-metropolitan officials during the development of long range plans and TIPs,¹⁹ but it did not reference or define RTPOs or their potential activities.^{20,21,22} In 2003, FHWA and FTA issued a rule to enhance the participation of local elected and appointed officials in rural planning processes.²³ The rule called for State DOT staff to consult with counties, Regional Development Organizations (RDOs), and other non-metropolitan officials during the statewide planning process.²⁴

¹⁵ MAP-21 Amendments, 23 USC § 135(m). Accessed October 7, 2013: <http://www.fhwa.dot.gov/map21/legislation.cfm>.

¹⁶ Ibid, 23 USC § 135(f)

¹⁷ Ibid, 23 USC § 135(m)

¹⁸ Ibid.

¹⁹ American Planning Association (APA), “Inside MAP-21: Rural Transportation,” 2012. Accessed October 2, 2013: <http://blogs.planning.org/policy/2012/07/20/inside-map-21-rural-transportation/>.

²⁰ National Association of Development Organizations (NADO), “President Signs Transportation Reauthorization into Law; NADO Invited to Signing Ceremony,” 2012. Accessed October 2, 2013: <http://www.nado.org/president-signs-transportation-reauthorization-into-law-nado-invited-to-signing-ceremony/>.

²¹ ICF Consulting, “Evaluating State DOT Rural Planning Practices,” NCHRP Project 08-36, Task 35, December 2003.

²² Mid-Carolina Council of Governments (MCCOG), 2007. Accessed October 2, 2013: http://www.mccog.org/regional_transportation.asp.

²³ NADO, “Rural Transportation Survey Findings: Regional Development Organizations and State Transportation Agencies Establish Collaborative Processes for Developing Rural Transportation Plans,” 2004. Accessed October 2, 2013: <http://www.worldcat.org/title/2004-rural-transportation-survey-findings-regional-development-organizations-and-state-transportation-agencies-establish-collaborative-processes-for-developing-rural-transportation-plans/oclc/54491932>.

²⁴ NADO Research Foundation, “Transportation Planning in Rural America: Emerging Models for Local Consultation, Regional Coordination & Rural Planning Organizations,” 2005. Accessed October 2, 2013: <http://www.nado.org/wp-content/uploads/2011/08/scan2005.pdf>.

While these rules and the subsequent legislation set a baseline for State DOTs to involve rural stakeholders in transportation planning, many State DOTs exceed the requirements and engage in innovative ways with rural stakeholders, as described in later sections.

Stakeholders and Roles

A range of stakeholders are responsible for transportation planning in rural areas, exhibiting a variety of roles and organizational relationships. The following are some of the principal stakeholders involved in rural planning, either as primary actors or as partners.

Rural Planning Organizations (RPOs)

RPOs are voluntary organizations that facilitate the input and participation in transportation planning processes of government officials and stakeholders in areas with populations of less than 50,000 people. RPOs sometimes have designated transportation planning responsibility for these rural areas (see [RTPO definition](#)), and other times they may participate in transportation planning more informally.

NADO conducted a survey of various RPOs in 2011 to determine their role and level of involvement in the planning process.²⁵ The majority of these organizations were established under contract or agreement with the State DOT since the 1990s. In general, funding for these organizations comes from the FHWA Statewide Planning and Research (SPR) Program, various State funding sources, and the FTA State Planning and Research Program. Some RPOs have committees dedicated to rural transportation planning, whose nature and membership is influenced by issues facing the region. In the scan of RPOs, NADO identified public involvement, technical assistance to local governments, facilitation of rural participation in statewide planning, and transportation enhancement activities as the most common activities that RPOs perform.²⁶ RPOs primarily have interest in bringing resources and benefits to their regions, which may consist of only a few counties and towns. However, there are examples of RPOs that leverage their limited staff capacity and financial resources by partnering with other RPOs, MPOs, or State DOTs to pursue shared goals that would have impacts beyond the rural area.

Regional Development Organizations (RDOs)

RDOs are multi-jurisdictional, public-based regional planning and development organizations that often have a formal or informal role in transportation planning. RDOs are governed by a regional policy board with majority control by local elected officials. State statutes, gubernatorial executive orders, and Memorandums of Understanding (MOU) of local governments are the most common establishing mechanisms. RDOs have responsibilities covering many disciplines, including economic development, social services, natural resources, and transportation. For example, the Appalachian Regional

²⁵ NADO and NADO Research Foundation, "2011 RDO Organizational Data Profiles," 2011a. Accessed October 2, 2013: <http://www.nado.org/wp-content/uploads/2011/04/2011-National-Profiles-of-RDOs-FINAL.pdf>.

²⁶ NADO Research Foundation, "Transportation Project Prioritization and Performance-based Planning Efforts in Rural and Small Metropolitan Regions," 2011b. Accessed October 2, 2013: <http://www.nado.org/wp-content/uploads/2011/11/RPOprioritization.pdf>.

Commission (ARC) established many RPOs in 1965 in Appalachian States for local participation provided through multi-county local development districts (LDDs).²⁷ Therefore, RPOs may be referenced in Appalachian and other parts of the country as, “Economic Development Districts,” “Local Development Districts,” and/or “Councils of Governments.” Rural Planning Organizations (RPOs), described above, are often considered to be programs of RDOs, but not all RDOs have RTPOs or RPOs designated within them.²⁸

Planning in rural areas is often done by agencies such as Economic Development Councils, or economic development districts or Regional Councils developed to implement long-term strategic plans for economic growth, transportation planning and other regional planning efforts for their regions (and sometimes across a State).²⁹ Key components of economic development, these councils are public-private partnerships made up of local experts and stakeholders from business, academia, local government and non-governmental organizations.

State Departments of Transportation (DOTs)

State DOTs are responsible for development and implementation of statewide transportation plans and programs. In some cases, State DOT staff is heavily involved in rural area planning and do much of the rural planning in house. In other cases, State DOTs work closely with RTPOs and RPOs to have these organizations lead or provide significant input into the transportation planning process for areas of the State not contained within MPO boundaries.

Metropolitan Planning Organizations (MPOs)

MPOs are the federally designated transportation planning organizations for areas with 50,000 or more people. Federal transportation funding for projects and plans, to be used within metropolitan areas, are subject to the MPO transportation planning process. The FHWA white paper prepared by the Volpe Center, called “The Evolving Role of MPOs in Megaregions,” and the proceedings from a FHWA-sponsored peer exchange on Megaregion Planning for MPOs and Partners hosted by the Maricopa Association of Governments, contain more information about how best practice MPOs are adapting their traditional structure and roles, which focus on their planning boundaries, to also contribute to planning for megaregions.^{30,31}

²⁷ <http://www.arc.gov/about/index.asp>

²⁸ NADO and NADO Research Foundation, 2011.

²⁹ Several States have Economic Development Councils that cover planning across the State:
<https://www.dot.ny.gov/programs/RegionalEconomicDevelopmentCouncils>
<http://www.coloradodot.info/programs/statewide-planning/mpo-rural-planning.html>
http://www.dot.ca.gov/hq/tpp/images/rtpa_mpo_map.pdf

³⁰ Report forthcoming, to be posted at FHWA Megaregions website:
<https://www.fhwa.dot.gov/planning/megaregions/>

³¹ Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). 2012. “Megaregions Planning for MPOs and Partners: A Transportation Planning Capacity Building Peer Exchange.”

Local Governments

Local governments are responsible for overseeing transportation infrastructure and services within their jurisdictions. Local governments include county, city, or town staff, especially those in departments of transportation, public works, engineering, and planning. Some rural areas use special transportation districts or commissions, often based on one or more cities or counties, to manage transportation. Special districts or public authorities³² play a major role in the provision of public services financed by user fees and whose capital investments are self-financed through tax exempt bonds; and managing capital assets and making long term capital investment decisions with some isolation from State government such as maintaining bridges and highways and operating mass transit systems.

In rural areas, State DOTs consult with local officials through a formal process that is separate from the general statewide public participation process; this consultation is sometimes conducted through RTPOs when the State has designated them, but it can occur through local elected officials in States without designated RTPOs. Local governments are also the implementing agencies for county- and city-owned transportation infrastructure; they may submit projects to the RTPO or State DOT for consideration in LRTPs and Statewide Transportation Improvement Programs. Finally, local governments and especially local elected officials have a vested interest in improving the economies and infrastructure of their municipalities for the good of their citizens. This interest ties them closely to the outcomes of regional and local transportation planning processes.

Private Sector Entities

Private businesses are important to the transportation planning process in rural regions due to the role of transportation in economic growth and goods movement. Private sector stakeholders in rural transportation planning may include owners and operators of railroads, intercity bus companies, and freight owners and operators. Major business owners in the region who have interests in transporting materials, employees, and manufactured products within and outside of the rural region are also important stakeholders in transportation planning.

Resource and Regulatory Agencies

Agencies with a role in environmental permitting for transportation projects include Federal and State environmental, wildlife, water quality, land management, and air quality agencies. These agencies can help transportation planners select and plan for transportation projects that produce the best environmental outcomes for the entire ecosystem. They are also likely to work at a larger regional scale and can help connect rural transportation plans and projects with related plans and projects elsewhere in the State or larger region.

Federal Land Management Agencies

National parks, national wildlife refuges, national forests, military reservations, Federal prisons, and public-domain land are all examples of lands owned or administered by the Government of the United

³² <http://www.publicauthority.org/>

States. Federal Land Management Agencies (FLMAs) conduct transportation planning in accordance with their agencies' rules and policies. FLMAs also partner with FHWA's Office of Federal Lands Highway to conduct transportation planning for roads within Federal lands or offering access to Federal Lands;³³ in such, FLMAs often partner with State DOTs and local governments for funding and delivering transportation projects. FLMAs may coordinate transportation planning at the regional or State office level; some FLMAs have produced Regional Long-Range Transportation Plans that set goals and objectives across a multi-State area that may overlap with megaregions.

Indian Tribal Governments

The Federal government respects federally recognized Indian Tribes as sovereign nations and works with each on a government-to-government basis. FHWA provides funding to Tribes through the Tribal Transportation Program for transportation infrastructure on Tribal lands. Additionally, State DOTs and MPOs are required to coordinate and consult with Indian Tribes with lands in the State or region throughout the transportation planning process. Indian Tribal Governments work with these partner agencies, as well as municipalities and transit agencies, to maintain and improve transportation infrastructure on Tribal lands. Many Tribes develop short- and long-range transportation plans, often in coordination with FHWA, the State DOT, and the MPO, to lay out how they will make their transportation investments over time.³⁴

FHWA and the Federal Transit Administration (FTA)

FHWA and FTA provide oversight, guidance, and technical assistance to State DOTs, MPOs, and their partners for successfully conducting transportation planning in response to the joint planning requirements. The Federal agencies also provide tools and technical assistance to RPOs and their partners to help rural transportation systems best serve the needs of rural regions and also bring access, connectivity, and other benefits to the statewide and metropolitan area transportation. See also [FHWA resources for rural transportation planning](#) and the [Rural and Small Community page](#) of FHWA and FTA's [Transportation Planning Capacity Building website](#).

The FTA provides tools and technical assistance for rural transit providers through initiatives such as the report Transit at the Table III on best practice participation by rural transit providers and regional

³³ The Bureau of Land Management, the National Park Service, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the U.S. Forest Service are all core partners of the Office of Federal Lands Highway.

³⁴ Several USDOT websites provide information on transportation planning for Indian Tribes. The FHWA Office of Policy manages a Tribal Transportation website (<http://www.fhwa.dot.gov/tribal/>), the Office of Federal Lands Highway manages the Tribal Transportation Program website (<http://flh.fhwa.dot.gov/programs/ttp/>), and the FHWA Office of Planning manages the Tribal Transportation Planning website (<http://www.fhwa.dot.gov/planning/processes/tribal/>).

planning agencies in statewide transportation planning.³⁵ FTA's [Rural Transit Assistance Program](#) (grant) and the [National Rural Transit Assistance Program](#) provide related technical assistance.

AASHTO, NARC, NADO

The American Association of State Highway and Transportation Officials (AASHTO), [National Association of Regional Councils](#), and [National Association of Development Organizations](#) are national groups that provide advocacy, develop research, and conduct training for member organizations. These associations serve State DOTs, COGs/MPOs, and RDOs, respectively. They provide research and technical assistance, and they help convene members to tackle common challenges like planning across jurisdictional boundaries.

NADO maintains the [Ruraltransportation.org](#) resource website, with support from FHWA.

Relationships between State DOTs and Rural Transportation Planners

The relationship between State DOTs and RPOs and models of RPO participation in transportation planning vary widely by State. RPOs may participate in Statewide planning processes in formal or informal ways, such as prioritizing transportation project needs or assisting State transportation officials with public outreach and coordination efforts. Other RPOs have limited or no consultation with their State DOTs for statewide or rural transportation planning. Prior to MAP-21, approximately half of States (26 States) had designated organizations for rural transportation planning that had formalized relationships with the State DOT. The other 24 States either had no formal relationship between RPOs and State DOTs, or they had a less formal relationship without established roles.^{36,37}

FHWA and NARC are engaging in research to better understand the roles of RPOs and their relationships with State DOTs and the statewide transportation planning process. Initial conversations with NARC and examination of case study RPOs indicate that States and RPOs can effectively share responsibilities for rural transportation planning using flexible relationships and institutional structures. This same flexibility in relationships and roles is also characteristic of effective megaregions planning. However, this white paper does not contain detailed analysis on State DOT and RPO roles and relationships, in anticipation of the forthcoming research that may provide an additional resource for how RPOs and State DOTs can work together.

³⁵ FTA, "Transit at the Table III: A Guide to Effective Participation in Statewide Decision-Making for Transit Agencies in Non-Urbanized Areas," 2011. Accessed October 2, 2013: http://www.planning.dot.gov/documents/TransPlanning/TAT_III_FinalReport.pdf.

