

RURAL TRANSPORTATION PLANNING

CURRENT NATIONAL PRACTICE: LITERATURE REVIEW AND AGENCY INTERVIEWS

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GLOSSARY OF TERMS

FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
MAP-21	Moving Ahead for Progress in the 21 st Century
MPO	Metropolitan Planning Organization
NADO	National Association of Development Organizations
RPA	Regional Planning Association
RPC	Regional Planning Commission
RPO	Regional Planning Organization, Rural Planning Organization
RTPO	Regional Transportation Planning Organization

1.0 INTRODUCTION

Federal law prescribes much of the transportation planning process for which States are responsible. States develop a Long Range State Transportation Plan to guide their decision making over a twenty year or greater period. They are also required to adopt a Statewide Transportation Improvement Program (STIP) that acts as a four-year capital program, enumerating project-level investments of funds from the Federal Highway Administration and Federal Transit Administration.

In accomplishing these tasks, the State DOT must work with specified partners: Metropolitan Planning Organizations (MPO) for the urbanized portions of the state; and local officials representing nonmetropolitan regions. When Congress passed Moving Ahead for Progress in the 21st Century (MAP-21) in 2012, they created a new option for rural consultation, the Regional Transportation Planning Organization (RTPO). States could choose to designate rural planning agencies as RTPOs if they met standards specified in the law (see box below). Agencies that met these standards would act much like MPOs.

RTPO Requirements

“(d) To carry out the transportation planning process required by this section, a Governor may establish and designate RTPOs to enhance the planning, coordination, and implementation of the long-range statewide transportation plan and STIP, with an emphasis on addressing the needs of nonmetropolitan areas of the State. In order to be treated as an RTPO for purposes of this Part, any existing regional planning organization must be established and designated as an RTPO under this section.

(1) Where established, an RTPO shall be a multijurisdictional organization of nonmetropolitan local officials or their designees who volunteer for such organization and representatives of local transportation systems who volunteer for such organization.

(2) An RTPO shall establish, at a minimum:

(i) A policy committee, the majority of which shall consist of nonmetropolitan local officials, or their designees, and, as appropriate, additional representatives from the State, private business, transportation service providers, economic development practitioners, and the public in the region; and

(ii) A fiscal and administrative agent, such as an existing regional planning and development organization, to provide professional planning, management, and administrative support.

(3) The duties of an RTPO shall include:

(i) Developing and maintaining, in cooperation with the State, regional long-range multimodal transportation plans;

(ii) Developing a regional TIP for consideration by the State;

(iii) Fostering the coordination of local planning, land use, and economic development plans with State, regional, and local transportation plans and programs;

(iv) Providing technical assistance to local officials;

(v) Participating in national, multistate, and State policy and planning development processes to ensure the regional and local input of nonmetropolitan areas;

(vi) Providing a forum for public participation in the statewide and regional transportation planning processes;

(vii) Considering and sharing plans and programs with neighboring RTPOs, MPOs, and, where appropriate, Indian Tribal Governments; and

(viii) Conducting other duties, as necessary, to support and enhance the statewide planning process under § 450.206.”

23 CFR 450.210(d)

This report will document the current state of practice for rural transportation planning across the country. It includes a thorough literature review and information gathered from interviews with four State DOTs and regional planning agencies in each of those states.

2.0 LITERATURE REVIEW

This activity is the first task in a larger project intended to assist the Florida Department of Transportation (FDOT) Office of Policy Planning in evaluating its process for conducting transportation planning in rural regions of the state. The literature review and identification of noteworthy practices provides the foundation for further research.

For additional information about this project, contact

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RSG was engaged by the FHWA Office of Policy and Government Affairs/Transportation Policy Studies to document “RTPO State of the Practice.” The project was initiated in 2013 and completed in 2014. FHWA was interested in how transportation planning was being done in rural regions of the country after the passage of MAP-21, in documenting noteworthy practices, and in preparing materials to encourage states to consider designating RTPOs. Deliverables from that work included two series of Fact Sheets: “RTPO 101”, and “RTPO Noteworthy Practices”¹.

This literature review begins with the findings of the FHWA project through 2013. Additional research work was done to add documents that have been published since that time.

2.1 | LITERATURE REVIEW PREPARED FOR FHWA: “RTPO STATE OF THE PRACTICE” (2013)²

GUIDANCE

1. Federal Highway Administration (2001). Planning for Transportation in Rural Areas. 99p.,

http://www.fhwa.dot.gov/planning/publications/rural_areas_planning/ruralguide.pdf

This document was developed as a resource rather than a guidebook. It includes a discussion of how “rural” is defined, the characteristics of the rural system, issues and trends impacting the rural system, how various jurisdictional levels address rural transportation planning, major rural transportation planning challenges, and some lessons from states addressing these challenges. The document also includes questions to be answered before getting started on a rural plan, approaches for public consultation and environmental review, the basic components for rural transportation planning, and how to develop the plans. As special planning topics, transit system planning concepts, rural intelligent transportation systems, and access management are addressed, along with case studies of successful rural transportation planning efforts from several states.

¹ https://www.planning.dot.gov/documents/RTPO_factsheet_master.pdf

² The project is described in the above paragraph. The literature review was provided to FHWA but not published.

2. Goodwin, Ronald, et al. Rural Transportation Guidebook, Report 0-4230-P1, Center for Transportation Training and Research, Texas Southern University, March 2004.

This guidebook presents the tools and strategies for developing and implementing successful rural transportation projects using both bottom-up (transportation plans based on the identification of needs from the community perspective) and top-down (strategy using regional and state perspectives) approaches. It defines rural regions and how they are distinct from urban transportation designs and needs. The authors explain the process for developing a potential rural transportation plan as well as considerations that must be incorporated in order to properly meet area needs.

3. Rural Local Officials Consultation Assessment Guide, National Association of Development Organizations Research Foundation, 2008, www.nado.org/rural-local-officials-consultation-assessment-guide.

This guide is intended to provide rural local elected and appointed officials, along with their regional planning organizations, with a framework for appraising the effectiveness, timeliness and results of their involvement and input into the statewide transportation planning and decision-making processes within their respective states. The document explains federal statute regarding transportation planning and decisionmaking, including the role for local officials, and provides a series of questions for nonmetropolitan areas to gauge their level of participation in statewide planning and to determine steps to increase their value as a planning partner.

4. Rural Transportation Consultation Processes, National Academy of Public Administration, Washington DC, 2000.

This report examines the effectiveness of required consultation with non-metropolitan local officials in state transportation planning and programming processes. Changes to the federal government's surface transportation programs in the 1990s established new requirements for involving local rural officials in planning, programming, decision-making and spending of certain federal-aid funds. In spite of these new rules, local officials voice dissatisfaction with their access to DOT planning and question their level of inclusion into the process. This study examines the degree of cooperation between each state, local rural officials, and RPOs.

Researchers were able to derive some major findings based on the research. Consultation with local officials is crucial to making transportation delivery systems work well in the states. The usefulness of consultation is maximized when conducted using a framework of dialogue about planning, programming, and results. State demographics vary considerably, resulting in unique practices and processes. Transportation officials at all levels need to work towards institutionalizing and improving the process for effective consultation.

5. Statewide Transportation Planning: Opportunities Exist to Transition to Performance-Based Planning and Federal Oversight, Government Accountability Office, 2010, <http://www.gao.gov/new.items/d1177.pdf>.

States conduct a variety of long- and short-range planning activities, and the majority of RPOs surveyed reported being generally satisfied that rural needs are considered. To develop required long-range statewide transportation plans (long-range plans), states conduct research activities, such as inventorying assets and modeling traffic. While the resulting plans generally include some performance elements, such as goals, many plans do not include performance targets. Such targets are not required, but prior GAO work shows that targets are useful tools to indicate progress toward achieving goals. To develop required short-range plans—state transportation improvement programs (STIP)—states assess needs and determine funding allocations. However, in selecting projects, states assigned greater importance to factors such as political and public support than to economic analysis of project benefits and costs. While the majority of surveyed RPOs reported being satisfied that their rural needs were considered, some RPOs reported less satisfaction with their role in allocating funds for rural areas.

6. Wilbur Smith Associates, Non-Metropolitan Local Consultation Process: A Self-Assessment Tool for States, American Association of State Highway and Transportation Officials, Washington, DC, August 2006.

This self-assessment guide assists state transportation agencies with evaluating their performance in carrying out the non-metropolitan local consultation process required by Federal law for statewide transportation planning and other state actions. Well-established consultation processes have existed for decades for metropolitan areas, but equivalent rural processes are far less established. The involvement of local officials should be one of the major elements when state transportation agencies develop their plans and programs. Their participation provides local knowledge and necessary perspective on the needs, priorities, evaluation criteria and potential impacts of decisions on their regions. The tool provides suggestions for questionnaires, rating systems, and performance evaluations to conduct these assessments.

RPO INSTITUTIONS AND PRACTICE

7. Bradshaw, Scott, Kwabena Boansi, Jacqueline Huff, Michael Worthington, Development of Performance Measures for the Assessment of Rural Planning Organizations, Center for Research and Evaluation, Elizabeth City State University, 2011, www.ncdot.gov/doh/preconstruct/tpb/research/download/2008-12FinalReport.pdf

Following extensive review of published research and a search of RPO-related documents in each state in order to identify evaluation and performance 'best practices' in each state, the authors met with the Transportation Planning Board, North Carolina Association of RPOs, and representatives of RPO constituents to determine concerns with existing measures and their needs and suggestions for the new performance measures. After developing the evaluation criteria and performance measures, the project team presented the plans to the various groups, and gathered feedback. The feedback was used to clarify any issues within the new performance measures. The development of the performance measures was driven by several principles: (1) The assessments developed, where possible, should be objective and quantifiable, (2) The evaluation criteria and performance measures should be developed

with input from all of the parties involved, (3) The evaluation criteria and performance measures should facilitate the assessment of both short-term and long-term goals, and (4) measures should be practical and cost-efficient to implement.

8. Chase, M. et al. (2005). Transportation Planning in Rural America: Emerging Models for Local Consultation, Regional Coordination and Rural Planning Organizations. National Association of Development Organizations Research Foundation: 36p., <http://www.ruraltransportation.org/uploads/scan2005.pdf>

Following the passage of ISTEA and TEA-21, many states adopted regional-level transportation planning models in non-metropolitan areas. This report provides summaries of the practices of 28 states where the state department of transportation has contracted with local or regional entities to conduct planning activities, gather local official and public input, and/or collect relevant data to support statewide planning. In some cases, the regional rural transportation planning organizations are county planning offices or state DOT district offices, but more often, it is a council of governments, regional planning commission, or regional economic development district that receives the state DOT contract. As of 2005, California, Colorado, North Carolina, and Washington had adopted state statutes requiring regional transportation planning in nonmetropolitan areas of those states.

