Transportation Planning Capacity Building (TPCB) Peer Program

Megaregions Planning for MPOs and Partners

A TPCB Peer Exchange

Location: Phoenix, Arizona

Date: May 9-10, 2012

Host Agency: Maricopa Association of Governments (MAG)

Peer Agencies: Atlanta Regional Commission (ARC)
Delaware Valley Regional Planning Commission (DVRPC)
Greater Buffalo-Niagara Regional Transportation Council (GBNRTC)
Pikes Peak Area Council of Governments (PPACG)
San Diego Association of Governments (SANDAG)

Federal Agencies: Federal Highway Administration (FHWA)
Federal Transit Administration (FTA)
Volpe National Transportation Systems Center (Volpe Center)

U.S. Department of Transportation
Federal Highway Administration • Federal Transit Administration

Table of Contents

1. Introduction **1**

2. Background on Megaregions Planning **1**

3. Overview of the Megaregions Planning for MPOs and Partners Peer Exchange **2**

4. Examples of MPO Planning for Megaregions **4**

Atlanta Regional Commission (ARC) 4

Delaware Valley Regional Planning Commission (DVRPC) 6

Greater Buffalo-Niagara Regional Transportation Council (GBNRTC) 9

Maricopa Association of Governments (MAG) 10

Pikes Peak Area Council of Governments (PPACG) 13

San Diego Association of Governments (SANDAG) 15

5. Key Themes **18**

Enhancing Economic Competitiveness is a Key Goal 18

Improved Transportation of Freight is a Key Concern for Megaregions 19

Establish New Governance without Creating New Government 20

Partnerships Develop out of Necessity and Opportunity 20

Megaregion Boundaries are Flexible 21

Important Role for MPOs, but they may not be the most Logical Long-Term Leaders 21

Megaregions Need a Champion 21

Alternative Transportation Modes Play an Important Role 21

Link Megaregion Planning to Land Use and Transit 22

Megaregion Partnerships Can Address More than Transportation 22

6. Potential Opportunities and Next Steps **23**

Find Common Goals among Diverse Partners 23

Develop Forums for Sharing Information and Best Practices 23

Study Disaster Response, Climate Change Planning and European Examples 23

Power in Numbers 24

Consider a Pilot Project for a Megaregion Investment Plan 24

Develop a Framework for Megaregion Collaboration between Federal Modal Agencies 24

Engage Federal Land Management Agencies and U.S. Military Installations 24

Technical Tools, Data and Models for Freight Planning are needed to Advance 25

Megaregion-scale Vision and Scenario Planning 25

7. Transportation Planning Capacity Building (TPCB) Program **26**

8. Appendix **27**

A. Agenda 27

B. Key Event Contacts 31

C. Agency Website and Resource Links 33

D. Acronyms 34

1. Introduction

This report summarizes key themes from a peer exchange on Megaregions Planning for Metropolitan Planning Organizations (MPOs) and Partners, in Phoenix, Arizona on May 9-10, 2012.

This two-day peer exchange was hosted by the Maricopa Association of Governments (MAG) and involved representatives from the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Atlanta Regional Commission (ARC), Delaware Valley Regional Planning Commission (DVRPC), Greater Buffalo-Niagara Regional Transportation Council (GBNRTC), Pikes Peak Area Council of Governments (PPACG), San Diego Association of Governments (SANDAG), The Center for Quality Growth and Regional Development (CQGRD) at the Georgia Institute of Technology, U.S. DOT Volpe National Transportation Systems Center (Volpe Center), as well as approximately 30 participants from local Arizona governments, transportation agencies and transit agencies. The purpose of the exchange was to share innovative approaches by MPOs and their partners to planning for megaregions -- their motivations, results, and insights for national peers.

The event was sponsored by the Transportation Planning Capacity Building (TPCB) Program, which aims to advance the state of the practice in multimodal transportation planning nationwide. The TPCB Program is jointly funded by the FHWA and FTA.