³⁶ NADO Research Foundation, 2005.

³⁷ NADO Research Foundation, 2011b.

Key Issues for Rural Transportation Planning

Transportation planning is multisectoral and interdisciplinary in rural areas. First, transportation is the critical social and economic link between rural communities and metropolitan areas, providing access to goods and services not available locally and to markets to export products from the region. Second, rural economies are closely tied to natural resource ecosystems, agriculture, resource extraction, necessitating balanced transportation systems to support these activities and facilitate economic development while maintaining environmental health and preserving rural character and quality of life. Finally, because rural areas have smaller populations and fewer public sector resources, those with planning expertise often serve in multiple roles across sectors. The economic, environmental, and social issues within rural areas of the geographic regions are inextricably linked to surrounding cities, ecosystems, regions, and States. For example, demand from metropolitan areas drives agriculture, manufacturing, and resource extraction in rural areas; and transportation logistics, new regulations, or taxes from the State or county may affect where new businesses locate.

The three issues explored in this section (economic development, freight, and natural resources) are central to transportation planning in rural regions, and are also priority issues for megaregions. When multiple stakeholders work together to consider interregional needs, these issues are often at the top of the agenda. This section explores how each key issue influences transportation planning in rural areas, and then notes the importance of the issue within a megaregions context. For each issue, this section lists one or more relevant examples based on planning by and initiatives from RPOs. In some cases, these examples are from the organizations profiled in case studies in later sections, while other examples are based on literature review or references provided by NARC and NADO.

Economic Development

Connection with rural transportation planning

Transportation planning is strongly linked to supporting rural economies and increasing economic development in rural areas, as transportation provides the infrastructure and network access that can promote economic growth.³⁸ Industries that are important to rural economic development include tourism, agriculture, service industries and manufacturing, each of which is described briefly below.

Tourism is an important economic force in rural areas; increased tourism results in growth in related goods and services. The transportation system has the ability to connect rural and urban areas, allowing tourists access to amenities and attractions such as natural, scenic, and cultural resources. Rural areas increasingly rely on travel, tourism, and recreation to provide jobs and tax revenues. As tourism in rural areas increases, the use of and demand for rural roads increases, as well.³⁹ As part of the increase in

³⁸ Dabson, Johnson, & Fluharty, "Rethinking Federal Investments in Rural Transportation: Rural Considerations Regarding Reauthorization of the Surface Transportation Act," Rural Policy Research Institute (RUPRI), 2011. Accessed October 2, 2013: http://www.rupri.org/Forms/RUPRI_Transportation_April2011.pdf.

³⁹ AASHTO, *Future Needs of the U.S. Surface Transportation System*, 2007. Accessed October 10, 2013: <http://www.ctaa.org/webmodules/webarticles/articlefiles/TIF1-1.pdf>.

tourism, there has also been an increased demand for services such as fishing and hunting tours, which contributes to economic development of rural areas with tourist attractions. The incorporation of multimodal transportation in the form of bicycle and pedestrian infrastructure can help rural areas attract tourism, as many tourists enjoy walking and biking activities for both recreation and transportation during their vacation.⁴⁰

As a primary economic sector in rural areas, agriculture is a significant consideration in both land use and transportation planning and investments. Agriculture relies on the ability to move goods efficiently through the use of highways, rail, waterways and ports, and intermodal transfer facilities. The mode of transportation for agriculture depends on the geographic region and the agricultural product. Some areas, such as the Midwest, depend on barge and rail transport for shipping products such as grain, while others require trucks and strong roadway networks to transport products such as corn into processing plants. Other areas, such as counties in California and Pennsylvania, rely on air transportation and overnight trucking, particularly in areas that concentrate on highly perishable fruits and vegetables. Trucking is particularly important, carrying 70 percent of the inputs and outputs of agriculture, followed by railroads and barges.⁴¹

The face of agriculture in rural areas is changing, with a trend toward larger operations to maximize economies of scale, with the average farm size increasing annually through 2012.⁴² The consolidation of agricultural activities has resulted in fewer production and processing facilities, placing larger demands on the transportation systems.⁴³ A more efficient and coordinated transportation system can help lower costs of seeds, fertilizer, and other inputs for farmers and increase their market access,⁴⁴ while also allowing them to locate where the soil and climate are most suitable for their crops. An interconnected transportation system can help effectively link rural areas and allow for the movement of agriculture outputs through planning for freight connections between agriculture areas, processing centers, and urban consumption centers. The goal of improved system connectivity may motivate stakeholders in rural agricultural areas to participate in larger-scale transportation planning, and the entire foodshed – which may span many States - can benefit from more efficient delivery of agricultural products and greater economic productivity of the agricultural sector.

The same transportation networks that serve agricultural sectors are also important for the manufacturing industry. The manufacturing sector requires rail, air, highway, and maritime services to

⁴⁰ American Trails, "Economic Benefits of Trail Tourism," 2011. Accessed October 2, 2013: <http://atfiles.org/files/pdf/Economic-Benefits-American-Trails.pdf>.

⁴¹ USDA and USDOT, 2010.

⁴² Although the U.S. has experienced growth around local and urban agriculture, these have not seemed to have a substantial effect on the growth of the nation's overall large industrial farming structure. USDA National Agricultural Statistics Service, "Farms, Land in Farms, and Livestock Operations 2011 Summary," 2012. Accessed February 27, 2012: <http://usda01.library.cornell.edu/usda/current/FarmLandIn/FarmLandIn-02-17-2012.pdf/>.

⁴³ FHWA, 2001.

⁴⁴ USDA and USDOT, 2010.

move raw and finished goods and provide access to markets, and manufacturers seek locations where transportation infrastructure minimizes logistics costs. Furthermore, manufacturing has traditionally located in rural areas to take advantage of lower capital and labor costs. Manufacturing employs 15 percent of the rural workforce, compared to less than 11 percent of the metropolitan workforce; therefore, manufacturing is an important component of the rural economy.⁴⁵ After the late 1980s when many manufacturing plants moved overseas, manufacturing in the U.S. shifted into a higher skilled industry, requiring a more educated labor force. Now, manufacturing jobs are attractive in rural areas, paying higher wages and providing more benefits than other non-farm jobs.⁴⁶

The service industry is also important to rural economies and has unique demands for a multimodal transportation system. Service industries such as health care, recreation, legal, and business services are fast growing in rural areas, in part to keep up with population increases that demand these services.⁴⁷ Rural service areas can serve as regional trade centers or provide amenities for tourism.⁴⁸ New service industries require transportation networks that are well connected with intermodal centers for passengers and freight; they rely on transportation services such as package delivery and air transportation for their day-to-day operations and for connections to people and markets located outside of the region and around the world. Multimodal transportation systems allow business owners and employees to quickly and efficiently move people and ideas from more remote areas to metropolitan centers and ports in the larger region.

Rural areas are also the site of energy production and generation, which are significant contributors to regional economies. Rural areas often contain resources that are extracted to produce energy, fuel refineries, electric generation facilities, pipeline and power line infrastructure, and distribution centers. The energy produced and transported within and through rural areas powers transportation across both urban and rural areas, and is a necessary component for industry and commercial activity. Due to the scale of electric generation, transmission and pricing of electricity usually occurs on a multi-State basis. Similarly, transportation fuel extraction, refinement, and distribution require coordination at a megaregions scale.

Connection to larger region and benefits to rural areas

Economic development is a critical reason to build strong transportation connections between rural areas and larger urban areas. Improved transportation allows for better access to customers and raw materials, increases the productivity of capital, and reduces transportation and production costs,

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Goodwin et al, *Rural Transportation Guidebook*, Center for Transportation Training and Research, 2004. Accessed July 30, 2013: <http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/0-4230-P1.pdf>.

⁴⁸ USDA Economic Research Service, "Understanding Rural America," Agricultural Information Bulletin 710, 1995. Accessed July 30, 2012: now <http://www.ers.usda.gov/publications/aib-agricultural-information-bulletin/aib710.aspx>.

thereby leading to more competitive pricing of goods and services and an overall more economically competitive region. In addition, better networks can lead to reductions in travel time, lower vehicle operating costs, and increased property values, improving the quality of life for residents and workers.⁴⁹

Multimodal transportation networks are also an important amenity for residents, as residents benefit from improved access to jobs, services, and recreational opportunities. The presence of multimodal transportation systems in rural areas can help attract a stronger and more diverse workforce.⁵⁰ The economic growth that results translates into higher wages for workers and greater income for business owners, helping to further the competitiveness of the region.⁵¹

In the context of planning for the larger region, rural and metropolitan regions alike are recognizing the increased need for a new scale of transportation and other planning to realize economic competitiveness on a national and global level. The manufacturing, agricultural, tourist, and service sectors in rural areas are mutually supportive to the economic health of the larger region, producing many of the goods and services consumed by metropolitan residents or exported outside the region. The importance of these economic sectors to neighboring areas and economies provides an impetus for metropolitan and State transportation planning leaders to partner with rural stakeholders. Improved transportation connections to the larger megaregions can help rural areas transport the resources, agricultural products, and raw materials to customer base, markets, and networks that will enable them to be more competitive, providing an important benefit for these areas to participate in large-scale transportation planning.

Case examples

There are a number of examples from current practice that demonstrate how regional transportation projects can contribute to local economic growth through improving access to jobs and increasing the vitality of downtown areas. The town of Brattleboro, Vermont, constructed a passenger intermodal transportation hub and improved the Amtrak station. These improvements have revitalized the downtown. Another example considers how the installation of commuter bus service from Baldwin County, Alabama, into Mobile, increases access to job opportunities for rural residents, while also reducing congestion. The Central Oregon Intergovernmental Council (COIC) prepared a coordinated regional public transportation plan, built a transit hub, and operated a local and regional bus service.

⁴⁹ FHWA, 2001.

⁵⁰ In a 2003 report, Whitener and McGranahan suggested that employers are more attracted to rural areas offering concentrations of well-educated and skilled workers. Whitener and McGranahan, "Rural America: Opportunities and Challenges," USDA Economic Research Service, 2003. Accessed July 30, 2012: <http://162.79.45.195/Amberwaves/Feb03/Features/ruralamerica.htm>.

⁵¹ Dabson, et al, 2011 and Goodwin, et al, 2004.

This system provides many school and work related trips, helping increase access in the area to work and education opportunities.⁵²

As profiled in a [case study](#), the rural residents of Yakima County, Washington, organized a transportation advocacy group to prioritize transportation issues to support economic development. Driving Rural Yakima Valley's Economy (DRYVE) focuses on freight movement, agricultural tourism, corridor development, and multimodal access to jobs and services. With limited resources for new capacity projects, rural stakeholders place elevated importance on establishing shared priorities and communicating these to elected officials and funding agencies, which they can do through DRYVE meetings.

In another [case study](#) in this paper, Western Michigan Regional Development Commission (WMRDC) recognizes its lakeshore as a natural tourist attraction, but it wanted to establish transportation systems that help its region further benefit from tourism. WMRDC joined with 180 State, local, regional, and nonprofit groups to develop [Connecting Michigan](#), a statewide nonmotorized trail vision and action plan initiative that includes regional trail gap closures that will help promote tourism.

Freight

Connection with rural transportation planning

Freight transport is critical to support rural industry, as it transports the raw goods and products needed to support and promote growth in rural economies. Well-planned, multimodal freight systems provide opportunities for companies to locate and grow in rural regions due to efficient and reliable connections with major markets and ports. The volume of goods moved by freight has increased by 20 percent from 1998 to 2010, and FHWA estimates that it will increase 50 percent over current levels by 2040.⁵³

Rural economies depend upon multiple freight modes, and urban areas similarly benefit from infrastructure improvements in rural areas that increase the efficiency of goods movement.

- Highway freight relies on U.S. and State highways to move goods, with most highway mileage located in rural areas. Highway freight transports the vast majority of U.S. manufactured goods, due to the flexibility and door-to-door service of this mode.
- Rail freight is a cost-efficient option for heavy and bulky commodities, such as lumber, coal, and heavy equipment. There are over 47,000 miles of freight railroads in the U.S., and as with highways, most of this mileage is located in rural areas.

⁵² NADO Research Foundation, "Role of Transportation Planning in the Comprehensive Economic Development Strategy Process: A Nationwide Scan," 2009. Accessed July 30, 2012: <http://www.ruraltransportation.org/uploads/cedsreport.pdf>.

⁵³ FHWA recorded 18,313 million tons of freight shipments in the U.S. in 2010, up from 15,271 million tons of freight in 1998. The figures incorporate slight dips in freight transport after 2007 due to the economic recession, but volumes began to rise again in 2010. FHWA, "Freight Facts and Figures," 2011. Accessed October 3, 2013: http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/11factsfigures/index.htm.

- Water freight presents another lower-cost option for transporting bulky goods. Inland waterways, such as the Great Lakes, the St. Lawrence Seaway, rivers, and coastal waterways are all part of the rural transportation network.
- Air freight connects rural freight shippers to national and international ports and destinations. Air freight is relatively low in volume but tends to transport higher value goods, such as those from technology industries.⁵⁴

The role of freight in rural communities varies according to the primary economic sectors. Freight systems must be sensitive to both the inputs to the local industry and the products grown or manufactured there. Freight transport must be appropriate to deliver the raw materials and the finished products in a way that is sensitive to the timeliness, perishability, and composition of these products. For example, specialized or highly perishable fruits and vegetables may require air transport to reach domestic and global markets, whereas heavy grains rely upon barge and rail transport.⁵⁵ The need for specific types of freight infrastructure calls for greater participation by rural stakeholders in transportation planning to ensure that the infrastructure best serves the region's needs.