9. Integrating Land Use, Transportation and Economic Development in Pennsylvania, National Association of Development Organizations Research Foundation, 2010, www.nado.org/integrating-land-use-transportation-and-economic-development-in-pennsylvania

Pennsylvania initiated a statewide effort to integrate land use, transportation and economic development at the regional level through a process known as LUTED, under which the state's regional planning and development organizations developed regional visions and strategies to identify projects related to multiple issue areas.

In April 2010, the NADO Research Foundation held a Peer Exchange event in Pennsylvania to learn more about this effort. At this event, a group of transportation planning practitioners from rural and small metropolitan regions across the nation visited three regional planning and economic development organizations based in Pennsylvania: the Southern Alleghenies Planning and Development Commission, SEDA-Council of Governments and Southwestern Pennsylvania Commission. This proceedings report describes the background of regional planning and the LUTED process in Pennsylvania, and provides case studies of how the three organizations observed on the Peer Exchange approached the integration of land use, transportation and economic development planning in their regions.

10. Kissel, C. and C. Gron (2011). Transportation Project Prioritization and Performance-based Planning Efforts in Rural and Small Metropolitan Regions. National Association of Development Organizations Research Foundation: 24p., <http://www.nado.org/transportation-project-prioritization-and-performance-based-planning-efforts-in-rural-and-small-metropolitan-regions>

This report provides an overview of the state-of-the practice in regional-level rural transportation planning, including structure, staff capacity, major transportation responsibilities, and inclusion of performance-based elements in transportation planning documents. According to the research, regional rural transportation planning organizations receive from under \$25,000 to over \$125,000 per year from their state DOT to conduct non-metropolitan transportation planning-related tasks, with the most contract amount being between \$50,000 – 75,000. Nearly two-thirds of the responding organizations are staffed at 2 or fewer individuals who work on transportation planning. Most of those staff members also have responsibilities outside transportation planning. Over half of respondents have a policy committee and technical committee in place. Other significant findings include that regional transportation planning organizations' responsibilities nearly always include public involvement and technical assistance to local governments. Most also facilitate local official participation in statewide planning and develop a regional transportation improvement program, while 57% develop a rural long-range plan.

11. Local Government Officials: Key Stakeholders in Rural Transportation Planning, National Association of Development Organizations and National Association of Counties, December 2004, www.nado.org/pubs/primer.pdf

This primer provides a summary to help local officials better understand the new rural transportation planning requirements established by the Transportation Equity Act for the 21st Century (TEA-21). By February 2004, each state was required to have a documented planning process in which local non-metropolitan government officials have provided considerable input. The primer provides an overview of the federal statewide consultation requirements, examples of local official involvement in the transportation decision-making process, and a resource list and glossary of common transportation planning terms.

12. Martin, J., C. Giusti, E. Dumbaugh and L. Cherrington, Examining Challenges, Opportunities and Best Practices for Addressing Rural Mobility and Economic Development under SAFETEA-LU's Coordinated Planning and Human Services Framework: 76p., http://utcm.tamu.edu/publications/final_reports/Martin_08-17-09.pdf

In response to changes in federal requirements for rural transit planning, the Texas State Legislature and the Texas Department of Transportation have recently developed coordinated transit and human services plans for the 24 planning regions in the state of Texas. This study evaluates both the processes that have been adopted throughout the state as well as the types of outcomes that have emerged. Having engaged in perhaps the most comprehensive approach to meeting the revised federal requirements in the United States, the Texas experience in developing coordinated transit and human service plans is particularly useful for identifying opportunities, barriers, and best practices for coordinated rural transit planning, and thus for filling a major gap in the available professional guidance.

13. Natural Gas Drilling in the Marcellus Shale: Economic Opportunities and Infrastructure Challenges, National Association of Development Organizations Research Foundation, 2010, www.nado.org/natural-gas

This issue brief examines the natural gas drilling boom in the U.S. and associated economic opportunities and infrastructure challenges, including strains on local transportation networks and other types of infrastructure as well as environmental impact concerns. The publication explores how regional development organizations in Pennsylvania and New York are addressing these challenges, and what sort of measures can be taken to ensure that natural gas extraction brings the best possible benefits to regions and communities, while minimizing potential negative effects.

14. North Carolina's Rural Consultation Process, North Carolina Department of Transportation, Transportation Planning Branch, January 2004.

The North Carolina DOT developed this report to document the development of a new rural consultation process following the creation of RPOs statewide in accordance with law passed by the North Carolina General Assembly in 2000. The report provides an overview of steps taken in the consultation processes for statewide planning, non-metropolitan planning, metropolitan planning, and transportation conformity.

15. Overman, John, Patricia Ellis, William Frawley, Ryan Taylor, Tina Geiselbrecht, and Ginger Goodin, Rural Planning Organizations – Their Role in Transportation Planning and Project Development in Texas: Technical Report, Texas Transportation Institute, 2011.

While a formal planning and programming process is established for urbanized areas through Metropolitan Planning Organizations, no similar requirement has been established for rural areas. Currently, under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, states are required to consult with non-metropolitan local officials in transportation planning and programming. The consultation process between state Departments of Transportation (DOT) and non-metropolitan local officials is not prescribed in the planning rules, and consultation practices vary widely among each state's DOT.

Historically, the Texas Department of Transportation (TxDOT) has worked in cooperation with each individual rural county to plan and program projects. This has often resulted in a county-by-county project list that the TxDOT districts must try to fashion into a regional strategy or plan. A need exists to examine the concept of rural planning organizations and research their use in Texas to determine if a formal rural planning organization may offer a means to improve transportation planning and programming. The objective of this research is to identify and examine rural planning organizations, their structure and operation, and their role in transportation planning and programming. The project will include a review of current processes used by TxDOT and other agencies to plan and program transportation projects in rural areas.

16. Ransome, K. and K. Quinn. (2009). Coordinating Transportation and Land Use in Rural Jurisdictions.

Like many jurisdictions throughout the United States, rural counties in Maryland are growing at an alarming rate. Between 1990 and 2000, the population of rural counties has increased

by nearly 20 percent. In addition, Maryland is annually converting 25,000 acres of agricultural and forest lands for development. While development in rural jurisdictions continues to grow, many of these areas remain isolated from transportation services. According to the American Public Transportation Association (APTA), two-thirds of rural Americans - about 60 million people - are unserved by public transportation and live in remote counties that have either little or no service. Given the current pace of development and the seclusion faced by residents of rural areas, it is vital that land use decisions incorporate transit opportunities. This paper includes an examination of comprehensive master plans and development review processes in rural counties in Maryland, both of which can be used to coordinate transit and land use. The integration of transit in these areas is critical in preparing rural jurisdictions for future population growth while ensuring more balanced communities.

17. Regional Approaches to Sustainable Development: Linking Economic, Transportation, and Environmental Infrastructure in Rural and Small Metropolitan America, National Association of Development Organizations Research Foundation, 2011, www.nado.org/regional-approaches-to-sustainable-development

Regional development organizations (RDOs) working in all types of communities across the country are designing and implementing strategies to create stronger, more dynamic, more resilient regional economies that are based on quality of place. Featuring case studies from California, Michigan, North Carolina, and Utah, this report highlights the opportunities available to RDOs to undertake sustainable development initiatives using a systems-based approach.

18. Statewide Transportation Planning Process and Transportation Planning Regions. Code of Colorado Regulations. 2 CCR 601-22., <http://www.coloradodot.info/programs/statewide-planning/planning-process.html>

The regulation names the 15 Transportation Planning Regions and their boundaries, and defines the TPRs' and Colorado DOT's (CDOT) responsibilities in transportation planning. Of the 15 regions, five are urban and served by metropolitan planning organizations. The remaining ten regions are rural and are typically assisted by a regional planning commission. For the rural areas, CDOT and the non-metropolitan TPRs "shall work together" to develop Regional Transportation Plans, and CDOT shall consult with the rural TPRs on development of the Statewide Transportation Plan; incorporation of RTPs into the Statewide Transportation Plan; and the inclusion of projects into the STIP that are consistent with the RTPs. A Statewide Transportation Advisory Committee comprises a representative from each metro and non-metro TPR in the state, as well as non-voting members from two Tribal governments within Colorado. The role of the STAC is to review and comment on regional plans, integration of regional plans into the statewide plan, and issues and problems related to the state's transportation system. The regulations outline a process for public involvement, content of the regional and statewide long-range plans, and development of statewide and regional transportation improvement programs in accordance with federal regulations. A Transportation Commission, whose members are appointed by

the governor and serve a four-year term, directs the work of CDOT and its partners, approves the statewide plan and STIP, and develops guidance for the state's planning process and other policy.

19. Statewide Transportation Planning Program Rural Consultation Report, Kentucky Transportation Cabinet Division of Planning, 2006.

In response to the TEA-21 requirements, Kentucky established a formal Regional Transportation Planning Program with the state's 15 area development districts (ADDs). To analyze the current state of this partnership, the Kentucky Transportation Cabinet (KYTC) solicited comments and suggestions from 142 local officials in non-metropolitan counties and urban areas on the effectiveness of the program. Results showed that continuing efforts to build and strengthen relationships between ADDs and KYTC have yielded enhancements to the planning program. The planning program serves as an effective consultation process with local officials through the setting of regional project priorities.

20. Turnbull, Katherine F., Consultation between State Departments of Transportation and Local Elected Officials in Non-Metropolitan Areas, Texas Transportation Institute, Texas A&M University System, 2002.

The study examines traditional and innovative methods used by state DOTs when consulting with rural area officials and inter-jurisdictional partnerships involving state transportation agencies, local governments, and other stakeholders. The consultation methods and techniques specifically examined are those used to maintain ongoing communication with local officials and to obtain input during the development of statewide plans and State Transportation Improvement Programs (STIPs), the project development and selection process and transportation planning activities. The report examines consultation and communication techniques, but does not examine the level of funding provided to urban or rural areas. The examples are based on reviews of the FHWA reports, state submitted documentation of consultation methods, Internet sites, reports and documents from state transportation agencies, and telephone interviews with 38 individuals from 27 states.

The study recognized certain themes pulled from the examples: there is no one best approach, the need for use of multiple methods, the need for matching approaches to the unique features of individual states, the importance of building on existing institutional arrangements and organizational structures, the need for making the investment to develop strong working relationships over time, and the benefits of being creative and using innovative approaches.

21. Twaddell, H. and D. Emerine (2007). Best Practices to Enhance the Transportation - Land Use Connection in the Rural United States, Transportation Research Board: 103p., http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_582.pdf

This report presents guidance on how best to integrate land use and transportation in rural communities. The study highlights programs and investment strategies that support community development and livability while providing adequate transportation capacity. The

research consisted of an extensive review of current literature; a series of focus group discussions with community, tribal, and transportation agency staff and officials; and a survey aimed at a cross section of rural transportation planners. The research identified key principles for successful land use and transportation integration and outlines specific approaches suitable to a range of rural community types. This report will be useful to transportation planners and decision-makers who deal with land use and transportation issues in rural communities.

22. Widoe, Jr., Robert O., RPO Process Review Survey Final Report, New Mexico Department of Transportation, May 2007.

The New Mexico DOT, in cooperation with FHWA, conducted a survey to assess the effectiveness of the RPO process in New Mexico and the level of support provided by the NMDOT in the transportation planning process. Results from the survey showed that the RPO process is working well at a generally high level. Most of the negative feedback received from local officials related to specific isolated issues. The strength and effectiveness of the RPO process depends on the level of collaboration and communication between communities, governments, and the state. These connections, particularly in the rural regions, must be based on inclusion.

CASE STUDY MATERIALS

23. Aligning Strategies to Maximize Impact: Case Studies on Transportation and Economic Development, National Association of Development Organizations, 2012, www.nado.org/category/resources/transportation-publications

This report features 10 case studies from 11 states, where regional planning and economic development organizations are taking steps to coordinate planning processes and investment strategies, partner with new entities to improve outreach and implementation, document progress through metrics, and communicate results in an engaging way.

Projects from regional organizations across the United States demonstrate how the fields of transportation and economic development can complement each other and create an environment for increased collaboration and aligning of resources. Achieving multiple goals with a single project offers significant benefits as budget concerns continue to impact regional planning.

In particular, this report examines transportation planning through the lens of economic development and the Comprehensive Economic Development Strategy (CEDS), a regional economic development plan. In 2011, the NADO Board of Directors adopted Peer Standards of Excellence for Economic Development Administration (EDA)-designated Economic Development Districts (EDDs). These principles, developed by NADO members, are intended to make the CEDS a more effective tool, beyond a compliance plan needed to access EDA funds. The Standards of Excellence promote a strategic planning and implementation framework that is results-oriented; focused on aligning and leveraging

resources; inclusive of public, private, and nonprofit sector leaders; and emphasizes the importance of asset-based regional economic development.

24. Cole, David, CONNECTING THE D•O•T•S, A Guide for Connecting with Your Department of Transportation, National Association of Development Organizations Research Foundation, 2011, <http://www.nado.org/connecting-the-dots>

This report describes evolutions in Maine’s regional transportation planning partnerships and processes as a model case for other states seeking to improve relationships among state, regional, and local practitioners and stakeholders. Using examples from specific projects and initiatives, the report demonstrates ways that regional partners can add value to statewide planning and project delivery processes.

25. Exploring the Role of Regional Transportation Projects as Rural Economy Drivers, National Association of Development Organizations Research Foundation, 2011, www.nado.org/exploring-the-role-of-regional-transportation-projects-as-rural-economy-drivers

With case studies in Alabama, Oregon, and Vermont, this report explores regions where public transit is playing a role in connecting employees to work, getting people to services, and revitalizing downtown areas. Through partnerships at the local and regional level, regional planning and development organizations are facilitating improved mobility, which in turn supports the regional economy.

26. Four Corners Rural Transportation Forum: Summary of a Conference, National Association of Development Organizations Research Foundation, 2010, www.nado.org/four-corners-rural-transportation-forum-summary-of-a-conference

In August 2009 and May 2010, a small group of regional transportation planning practitioners convened in Sedona, Arizona (2009) and Park City, Utah (2010) for two days of facilitated discussion and presentations. Participants shared information about best practices and emerging issues in their regions on a variety of rural transportation planning and economic development issues, including rural transportation safety, livability in rural areas and relationship-building with Tribal nations. Read the event summaries to learn about issues, collaborative models, and practices in rural transportation planning in Arizona, Colorado, New Mexico and Utah. Two proceedings reports were produced through the NADO Research Foundation’s Center for Transportation Advancement and Regional Development under a cooperative agreement with the Federal Highway Administration.

27. Evaluating State DOT Rural Planning Practices, prepared as part of NCHRP Project 08-36, National Cooperative Highway Research Program, Transportation Research Board, ICF Consulting, American Association of State Highway and Transportation Officials, Washington, DC, December 2003, www.transportation.org/sites/planning/docs/nchrp35.doc

This report highlights the role of state DOTs and RPOs regarding planning practices for rural areas and identifies best practices and areas for improvement. Eight U.S. states are sampled to provide diversity regarding the type of rural areas discussed: Colorado, **Florida**,

Maine, Maryland, Missouri, North Carolina, Ohio and Oregon. The discussion is organized around five topic areas: state and RPO roles in rural transportation planning, public participation in rural areas, serving the transit-dependent in rural areas, linking transportation and land use in rural areas, and linking transportation and economic development in rural areas. The report provides some general conclusions. Based on interviews, state DOTs receive high marks from local and regional officials in rural areas because they listen and address their concerns and needs. States with empowered RPOs show success in their rural transportation planning process. The use of RPOs can create new institutional challenges. State DOTs need to encourage more public participation. Most state DOTs need to improve linkages between transportation planning and land use in rural areas. Finally, there is considerable variability among the states regarding techniques in promoting rural economic development through transportation investments.

28. Lessons Learned from Irene: Vermont RPCs Address Transportation System Recovery, National Association of Development Organizations Research Foundation, 2012, www.nado.org/lessons-learned-from-irene-vermont-rpcs-address-transportation-system-recovery

One week after moving into the Caribbean and then striking the U.S. east coast as a category 1 hurricane, Irene arrived in Vermont on August 27, 2011. The storm caused widespread damage in 223 of the state's 251 towns and villages. Severe flooding was particularly devastating for transportation infrastructure, requiring the Vermont Agency of Transportation (VTTrans) to take a leading role in the recovery. The extent of the damage, however, proved too much for a single agency to manage alone. VTTrans' leadership sought help from the state's 11 regional planning commissions (RPCs) to assume responsibility for assessing needed local road repairs.

While the RPCs were well positioned to assist because of their established relationships and networks within the towns, their recovery activities often went beyond their typical scope of work. The collaboration between VTTrans and the RPCs offers lessons for disaster preparedness and recovery, both crucial elements for building more resilient communities.

29. Metropolitan and Rural Transportation Planning: Case Studies and Checklists for Regional Collaboration, National Association of Development Organizations Research Foundation, 2009, www.nado.org/metropolitan-and-rural-transportation-planning-case-studies-and-checklists-for-regional-collaboration

This report provides checklists of possible actions that metropolitan planning organizations (MPOs), rural transportation planning organizations (RPOs), state departments of transportation (DOTs), local government entities, and other planning partners may take to enhance their partnership efforts. In addition, case studies from several states describe the institutional arrangements and practice areas that lend themselves to partnerships across planning agency boundaries.

30. Midwest Local Consultation Workshop, May 18 – 19, 2006, American Association of State Highway and Transportation Officials, National Association of Counties, National Association of Development Organizations, 2007.

This report presents the results of a workshop hosted in St. Louis, Missouri. Participants included representatives of state DOTs, local representatives from counties and staff from RDOs in nine states in the Midwestern United States. The purpose was to identify successes, challenges and best practices in each state's current local consultation process, identify the major criteria and performance measures for evaluating the local consultation process, develop self-assessment tools for each state, and determine ways of institutionalizing these processes. The states of Missouri, Minnesota, and Iowa involve RPOs as the first line of input to link local needs with the state transportation planning process. All of the states who participated demonstrate a willingness to communicate and improve relationships between the DOTs and rural local officials.

Certain themes were heard throughout the workshop: DOT officials should consult with local officials in a manner that they would want to be consulted; regional areas need adequate resources for the local consultation process, a process that should be flexible, dependable, and inclusive; training should be provided to local officials by state DOTs regarding the state transportation planning and programming process; self-assessment guides provide a useful and flexible tool that can be applied to each state DOT and participant in the process.

31. Overman, John, Texas RPO Workshop Implementation Project Summary, Texas Transportation Institute, 2012, <http://tti.tamu.edu/documents/5-6483-01-1.pdf>

This report documents rural planning organization (RPO) workshops conducted throughout Texas. An RPO is a voluntary organization created and governed by locally elected officials responsible for transportation decisions at the local level. RPOs address rural transportation planning priorities and provide recommendations to TxDOT for areas outside the boundaries of a metropolitan planning organization (MPO). More than 145 community leaders participated in the workshops, including county judges, county commissioners, and mayors and representatives from TxDOT Districts, cities, MPOs, and councils of governments.

Since the RPO project was initiated, the number of RPOs in Texas has grown from four to 14. Additional RPOs are expected to organize and form in the next few years. The RPO workshops involved both new and existing RPOs throughout Texas.

32. RPO America Peer Symposium Proceedings, National Association of Development Organizations Research Foundation, 2013, www.nado.org/2010-2013-rpo-america-peer-symposium-proceedings

With support from the Federal Highway Administration, the NADO Research Foundation held a special symposium session during the 2010 – 2013 National Rural Transportation Peer Learning Conferences. Each year, the symposium was designed to showcase the efforts of rural and small metropolitan regional transportation planning organizations and their partners, such as state departments of transportation, that are leveraging partnerships to create innovative programs that have beneficial impacts on the communities, regions, and states that they serve. Attendees had opportunities to ask questions of presenters and to share information with their peers about their own programs and issues. The symposia

proceedings include information on planning processes, partnerships, and initiatives from states with diverse institutional arrangements and road ownership structures, including Alabama, Connecticut, **Florida**, Georgia, Iowa, Maine, Minnesota, Missouri, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, and Virginia.

33. Rural Planning Peer Exchange in Iowa: The Role of Regional Planning Agencies in Iowa's Rural Planning Process, Transportation Planning Capacity Building Program, FHWA/FTA, August 2006, www.planning.dot.gov/Peer/iowa/iowa_2006.htm

This report summarizes the results of a Peer Exchange in which state and regional transportation organizations from Indiana and New Hampshire traveled to Iowa. Metropolitan and rural planning agencies were given the opportunity to examine the rural/regional transportation planning process in Iowa, specifically focusing on the role of Regional Planning Affiliations (RPAs) in the planning process. The objectives were to learn about the RPA planning process, Iowa DOT funding for RPAs, the RPA transportation improvement program and its relationship with the statewide transportation improvement program, local official membership and participation in RPAs, and the state long-range transportation plan.

Participants recognized lessons learned from the exchange that may be applied to improve the equivalent RPO processes in their regions. RPAs are project-driven, establish regional transportation priorities with local officials, and channel programming funds to implement those priorities. Participants believe that the key to making the RPA system work is to think and act regionally. This requires governmental involvement at every level and the encouragement of citizen participation. When developing transportation plans, local needs and processes of the community must be considered.

34. Southeast Local Consultation Workshop, June 16 and 17, 2005, American Association of State Highway and Transportation Officials, National Association of Counties, National Association of Development Organizations, 2006.

This report presents the results of a workshop held in Nashville, Tennessee where various state transportation agencies from 12 states in Southeastern United States, county officials, and regional development organization representatives participated. The purpose of the workshop was to identify successes, challenges and best practices in each state's current local consultation process, identify the major criteria and performance measures for evaluating the local consultation process, develop self-assessment tools for each state and determine ways of institutionalizing these processes. Themes emerged in the participants' input on challenges to local official consultation: attention needed to be spent on governance, education, understanding, and feedback to improve the process.