In addition to deriving benefits from freight serving economic sectors in rural areas, there are some examples of intermodal facilities, logistics, and operations centers locating in rural regions. These intermodal facilities benefit from lower land and labor costs (as compared to urban areas) and may be strategically located at a key transfer point in a freight corridor.⁵⁶ The role of transportation planning in guiding these investments would be a worthwhile topic for future research.

In other cases, freight transportation passes through rural regions without bringing direct economic benefit to those areas. In cases where freight connects origins and destinations in metropolitan areas, rural regions host the roads, rails, and waterways that carry freight vehicles. Freight transportation may bring negative externalities in the form of pollutant emissions, spread of invasive species, hazardous material incidents, crossing incidents, and vehicular crashes.⁵⁷ Furthermore, increases in freight volume may bring additional truck traffic to deficient rural roads, requiring rural regions to make costly adaptations to their transportation infrastructure without direct benefit to the area. Such issues present challenges for rural regions, which have fewer resources and less flexibility to address such externalities.⁵⁸

Rural communities must also consider that transportation infrastructure for freight may not align with other community transportation needs or accommodate other regional transportation patterns.

⁵⁴ FHWA, 2001 and 2004.

⁵⁵ USDA and USDOT, 2010, p128.

⁵⁶ Ogard, "Intermodal Freight Facilities in Small to Medium Sized Communities," Upper Great Plains Transportation Institute Rural Transportation Conference Proceedings, 2004. Accessed October 3, 2013: http://www.ugpti.org/resources/proceedings/2004_ruralfreight/downloads/intermodalFacilities.pdf.

⁵⁷ FHWA, *Freight Story 2008*, 2008. Chapters: "Safety and Environmental Considerations" and "The Freight Challenge." Accessed October 3, 2013: http://ops.fhwa.dot.gov/freight/freight_analysis/freight_story/index.htm.

⁵⁸ FHWA, 2001.

Manufacturing facilities or farms may be located far from residences and commercial services. For example, highways that are built for freight efficiency may be wide and straight, while a scenic, winding road is preferable for attracting tourists.⁵⁹ Large-scale agriculture and related freight facilities may not produce benefits of food access for rural areas. SACOG, the Sacramento area MPO, is an example of how transportation planning can also consider similar issues of food access to local communities.⁶⁰ Transportation planning, whether led by DOTs or rural organizations, is critical to trade-off competing goals and priorities such as these.

Connection to larger regional planning

Metropolitan regions rely heavily on efficient freight systems to deliver goods to their markets. Strong multimodal freight systems connecting metropolitan areas are critical for national economic competitiveness.⁶¹ Efficient freight movement also benefits metropolitan areas in terms of more competitively priced markets and positive impacts on business location decisions.⁶²

Megaregions are increasingly becoming the most relevant scale for international and domestic trade. Therefore freight planners working on this scale may be able to better assess the types of infrastructure to improve trade in the region.⁶³ Freight movement is not constrained by jurisdictional boundaries but rather influenced by market forces. Therefore, freight corridors include the infrastructure of multiple jurisdictions (States, rural areas, MPOs, etc.) and require planning and coordination across borders to develop efficient plans and make effective decisions. FHWA and AASHTO recommend a multi-jurisdictional stakeholder group to arrive at common freight goals that consider the regulations, needs, and constraints of all areas⁶⁴ – this clearly is important on a megaregions scale.

RDOs (see [definition](#)) also engage in planning for freight at a larger scale; in States such as Colorado and New York, economic development agencies cover the entire State and necessarily consider freight

⁵⁹ USDA and USDOT, 2010, p129.

⁶⁰ U.S DOT Volpe Center for FHWA Office of Planning, Metropolitan Area Transportation Planning for Healthy Communities, 2012. Accessed October 3, 2013: http://www.planning.dot.gov/documents/Volpe_FHWA_MPOHealth_12122012.pdf. The SACOG case study begins on page 76.

⁶¹ Puentes, “A Bridge to Somewhere: Rethinking American Transportation for the 21st Century,” Brookings Metropolitan Policy Program, 2008. Accessed October 10, 2013: http://www.brookings.edu/~media/research/files/reports/2008/6/transportation%20puentes/06_transportation_puentes_policybrief.pdf.

⁶² Lindsey, “A Framework for Integrating Freight into MPO Transportation Planning,” Master’s Thesis, Georgia Institute of Technology, 2008. Accessed October 3, 2013: http://smartech.gatech.edu/jspui/bitstream/1853/24606/1/lindsey_christopher_I_200808_mast.pdf.

⁶³ Ross, “Megaregions: Literature Review of the Implications for U.S. Infrastructure Investment and Transportation Planning,” 2008. Accessed October 3, 2013: http://www.fhwa.dot.gov/planning/megaregions/reports/megaregions_report_2008/megaregions.pdf.

⁶⁴ AASHTO and FHWA, “The AASHTO/FHWA Freight Transportation Partnership III Meeting,” 2010. Accessed October 3, 2013: <http://ops.fhwa.dot.gov/freight/documents/fp3wp/findings.htm>.

planning at a larger scale. These RDOs and economic development agencies could be leaders or participants in freight planning at a megaregions scale.

State DOTs often lead freight planning due to their capacity to bring together the many stakeholders within their borders.⁶⁵ DOTs also have multimodal planning responsibilities, as defined in MAP-21, and are typically the institutions with the largest planning boundaries. Most States have established stakeholder representative groups to advise on freight planning. These groups include representatives from private industry, shippers, and transportation companies. Although MPOs are frequently involved in freight planning, they may not lead large-scale freight planning efforts. States often lead statewide Freight Plans, at the encouragement of the USDOT⁶⁶ and often in conjunction with MPO and rural partners. States are increasingly working across State boundaries to plan for freight, recognizing the importance of coordination in effective intermodal freight systems.⁶⁷

Stakeholders within these larger regions can coordinate on new or enhanced rail lines to complement highway corridors, intermodal terminals, and computerized traffic control to enhance freight efficiency across the megaregion.⁶⁸ Additionally, since freight corridors tend to serve multiple points in a large region, rural communities can most effectively voice their needs by partnering with other communities in approaching freight transport.⁶⁹

Case examples

The Appalachian Regional Commission studied global competitiveness of export industries within their rural region. It found that the mode of freight transport varied by industry, and the type of ports used to distribute goods also varied significantly by industry. That means that products produced in the same rural region might have very different processing destinations and modes of travel, which increases the need for multimodal and intermodal facilities. The Regional Commission further found that almost all airport facilities and most intermodal facilities that transport the region's products are located outside the region. The Regional Council successfully identified the gaps between the current transportation

⁶⁵ Ross, "Literature Review of Organizational Structures and Finance of Multi-jurisdictional Initiatives and the Implications for Megaregion Transportation Planning in the U.S.," 2011. Accessed October 3, 2013: http://www.fhwa.dot.gov/planning/megaregions/reports/megaregions_report_2011/megaregions2011.pdf.

⁶⁶ U.S. Federal Register, Vol. 77, No. 199, October 15, 2012. Accessed October 3, 2013: http://www.fhwa.dot.gov/map21/docs/guidance_freight_101512.pdf.

⁶⁷ Hauser and Scmittou, "Summary of Freight Planning and Policies – Selected States," prepared for the North Carolina Forum on Freight Mobility and Economic Prosperity, 2004. Accessed October 10, 2013: <http://transpol.uncc.edu/pdfs/whitepaper.pdf>.

⁶⁸ Ross, 2011.

⁶⁹ USDA, 2010 p129.

system and the type of infrastructure needed to best support the region's infrastructure, which has since resulted in Congressional funding for completing the Appalachian development highway system.⁷⁰

As detailed in a [case study](#), YVCOG benefits from a direct relationship with the Port of Seattle. Many of the agricultural goods produced in Yakima Valley must pass through the port, and staff from the two organizations meets regularly to discuss issues related to export of goods.

Natural Resources and Environment

Connection with rural transportation planning

Transportation planning has important implications for environmental and natural resources protection, especially in a rural context where there are more intact natural areas and habitat corridors than in urban areas. These implications also apply to megaregions. The placement of transportation infrastructure has a profound impact on the rural natural environment, affecting water quality, ecological services, endangered species, wildlife migration corridors, and habitat protection. Furthermore, Federal regulations require State DOTs and other transportation project sponsors (including RPOs) to identify and avoid or mitigate the environmental impacts of transportation projects using Federal funds, and all regional planning agencies are also encouraged to consider environmental impacts in transportation planning.^{71,72,73}

Rural communities were founded on the agricultural and natural resource values of the land; these resources are important to regional identity and economies. Many rural areas are centered on land-based economies, with a healthy, working landscape being critical to the vitality of these communities.⁷⁴ The proximity of natural resources and their importance to the daily lives of rural residents (for recreation, employment, etc.) sets rural areas apart from their metropolitan neighbors. With these close

⁷⁰ FHWA, "Freight's Role in Economic Development: Success Stories from Urban and Rural Areas," Transcript from Talking Freight, January 19, 2005. Accessed October 10, 2013: http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/jan19transcript.cfm.

⁷¹ The National Environmental Policy Act of 1969 42 USC § 4321-4347. Accessed February 14, 2013: http://ceq.hss.doe.gov/laws_and_executive_orders/the_nepa_statute.html.

⁷² The Endangered Species Act of 1973 16 USC §1531-1544. Accessed August 23, 2013: <http://www.fws.gov/laws/lawsdigest/esact.html>.

⁷³ The Clean Air Act 42 USC §7401-7671. Accessed October 10, 2013: <http://www.epa.gov/air/caa/>.

⁷⁴ International City/County Management Association (ICMA), *Putting Smart Growth to Work in Rural Communities*, 2010. Accessed October 3, 2013: http://icma.org/en/icma/knowledge_network/documents/kn/Document/301483/Putting_Smart_Growth_to_Work_in_Rural_Communities.

resource ties, rural residents frequently prioritize natural resources and environmental stewardship in long-range transportation planning as critical elements of the long-term vitality of the region.⁷⁵

Benefits of planning for natural resources on a larger scale

An ecosystem approach to infrastructure development has inherent overlap with megaregions planning. Natural resources do not recognize jurisdictional lines, and the resource and regulatory organizations that serve as stewards of these resources oversee regions that encompass many political entities. While traditional avoidance, minimization, and mitigation practices are important precepts of environmental planning, such strategies are often practiced primarily at the local scale at the expense of bringing value and protection to the larger ecosystem.⁷⁶ Planning at an ecosystem scale coincides with the broad, fluid boundaries of a megaregion; the needs of habitats and watersheds do not end at jurisdictional boundaries, just as the economic and social needs for transportation infrastructure do not always follow political boundaries.

Transportation and environmental planners increasingly recognize the benefits of megaregions- scale planning for ecosystem benefits. The emergence of the modern fields of landscape ecology and conservation biology has greatly enhanced the knowledge of habitat connectivity and regional hydrologic processes. Building upon this scientific foundation, FHWA and a team of Federal agency partners developed the Eco-Logical approach; an ecosystem approach to infrastructure development introduces opportunities for restoring, creating, enhancing, and preserving the environment on the scale that ecological processes actually operate. Eco-Logical uses collaborative planning and partnerships to identify shared priorities for preserving and enhancing key habitat corridors and other natural resources rather than avoiding isolated habitat patches.⁷⁷ For example, Eco-Logical could be used to extend traditional compensatory wetland mitigation to include off-site mitigation in areas of highest need.⁷⁸ The use of the Eco-Logical approach should result in better environmental outcomes as well as streamlining of transportation planning and delivery, which bring benefits to all stakeholders.⁷⁹

Transportation planning stakeholders can realize multiple benefits by using a megaregions approach that considers natural resources on an ecosystem scale. First, States and metropolitan areas have an interest in protecting the resources in rural areas for the following reasons:

⁷⁵ NADO Research Foundation, "Regional Approaches to Sustainable Development: Linking Economic, Transportation, and Environmental Infrastructure in Rural and Small Metropolitan America," 2011a. Accessed October 10, 2013: <http://www.nado.org/wp-content/uploads/2011/09/NADO-Sustainable-Devt-2011.pdf>.

⁷⁶ FHWA, *Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects*, 2006. Accessed October 3, 2013: http://www.environment.fhwa.dot.gov/ecological/eco_index.asp.

⁷⁷ Ibid.

⁷⁸ Ibid, Section IV.

⁷⁹ FHWA, "Eco-Logical Grant Program Annual Report for 2011," 2012. Accessed October 3, 2013: http://www.environment.fhwa.dot.gov/ecological/grantProgram_rpt/report2012.asp.

- Federal and State laws require the consideration and minimization of impact to specified natural resources.
- Natural resources serve as a recreational and visual amenity for residents of both urban and rural areas.⁸⁰
- Resources contribute to clean air and water for the larger region.⁸¹

Rural stakeholders can benefit from coordinating with State and MPO transportation planners on natural resource impacts at a larger scale, especially in planning with the Eco-Logical approach. Rural stakeholders can express the transportation needs and values of their rural regions, and they have local knowledge or connections to local citizen groups that can identify the resources of greatest importance and ecological service in the region.

In addition to working at an ecosystem scale, transportation planning processes should involve all stakeholders, including rural stakeholders, to better realize benefits for both the transportation system and the environment.⁸² Advanced, integrated planning at the ecosystem scale allows planners to incorporate the needs and constraints of all stakeholders into a set of shared priorities for preservation or mitigation for the larger region. These needs and constraints will also contribute to the selection of transportation projects. State and MPO transportation planners can consider including rural stakeholders in transportation planning, not only due to the important perspective they bring on natural resources, but also because upfront participation can avoid stalemates later in the process.