35. Transportation Planning in Rural America: Emerging Models for Local Consultation, Regional Coordination and Rural Planning Organizations, National Association of Development Organizations Research Foundation, 2005.

This report consists of findings from a nationwide scan of 320 RDOs that primarily serve small metropolitan and rural regions. The report offers insights into the impact, trends and

partnerships being forged in response to new rural planning and consultation rules. The important partnership developing between RDOs and state transportation officials is also examined. This report highlights the growing network of RPOs and presents case studies that showcase the activities and results of these regional planning entities. The report provides brief summaries of organizational structures of regional transportation planning agencies from 29 states.

36. Transportation Project Prioritization and Performance-based Planning Efforts in Rural and Small Metropolitan Regions, National Association of Development Organizations Research Foundation, 2011, <http://www.nado.org/transportation-project-prioritization-and-performance-based-planning-efforts-in-rural-and-small-metropolitan-regions>

This report provides an overview of the state of the practice in non-metro regional transportation planning, including the contract amounts, RPO tasks, and committee structures. The research also examines rural long-range planning efforts and criteria used to rank regional priority projects. With case studies on the statewide and regional planning processes in North Carolina, Pennsylvania, and Washington, the document provides examples for rural and small metro regions looking to formalize their planning process.

37. Watts, Richard, Evaluation and Review: Citizen Participation and Local Official Consultation in the Transportation Planning Initiative, Vermont Agency of Transportation, October 2003.

This report reviews the factors that led to the creation of the Transportation Planning Initiative (TPI) by the Vermont Agency of Transportation, analyzes its current practice and execution, and provides recommendations for continuing to meet the goals of citizen participation and local official consultation, particularly with transportation advisory committees (TACs). The report attempts to identify the merits of consultative planning and how Vermont's approach to consultative planning has been productive and meaningful. The results of the survey generated some key findings. Participation depends largely on the amount of influence individual TAC members believe they have in the decision-making process. State agency staffs view the TPI positively and believe it enhances collaborative relationships in the community. The TPI has been successful at expanding participation in transportation decision-making. Public involvement has greatly increased. The TPI met its initial objectives, but several towns still do not participate.

2.2 | RECENT PUBLICATIONS (2014-2017)

RPO INSTITUTIONS AND PRACTICE

1. Advancing Collaborative Planning: Summary of a Focus Group on Transportation and Economic Development, National Association of Development Organizations Research Foundation, 2016, https://www.nado.org/wp-content/uploads/2016/05/Advancing_FocusGpReport.pdf

In March 2016, the NADO Research Foundation held a focus group on the link between transportation and economic development, and how state departments of transportation and regional planning and development organizations can work together to better plan for those issues in an integrated way. The focus group participants included regional, state, and federal agency staff and others with experience in both transportation and economic development programs. During the conversation, the focus group participants developed a definition of economic development that emphasizes doing economic development and transportation planning differently, and can be used to help frame related planning efforts: Economic development in transportation involves deliberate interventions to produce tangible benefits that are specific to the context, are sustained over time, and make a place more resilient.

2. Akoto, Eunice, Transit Operational Performance--Exploring Non-traditional Performance Indicators and Methods for Analyzing Policy Impact on Non-urbanized/Rural Transit Operations, Transportation Research Board, TRB 93rd Annual Meeting Compendium of Papers, 2014.

In recent years, there has been a renewed focus on improving rural transit operational performance. However, the indicators and methodologies employed in analyzing transit performance outcomes do not always favor the rural transit systems due to the unique characteristics of rural transit operations such as the long mileage and service hours involved. Consequently, the utilization of traditional performance measurement constructs that mostly analyze transit operational efficiency may present skewed outcomes compared to the urban transit systems. This study explores the use of both traditional and non-traditional performance indicators and methodologies to assess level of improvement in rural transit operational performance during the implementation of “Safe, Accountable, Flexible and Efficient Transportation Equity Act-legacy for Users (SAFETEA-LU) policy. Traditional indicators include effectiveness and efficiency constructs while non-traditional constructs were mobility/impact constructs. Combinations of these variables are used to capture the unique attributes of rural transit operational performance and reveal the socioeconomic impact on transit operational performance during the period of policy implementation. This paper is a part of a broader study, which analyzes the impact of the SAFETEA-LU policy provisions and strategies. This extract from the study focuses on the performance indicators; it offers useful implications for policy and practice and should assist in motivating continuous investment in transit programs. It also has the potential to be used in analyzing the operational performance of other FTA formula programs.

3. Aultman-Hall, Lisa, Jonathan Dowds, The Role and Position of Local Agencies in Climate Adaptation Planning, University of Vermont Transportation Research Center, 2015, <http://docs.trb.org/prp/16-3846.pdf>

Climate adaptation is a growing priority for transportation agencies but is inhibited by variability and uncertainty about climate threats, tool development, limited human and financial resources and the interdependent nature of the transportation system which consists of infrastructure owned and managed by a host of different state and local agencies. The adaptation process can be described in 5 steps: 1) inventorying assets, 2) assessing climate threats, 3) evaluating asset vulnerability, 4) rating asset criticality, and 5) identifying and implementing adaptation actions. State and local agencies need to collaborate in order to maximize the effectiveness and efficiency of this process but appropriate roles for different agencies are not clearly delineated. The rating of criticality may be the weakest link in the framework and the one for which local and state cooperation is most essential. This paper

proposes a potential delineation that considers ownership and responsibilities by agency type. Analysis of survey data from 149 transportation professionals finds that agencies at both the state and local levels have identified climate threats that pose a risk to their region that agencies are not currently preparing for. Overall, state agencies are more active than locals in preparing for climate threats and a higher percentage have undertaken many adaptation actions (this gap is not statistically significant for all threats and actions surveyed). On average tools and resources for climate adaptation are relatively poorly rated.

4. Beiler, Michelle, “Organizational sustainability in transportation planning: Evaluation of multi-jurisdictional agency collaboration,” *Journal of Transport Geography*, Vol. 52, 2016.

Although significant effort is being made in addressing infrastructure design, construction, operations, and maintenance, there is the need for assessing organizational sustainability within transportation planning. Transportation planners have identified coordination and collaboration as fundamental steps in addressing issues related to transportation network planning and sustainability initiatives. This research explores multi-jurisdictional collaboration between agencies using a case study on Pennsylvania Metropolitan/Rural Planning Organizations (MPOs/RPOs) and non-designated areas. The agencies are surveyed and the results are analyzed using a network analysis software (Gephi). In order to compare the collaboration network analysis (survey results) to influential factors, such as geographic adjacency and geographic proximity (reflective of transportation networks), GIS is used in combination with Gephi to complete geographical network analyses. The three analyses are compared using average degree, density, and average path length. The results indicate that the MPOs, RPOs, and non-designated areas within the state of Pennsylvania are collaborating, on average, beyond the geographical adjacency but below the level of geographical proximity network. In addition, email and phone communication forms are the most widely used for high frequency connection while face-to-face meetings are more likely for biannual and annual collaboration. The results of this study serve as a foundation for measuring and monitoring multi-jurisdictional collaboration to promote sustainable organizational planning in transportation.

5. Edrington, Suzie, Jonathan Brooks, Linda Cherrington, Todd Hansen, Paul Hamilton, Chris Pourteau, Identifying Best Practices for Managing Operating Costs for Rural and Small Urban Transportation Systems: Technical Report, Texas A&M Transportation Institute, Texas Department of Transportation, 2016,

<https://ntl.bts.gov/lib/60000/60000/60011/0-6694-1.pdf>

Rural and small urban transit providers across the United States face fiscal challenges caused by the growing gap between the cost of providing transit service and available federal, state, and local funding. In Texas, the fiscal challenges facing rural and small urban transit providers are compounded by an increasing population and growth in urbanization in some counties and declining population with increasing demand for transit service for an aging population in other counties. The research report examines the drivers of operating costs, approaches to containing costs, transit agency priorities for tools needed to better contain costs, and methodology used to develop the guidebook and workshop.

There are five primary documents produced in this research project: research report, guidebook entitled *Managing Operating Costs for Rural and Small Urban Transportation Systems*, workshop participant workbook, workshop instructor’s guide, and a presentation to

support the workshop. Researchers found that transit agency staff indicated a priority need for guidance and training in the following topics: managing staff, maintenance and state of good repair, buying and managing fuel, contracting for service, minimizing no-shows, and innovations in technology and service design. Also, researchers found a need to provide information on fundamentals of reporting, allocating, and tracking costs. The resulting guidebook and corresponding workshop incorporates the findings of the research.

6. Griffin, Greg, Put It There: Geographic Specificity of Public Engagement Methods in Transportation Planning, Transportation Research Board, TRB 93rd Annual Meeting Compendium of Papers, 2014.

Public involvement methods are often chosen for transportation planning without a framework for determining how relevant the comments received are to the specific plan. A key issue in the design of participation methods is whether and how the location of public comments are included. This study critically assesses existing literature, including the foundations of public involvement and the latest requirements. A rural transportation planning process is evaluated in terms of the geographic specificity of comments received from open-ended responses on a questionnaire and a facilitated mapping session, and reviews them for relevance to developing a rural transportation plan. Although all input received from the public can be valuable in the process, location-based comments may be more actionable by transportation planners. Qualitative methods are employed to evaluate spatial aspects of public input from a transportation plan in Central Texas, and relative benefits reviewed. This study demonstrates geographic specificity is a valuable concern in the design of public involvement for transportation planning, and offers several techniques for consideration.

7. Karner, Alex, “Planning for transportation equity in small regions: Towards meaningful performance assessment,” Transport Policy, Vol. 52, 2016.

Regional transportation planning agencies seek to achieve multiple objectives simultaneously including consensus on key issues, compliance with relevant laws and regulations, and improvements in the congestion, air quality, and safety performance of the transportation system. Some performance areas lend themselves well to operationalization while others do not. One area that has received comparatively little study is the assessment of a plan's impacts on environmental justice and social equity. Although research on regional planning usually emphasizes larger metropolitan areas and agencies, these issues are especially relevant in smaller regions where planners lack the capacity for innovation and careful analysis. Further, the transit services on which disadvantaged populations depend are often lacking or non-existent in less-populated regions. Understanding how planners in these locations undertake social equity-related analyses and providing suggestions for improvement is thus an important endeavor. While prior work has assessed whether, and to what extent, equity objectives are included in plans, there are few detailed investigations of the key analytical choices that shape equity outcomes. This paper fills this important research gap, providing such an analysis of existing practice in a largely rural region in California, the San Joaquin Valley, as well as recommendations for future analyses aimed at improving the consistency between equity analyses and the real-world impacts of transportation plans.

8. Matsuo, Miwa, Efficiency, Effectiveness, and Management Characteristics of Rural Local Bus Services in the US, 2015,

https://waseda.repo.nii.ac.jp/?action=repository_action_common_download&item_id=27281&item_no=1&attribute_id=77&file_no=1

This paper conducts semiparametric analysis of service production efficiency and service effectiveness of U.S. rural bus services, using network data envelopment analysis (NDEA) and censored regression. Production efficiency is measured by the ratio of the service provided to the resource inputs, and service effectiveness is measured by the ratio of the service consumed to the service provided. The analysis finds strong scale economies in production efficiency, while service effectiveness peaks at annual vehicle revenue hours of approximately 10,000. Operators with smaller service areas have lower production efficiency because of lack of capacity, while their service effectiveness is higher due to their compact network and local knowledge. Moreover, operators in states with regional transportation planning organizations perform better than operators in states without such organizations, particularly in effectiveness of service. Private operators are not performing well compared to public operators, even in production efficiency. The assessment indicates regional coordination ensures services are scaled to achieve both high production efficiency and high service effectiveness. The analysis also demands revisiting contracting schemes with private operators to improve their performance.

9. Miller, Kristi, John Overman, Performance Planning for Rural Planning Organizations, Texas A&M Transportation Institute, Texas Department of Transportation, Federal Highway Administration, 2017.

Recent federal rules place increased emphasis on performance-based management of the multimodal transportation system and require the use of performance based methods in state, metropolitan, and non-metropolitan transportation planning and programming. The Fixing America's Surface Transportation Act and the Moving Ahead for Progress in the 21st Century Act emphasizes seven areas including: safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery. Establishing a common set of performance measures allows for the evaluation and comparison of different projects and transportation corridors for both current and future conditions, and translates data and statistics into a form that the public and decision makers can easily understand. This research developed a framework, performance measures, tools, and guidance to conduct performance-based transportation planning and programming in non-metropolitan areas of the state and support Rural Transportation Planning Organizations.

10. Monast, Kai, Matthew Palmer, Exploring the Relationship Between Performance Measures and Trip Type for Transit Systems Serving Rural Communities in the United States, TRB 96th Annual Meeting Compendium of Papers, 2017.

This research considers how using the rural element of the National Transit Database (NTD) to determine performance-based allocations may influence rural transit system service delivery. Rural public transportation providers receive subsidies that support both consolidated human service trips and general public transportation. Due to budget constraints and the public expectation of providing greater production and cost-efficiency with the same or decreasing resources, the use of performance measures in rural public transportation subsidy allocation formula is gaining traction in policy circles. This research examines rural National Transit Database statistics to determine whether there is a relationship between standard transit system performance measures (productivity and cost-

efficiency) and the percentage of trips that service the general public in rural areas. The analysis shows that higher percentages of general public trips are associated with higher system productivity and cost-efficiency. This research supports larger policy concerns as to whether public policies incentivizing higher levels of system performance may have the unintended consequence of encouraging rural transit systems to reduce human service trips; in so doing, costing more to the public than through sponsored NTD trips for human service agencies. The research does not claim that transit systems currently make these sacrifices, rather that funding tied to performance measures using rural National Transit Database statistics introduces an incentive to do so and ultimately costs the public more when considering the full social costs and benefits of rural public transportation.

11. Morton, Brian, Joseph Huegy, John Poros, Close to Home: A Handbook for Transportation-Efficient Growth in Small Communities and Rural Areas, Transportation Research Board, 2014.

Many people in small communities and rural areas in the United States spend a considerable amount of time in their cars. New growth in such areas can add to an already high load of daily driving if land use decisions are not made with careful consideration and a regional perspective. This handbook provides insights into the relationship between a small/rural area's existing development patterns and changes in daily driving after hypothetical new growth. The handbook offers a vocabulary of land use characteristics that are significant in small communities and rural areas. It also estimates the change in daily driving per person after hypothetical growth occurs according to different development visions or scenarios. Although the report does not advocate any particular type of development pattern, it suggests the land-use-related conditions that are most important to consider when one of the goals of planning is minimizing the increase in vehicle-miles traveled and the consequent consumption of fossil fuels and vehicular emissions of air pollutants, including greenhouse gases. In addition, the handbook includes dozens of streetscape visualizations of real towns in small communities and rural areas, showing ways in which noticeable levels of growth can be accommodated without losing the character and feel of the towns. The project's results are applicable to many small communities and rural areas in the United States.

12. Moving Toward Performance-Based Transportation Planning in Rural and Small Metropolitan Regions, National Association of Development Organizations Research Foundation, 2014,

http://ruraltransportation.org/wp-content/uploads/2015/02/MovingTowardPerformance_NADORF.pdf

The NADO Research Foundation report Moving toward Performance-based Transportation Planning in Rural and Small Metropolitan Regions (PDF), published in December 2014, draws on research and training efforts conducted by the NADO Research Foundation from 2010 – 2014 and with support and guidance from the Federal Highway Administration. Throughout this period, the NADO Research Foundation collected planning documents from rural, regional transportation planning organizations, held interviews and conversations about planning and performance measurement with regional planning professionals and their state partners, and conducted training and outreach on performance measurement where discussion in the sessions also informed the research effort.

The research found that many organizations are adopting measures and considering performance measurement carefully. The efforts of state DOTs and state legislatures to

increase performance culture play a significant role in determining the extent to which regional agencies are moving toward performance measurement. In many cases, a strategic planning framework is already well entrenched in RTPOs' planning processes and could be adapted to include systematic performance measurement.

Some of the strategies to move toward performance-based planning used by RTPOs, MPOs, and state DOTs that participated in the research include working with partners on data, analysis, selecting measures, and creating measurement frameworks; communicating the information that resonates with the audience; using data to drive decisionmaking; making use of funding scenarios and plan alternatives to understand the performance implications of potential future investment decisions; and more.

13. Overman, John, Rural Performance Based Planning Guidebook, Texas A&M Transportation Institute, Texas Department of Transportation, Federal Highway Administration, 2017.

Performance-based transportation planning has existed for many years. Recently, it is becoming more accepted and practiced as a result of federal rules. It is fast becoming the cornerstone for transportation decision making throughout the country in both metropolitan and non-metropolitan (rural) areas. Establishing a common set of performance measures allows for the evaluation and comparison of different projects and transportation corridors for both current and future conditions, and translates data and statistics into a form that the public and decision makers can easily understand. This guidebook directs the reader through the framework for conducting a rural transportation system assessment based on individual goals and objectives and selected performance measures and weights. The planning tool developed as part of this project is intended for use with the guidebook for establishing and using rural performance-based transportation system assessment, monitoring, planning, and programming consistent with statewide plans and programs.

14. Planning for Transportation Together: Collaborating to Address Transportation and Economic Resilience, National Association of Development Organizations Research Foundation, 2016, [https://www.nado.org/wp-content/uploads/2016/09/Planning Transportation Together Final.pdf](https://www.nado.org/wp-content/uploads/2016/09/Planning_Transportation_Together_Final.pdf)

Across the nation, state agencies and regional planning and development organizations are working together and with other partners to create jobs, improve access to employment, education, and essential services, and to advance quality of life in communities and regions. Transportation facilities, infrastructure, and services are critical components to support these economic and quality of life outcomes, along with other policies and investments. Transportation can be an economic asset where the system allows for access to the workforce, resources, and markets. As a feature of the landscape, a region's roads, paths, and services also support community vitality.

Transportation and economic development efforts occur through both a mix of state-led policies and programs that include local and regional input and participation, as well as more locally developed priorities that benefit from state funding and technical assistance. Top-down and bottom-up efforts often work together, as policies and plans adopted at the state level have provided a useful framework for regions to complete their own transportation and economic development planning and project development.

This report presents case studies that demonstrate how state agencies and regional planning and development organizations are working together on deliberate interventions to produce tangible benefits that are specific to the context, are sustained over time, and make a place more resilient.

15. Regional Rural Transportation Planning: State Models for Local Consultation, Regional Coordination, and Regional Transportation Planning Organizations, National Association of Development Organizations Research Foundation, 2016, https://www.nado.org/wp-content/uploads/2016/11/Reg_transportation_planning_report_FINAL2.pdf

This new report presents information on the structures, membership, tasks, and funding for regional organizations conducting rural transportation planning work in about 30 states.

16. Regional Transportation Planning Organization Peer Exchange Summary: Held in Conjunction with Moving Rural America: National Working Summit on Transportation in Rural America, National Association of Development Organizations Research Foundation, 2017, <https://www.nado.org/wp-content/uploads/2017/03/RTPOPeerExchange2016.pdf>

The Regional Transportation Planning Organization Peer Exchange Summary (PDF) covers discussion of a small group of regional transportation planners and state Department of Transportation planning staff, as well as engagement with a larger and diverse group of professionals attending the summit *Moving Rural America: National Working Summit on Transportation in Rural America*.

The peer exchange summary includes discussion and short descriptions of practice on several topics, including: addressing rural mobility challenges, aligning transportation with economic development, rural public involvement, opportunities to increase economic development by having a safe transportation system, and connecting to transportation safety.

17. Reinke, David, Jim Damkovich, Daniel Landon, Development of performance measures for rural counties in California, 2016, <http://docs.trb.org/prp/17-06203.pdf>

Transportation agencies at all levels are increasingly relying on performance measures to inform decisions on investment and transportation system management. The California Transportation Commission (CTC) recently adopted a set of performance measures that were based mainly on the needs of urban areas in the state. The California Rural Counties Task Force were concerned that these performance measures did not meet their specific needs. The Task Force therefore commissioned a study to develop performance measures applicable specifically to rural areas in the state. This paper describes the development of these performance measures, which were subsequently adopted by the CTC. The study consisted of reviewing existing performance measurement practices in rural counties, assessing available planning resources for data collection and analysis to produce performance measures, establishing criteria for assessing potential performance measures, recommending performance measures, and examining potential future performance measures. The recommended performance measures were adopted in toto by the CTC.

What distinguishes this study from most previous efforts in this area is the development of a systematic framework for the selection of performance measures.

18. Waldheim, Nicole, Susan Herbel, Carrie Kissel, Integrating Safety in the Rural Transportation Planning Process, Cambridge Systematics, Inc., National Association of Development Organizations, Federal Highway Administration, 2014, https://safety.fhwa.dot.gov/local_rural/training/fhwasa14102/isrtpp.pdf

Rural areas consistently experience higher numbers of crash-related fatalities and serious injuries than urban areas. Regional planning organizations (RPO) are poised to assist state departments of transportation (DOT) and local officials in addressing the safety needs in nonmetropolitan areas in accordance with statewide safety goals. RPOs in general engage in a planning process to understand the regional issues and needs, and identify strategies to address them through coordination with regional stakeholders. The opportunity exists to incorporate safety into this existing process.

This Technical Report provides methods for integrating safety into each step of the RPO planning and programming process, to assist in addressing rural roads multimodal safety needs.