Case examples

Several case examples demonstrate the role that transportation planning can play in an ecosystem approach to infrastructure development in rural areas. North Carolina's Land-of-Sky Regional Council (LOSRC) developed a green infrastructure map for a four-county region of western North Carolina using a combination of stakeholder involvement and data analysis. The publicly available maps, which display important water resources, agricultural and recreational lands, wildlife habitat, and cultural resources, help area partners streamline environmental review and permitting for transportation projects. The French Broad River MPO, housed with LOSRC, included the maps within an "Environmental Analysis" chapter of the area's LRTP.⁸³

⁸⁰ Hermansen-Baez, et al., "Wildland-Urban Interface: Key Issues," Factsheet, InterfaceSouth of the Centers for Urban and Interface Forestry, Southern Research Station, U.S. Forest Service and the University of Florida, Institute of Food and Agricultural Sciences (IFAS), 2009. Accessed July 30, 2013: <http://www.srs.fs.usda.gov/factsheet/pdf/wui-keyissues.pdf>.

⁸¹ National Park Service, "Plant Invaders of Mid-Atlantic Natural Areas," 2010. Accessed July 30, 2012: <http://www.nps.gov/plants/alien/pubs/midatlantic/introduction.htm>.

⁸² FHWA, 2006.

⁸³ FHWA, "Linking Lands and Communities in the Land-of-Sky Region," Grant Program Project, Eco-Logical, 2011. Accessed October 10, 2013: http://www.environment.fhwa.dot.gov/ecological/grantProgram_rpt/grants/losrc_2011.asp.

The North Central Texas Council of Governments (NCTCOG) developed a Regional Ecosystem Framework (REF) to help assess environmental impacts of proposed transportation projects. The REF brings together plans from multiple agencies and levels of government. The REF takes a watershed-scale approach to integrate regional data, including a composite map of resource priorities. NCTCOG can reference the REF when developing environmental policies in its LRTP and when conducting project-level analysis.⁸⁴ LOSRC and NCTCOG identified priorities and potential impacts across the ecosystem, providing data and tools that could be used by the many jurisdictions within the larger region.

Case Studies

This white paper is designed to open up and explore the topic of rural participation in transportation planning for megaregions. The research team developed three case studies of active and effective RPOs in megaregions-scale planning to explore and frame issues and opportunities. The three featured case studies are:

- The SouthEastern Arizona Association of Governments (SEAGO), Arizona;
- The West Michigan Shoreline Regional Development Commission (WMSRDC); and
- The Yakima Valley Council of Governments (YVCOG), Washington.

Based on these cases and research conducted into rural participation in planning for megaregions, the project team developed a framework to assist RPOs and other rural stakeholders in participation in this type of planning. This chapter:

- Describes how the project team selected the three RPOs for case studies;
- Presents a framework, roles, and lessons for rural participation in megaregions planning; and
- Provides the three case studies.

Selection of Case Studies

After a review of relevant source materials on rural transportation planning and discussions with representatives from NARC and NADO, the research team identified 11 organizations that act as RPOs and participate in interregional activities (see Table 1). The megaregions listed in Table 1 are identified in research conducted by America 2050 and the Center for Quality Growth and Regional Development, as referenced in [Appendix A](#). For an explanation of different organization types and activities, reference the [Stakeholders and Roles](#) section.

Table 1: Innovative Rural Organizations and Initiatives Operating at Megaregions Scale

RPOs and Megaregions-Scale Initiatives	State	Megaregion
Brazos Valley COG	TX	Texas Triangle

⁸⁴FHWA, “North Central Texas Regional Ecosystem Framework,” Grant Program Project, Eco-Logical, 2011. Accessed October 10, 2013: http://www.environment.fhwa.dot.gov/ecological/grantProgram_rpt/grants/nctcog_2011.asp.

Central Oregon Intergovernmental Council	OR	Cascadia
Green River Area Development District	KY	Midwest
Lincoln Trail Area Regional Development District	KY	Midwest
New England’s Sustainable Knowledge Corridor (Capitol Region Council of Governments lead)	CT/ MA	Northeast
North Country Council	NH	Northeast
North State Super Region (Shasta Regional Transportation Agency lead)	CA	Northern California
Piedmont Triad Regional Council	NC	Piedmont Atlantic
SouthEastern Arizona Governments Organization	AZ	Arizona Sun Corridor
West Michigan Shoreline Regional Development Commission	MI	Midwest
Yakima Valley COG	WA	Cascadia

This list is not meant to be exhaustive, nor representative of all best practices nationwide, but was instead designed to introduce a range of potential organizations that may provide insights and best practices to share with peers. In assembling and ultimately paring down this list, the project team sought geographically diverse RPOs that:

- Demonstrate leadership in interregional or megaregions planning;
- Participate in innovative partnership structures;
- Are located within a recognized megaregion;
- Have a range of staff capacity and expertise; and
- Experience a variety of transportation and economic development challenges.

Based on these criteria, the research team selected three RPOs (SEAGO, WMSRDC, and YVCOG) for further investigation. The team conducted structured discussions with the executive director of each organization, covering the current and potential role of RPOs within the transportation planning process and their organization’s relationships and collaborations with State DOTs, MPOs, transportation providers, local government, and other public or private sector stakeholders. The team also reviewed documents and plans and spoke with partner agencies, as suggested by each executive director.

The three [case studies](#) are located at the end of the paper. The following section offers a synthesis of characteristics, benefits, and activities common among many RPOs to guide the reading of the case studies. These commonalities are based on observations from the three documented RPOs and on the research documented in earlier sections.

Synthesis

This synthesis draws high-level lessons and considerations based upon the three case studies, the scan of additional rural involvement in interregional planning, background literature and policy research, discussions with experts from the fields of rural transportation planning and megaregions planning, and conversations with State, metropolitan, and rural transportation planning stakeholders.

This white paper and the three case studies are meant to initiate discussion by rural agency peers on a range of possibilities rather than recommend a fixed course of action to bring rural considerations into planning transportation for megaregions. With thousands of rural planning organizations across the U.S.

covering a broad spectrum of responsibilities in transportation planning, each individual agency must adapt activities to fit its own context. This report is explicitly intended to be a resource to broaden thinking on possible future directions to effectively participate in transportation planning for megaregions.

The research team found that rural regions face issues that cannot always be addressed at a local scale, and these issues often have impacts that affect neighboring metropolitan and rural regions. To better organize themselves to be at the table in planning for larger regional transportation systems and important needs, rural stakeholders can partner with each other and leverage existing local and State transportation planning efforts. This section draws from some of those best practices and identifies several means by which RPOs may participate successfully, as well as some of the opportunities, barriers, and implications of such participation.

Existing Characteristics of RPOs and Partners

RPOs currently operate under a wide variety of institutional structures and follow several approaches to participation in transportation planning at the local, regional, and State levels. In many cases, rural stakeholders may not prioritize participation in larger-scale transportation planning, due to the perception that this type of planning often occurs in and focuses on the issues of metropolitan areas. Consequently RPOs are not frequently noted as key participants in megaregions-scale coalitions and initiatives, especially when compared to MPOs and State DOTs. Limited funding and technical capacity makes it difficult for RPOs to participate in and promote planning activities outside of their region. Furthermore, State and metropolitan leaders may also not consider including RPO players in megaregions initiatives unless they clearly recognize an issue that requires their perspective or expertise.

The research indicates several characteristics common across many, if not all, RPOs that act to either enhance or limit their capacity to participate in megaregions initiatives and attract recognition from State and metropolitan transportation stakeholders.

1. **RPO funding constraints.** RPOs have very small budgets for intergovernmental coordination, transportation planning, and project delivery, as was evident in all three of the case studies. In many cases, RPOs with more responsibility for planning across their region often prioritize planning elements required or emphasized by the State DOT before they are able to turn attention to interregional concerns, which often cross State borders.
2. **Staff relies on grants.** RPOs use grant funding to complete plans, studies, and projects that may implement the goals of their plans or meet the region's priorities. Grant funding allows them to go beyond the very limited scope of activities covered through their general transportation budget, as emphasized by the director of the WMSRDC. However, staff often spends significant amounts of time on grant applications, thus limiting staff capacity to participate in other activities or initiatives.
3. **RPO staff capacity.** RPOs often have a small number of staff, covering several disciplines and job functions. RPOs may lack dedicated transportation planners, or their transportation professionals may not have time to seek out and participate in collaborative opportunities. However, when staff does participate in such collaborations, they are often able to address

transportation, economic development, natural resources, and other intersecting topics of importance for the rural area as well as the larger megaregion.

State DOTs, MPOs, and other participants in megaregions initiatives also present opportunities and challenges for RPO participation.

4. **State funding and staff capacity.** State DOTs may allocate responsibility for transportation planning to RPOs, the team observed in Washington and Michigan, especially in cases where their own capacity is curtailed. While limited State funding can create a space for RPO-led planning, State DOT staff limitations may make it difficult for DOTs to support statewide coordination between RPOs.
5. **Barriers to inviting RPO participation in megaregions activities.** State DOTs and MPOs may be the most logical actors to engage RPOs. However, they may not be actively recruiting RPOs' participation for a variety of factors, including the fledgling or ad hoc nature of megaregions activities, lack of awareness of the benefits and relevance of RPO participation, and the large number of RPOs within a megaregion.
6. **Nature of megaregions initiatives.** Many (although not all) megaregions plans, programs, and forums are established in metropolitan areas, led by leaders based in cities, and/or focused on agendas set by urban interests. For this reason, and due to the limited capacity of RPO staff to monitor these activities, some rural areas may not feel engaged with their megaregion or even have familiarity with the concept of megaregions.

Benefits for RPO Participation

Despite some of the existing barriers, RPOs cite numerous benefits of partnerships and programs outside of their regions. Additionally, Federal agencies, State DOTs, and MPOs recognize the importance of having rural stakeholders significantly involved in larger plans and projects. The following factors help both RPOs and their partners to bring a rural voice into megaregions transportation planning:

1. **Economic development.** The many facets of economic development, which are detailed in a new Volpe Center report for FHWA, "A Multimodal Approach to Economic Development in the Metropolitan Planning Process,"⁸⁵ are the primary motivation for RPOs to partner with State DOTs, MPOs, and other RPOs on transportation planning. RPOs and their member governments are interested in bringing jobs, tax revenue, and tourism dollars to their regions, as noted in all three case studies and from NADO and NARC discussions. Often surrounding metropolitan areas and States have the ability to invest in transportation infrastructure that supports economic development. Similarly, metropolitan areas and States see the importance of working across a region to compete on a global scale, and rural regions often house the manufacturing, agricultural, and freight infrastructure to enable this competition.
2. **Rural megaregions assets.** Closely related to economic development, rural areas contain assets of megaregions significance such as agricultural and industrial production areas, freight infrastructure, natural resources, and landscapes that attract tourism. These assets are also central to the identities, characters, and economies of rural areas. As many initiatives or

⁸⁵ The forthcoming report will be posted on the TPCB website: <http://www.planning.dot.gov/>.

interregional projects center upon or directly affect these assets, it is essential to include rural areas in planning activities.

3. **Gaining support of rural stakeholders.** RPO staff work between disciplines and are well-connected with local elected officials, business leaders, and other important stakeholders; for example, the YVCOG and WMSRDC case studies describe some of the interdisciplinary roles of RPO staff. The support of these stakeholders is critical in interregional or megaregions-scale projects and plans, as their jurisdictions will be strongly impacted by resulting infrastructure and programs. RPOs can help convene local governments and other rural stakeholders to provide feedback and advocate for interregional initiatives, potentially resulting in fewer delays later in the planning process. RPOs and their partners can also use their planning process to help shape initiatives to reflect local concerns, for example siting of rail corridors or highway exits, to reflect local concerns.

Activities

RPOs currently participate in megaregions initiatives in a range of ways – from informal communications to active involvement in large-scale forums. The activities cited among the case studies and through other conversations with national experts include the following “menu” of options for RPO participation.

1. **Thought leadership.** Through participation in forums for regional planning, COGs, RPOs, and/or related initiatives, RPO staff can raise issues that originate in their regions that affect others in the State or megaregion. Forums that allow all participants an equal voice, regardless of the size of their constituency, can be especially effective for RPO staff to generate new ideas. An example is SEAGO raising border trade issues in a meeting of Arizona COG directors.
2. **Partnerships.** RPOs frequently enter into partnerships to expand their capacity and achieve mutual goals for their rural areas. These partnerships can be formal, such as RPOs housed within and using the expertise of MPOs, and informal, such as with local business owners as illustrated in YVCOG. Some innovative partnerships that can help RPOs expand their influence outside of their boundaries include partnerships with urban port authorities, transit agencies, and major institutions or employment centers. Often partnerships are a low-cost, low-effort way for RPOs to coordinate their activities and goals, and these partners can help extend the voice of RPOs into larger forums. In many cases, including several of those documented in case studies, partnerships within the State are good precedents for future expanded participation by rural agencies in planning on a megaregions scale.
3. **Communications.** Communications are critical for megaregions leaders, due to the diversity of actors affected by large-scale planning and the challenge of communicating effectively with everyone. RPOs can collaborate to help shape messages about the megaregion and rural concerns to freight operators, business leaders, local governments, and other critical stakeholders. RPOs can also help connect important rural stakeholders with metropolitan or State-level leaders, as evidenced when SEAGO introduced MAG to local government officials on both sides of the U.S./Mexican border. RPOs can also disseminate information about megaregions formally or informally in their regions and develop appropriate communications strategies.

Roles for Participation

The roles for RPO engagement in megaregions can cover a spectrum of activities and levels of effort. This spectrum considers the very real constraints of staff capacity facing RPOs, as well as the inherent

diversity in RPOs across geography and time. The research team identified these roles in practice in the three case studies and in background research on participation of rural agencies in other areas. Peer RPOs may find different activities appropriate for their organizations or more feasible during certain time periods or when faced with different opportunities or issues.