CASE STUDY MATERIALS

19. Anderson, Michael, Tahmina Khan, “Performance Measures for the Analysis of Rural Public Transit in Alabama,” Journal of Public Transportation, Vol. 17, No. 4, 2014, <http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1001&context=jpt>

As rural public transit systems are vital to the livelihood of rural Americans, improving the operations of these systems is the focus of this work. The use of performance measures to evaluate operation is essential to maintain growth and avoid becoming stagnant. The main goal of this study was to examine existing performance measures (PM) and modify them to allow for comparison of performance among rural transit agencies in Alabama. The tasks presented in this paper are a review of performance measures, data collection, and data analysis for agencies in Alabama. The report concludes that performance measures can be developed that balance external factors in the analysis and allow for a fair comparison of agencies.

20. Astroza, Sebastian, Priyadarshan Patil, Katherine Smith, Vivek Kumar, Chandra Bhat, Zhanmin Zhang, Texas Transportation Planning for Future Renewable Energy Projects: Final Report, The University of Texas at Austin Center for Transportation Research, 2017, <https://ntl.bts.gov/lib/61000/61200/61299/0-6850-1.pdf>

There will be a significant increase in the number of renewable energy production facilities in Texas. The construction of wind farms requires the transport of wind turbine components that create increased loads on rural roads and bridges. These rural roads and bridges are typically not designed for such loads. This will result in a greater burden on the transportation infrastructure in Texas.

Given the upward trend in wind energy production, the Texas Department of Transportation (TxDOT) is looking to plan for the impacts of future renewable energy projects on roads while facilitating the development of new renewable projects in and around Texas. CTR created an operational planning tool that TxDOT can use to propose route plans for wind turbine components passing along Texas routes and develop recommendations for planning construction of new wind farms as well as maintenance strategies for the roads.

21. Battista, Geoffrey, Brian Lee, Jane Kolodinsky, Sarah Heiss, “Exploring Transportation Accessibility to Health Care Among Vermont’s Rural Seniors,” Transportation Research Record: Journal of the Transportation Research Board, Vol. 2531, 2015.

The aging baby boomer generation will have a profound impact on the demand for health care services in the United States. This impact will be felt strongly in rural areas, where the population in general is older and the supplies of health care services and alternative transportation are limited. This study employed a mixed-method approach to assess health care accessibility among seniors in the state of Vermont. A geographic information system was used to project health care accessibility according to the spatial characteristics of the health care and transportation systems. Subsequently, the mechanisms that shaped accessibility were assessed through semi-structured interviews with 20 seniors and caregivers. The study found that health care accessibility varied among seniors, given the local health care supply, transportation, and individual resources at their disposal. Health care accessibility also was shaped by less tangible factors, which included social connectedness and personal preferences for care and transportation. The results suggested that mixed methods provided a more nuanced and valid perspective on health care accessibility. This perspective can better inform policy makers as they strive to accommodate rural senior preferences to age in place in a healthy manner.

22. Beiler, Michelle, Leylin Marroquin, Sue McNeil, “State-of-the-practice assessment of climate change adaptation practices across metropolitan planning organizations pre- and post-Hurricane Sandy,” Transportation Research Part A: Policy Practice, Vol. 88, 2016.

Metropolitan Planning Organizations (MPOs) throughout the United States are identifying goals and implementation strategies to reduce the impacts of climate change through transportation adaptation initiatives. Using vulnerability assessments as well as adaptation practices that support mitigation, MPOs are beginning to integrate climate change planning into the long-range planning process. Evaluating the state-of-the-practice of adaptation planning and adaptation in support of mitigation is useful in that it helps identify gaps and areas of improvement. Therefore, this research investigates the state-of-the-practice of MPO adaptation planning using the Mid-Atlantic region as a case study. Surveys, administered in 2012 and 2014, are used to identify the level of progress of MPOs with regard to climate change adaptation practices as well as barriers before and after Hurricane Sandy. A cross-sectional analysis using GIS (Geographic Information Systems) maps the results of the surveys and spatially compares regional trends. The results of the case study suggest growing interest in adaptation efforts such as floodplain area designations and efforts to enhance coordination and collaboration as transportation jurisdictions respond to the potential climate change impacts. In addition, MPOs with dense, smaller geographic areas prioritize inter-jurisdictional collaboration as high, suggesting that they are more reliant on other

agencies to maintain inter-connectivity of transportation networks and further implement adaptation planning practices.

23. Bond, Megan, Jeffrey Brown, James Wood, “Adapting to challenge: Examining older adult transportation in rural communities,” Case Studies on Transport Policy, 2017.

Rural and small communities in the United States are home to a higher proportion of older adults (those aged 65 and older) than urban or suburban areas. This proportion is expected to grow over the next decade. Public transportation can play an important role in meeting the mobility needs of older adults, but transportation providers face significant challenges serving older adults in these settings. Using a set of case studies, the authors explore strategies that providers use to try to address these challenges and increase older adult transit use. These strategies include the use of flexible services, partnerships, and individualized outreach. Local context is important to service provision in small communities. Providers report generally positive results, yet most assessment rests on anecdotal evidence. There is a need for better data to determine whether older adult mobility needs are being effectively served.

24. Dierwechter, Yonn, Brittany Hale, Robert Woodmark, Cody Wyatt, Wendy Moss, Matthew Hall, Whitney Hays, Shanna Schubert, Cheng Wang, Seth Lundgaard, and Caleb Rawson, "Enhancing Big Ideas Through Regional Planning: Cross-Jurisdictional 'Value Added' in Washington State," Conflux, 2014,
<http://digitalcommons.tacoma.uw.edu/cgi/viewcontent.cgi?article=1006&context=conflux>

This paper argues that enhancing multi-jurisdictional planning - i.e. regionalism in various forms -- should be at the center of how we ameliorate most of our major developmental challenges. Put another way, efforts to improve the planning profession's contribution to concerns like “climate action,” “economic development,” “social equity,” “local government capacity,” and so on, all require more attention to stronger regional planning processes. The paper is divided into three sections. In the first section, the authors develop the over-arching theme that experiments in regionalism no longer refer to significant institutional-structural reforms - in particular, to consolidation or centralization of planning authority -- but instead to far less threatening, more politically viable, and also less ambitious efforts to build incremental, horizontal collaborations that frequently lack much formal authority because they rely heavily on voluntary reciprocity. They then turn to a lengthy discussion of five different regional planning experiences in Washington State. The final section of the paper recapitulates the main ideas and offers preliminary suggestions as we move forward.

25. Freund, Katherine, “Getting From Here to There: Maine's Elder Transportation Challenge,” Maine Policy Review, Vol. 24, Issue 2, 2015,
<http://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1707&context=mpr>

Surveys and studies have repeatedly pointed out the problem of transportation for elders in Maine. Katherine Freund reviews Maine transportation studies and policy and suggests that the solution lies in developing private transportation alternatives that are supported by technology and by appropriate public policies.

26. Mathison, Arlene, Gina Baas, Janene Cowan, Frank Douma, Guillermo Narvaez, Thomas Garry, Dakota County Human Services Research and Transportation Planning: Strategic Action Plan, Center for Transportation Studies, University of Minnesota, 2014,

<https://conservancy.umn.edu/bitstream/handle/11299/176397/CTS14-14.pdf?sequence=1&isAllowed=y>

Transportation is essential to a full life: providing access to jobs, school, medical care, recreation, and other basic needs. Those who can afford and are able to use personal vehicles do not experience significant barriers to getting where they need to go. For those who cannot drive a personal vehicle, the story is very different. Dakota County engaged a team from the University of Minnesota, led by the Center for Transportation Studies, to conduct collaborative stakeholder engagement, data collection and analysis, emerging practices research, and strategic planning in order to assist County government with identifying strategic opportunities to facilitate improved transit and client transportation services in Dakota County. The work was conducted from October 2013 through February 2014. This report summarizes the results of the research and engagement activities, and outlines seven recommendations for the County to improve the coordination, availability, accessibility, efficiency, cost-effectiveness, and safety of human service transportation.

27. Mjelde, J.W., R. Dudensing, J. Brooks, G. Battista, M. Carrillo, B. Council, A. Giri, M.K. Kim, V.D. Pyrialakou, and S. Ullerich, Economics of Transportation Research Needs for Rural Elderly and Transportation Disadvantaged Populations, Texas A&M University, United States Department of Agriculture, National Institute of Food and Agriculture, 2017, <https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2017-1.pdf>

Economic research focused on enhancing the mobility of the elderly and disadvantaged individuals is insufficient. To address this insufficiency, a multidisciplinary team of researchers convened as part of the 2016 National Conference on Rural Public and Intercity Bus Transportation (RIBTC) in Asheville, North Carolina. The team's objective is to provide research recommendations that may be used to enhance, if appropriate or applicable, the provision of rural transportation options that improve quality of life for the rural elderly and other socially and transportation disadvantaged populations. Research recommendations focus on five general areas: theoretical issues, innovative solutions, rural socioeconomic considerations, economic assessment and evaluation of rural transit, and information technology solutions.

28. Novak, David, Chris Koliba, Asim Zia, Matt Tucker, "Evaluating the outcomes associated with an innovative change in a state-level transportation project prioritization process: A case study of Vermont," Transport Policy, Vol. 42, 2015.

This paper examines the outcomes associated with an innovative change in a state-level transportation project prioritization process within the United States (U.S.). A foundational component of the innovation is the development and implementation of a novel multi-criteria analysis (MCA) tool to aid decision-makers. The pre and post-MCA project prioritization processes are described in detail for the state of Vermont, and the authors use a mixed methodological approach to empirically evaluate the outcomes associated with the innovative change with respect to three objectives: (1) to make the project prioritization

process more transparent, (2) to improve the project prioritization process by incorporating well-defined, objective evaluation criteria into the decision-making process, and (3) to reduce inequality in the allocation of transportation project funds between the local jurisdictions. They demonstrate that the innovative change in the project prioritization process was clearly successful in accomplishing objectives 1 and 2, but does not appear to be successful with respect to accomplishing objective 3. The findings are discussed in the context of the state of Vermont, and the authors offer suggestions for how funding inequality might be addressed in the future.

29. Reinke, David, Jim Damkovich, Daniel Landon, Development of performance measures for rural counties in California, 2016, <http://docs.trb.org/prp/17-06203.pdf>

Transportation agencies at all levels are increasingly relying on performance measures to inform decisions on investment and transportation system management. The California Transportation Commission (CTC) recently adopted a set of performance measures that were based mainly on the needs of urban areas in the state. The California Rural Counties Task Force were concerned that these performance measures did not meet their specific needs. The Task Force therefore commissioned a study to develop performance measures applicable specifically to rural areas in the state. This paper describes the development of these performance measures, which were subsequently adopted by the CTC. The study consisted of reviewing existing performance measurement practices in rural counties, assessing available planning resources for data collection and analysis to produce performance measures, establishing criteria for assessing potential performance measures, recommending performance measures, and examining potential future performance measures. The recommended performance measures were adopted in toto by the CTC. What distinguishes this study from most previous efforts in this area is the development of a systematic framework for the selection of performance measures.

3.0 PEER INTERVIEW FINDINGS

The second step in documenting current practices in rural transportation planning was the conduct of interviews with peer states and their constituent rural planning organizations. Many states have regional transportation planning agencies in rural areas. NADO recommended states that have longstanding or exemplary practices associated with rural transportation planning. A determination was made that peer states should be similar to Florida in having a significant number of metropolitan areas with MPOs that are adjacent to rural regions. Each of these states has robust rural transportation planning partnership programs that are anchored in State law. This allowed an examination of how some states, like Ohio, are using the Federal definition of RTPO designation, while others rely on state statute to define the context and content of rural planning. The selected states that were interviewed as peers included:

- North Carolina
 - NCDOT
 - NCARPO (State Association Chair)
 - Rocky River RPO
- Ohio
 - Ohio DOT
 - Buckeye Hills Regional Council - RTPO
 - Maumee Valley Planning Organization – RTPO
 - Ohio Valley Regional Planning Commission – RTPO
- Pennsylvania
 - PennDOT
 - North Central Pennsylvania Regional Planning Development Commission - RPO
- Washington
 - Washington DOT

3.1 | NORTH CAROLINA

North Carolina established rural regional transportation planning organizations, referred to as RPOs, as a requirement of a State law passed in 2000. State officials worked with local officials and the existing network of Councils of Governments to create 20 RPOs that served all counties outside of the existing 17 metropolitan planning organizations (MPOs). The 2010 Census urbanized area boundary changes resulted in some counties becoming part of MPOs, so there are now 18 RPOs. Under the law, RPOs are required to serve contiguous areas of at least three counties and must have a combined minimum population of 50,000. The largest is the Albemarle RPO, which includes ten counties. Not all the municipalities in an RPO region are required to join, but each county must be a member. The RPOs are structured with a Transportation Policy Committee, a Technical Advisory Committee, and a staff/administrative agent. They are established by MOU with NCDOT and member counties, accompanied by an Agreement for Disbursement and Accounting of Rural

Transportation Planning Funds. Currently, the RPOs serve nearly four million North Carolinians, or almost half the population of the state.

North Carolina DOT (NCDOT) provides funding for the RPOs from the FHWA State Planning & Research (SPR) program. The annual budget is between \$1.5 and \$1.7 million, with each organization receiving between \$80,000 and \$150,000 on a population-based formula. The required 20% match is provided by the constituent counties.

The RPOs are involved in plan development, and to a lesser extent in project programming. In North Carolina, each county is responsible for a Comprehensive Transportation Plan (CTP). These are coordinated through the RPOs with assistance from NCDOT, including modeling assistance. There is no requirement that the CTP be updated on a regular basis, nor that it be fiscally constrained. RPOs are working on the plan development process so the projects can be more competitive for funding. There is consideration of moving these plans from the county to the RPO level.

While they do not prepare a regional TIP, RPOs are involved in the project selection and prioritization process. NCDOT states that project criteria make it difficult for rural projects to score well, and there remains an urban-rural divide, both perceived and real.

RPOs play an important role in public outreach. They acknowledge this can be particularly difficult in rural areas, but many of the COGs/RPOs have established themselves with their constituencies. The COGs also provide technical services like GIS mapping to their member governments.

The North Carolina Association of RPOs (NCARPO) provides a means, through quarterly meetings, for the RPOs to share planning practice, and to meet as a group with NCDOT. They sometimes meet jointly with the North Carolina Association of MPOs.

3.2 | OHIO

Ohio is the only state in the country that has taken advantage of the provision in MAP-21 to formally designate Regional Transportation Planning Organizations (RTPO). This began with a two-year pilot program in July 2013, initiated by Ohio DOT (ODOT). ODOT stated that prior to this, transportation planning was done by 17 MPOs covering 33 of their 88 counties. The state was responsible for planning in the rural areas and felt that the process could be improved. Their reasoning was that RTPOs would:

- Provide local elected officials and stakeholders a forum to participate in the statewide transportation planning process
- Result in better transportation decision making in rural areas
- Over time, cover the entire state with regional transportation planning

Rather than create a process in state law, they found that the Federal planning rule describing the institutional and planning requirements of RTPOs met their needs.

Five existing regional planning agencies were selected for the pilot initiative, covering 34 rural counties:

- Buckeye Hills-Hocking Valley Regional Development District (8 counties)
- Logan Union Champaign Regional Planning Commission (2 counties)
- Maumee Valley Planning Organization (5 counties)
- Ohio Mid-East Government Association (8 counties)
- Ohio Valley Regional Development Commission (11 counties)

In 2016, ODOT initiated the process of designating a sixth RTPO:

- Central Ohio Regional Planning Organization (7 counties)

The rural regions of Ohio are diverse. Those in the southeastern part of the state are part of the Federally designated Appalachian Region, addressing issues of poverty and isolation. Others can be characterized by Rust Belt issues of loss of manufacturing economy and aging population. Some of the counties have demand-response public transit, but others have few transportation options. The Ohio Rural Intercity Bus Program uses Federal Transit Administration (FTA) funds to support a program called GoBus. This service supplements commercial bus operations, which have experienced cut backs over recent years, by providing rural-urban intercity bus service throughout the state.

Each of the RTPOs established a Policy Committee that is distinct from the Board of the parent organization. In each case, local elected officials fill the majority of seats. Transportation Technical Committees at the RTPOs include engineers and planners from the member counties and some cities; ODOT; and others. ODOT funds the RTPOs with FHWA SPR program funds and covers half of the 20% match. This is sufficient to support a staff of 1.5 to 2 FTEs.

Because the Federal requirements for RTPOs mirror those for MPOs, ODOT assigned an MPO mentor to each of the new RTPOs. The RTPOs found these relationships valuable and have generally continued them after the pilot period. Each RTPO was charged with developing a Transportation Plan and a Public Participation Plan.

The regional planning organizations that host the RTPOs are multi-functional, typically with a history of administering programs of the Economic Development Administration (EDA), Appalachian Regional Commission (ARC), and the Ohio Public Works Commission. They assist their member counties with comprehensive plan development, GIS mapping, and other technical services. Some had been involved in project scoring for ARC and EDA transportation projects. One of the RTPOs noted that projects identified as ARC local access roads would be ideal for RTPO funding.

The most significant drawback cited by the RTPOs is that they are not provided an allocation of FHWA capital funds by ODOT. The RTPOs will be developing their first Regional Transportation Improvement Program (RTIP) in 2017 for SFY 2018-2021. This will provide for direct input from local governments in the program development process. The projects in the RTIPs will be consistent with the RTPO LRTP. The RTIPs are included in the ODOT Statewide TIP (STIP). While the lack of a direct allocation has presented a challenge to keeping the interest of local officials, the RTIP process is a significant step.

The RTPOs and ODOT cited the value of the organizations in providing the rural perspective and advocating for local needs that might otherwise be missed.

3.3 | PENNSYLVANIA

Pennsylvania has a long history of having the entire state being covered by either MPOs or RPOs. PennDOT's recognition of rural planning agencies as RPOs occurred after the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. There are now five RPOs in the state, as some met the population threshold to be designated as MPOs after the 2010 Census. The RPOs meet all the Federal requirements for RTPO designation, but neither they nor PennDOT sees any benefit from officially designating them. PennDOT funds the RPOs with SPR funds and provides half of the non-Federal match.

As in other states, these agencies have always performed a variety of planning tasks. Many began as EDA Economic Development Districts. They work in community development, workforce development, and environmental resource planning. There is broad agreement that transportation planning benefits from the interaction with these other planning functions.

The North Central Pennsylvania Regional Planning Development Commission is recognized as a national leader in rural transportation planning. They are involved in a wide range of transportation planning work, including the Coordinated Public Transit-Human Services Transportation Plan, greenway planning, a safety corridor analysis, an economic corridor analysis, and an inland port feasibility study.

The RPOs have adopted Public Participation Plans that include a Limited English Proficiency element like the MPO plans. PennDOT sees them as a valuable link to local rural communities, helping them focus on needs-based planning.

3.4 | WASHINGTON

Washington's 1990 Growth Management Act created the legislative basis for creation of its Regional Transportation Planning Organizations (RTPOs). While they use the RTPO name, they are not designated under Federal law. An RTPO in Washington covers both urban and rural areas and receives state funding in support of its planning efforts. Because an MPO covers an urbanized area, there are planning agencies that are designated as MPOs under Federal law and RTPOs under State law. RTPO members include cities, counties, Washington State DOT (WSDOT), tribal governments, ports, transportation service providers, private employers and others. Four of the RTPOs are entirely rural. WSDOT funds RTPOs within the State budget at a level of \$4.4 million/biennium. This has not been increased since 2003. Constituent counties provide in-kind services to support the RTPO organizations.

Each RTPO prepares a Regional Transportation Plan. They also work with their constituent counties to certify that the county comprehensive plans are consistent with the RTP. This ensures that planning goals, objectives, and performance measures are consistent across levels of government. The RTP update cycle is as follows: every two years there is a review

for currency of data and assumptions, every six years there is a full update. The update may be done sooner if needed. Content is similar to an MPO LRTP. Fiscal constraint is required, but not applied rigidly. WSDOT is in the process of updating its Washington Transportation Plan. The WTP does not include a project list, but seeks to align policies with the RTPO plans.

RTPOs develop a Regional Transportation Improvement Program (RTIP). These are not directly incorporated into the STIP, as there is a separate Capital Program Development process. RTPOs do not receive capital allocations; counties and cities must work with the RTPO to get projects on the RTIP.

WSDOT sees the benefits of RTPOs as:

- Allowing multiple counties that are resource poor to pool resources for things like GIS purchase and licensing;
- Model development for the entire region;
- Meeting state policy goals;
- Consistency of planning with available data, projects

The primary challenge is that available funding often does not provide for enough staff. While MPOs have other revenue sources like FHWA-PL, they often lose focus on their rural component. The fully rural RTPOs struggle to meet all of their planning responsibilities.

4.0 NOTEWORTHY PLANNING PRACTICES

Review of relevant literature and interviews of peer states has brought forth noteworthy practices in rural transportation planning, and institutional relationships between State DOTs and rural planning agencies.

4.1 | INSTITUTIONAL AND PLANNING PROCESS

States choose to meet the Federal planning requirement for consultation with nonmetropolitan local officials in a variety of ways. In some cases, there are simply periodic informal meetings between DOT field personnel and local government engineering and planning staff. Other states have chosen to develop a more formal process of collaborating with local officials. Finally, there are those, including the states interviewed for this project, that use either existing or newly created rural regional planning organizations in a fully institutionalized cooperative process.

As noted above, Ohio is the only state in which the Governor has designated RTPOs under Federal law. The action is the same as MPO designation, and the organizations act very similarly.

States including Washington and North Carolina have passed state laws regarding regional planning organizations to facilitate effective statewide transportation planning. In many cases, the requirements and practice are similar to that of Federal law.