1. **Connect megaregion leaders with people and resources.** Without investing significant time or travel, RPOs can share their local knowledge by providing data and identifying contacts who can help inform megaregions plans, programs, and projects. RPOs are excellent resources for facilitating communications with local elected officials, who often compose RPO boards. RPOs may also connect leaders with local groups, such as a manufacturing trade group, that may have expertise in or be affected by megaregions issues.
2. **Introduce a megaregions-scale need to a group of stakeholders.** While RPO staff may lack the resources to lead a megaregions effort, they may recognize a challenge or even propose a large-scale project solution that starts in their rural area but is a priority at a larger scale. Border crossing infrastructure in Southeast Arizona is an example of initiation of ideas.
3. **Participate in discussions, forums, and workshops.** RPOs can benefit from participating in discussions and forums to include their needs and priorities in megaregions plans. State and metropolitan stakeholders avoid potential conflict by having these needs raised early in the planning process. RPO participation can be facilitated by holding these forums concurrently with other COG/RPO meetings or taking advantage of or developing opportunities to participate virtually.
4. **Advise planning studies.** State DOTs, MPOs, and others that initiate megaregions-scale planning studies can invite RPO staff to serve on advisory panels. The expertise of rural transportation planners is especially important when the plans examine mobility through rural regions, such as freight flows or inter-city passenger travel. RPOs may be able to shape the recommendations of the plans to better suit their regions' needs, although this may require greater time investment.
5. **Comment on plans or studies.** In this reactive role, RPOs can opt in as their capacity permits to assist other stakeholders consider rural concerns and opportunities. The efficacy will likely depend on the frequency of these reviews and the stage at which a plan or study is reviewed.

In addition to the roles described below for RPOs, State DOTs and MPOs are critical to ensuring successful integration of rural interests in megaregions transportation planning. The following examples are ones either observed in case studies or recommended by the authors based on observations and best practices:

1. **Leadership and funding contributions.** Compared to RPOs, State DOTs and MPOs may have greater capacity or staff flexibility to be leaders or involved participants in initiatives (as described in the [Stakeholders and Roles](#) section). State DOTs and MPOs may initiate forums, or more likely they may lead a multi-state or multi-region plan or project that results from such a forum. State DOTs and MPOs may also be able to contribute funding for programs, plans, or studies.
2. **Liaisons.** State DOTs and MPOs can serve as liaisons for RPOs in plans or projects of statewide or megaregional significance. RPOs may be unaware of large-scale efforts or may not have time to be fully informed of project details. Liaisons at the State DOT (or metropolitan) level that are assigned to several RPOs can pass along information and engage RPOs at appropriate times. For


this to be successful, the State DOT participant in the coalition would have to have good knowledge of the RPOs in the State and maintain close communications.

3. **Communications and technical assistance.** State DOTs and MPOs can also inform RPOs about projects of regional significance that may affect the rural regions. As capacity allows, State DOTs and MPOs can also provide technical assistance with RPOs related to megaregions issues.

Framework Development

Building on the foundation of previous research into megaregions transportation planning and the needs of rural areas, this research seeks to demonstrate how the participation of rural areas can strengthen transportation planning for megaregions and extend benefits in the areas of economic development, freight, natural resources, and transportation system operations across the larger region. Through interviews with key stakeholders in rural areas that currently participate in large-scale transportation planning, the research team developed a framework for conceptualizing improved rural involvement in megaregions (see Figure 4).

Figure 4: Framework for Rural Participation in Megaregions

Inputs		Processes		Benefits of RPO participation
<ul style="list-style-type: none"> • Topics of interest to rural areas and to megaregions • Institutional structures and models for rural participation in transportation planning • Policy and regulatory frameworks • Fiscal and political constraints 	→	<ul style="list-style-type: none"> • Activities • Roles for Participation • Timing of participation 	→	<ul style="list-style-type: none"> • Plans and projects with mutual benefits for RPOs, State DOTs, and MPOs • Shared economic development • More efficient movement of people and freight • Ability to leverage multiple funding sources
				
Case Studies				

The **Inputs** describe the factors that influence if, how, and why RPOs are actively engaged in the planning initiatives within their megaregions. There are basic overlapping interests between rural areas and megaregions, most frequently in the areas of economic growth and freight that may motivate RPOs to participate. The RPOs must tailor their activities to fit within their existing relationships with State and metropolitan partners, the policies and regulations that dictate their responsibilities, and of course, the limited staff and financial resources at their disposal.

Shaped by these inputs, the **Processes** describe the ways RPOs can and do participate in interregional planning and partnerships. These are activities, such as attending forums or reviewing corridor plans, and roles that articulate how the RPO fits within the larger institution of a megaregion. Timing is also important to the processes component, as it affects when RPOs can best add value. Timing is closely related to activities and roles, and the previous section describes multiple points for RPO contribution.

Finally, the **Benefits** of RPO partnership in megaregions initiatives extend to rural, urban, regional, statewide, and Federal organizations. These benefits are a direct outcome of the varied processes for RPO participation. As evidenced in the case studies and background research, non-rural stakeholders

cite significant benefits of rural stakeholder participation, which can include influence on plans and projects. For example, YVCOG led the development of a new transit route to serve commuters and students at Central Washington University, located outside of their region. Also, the participation of SEAGO in Arizona led to new alternative rail ports to Mexico, which allows the entire State to benefit from more channels for international trade.

Case studies support the development of this framework and provide evidence of the inputs, processes, and benefits derived from RPO participation in broader transportation planning.

This framework provides a flexible model for megaregions leaders, State DOTs, and rural stakeholders to consider the mechanisms for and benefits of rural participation in megaregions transportation planning. The framework can provide a lens through which to read the following case studies for how they fit the framework and where the framework may provide them future opportunities for involvement. As with other findings, this framework is meant to open discussion on rural participation and to offer flexibility to all stakeholders, while considering the centrality of rural areas as part of the larger megaregion.

Border Planning in Southeastern Arizona

Background and Issues

In the Sun Corridor megaregion, southeastern Arizona is a critical linkage between the major metropolitan areas and the economic opportunities south of the Mexican border. The Sun Corridor encompasses the metropolitan areas of Phoenix and Tucson, as well as the communities and land areas connecting the two cities (see Figure 5). A unique collaboration between several planning entities across Arizona has allowed a small RPO to take a larger role in megaregions transportation planning.

The SouthEastern Arizona Governments Organization (SEAGO) serves as the regional planning agency for four counties in southeast Arizona (Cochise, Graham, Greenlee, and Santa Cruz), as well as 14 cities and towns and one tribe within those counties (see Figure 6). SEAGO conducts planning, project programming, and some implementation activities in the areas of transportation, housing, economic development, environment, and social services. The Executive Board makes policy decisions for SEAGO; it consists of one elected official from each of the four counties and fourteen municipalities, one tribal representative, and five private sector representatives. The Administrative Council includes members representing each municipality's city or town manager, and makes recommendations to the Executive Board. SEAGO also has 13 staff, with two staff dedicated fully to transportation and mobility. Staff frequently work together on cross-cutting issues like border planning and economic development initiatives. Transportation planning and its related infrastructure affect all of SEAGO's program areas and often guide the implementation of activities in those programs.



Figure 6: Arizona's Councils of Governments (Courtesy of SEAGO)



Figure 5: Arizona's Sun Corridor Megaregion (Courtesy of MAG)

The Maricopa Association of Governments (MAG) serves as the MPO for the Phoenix metropolitan area, encompassing Maricopa County and its 25 incorporated municipalities; its members include representatives from the County, municipalities, three Tribes, and the Arizona Department of Transportation (ADOT). [MAG](#) oversees a variety of transportation and other planning programs and functions throughout the urbanized area.

MAG has led efforts to collaborate with other transportation and economic development planning agencies in the Sun Corridor to study and plan for region-wide development opportunities.

Sun Corridor Megaregion

The Sun Corridor encompasses the corridor between Tucson and Phoenix, Arizona, home to 5.6 million residents in 2010. The Sun Corridor's natural resources and quality of life have attracted a high level of growth, and a projected 85 percent of the State's population will live within the corridor at buildout. The population in the corridor is expected to grow to 7.8 million by 2025.⁸⁶ The Sun Corridor falls entirely within Arizona, but the key players are also establishing new interregional connections from Phoenix and Tucson to Las Vegas, Los Angeles, Salt Lake City, and the Denver Front Range metropolitan areas; to Mexican border crossings and ports; and to the I-10 corridor.

The following issues are driving collaboration and transportation planning in the Sun Corridor:

- *Freight:* Although approximately one-third of the nation's freight is transported through Arizona, more than 62 percent of that freight simply passes through without any economic benefit to Arizona. Key freight connections include Mexico, Nevada, and Utah.
- *Inter-city rail:* The region has a long-term goal to institute inter-city passenger rail between Phoenix and Tucson, with eventual connection to Nogales on the Mexican border and other points outside the region.
- *Land use and natural resource management:* The rapid population growth forecasts are threatened by currently unsustainable land use practices, thresholds for water availability, and concerns for protecting other natural resources.

One of the important transportation planning partnerships at a megaregion scale is the Joint Planning Advisory Committee (JPAC), which connects the three Arizona Councils of Governments (COG) within the megaregion to organize transportation planning activities and studies. Members of MAG; the Tucson area MPO, the Pima Association of Government (PAG); and the MPO for Pinal and Gila Counties, the Central Arizona Association of Governments (CAAG), signed a Memorandum of Understanding (MOU) and a charter to create JPAC and combined planning efforts in 2009. Each COG appoints a few of its board members, who are elected officials from jurisdictions within the COG, to serve as JPAC members. JPAC does not have dedicated official staff, but instead relies on staff dedication from its members. JPAC's members have a history of participating in joint planning studies and plan to enhance opportunities for joint activities and general collaboration in the future.

Origins of Collaborative Border Planning

Arizona's Ports of Entry (POE) with Mexico, three of which are in the SEAGO region,⁸⁷ have the potential to be border crossings of national significance of economic trade, but, with the exception of the Mariposa POE in Nogales, their capacity has historically been limited to regional-scale trade. For several decades, SEAGO's elected members and produce industry advocacy groups worked on partnerships and

⁸⁶ America 2050, Megaregions website, Arizona Sun Corridor, Regional Plan Association, 2013. Accessed October 7, 2013: http://www.america2050.org/arizona_sun_corridor.html.

⁸⁷ The SEAGO region has three POEs (Nogales, Naco, and Douglas). Nogales has four "gateways," or entry points, so there are a total of five gateways in the SEAGO region.

communications to expand the capacity of the POEs in Nogales and Douglas to better compete with POEs in California and Texas for international trade opportunities. Even with new capacity expansions at the Mariposa POE (in 2010 using funds from the American Reinvestment and Recovery Act), SEAGO needed support and resources from other government agencies and private sector stakeholders to improve surrounding infrastructure.

SEAGO saw an opportunity for fruitful collaboration with ADOT and neighboring MPOs during meetings of the Arizona COG directors. The directors have been meeting biannually since the 1970s, with meetings increasingly focused on border and international trade issues in recent years. They have discussed how to shift the attitudes of Arizona residents and policymakers from negative perceptions surrounding the Mexican border to positive opportunities for economic development.

Another motivation for Arizona COG directors to focus on international trade was the economic downturn of 2008, which caused many planners to examine growth opportunities outside of their region. Specifically, MAG used its JPAC to work on a freight study across the Sun Corridor. The freight study focused on trade opportunities with Mexico and provided the data to support infrastructure needs beyond the MAG region. The study helped lay the foundation for the collaborative political alignment that would be needed to develop large-scale infrastructure from the border.

SEAGO's involvement with the larger border planning efforts came about as MAG's freight study extended into southeastern Arizona. At the COG directors' meeting, SEAGO emphasized the need for Arizona's COGs and MPOs to work together toward the necessary infrastructure to enable the State to compete in the global economy and recapture trade being lost to California and Texas ports. While Arizona does not contain its own seaports, it does benefit from the ongoing expansion of the nearby Port of Guaymas, Sonora, the well-developed highway and rail infrastructure in Mexico connecting the Guaymas port to Nogales, Arizona, and the transportation and distribution infrastructure that offers access to and from this and other seaports. As ports in Mexico expand, Arizona seeks to expand the value-added logistics, rail, and road infrastructure that supports international and national trade to stimulate the economy within the State.

With this shared desire for statewide economic development, the COGs discussed prioritizing projects at and around the border to get the greatest return-on-investment for Arizona's transportation projects. MAG's interest brought new momentum to the directors' conversation on improving the State economy through international trade. MAG's name recognition also elevated the issue to attract attention, especially among local elected officials. SEAGO recognizes the importance of its strong partnership with MAG in identifying and responding to border planning issues and opportunities, and in implementing related transportation projects. MAG similarly values SEAGO's partnership and the involvement of its elected officials from border communities. SEAGO and MAG staff meet in person during the relatively infrequent Statewide Planners Meetings, gather during border site visits, and conduct informal communications, as needed. MAG and SEAGO staff would like to have more regular communications if time and staff capacity allowed.

Border Planning Activities and Results

Arizona's transportation planners from ADOT, COGs, and MPOs are primary players in the conversations and collaboration on border-related transportation planning. ADOT and MAG, in particular, have led discussions and focused on existing opportunities for international trade along the Arizona/Mexico border, as well as how to prioritize and leverage existing funds on transportation assets that can improve trade.

Although these discussions and exploratory trips to the border are led by MAG, ADOT, and the Arizona Commerce Authority, SEAGO and other rural stakeholders are able to be active participants and raise relevant rural issues in megaregion-scale planning efforts. For example, SEAGO has contributed to plans for improving State Route 189 and an interchange project on Arizona's Statewide TIP, as well as significant contributions to the recently completed Arizona-Sonora Border Master Plan, including advocating for the rehabilitation of the Curtiss-Naco railroad branch and re-establishment of the Naco Rail POE as an alternative to the DeConcini Rail POE in Nogales, which is currently Arizona's sole rail connection to Mexico. SEAGO also included border-related infrastructure improvements on its TIP, which will be programmed slowly as funding becomes available. (See Figure 7 for existing cross-border freight corridors.)

The following are among the activities and accomplishments of collaborative border planning:

- The 2011 COG directors' meeting focused on rail for international trade, and the SEAGO Executive Board subsequently passed a resolution to support a potential rail project in its region.
- Arizona DOT completed its [Arizona-Sonora Border Master Plan](#) in 2013, with input from SEAGO, MAG, and other COGs. The Master Plan evaluates and prioritizes potential POEs and transportation projects, with goals to improve understanding of transportation planning on both sides of the border and ensure full and continuous stakeholder participation in transportation planning. The Master Plan recommends that there be an Implementation Monitoring Committee to oversee and assess progress on project implementation. SEAGO participated in meetings of the Policy Advisory Committee and the Technical Working Group, as well as submitting comments for project rankings. MAG also participated in stakeholder meetings related to the Master Plan.⁸⁸
- In February 2012, the Governor of Arizona established the Arizona Transportation and Trade Corridor Alliance, which brings together public and private sector representatives to assess transportation and border crossing infrastructure opportunities that will enhance economic development across Arizona.
- Working with the Alliance, MAG produced a [brochure](#) listing Arizona's priorities for infrastructure improvements around the POEs and making the case for

⁸⁸ Arizona Department of Transportation (ADOT), Arizona-Sonora Border Master Plan, October 3, 2013: <http://www.azdot.gov/azborderplan/>.

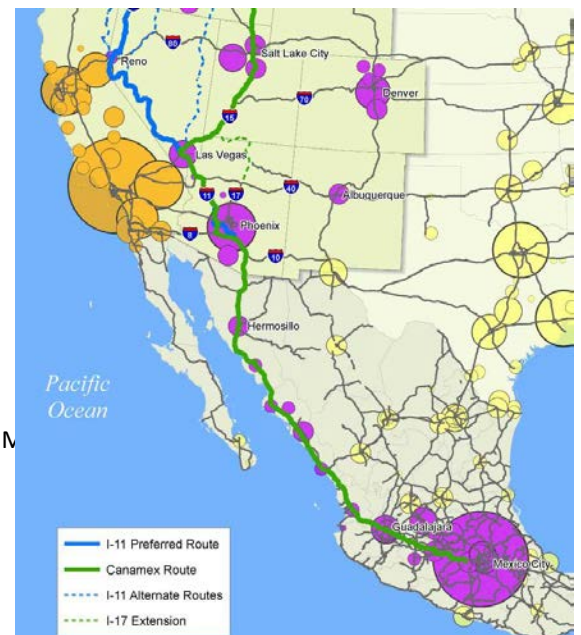


Figure 7: Freight corridors between Mexico and the U.S. (Courtesy of MAG)

improved trade relationships with Mexico. SEAGO helped the MAG communication manager contact leaders on both sides of the border to produce the brochure. MAG solicited participation from all of the Arizona COGs in the creation of the brochure to show the widespread impacts of border infrastructure. The brochure debuted at a September 2012 meeting with the Assistant Secretary of the U.S. Department of Commerce to discuss cross-border economic development issues.

- In April 2012, SEAGO signed a Resolution of Border Support.⁸⁹ The document was eventually signed by all of Arizona's MPOs and COGs, and it accomplishes the following:
 - Requests improvements and increased staffing at Arizona POEs from the Congressional Delegation;
 - Documents regional planning agency (RPA) support for highway and rail infrastructure serving Arizona's POEs that has the potential to foster economic development;
 - Commits RPAs to work with State and Federal partners to plan for improving trade between Arizona and Mexico; and
 - Commits RPAs to work with State and Mexican partners to encourage improved infrastructure on the Mexican side of the POEs.

Rural Border Issues

Working in a border region, SEAGO must plan for the impacts of activities that occur outside of its boundaries and outside of the U.S. SEAGO coordinates with Mexican officials as an advocate for transportation infrastructure that facilitates economic development for both countries, such as planned road improvements near POEs. However, SEAGO has little control or ability to influence broader issues affecting the region, such as changing priorities of political administrations in Mexico or U.S. border policy.

Communication is very important in working through culturally sensitive issues, such as air pollution and political differences among elected officials governing trade policy. The proximity and impact of Mexican communities upon the SEAGO region may not be immediately apparent to Arizonans living elsewhere in the State. Therefore, SEAGO staff tries to bring up pertinent examples informally in conversations with State agencies, businesses, and private citizens. For example, the Arizona Department of Environmental Quality has pushed to require testing for vehicles to meet emissions standards in the SEAGO region, which contains non-attainment areas under the Clean Air Act Amendments for particulate matter, which affect communities in proximity to highway emissions sources. However, since the region is so close to Mexico, which does not enforce similarly strict air quality standards, noncompliant vehicles are simply re-sold a few miles away and continue to operate on the Mexican side of the border, degrading the air quality in both Arizona and Mexico.

⁸⁹ Resolution of Support for Arizona's Points of Entry with Mexico, provided by SEAGO, April 2012.

Lessons Learned

The following lessons offered by SEAGO and MAG staff can guide RPOs and MPOs working together on large-scale issues.

- **A forum of transportation planning leaders across the State can be a powerful venue for collaboration.** When RPO leaders have an equal seat at the table with leaders from metropolitan and State organizations, they can raise issues critical to rural areas and leverage political support. The Arizona COG directors' meetings provided the forum for SEAGO to bring its border crossing infrastructure needs before a larger network with greater resources. The personal relationships built through decades of participation in the COG directors' meetings are making it possible to overcome logistical and political barriers to collaborative planning.
- **The keys to successfully elevating a rural priority to a larger scale is persistence and patience.** SEAGO members and produce industry advocates had communicated their border economic development and infrastructure needs for decades, waiting for the opportunity window in which the message would resonate with the needs and priorities of State and metropolitan area leaders.
- **Organizational capacity limits the RPOs' ability to plan major infrastructure projects.** With small populations and correspondingly small annual allocations of Federal aid funds, RPOs must phase both the planning and construction of large projects over multiple years. For example, SEAGO receives just under \$1.5 million each year for road construction, so County and local road construction can take many years. While RPOs may not have construction dollars to bring to the table, they are still important participants in larger planning efforts led by State DOTs and MPOs. The RPOs likely have expertise and relationships specific to the rural area that can help State DOTs and MPOs in planning for larger projects.
- **A regional economic development strategy should help guide long-range transportation plans.** Given the significant costs associated with implementation of transportation infrastructure projects, priority should be given to those projects most likely to produce an immediate return on investment. A study or plan to help a region grow economically is important to help transportation planners determine and prioritize the region's transportation needs, and the needs of that region within a larger geographic area. A transportation system for a megaregion must not only provide mobility to the region's residents, but it must also be a conduit for large scale freight and economic activities, including those that benefit the region. The JPAC's freight study provided factual evidence of statewide benefits related to border infrastructure, which helped build political support for such infrastructure.
- **Rural regions naturally embrace an interdisciplinary approach to transportation, which helps increase their relevancy in the region and beyond.** MAG staff noted that MPOs must look beyond transportation to be relevant in an increasingly competitive and resource-constrained region. When MPO staff focuses exclusively on transportation, they may miss critical linkages in other disciplines (economic development, housing, and environment) that affect the use of their transportation systems, but may be the responsibility of other regional or local agencies. RPOs tend to serve many roles, so they can more naturally integrate transportation with the overall well-being of a rural region.
- **COGs are equipped to work with other government agencies to accomplish shared priorities.** The COG model includes representatives from many municipalities in the region, who must come together to set a joint agenda and implement projects. These communication and

consensus-building skills facilitate their work with other units of government, whether those are other COGs, State agencies, the private sector, or even international agencies. Government institutions accustomed to a more hierarchical structure may have more challenges in partnering at a megaregions scale.

West Michigan Shoreline Regional Development Commission

Background and Issues

The [West Michigan Shoreline Regional Development Commission \(WMSRDC\)](#) is a regional council representing 127 local governments in five counties – Lake, Mason, Muskegon, Newaygo, and Oceana – on and near the eastern shore of Lake Michigan. WMSRDC functions as a planning and development organization, providing technical assistance to and coordination for its member governments. It also acts as the metropolitan planning organization

(MPO) for the Muskegon metropolitan area, where approximately 50 percent of the district’s approximately 290,000 residents reside. WMSRDC’s 21 member board of directors is primarily composed of local elected officials, with 25 percent of the board appointed from the private sector.

WMSRDC fulfills the traditional MPO transportation planning role for the Muskegon area, but it also extends transportation planning to rural areas of the region. WMSRDC’s dual role as an MPO for the urbanized area and regional council for the larger area encompassing rural counties enables it to leverage staff and technical abilities in both capacities, providing a level of in-house expertise that many RPOs serving only rural areas do not have.

Great Lakes Megaregion

WMSRDC is part of the Great Lakes megaregion, which encompasses several States in the Midwest, including Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Pennsylvania, and Wisconsin as well as Ontario (Canada) (see Figure 8).⁹⁰ Chicago is the economic and geographic center of the megaregion. Major metropolitan areas that radiate out from Chicago include Detroit, Pittsburgh, Cleveland, and St. Louis and are traditionally dependent on the manufacturing sector.

Construction of canals and railroads in the 19th century opened up the area to agricultural development and, later, manufacturing. The combination of agricultural goods, natural resources like timber and minerals, crude oil in Northwest Pennsylvania, and an influx of skilled labor led to dramatic industrial development in the agriculture sector. These forces and the pursuant accumulation of capital culminated in the development of the automobile and the advent of the modern assembly line, helping turn the Great Lakes into one of the largest industrial production centers in the world.⁹¹ Today, the



Figure 8: Great Lakes Megaregion (Courtesy of America 2050, a program of Regional Plan Association)

⁹⁰ America 2050, Great Lakes megaregion. Accessed October 7, 2013: http://www.america2050.org/great_lakes.html.

⁹¹ The Brookings Institution Metropolitan Policy Program, *The Vital Center: A Federal-State Compact to Renew the Great Lakes Region*, 2006. Accessed October 7, 2013: http://www.brookings.edu/~media/research/files/reports/2006/10/metropolitanpolicy%20austin/20061020_renewgreatlakes.pdf.

primary economic forces in the megaregion are manufacturing (industrial machinery, plastics, transportation, and chemicals) and wholesale in urban areas and manufacturing, tourism, and agriculture in rural areas. The megaregion generates about one-fifth of total U.S. freight by both tonnage and value, which is a higher proportion of national output than any other megaregion.⁹²

The Great Lakes has many notable transportation facilities. These include significant ports and rail and truck freight hubs of national and international significance, Interstates 70 and 80, and a substantial network of passenger trains. Chicago alone is the busiest rail hub in the United States, accounting for one-fourth of the nation's freight rail traffic with six of the seven largest rail carriers accessing the region. Nearly all of Amtrak's long-distance and intercity passenger rail services in the Midwest terminate in Chicago's Union Station.⁹³

While the Great Lakes still accounts for 30 percent of U.S. economic output, global competition brought on a sustained period of economic stagnation in the region's rural and small metropolitan areas. Global outsourcing of high-paying manufacturing jobs has created challenges for the megaregion's population, which has relatively fewer postsecondary degrees than other parts of the country due to out-migration of young, educated workers. Such degrees are necessary to compete in today's knowledge economy. Meanwhile, structural factors such as a significant out-migration of educated workers, a declining tax base, and aging infrastructure have hampered long term economic recovery in

Michigan Rural Task Force Program

Michigan's Rural Task Force Program provides Federal dollars to rural counties with populations under 400,000 for major road and transit projects. All project selection occurs through multi-county Rural Task Forces, which are comprised of representatives from county road commissions, cities and villages under 5,000 population, and rural transit providers.

Task force members from each respective county are charged with engaging and soliciting feedback from the public, determining project eligibility, and developing local consensus on project requests at a county level. Projects are submitted to the Rural Task Force, which then convenes to:

- Review projects/priorities selected by individual counties.
- Review available funding of each county.
- Ensure that the public has had opportunities for comment, including concerns of Tribal governments where appropriate.
- Select projects.
- Constrain each year's list of projects to available funding levels.
- Assemble and transmit materials to MDOT

MDOT makes resources available to regional councils to organize Rural Task Forces because many counties are not equipped to do so themselves. This arrangement helps ensure consistency with regional land use and development plans and the Michigan Transportation Policy Plan.

⁹² Gifford, et al, Mega-regions and Freight: Evidence from the Commodity Flow Survey and Freight Analysis Framework, submitted to the Transportation Research Board Annual Meeting, 2011. Accessed October 7, 2011: <http://trid.trb.org/view.aspx?id=987388>.

⁹³ CREATE, website, 2010. Accessed October 7, 2013: <http://www.createprogram.org/>.

the area.⁹⁴ Recognizing their shared history and economic connectivity, local planners and economic development professionals, including those at WMSRDC, increasingly recognize that narrow jurisdictional boundaries may not be the most appropriate scale for economic development planning.

Rural and Regional Transportation Planning in Michigan

Michigan has 14 State-designated regional councils, representing areas ranging in size from three to fourteen counties. Regional councils serve a variety of functions, including comprehensive and transportation planning and economic and workforce development. Michigan regional councils have staff that work across disciplines and projects; the same staff may work on Transportation Improvement Programs (TIPs), rural transportation plans, and local comprehensive economic development strategies. Like WMSRDC, five other Michigan regional councils serve as MPOs for metropolitan areas within their boundaries.