Finally, there are states like Pennsylvania that cover the full geography of nonmetropolitan regions with RPOs, which are governed by neither state nor Federal law.

Thus, the effectiveness of rural regional planning and collaboration is not necessarily determined by the legal framework, but rather by the commitment of all parties to the accepted practice.

States that represent best practice in institutionalizing a collaborative process to facilitate effective transportation planning in rural counties recognize these benefits:

- The State DOT gains a single channel to communicate about rural transportation policy and program issues.
 - PennDOT involves all of the RPOs and MPOs in working groups to develop financial forecasts for LRTPs, performance management, UPWP development, and other topics. These forums facilitate striking a balance between urban and rural areas, large and small metros, and across modes.
 - North Carolina DOT participates in the quarterly meetings of the North Carolina Association of RPOs.
- The State DOT gains greater insight into the transportation needs of rural counties and communities. DOT Districts/Regions typically do not have enough staff to fully engage rural stakeholders, and therefore rely on RTPO/RPO as an intermediary.

- The development of LRTPs in rural regions provides the State DOT with input to its State Transportation Plan that is robust and publicly vetted, on par with MPO LRTPs.
- The development of Regional TIPs can result in greater consistency in project identification, selection, and programming for the STIP.
- The engagement of local elected officials from rural counties and cities through RTPO/RPO Boards creates a formal opportunity for two-way communication. Not only do the local officials have a forum for making the case for transportation improvements in their counties or cities, but the DOT also has a forum for explaining State policies, funding constraints and opportunities, and methods for project selection and management.

4.2 | SUBJECT-SPECIFIC BENEFITS

The exploration of the transportation planning and related work of RTPO/RPOs can be distilled into areas that create benefit for both rural counties and cities, and for the State DOT. [Note that the numeric citations refer to the Recent Literature Review, Section 2.2]

PUBLIC ENGAGEMENT

A core value of planning is engaging the public and stakeholders in meaningful communication throughout the process of developing plans and programs. Outreach helps planners understand community needs, and also helps the public understand what the agency hopes to accomplish, and what constraints it is operating under. The new paradigm of performance-based planning makes it particularly important for the planning agency to look at the transportation system from the user perspective, recognizing that the measure of success is not programming and constructing transportation projects, but documenting the impact of the projects on safety, mobility, access, or system preservation.

State DOTs face challenges in achieving effective public outreach in rural areas. First, the DOT is often seen as a distant organization by rural people, when the District/Region office may be in a different county. Second, the DOT's investment priorities are often seen as heavily weighted to urban needs. Finally, it can be difficult to generate interest in planning topics that the public does not see as having a direct or immediate impact on their lives.

Using RTPO/RPO staff to lead public outreach has proved beneficial. Citizens often feel closer to the regional planning agency. These agencies may have engaged them on other topics ranging from Area Agency on Aging, to workforce development, to stormwater planning. The following approaches have proven useful in engaging the rural community through public outreach:

- Communicate the information that resonates with the audience, bringing them together by offering incentives, food, time for socializing/community connection, and an accessible location for public engagement events. [12, 16]
- Reach out specifically to the young, disabled, elderly, and other potentially transportation-disadvantaged communities. [16]

- Employ a variety of media and other approaches to maximize community engagement with different types of citizens. This may include using surveys, and attending events in rural areas like fairs and farmers' markets [16, Twin Rivers-Ottauquechee Regional Council VT]
- Using online platforms for communication is an important way to overcome rural travel distances, but must be balanced in regions where there is limited broadband coverage. North Central Pennsylvania RPDC created an online portal branded *Engage North Central PA* that they tested for two years. Enhancements to the agency website ended the use of the portal. [16, 25, 27]
- Using partner agencies to expand outreach efforts. The NCPRPDC Participation Plan³ states the value in reaching the underserved rural population from working with housing authorities, the Workforce Development Board, and community groups. Similarly, North Carolina's Triangle Area RPO's Public Involvement Plan⁴ includes a list of stakeholders that include organizations like Chambers of Commerce and Economic Development Corporations that not only participate directly but can act as communications conduits to their members and others.

ECONOMIC DEVELOPMENT

Rural counties vary from high levels of economic activity to those that are depressed and have a large percentage of low-income households. In either case, there is a role for transportation planning that RTPO/RPOs can facilitate. As noted above, many of these agencies started as EDA Economic Development Districts before they assumed a transportation planning function. Having an in-house linkage between these planning functions is particularly beneficial. The State DOT may be called on to provide improved access for both workforce and freight to a proposed development site. In many parts of the country, rural counties are home to recreational and tourism venues that generate significant economic activity and create traffic congestion. Some of these locations are seasonal, others are year-round. The RTPO/RPO may be in the best position to do the required analysis, often with technical assistance from the DOT. They may also influence the project prioritization process to recognize rural needs.

- Economic development: Even small transportation projects in rural areas can significantly impact economic development, tourism, and local business. The regional agency can communicate local needs and impacts to the DOT that may influence project prioritization or project scope/design. [16]
- Regionalism: Individual counties, cities, or government sub-units may compete for new development to enhance their tax base, even when the transportation and other impacts will be regional. RTPOs can facilitate a regional approach to major development challenges, especially with a focus on acknowledgement of shared benefits and costs among the agencies involved. [24]

³ <http://199.115.61.236/wp-content/uploads/2016/09/FINAL-2016-NCPPP-Update-12JULY2016.pdf>

⁴ <http://www.tarpo.org/docs/pubinvplan.pdf>

- **Growth:** Planning is critical in rural areas because unplanned growth can bring more VMT than the roadways can support. RTPOs can assist in making the land use – transportation linkage understandable to local officials. This can result in planning for growth that can be best accommodated by existing public facilities, or prioritizing transportation investments to either encourage or respond to planned growth locations. [11]
- **Energy Development:** Rural counties are the site of both traditional energy extraction (coal, oil and gas drilling and fracking) and new alternative energy infrastructure (i.e., wind turbines, large scale solar arrays). This industry can create a high volume of truck trips, including oversize and overweight loads. The RTPO can work with the State DOT to analyze the impact of these loads on local roads and bridges in the region. [20]

RURAL PUBLIC TRANSPORTATION AND ALTERNATIVE MODES

It is a challenge to provide public transportation in rural settings because of low density of population and long trip distance. Transit can fill a critical transportation gap for elderly, low-income, and other underserved rural citizens. RTPO/RPOs can bring planning expertise to help decision makers understand what is feasible, the costs of different service models, and the benefits to area residents. Some RTPO/RPOs do a Coordinated Public Transit – Human Services Transportation Plan, which is required for MPOs. These plans not only identify service gaps but can also find available transportation resources that were not otherwise apparent.

- A study in Dakota County, Minnesota recommended forming a “county coordinating collaborative” to organize regional human service transportation. Coordinating transit by region helps to appropriately scale services for different types of places, maximize both the effectiveness of the service and the efficiency of operating it, and balance resources and capacities as needed. [8, 26]
- **Rural elder transportation:** “Individualized outreach” is an important technique in addressing the transportation needs of the rural elderly, a group that often tends to be isolated. This requires paying attention not only to the resources they need to access, including healthcare, shopping, and financial services, but also to factors like personal preference and social/community connection when determining how best to provide transportation. The Boonslick (Missouri) RPC created a Mobility Manager position to perform this service, devising plans to meet individual needs. [21, 23]
- Most rural transit services have long mileage and less frequent service. They may benefit from a more compact structure and local knowledge compared with bigger systems, but they are relatively lacking in capacity and resources. RTPOs may be able to supply the analysis. [2, 8]
- Rural demand-response transit service is most often oriented toward meeting human service needs. This may be critical for seniors and others, but typically does not accommodate workforce needs for unemployed rural residents who do not drive. [2, 8, 26]

- Alternative Transportation Modes: Interest in ridesharing, bicycle and pedestrian infrastructure, and other alternative modes is on the rise even in rural areas. With proper planning and community involvement, making these modes available can improve transportation safety by offering an alternative to those who should not be driving but have no other transportation option (i.e. driving under the influence, elderly drivers). [16]
- Alternative Transportation Modes: RTPOs may be able to identify locations where a multiuse path can serve both commuting and recreational needs, benefitting the regional economy and community quality of life. They have also been effective in finding grant funding for these facilities. For example, NCPRPDC works with the Pennsylvania Department of Conservation and Natural Resources to obtain greenway grants for its members.

PERFORMANCE BASED PLANNING

MAP-21 created a requirement, since defined through a series of rulemakings from FHWA and FTA, that States and MPOs conducted a performance-based planning and programming process. This is done to support seven National Goals, through identified performance measures and a requirement that States set performance targets for each.

There is no requirement for rural planning organizations to do performance-based planning and programming, but they can assist the State DOT by taking that approach. As discussed by NADO [12], this activity is occurring in a number of states.

California provides a useful perspective. The California Transportation Commission (CTC) adopted a set of performance measures that were based primarily on the needs of urban areas. The California Rural Counties Task Force were concerned that these performance measures did not meet their specific needs, and commissioned a study to develop performance measures applicable specifically to rural areas in the state. The study consisted of reviewing existing performance measurement practices in rural counties, assessing available planning resources for data collection and analysis to produce performance measures, establishing criteria for assessing potential performance measures, recommending performance measures, and examining potential future performance measures. The recommended performance measures were adopted in total by the CTC.

5.0 SUMMARY

This report summarizes a literature review that begins with work done for the FHWA Office of Planning “RTPO State of the Practice” project in 2013-2014. It then adds new sources from subsequent years through 2017. The review spans rural transportation planning practice, institutional arrangements, and content.

The project team also conducted interviews with peer states and regional planning agencies across the country. These are combined with interviews completed for the FHWA project.

The result is the identification of noteworthy practices in rural transportation planning that highlight the benefits to both the State DOT, the RTPO/RPO, and rural citizens.

Fact Sheets produced for the FHWA RTPO State of the Practice can be found at https://www.planning.dot.gov/documents/RTPO_factsheet_Master.pdf

6.0 INTERVIEW CONTACTS

North Carolina

- North Carolina DOT: Jamal Alavi, Director, Transportation Planning Division
- North Carolina Association of RPOs: Dana Stoogenke, Chair
- Rocky River RP: Dana Stoogenke, Transportation Planning Director

Ohio

- Ohio DOT: David Moore, Statewide Planner
- Buckeye Hills RTPO: Karen Pawloski, Transportation Planning Coordinator
- Maumee Valley Planning Organization: Ellen Smith, Deputy Director
- Ohio Valley Regional Planning Commission: Malcolm Meyer, Transportation Planning Coordinator

Pennsylvania

- Pennsylvania DOT: Jim Ritzman, Deputy Secretary for Planning
- North Central Pennsylvania Regional Planning Development Commission: Amy Kessler, Director of Regional Development and Community Planning

Washington

- Washington State DOT: Matt Kunic, Director, Tribal and Regional Coordination Office