Michigan's transportation planning requirements and programs give regional councils a three-part role in working in rural areas that fall outside of MPO boundaries:

- 1) **Regional Transportation Planning Program:** Regional councils administer this program within their regions. The programs are designed to help the State work together with rural areas to fulfill Federal transportation planning requirements, and it includes Michigan's participation in FHWA'S [Highway Performance Monitoring System](#).
- 2) **Transportation Asset Management (TAM) Program** – WMSRDC and other regional councils help the Michigan Department of Transportation (MDOT) conduct the annual inventory of roads, bridges, and other transportation assets as part of the [TAM](#) Program.
- 3) **Rural Task Force Program** – WMSRDC and other regional councils select, prioritize, and administer Federal-Aid Highway projects in rural areas of its jurisdiction.

While Michigan's regional councils have participated in regional transportation planning programs and the TAM Program for some time, their greater autonomy over the programming of rural Federal transportation dollars is a recent addition to their responsibilities. Requirements previously established under the Transportation Equity Act for the 21st Century and continued in subsequent legislation, require States to consult with local, non-metropolitan officials for transportation plans, but according to WMSRDC staff, MDOT passed the responsibility for consultation directly to the Michigan's regional councils under the Rural Task Force Program (see sidebar). While MDOT turned to regional councils to extend their own capacity, which has been limited due to State budget and staff cuts, the consultation has several benefits for the regional councils. For WMSRDC, the new responsibilities translate to a strong working relationship with MDOT. This relationship has a foundation in years of shared efforts in planning and occurred well in advance of new language in MAP-21 that strengthens the consultation requirements between State DOTs and local governments, Michigan's county-based road commissions (which have the sole authority to construct and maintain local roads), and transit agencies.

⁹⁴ Ibid.

In Michigan, regional councils are an effective means for agglomerations of local entities to communicate and coordinate projects both within and across regions. These activities occur either on an ad-hoc basis between regional councils with adjoining boundaries or across larger areas of the State. The [Michigan Association of Regions](#) helps facilitate conversations across multiple regional councils; the group serves as a statewide convener of and advocate for regional councils.

Linking Transportation and Economic Development

In the face of global economic competition, Michigan's rural areas are trying to fortify their industrial and agricultural bases, while also capitalizing upon the States' natural amenities including lakes, lakeshore dunes, rolling hills, and forests to promote tourism growth. Partnerships between the regional councils, MDOT, and local governments lead to transportation decisionmaking based on local knowledge and needs at a regional, rather than State level. Within this coordinated planning and grant administration framework, transportation decisionmaking is motivated by economic development goals related to manufacturing, agriculture, and tourism. At WMSRDC, this translates into a focus on freight movement and tourism-based passenger services designed to keep project benefits locally. Some of these initiatives include the following:

- The Muskegon County Wind Energy Manufacturing and Technology Center is the outgrowth of a wind farm development project on Muskegon County property. The Michigan Wind Energy Consortium, a coalition of local manufacturers and economic development officials, intend to build wind turbine parts locally and distribute globally from an industrial campus with access to the deep-water Port of Muskegon.⁹⁵
- Ferries from Muskegon and Ludington provide passenger service to Milwaukee and Manitowoc in Wisconsin, offering an amenity and access point for lakeshore tourists.
- The [Connecting Michigan](#) initiative is a collaboration between 180 State, local, regional, and nonprofit groups that developed a statewide nonmotorized trail vision and action plan. WMSRDC participated with other local stakeholders to suggest regional trail gap closures from Muskegon's Lakeshore Trail to North Muskegon and east to Marne in Ottawa County. The trail is an important recreational attraction for tourists, as well as for area residents.

Regional Visioning

Through venues like the Michigan Association of Regions and the National Association of Regional Councils, WMSRDC staff is communicating the importance of implementing policies, programs, and projects on a megaregions scale that better aligns with the realm of global commerce. Within these venues and informally through their relationships with other regional council directors, WMSRDC staff has helped start conversations on increasing the scale of planning for regional councils, both in Michigan and in neighboring States. For example, WMSRDC staff has included the topic of cross-regional collaboration and economic development planning on the agenda at NARC meetings and during

⁹⁵ WMSRDC, Comprehensive Economic Development Strategy, 2010. Accessed October 7, 2013: <http://www.wmsrdc.org/Download/2012%20CEDS%20Document.pdf>

discussions with its fellow regional councils. For WMSRDC, such thinking begins with leadership and vision that goes beyond narrowly defined regional districts like those of Michigan's regional councils. Finding a space for this kind of visioning, however, can be difficult for RPOs with limited time and resources, substantive existing workloads, and existing grant opportunities, which tend to be limited in geographic scope.

Lessons Learned

The following lessons offered by WMSRDC staff provide insights for peers on how RPOs can approach large-scale issues.

- **State resource constraints can offer new opportunities for collaboration and leadership to RPOs.** Well before MAP-21, some States like Michigan had already relied upon the local knowledge and staff capacity of regional councils to help meet requirements of the Federal transportation planning framework, including regional engagement. Although diminished State resources limit the support available from State DOT staff, the situation enables RPOs to take a more active role in project prioritization and grant management, and in establishing relationships with rural stakeholders. While RPOs may experience staff capacity limitations, they can also take advantage of opportunities to manage their own transportation planning process and instigate beneficial partnerships with stakeholders within and outside of their regions.
- **RPOs housed alongside MPOs benefit from a higher level of staff expertise on transportation matters, whereas MPOs benefit from the RPOs' wider range of disciplines.** In the case of WMSRDC, staff work between subject areas, helping integrate transportation, economic development, and environmental policies. WMSRDC staff also noted that its rural areas could draw upon the MPO staff's depth and breadth of transportation expertise, whereas the range of staff expertise may be less for standalone RPOs.
- **Grant applications for rural transportation projects have strong potential to help RPOs consider megaregions-scale plans and projects.** Many RPO staff spend significant time on applying for grants to fund plans and programs in their regions, as their current financial resources are often insufficient to meet their programming needs. While RPO staff may want to participate in regional and megaregions-scale visioning, their time is constrained by heavy workloads and need to focus grant opportunities to fund local scale projects. Grants that exclusively focus on or favor larger plans and programs can encourage RPOs to think beyond their boundaries; grant applications could require co-signatures from other RPOs or MPOs to better ensure their support. Over the past five years, WMSRDC has attempted to form the Great Lakes Association of Regional Councils to promote the Great Lakes region and coordinate planning efforts.
- **A regional transportation system that is multimodal can be effective at garnering support across jurisdictional boundaries.** As evidenced by the [Connecting Michigan](#) initiative, numerous, diverse stakeholders came together for a non-motorized project that benefits many parts of the State. The initiative signals the desire and need for multimodal transportation systems, including trail networks, that are interconnected throughout a region. Non-motorized projects like Connecting Michigan attract interest from across transportation, tourism, and economic development sectors. These types of initiatives are models for how to bring new players into megaregions plans and projects.

Yakima Valley Council of Governments, Washington

Background and Issues

The [Yakima Valley Council of Governments \(YVCOG\)](#) serves as the MPO for the urbanized areas within Yakima County and as the RPO for the non-urbanized area in the County (see Figure 9). YVCOG staff conducts complementary planning activities that consider needs and projects across all parts of the County. The YVCOG board consists of one representative from each of 14 municipalities and one county. The 15-member board selects a seven-member executive council to make policy and project decisions.

Yakima County is located in Central Washington along Interstate 82, which connects with the Tri-Cities to the southeast and to I-90 to the north (providing connections to Seattle and Spokane). The most important transportation infrastructure is the highway and road

network, which carries truck freight, passenger vehicles, and transit buses. The region's transportation focus is on system preservation, due to a large number of road miles that the County and cities have to maintain (amidst harsh climate conditions) and limited financial resources. The region has relatively low traffic congestion, and new capacity projects are therefore focused on economic development opportunities. The region has some conflicts between freight vehicles and private passenger vehicles, stemming from the joint priorities for the transportation system to meet economic growth and livability goals. While rail lines pass through the region, there are no rail stations (for freight or passengers) in Yakima County.

Transportation is the COG's largest responsibility and the one that attracts the greatest participation from all parts of the region. More than half of the COG's budget comes from Federal or State funding for transportation planning and projects. However, YVCOG addresses other issues like comprehensive land use planning and public health. YVCOG coordinates these issues with transportation planning to meet regional livability and sustainability goals. As a COG, YVCOG's staff play broad roles and unique challenges to translate multidisciplinary and complex issues into messages that are understandable to elected officials and citizens. YVCOG and other Washington RPOs lead innovative partnership efforts that span rural and urban boundaries for transportation projects and programs that bring economic benefits to the larger region.

Cascadia Megaregion

YVCOG sits within the Cascadia megaregion, which encompasses parts of Washington, Oregon, and British Columbia (Canada). Most of the urban population is concentrated on the western side of the megaregion along the Interstate 5 corridor and close to the Pacific Ocean. However, much of the area's natural resources, in terms of agriculture and forestry, are contained in the eastern parts of the

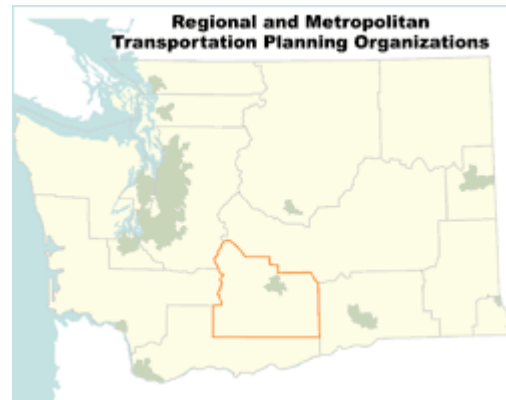


Figure 9: Washington Regional and Metropolitan Planning Organizations, with Yakima County highlighted (Courtesy of YVCOG)

megaregion. Cascadia is unified by shared economic, physical, and social characteristics, many of which are embedded in rural areas. The regional economy was built on timber harvesting and agriculture. Key agricultural products of the Cascadia region include salmon, berries, hazelnuts, wines, microbrews (hops), apples, pears, and dairy products. Washington and Oregon are national leaders in many of these specialty food products, and supporting industries to process and distribute these products are vital to the region's economy. However, sprawl is a major threat to continued agricultural production, with 20 to 30 percent or more of productive farmland converted to other uses since the 1980s.⁹⁶ Several other important industries in the Pacific Northwest are based in rural areas: outdoor tourism, mining, and hydroelectric power. Economic sectors that are concentrated in urban areas but may have connections to non-urban areas include green building, technology and e-commerce, aerospace, and entertainment (music and film).⁹⁷

Cascadia is defined as a bioregion with shared ecological and physical traits. Cascadia generally encompasses the greater Columbia River watershed and has common soils, climate, and native species.⁹⁸ Residents define their region according to the physical and aesthetic landscapes, including old-growth forests, beaches, and mountains, which are popular destinations for outdoor recreation.

Finally, the region shares social characteristics, most relevantly in the area of land use and transportation planning. The three major metropolitan areas share the following attributes and/or goals in their long-range plans: growth management strategies; preservation of open space, agricultural, and rural lands; and multimodal transportation planning (stemming from the recognition that population growth will create traffic problems). While multimodal transportation planning in urban parts of the region is a defined priority, travel between metropolitan areas remains a concern, with long-term goals to institute high-speed rail. There is also recognition that economic and income growth throughout the megaregion will increase travel for recreational purposes. This may bring about the need for more transportation infrastructure or capacity in rural areas, and it may also increase economic growth and support businesses between metropolitan areas.⁹⁹

Cascadia's notable transportation infrastructure includes its several ports of international significance in its largest metropolitan areas (Vancouver, Seattle/Tacoma, and Portland). Multimodal transportation corridors connect international imports arriving from across the Pacific to points inland across the U.S. and Canada. These include Interstate 90, Interstate 84, the Columbia River, and several major rail corridors (including BNSF Railroad connecting Seattle/Tacoma with the Port of Benton through Yakima County).

⁹⁶ Portland State University, *Cascadia Ecolopolis 2.0*, Studio report for USP 549: Regional Planning and Growth Management, Toulan School of Urban Studies and Planning, 2006. Accessed October 7, 2013: <http://www.america2050.org/pdf/cascadiaecopolis20.pdf>.

⁹⁷ America 2050, Megaregions website, Cascadia, 2013. Accessed October 7, 2013: <http://www.america2050.org/cascadia.html>.

⁹⁸ Portland State University, 2006.

⁹⁹ Ibid.

While Cascadia is often defined by its major urban areas, the megaregion's linkages to and dependence on its rural areas are clear in its economic, ecological, and transportation identities. The Yakima Valley, one small part of the large rural landscape in Cascadia, is highly representative of the centrality of rural regions to the megaregion. Yakima Valley is a major producer and exporter of fruit, with several freight corridors passing through the region. It also neighbors some of the premier recreation areas in the region, including Mount Rainier and the Cascade mountains. Yet, Yakima also represents the challenges of small urban and rural areas with limited resources, large land areas, and ties to consumers that lie primary outside of its boundaries – issues detailed in this case study.

Rural and Regional Transportation Planning in Washington

Washington has 14 RTPOs, each covering between one and five counties. Eleven of the RTPOs also serve as MPOs for a metropolitan area within their respective jurisdictions. Washington State legislation created RTPOs to cover both urban and rural areas and to receive State funding for transportation planning. While membership in RTPOs is optional, 38 out of 39 counties in Washington – and most cities – have opted to participate in an RTPO. Federal MPO and [State RTPO requirements](#) are complementary, and RTPOs prepare a long-range plan (usually one plan covering both urban and rural areas), coordinate transportation, and prepare a six-year TIP.

Washington's RTPOs differ from the RTPOs defined in MAP-21 in that MAP-21 calls for RTPOs that specifically cover non-metropolitan areas, whereas Washington's RTPOs cover both metropolitan and non-metropolitan areas. However, the new language in MAP-21 that recognizes but does not require RTPOs seems to follow Washington's model, according to YVCOG staff. Staff noted that the inclusion of RTPOs in MAP-21 may benefit local stakeholder groups in other States by giving them a consolidated voice in statewide planning through requiring their input for statewide plans and projects, and YVCOG staff also report improved planning at WSDOT and other State planning agencies based on Washington's model.

Agricultural and Resource Ties

Agriculture is a major economic force in the region, which makes the region less susceptible to economic recessions than its neighbors. Farms in the Valley produce a large array of fruit and other food crops, while urban areas of the County house cold storage and processing facilities. Freight trucks travel between the agricultural production, processing, and storage areas, and to ports outside the region. Other retail distribution centers are located within the region.

Water availability in the Yakima Valley is crucial for the region's agricultural industry. Because water passes through Yakima Valley en route to the Tri-Cities metropolitan area and other parts of the State, YVCOG is involved in planning for water use through cooperative studies and discussions. When water is scarce, the Valley's agriculture suffers and related freight transportation drops off as a result. Therefore resource availability indirectly affects transportation planning, although YVCOG staff may be working on water and transportation planning simultaneously.

Transportation Advocacy Groups and Transit Partnerships

YVCOG participates in two transportation advocacy organizations that help stakeholders come together to discuss transportation priorities. These advocacy groups help YVCOG meet the diverse needs of both urban and rural areas within the region and bring the priorities into their long-range plan and TIP. Additionally, these advocacy groups have helped support YVCOG efforts to expand transit beyond Yakima County.

TransAction

TransAction is a transportation advocacy organization serving the Yakima metropolitan area. TransAction arose out of a need for the metropolitan area to articulate its priorities to lawmakers to compete for Federal funding. The elected board consists of representatives from businesses, the RTPO, and WSDOT, with the MPO Executive Director serving as the Secretary/Treasurer of TransAction. TransAction provides a model for stakeholders in both the urbanized and rural areas of the COG to organize themselves so that they can better articulate their needs and participate in planning processes outside of their localities.

Driving Rural Yakima Valley's Economy (DRYVE)

Responding to the successful model of TransAction, [DRYVE](#) focuses on transportation priorities for the rural areas of Yakima County. The group has successfully engaged the Yakima Nation Tribe as well as other businesses and citizens in the County. Priorities for the rural areas include freight movement, agricultural tourism and corridor development, and multimodal access to jobs and services. DRYVE meets approximately every two months to discuss priorities and communicate these priorities to elected officials.

Transit Partnerships

The Yakima Valley transit system has historically been confined to the Yakima city limits, largely due to the boundaries of the taxing district that funds transit. YVCOG has led efforts to broaden the reach of transit to serve rural areas within the region and to provide connections outside the county. YVCOG led a partnership between Yakima Transit and Benton-Franklin Transit to offer connections between the two regions. This cross-regional service has been ongoing for many years with grant funding.

YVCOG staff worked with Yakima Transit, a local non-governmental organization (NGO), and Central Washington University to procure a grant to fund transit connecting the Yakima Valley with the community of Ellensburg, which lies approximately 36 miles north of Yakima along I-82. The transit system offers a critical link for commuters and students traveling between regions, a demand that has been growing over several decades. Yakima Transit runs the resulting service, which has exceeded ridership expectations and prompted Yakima Transit to add higher-capacity buses to the route. YVCOG also enabled this connection through including the project as a priority in its long-range transportation plans, which is a strong factor in grant selection. YVCOG also helps communicate the need and build a constituency for these types of projects over time.

Other Coordination Opportunities

YVCOG actively partners with regional and State organizations within Washington on a variety of transportation initiatives. The relationships and information sharing resulting from these initiatives allow YVCOG to seamlessly integrate its own transportation planning with larger-scale transportation programs and projects.

- [Forward Washington](#) is a pilot communication tool developed by Washington RTPOs. This online portal provides the public access to information about transportation projects in each region of the State. The tool allows RTPOs to see the status and details of projects in neighboring regions, which helps the RTPOs coordinate. Users can search by project category (expand, maintain, modernize), type (such as safety, transit, and ITS), and location (see text box, below).
- YVCOG serves on the Statewide RTPO coordinating committee, which meets quarterly with WSDOT regional and State planning staff. The coordinating committee allows COGs to leverage their limited staff and financial resources to have an impact in the larger region.
- Washington State University developed the [Eastern Washington Intermodal Transportation Study \(EWITS\)](#), which evaluated intermodal and transportation infrastructure and capacity for freight and passengers. The study included a report for each county on freight origin, destinations, and characteristics within the county. The report found that agriculture was the primary freight product in the region, followed by food, livestock, and lumber. The Director of YVCOG served on the Advisory Board of EWITS, along with representatives from other RTPOs, WSDOT, ports, and business.
- YVCOG has a long-standing relationship with the Port of Seattle. Staff from the Port and the COG meets regularly to discuss issues related to export of goods produced in the Yakima Valley. YVCOG also has a good relationship with the Puget Sound Regional Council, serving the Seattle/Tacoma metropolitan area.

Forward Washington

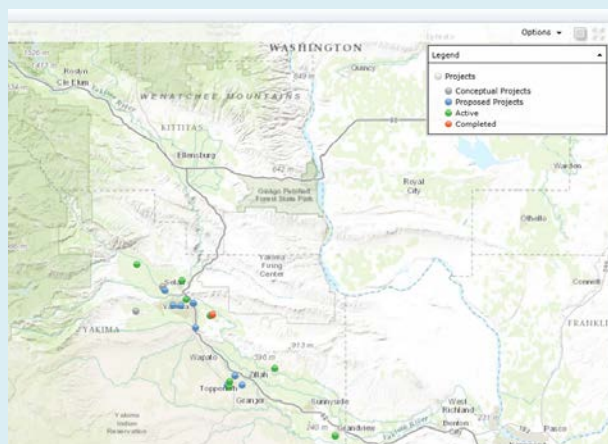
[Forward Washington](#) was a pilot effort between all of Washington’s RTPOs and WSDOT to communicate with the public and with each other about their transportation projects and priorities. After the State legislature requested priority investments by transportation mode and project type from each RTPO, the RTPOs worked within their regions to develop projects and priority lists. Then, they joined forces to create a portal that would provide access to information to the public about all transportation projects across the State.

The RTPOs and WSDOT established a Project Advisory Committee (PAC), consisting of representatives from nine of Washington’s 14 RTPOs (including YVCOG) and WSDOT. The RTPOs that do not have a member on the PAC were also active project participants, offering feedback and contributing project priority lists to the portal. The RTPOs enlisted a software developer to create an online map portal with search functionality; Whatcom Council of Governments served as the contract coordinator on behalf of the other RTPOs.

The PAC provided feedback on an initial web portal that the software developer created, recommending improvements that would allow the RTPOs to better coordinate with each other in transportation planning. Notably, the PAC’s feedback resulted in enhanced functionality to allow RTPOs to link relevant projects from WSDOT’s priority list to their RTPO lists. The software developer also updated the tool to highlight WSDOT priorities at a regional level and simplifying elements to track and view projects. Another important function of the PAC was to define and articulate the methodology for the portal users to use and understand information communicated through Forward Washington.

Forward Washington includes transportation projects that are completed, active, planned, and conceptual, across all RTPOs. The project information is searchable by an interactive map or by one of several data fields. Project information available publically through the portal includes:

- Project description
- Project type (i.e. general purpose capacity, intersections, new facility, non-motorized, safety, and transit)
- Start and end date
- Priority level for the RTPO (and WSDOT, if applicable)
- Primary and secondary goals (safety, economic vitality, mobility, environmental)
- Funding amount, sources, and needs by project phase



Screen shot of Forward Washington showing projects in Yakima Valley; image courtesy of Forward Washington.

Lessons Learned

Yakima Valley's experience in leading partnerships and programs with impacts beyond the COG provides insights for peer agencies that are similarly interested in expanding the reach of their activities.

Recognizing the limited staff capacity of YVCOG and other similar RPOs, the following lessons can help rural transportation planners focus their efforts for greater results at the megaregions scale.

- **Regional prioritization of transportation projects is a key criterion for funding selection, which adds significance to RPO planning efforts.** RPOs can support interregional transportation projects simply by identifying projects as regional priorities and ranking them highly in Regional Transportation Plans. Many grants include documentation of projects within regional plans and priorities as criteria for selection.
- **RPOs can jointly combine their capacities to coordinate transportation projects among each other and communicate to the public.** Forward Washington is an example of a collaborative tool with benefits for both transportation planners and the public. The pilot web portal allows RPOs to set their own priorities and communicate them on a shared platform for ease of dissemination across the State. The platform also allows the RPOs to more easily coordinate among each other.
- **COGs have an important role in supporting grassroots efforts for transportation planning and advocacy.** YVCOG's two transportation advocacy groups have been instrumental in setting priorities and building consensus in both rural and urban areas. Since COGs tend to work across disciplines with many stakeholders across their regions, their staff are well-suited to convene multiple interest groups and support resulting plans and programs.
- **Small regions face challenges of hosting transportation infrastructure without always receiving direct benefits.** Regions located between larger metropolitan areas may have freight trucks, boats, or, in YVCOG's case, rail passing through without any direct benefit. Adding freight rail stations is very expensive for operators due to the extra time and energy needed to decelerate, stop, and start trains. RPOs are looking for new ways to minimize negative impacts and maximize benefits from pass-through freight. YVCOG's relationship with the Port of Seattle is a positive first step; these relationships may help build a constituency to work with freight operators and transportation agencies in a way that benefits rural regions.

Conclusion

Rural as well as metropolitan areas are contained within the boundaries of megaregions. This opens significant opportunities for RPOs to help shape transportation plans and decisions that benefit both rural areas and the greater region. This research suggests that megaregions initiatives that do not involve rural stakeholders may not only miss out on rural contributions but also may face delays when trying to implement large-scale projects.

Despite the value of rural partnerships and participation, many constraints keep rural stakeholders away from the table. These constraints affect leaders of megaregions initiatives, who may lack the capacity to reach out to and coordinate sufficiently with RPOs, and the rural stakeholders themselves, whose significant capacity and funding limitations may keep them from pursuing larger projects and plans.

This white paper offers several suggestions for overcoming these constraints, as well as considerations for all participants to better involve rural stakeholders. However, the conclusions, observations, and recommendations contained in this section are based on a relatively limited subset of active RPOs. While the intent of this effort is to provide useful insights for peer RPOs and the larger transportation community, more research is needed to examine how these models and recommendations may affect other RPOs and megaregions.

Through peer exchanges, conferences, and virtual outreach, like webinars, future activities can helpfully identify and interpret additional examples of successful participation by RPOs in larger regional planning efforts. As researchers develop additional documented examples of best practices, the conclusions of this paper can be confirmed, updated, and refined. The research team also suggests a few related topics for additional future research:

- **Refine initial models of State DOT participation with rural agencies.** State DOTs are an important stakeholder in rural transportation planning and in megaregions planning, but more research may be needed on models for State DOT participation in megaregions planning. Research may cover how State DOTs can convene and coordinate transportation planners across both metropolitan and rural areas of the State for large-scale issues and how State DOTs can best communicate with other States on issues that concern the entire megaregion. Given the funding and staffing constraints facing State DOTs, research may also need to address concrete benefits, including time and cost savings that can be derived from taking a more active role in megaregions planning.
- **Develop targeted resource guides and manuals.** RPO staff may benefit from resource guides and manuals that help them accomplish some of the partnerships and coordination documented as best practices in this research. Resource guides may include topics such as grant writing for projects of megaregions significance, briefings on key issues in their megaregions with opportunities for involvement, and a summary of benefits, with associated metrics, that RPOs can gain from participation to assist them in communicating with local elected officials and board members and gaining essential political support and funding.
- **Research effective virtual forums.** Another barrier to rural participation is that these initiatives often convene in metropolitan areas where metropolitan issues are most visible and where participation by metropolitan stakeholders is most convenient. Research into the most effective virtual forums would benefit all participants in these fiscally-constrained times, but they would

especially offer new participation opportunities for rural stakeholders. Such research may sample best practices in virtual conferences, adapt how these models may best fit for megaregions, and develop guidance materials for leaders and participants in conducting effective virtual meetings.

- **Develop performance measures for State DOTs working with rural areas.** Through new emphasis in MAP-21, State DOTs are increasingly measuring performance in many areas of transportation planning. With performance measures that focus on working with stakeholders, notably RPOs and rural stakeholders, State DOTs would have added incentive to include rural interests in larger transportation planning processes. As the WMSRDC case study demonstrates, RPOs are more likely to be involved in interregional initiatives when the State DOT grants them a stronger role in transportation planning. Performance measures could thus help motivate both State DOTs and rural regions to take interest in each other's planning processes and encourage the benefits of rural participation.

Stakeholders across multiple geographic scales and disciplines can add value to megaregions transportation planning efforts. As the megaregion becomes an increasingly important scale of economic development and transportation planning, it will become critical to understand how rural and other stakeholders branch out from their established roles and agendas to collaborate and achieve shared goals with broad mutual benefits.

Appendix A: Previous Research on Transportation and Megaregions

This section provides references to available research and resources on transportation planning and megaregions. For an in-depth literature review, reference Catherine Ross (2011).

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