2. Background on Megaregions Planning

The movement of people, goods, and information has rapidly changed during the beginning of the 21st century due to globalization and technology advances. These changes have led to new ideas about the interdependence of metropolitan areas, and the smaller communities and rural areas that lie in-between them. These larger agglomerations are commonly known as megaregions. Although the megaregions concept is not new, policy makers, planners, and businesses increasingly accept it is as a valuable way to approach challenging transportation issues and opportunities that extend beyond the boundaries of existing institutions for transportation planning and decisionmaking.

CQGRD, a leading center for research on megaregions defines the concept as:

> ***"Megaregions are large networks of metropolitan centers and their surrounding areas connected through cultural, environmental, and economic characteristics as well as major infrastructure.[1]"***

In contrast to State, MPO, county, and city boundaries, there is no universally accepted definition or formal boundaries for megaregions. The boundaries served by current institutions responsible for transportation planning are historical and legally established: metropolitan planning areas served by MPOs are related to the U.S. Census Bureau's Urban Area delineation, which relies on formal geospatial and demographic criteria. State boundaries served by State Departments of Transportation (DOTs) are defined historically and legally.

[1] http://www.cqgrd.gatech.edu/program_areas/megaregions/history.php

Transportation policies, funding programs, regulations, and roles and responsibilities correspond to these existing institutions and boundaries; no formal institutions exist to address issues that transcend them.

There has been extensive research to identify megaregions based on population, economic, or mobility forecasts, but there is no single agreed upon set of criteria and resulting set of boundaries. Using different criteria, researchers have delineated boundaries for between 8 and 24 U.S. megaregions. However, in the absence of Federal requirements for megaregions planning, the exact boundaries may be less important than the partnerships that MPOs choose to form to address interjurisdictional planning issues.

Impetus for MPOs to participate in megaregions planning can come from political priorities and leadership, common goals and concerns, and the potential for productive partnerships between MPOs or with other partners. Research by the Volpe Center for FHWA on participation by MPOs in megaregions planning indicates that MPOs are taking a fluid approach to determining megaregions of interest and a practical approach to determining how and when to participate in planning for megaregions.

3. Overview of the Megaregions Planning for MPOs and Partners Peer Exchange

The Volpe Center worked with MAG, the FHWA Office of Planning, FHWA Arizona Division Office, FTA Office of Planning, and FTA Region IX Office to identify peer MPOs, speakers, and participants with knowledge and interest in megaregions transportation planning. The goals of the peer exchange were to:

- Provide senior and executive staff from MPOs involved in transportation planning at a megaregion scale an opportunity to interact with one another and learn from one another's work.

- Provide a forum for presenting "best practices" in planning by peer MPOs for MAG staff and partners from the Arizona DOT, other MPOs and regional planning agencies, regional transit agencies, and local areas.

- Share how each MPO approaches megaregion-scale projects, including their motivations; practices for collaboration among MPOs, partners, and stakeholders; examples of successful projects; and challenges and opportunities for continuing and future efforts.

- Identify research, technical assistance, or policy guidance needed to advance the practice of megaregion-scale transportation planning.

The peer exchange featured senior MAG staff persons, three special guest speakers and senior representatives from five peer MPOs:

Special Guest Speakers

- **Hon. Hugh Hallman,** Mayor, City of Tempe, Arizona
- **Catherine Ross, Ph. D. ,** Director and Harry West Chair, CQGRD
- **Hon. Scott Smith,** Mayor, City of Mesa, Arizona

Peer MPOs

- **Michael Boyer,** Manager, Office of Long-Range Planning & Economic Coordination, DVRPC
- **Jared Lombard,** Principal Planner, Land Use Division, ARC
- **Robert MacDonald,** Executive Director, PPACG
- **Hal Morse,** Executive Director, GBNRTC
- **Charles "Muggs" Stoll,** Director of Land Use and Transportation Planning, SANDAG

The five peer MPOs were selected based on case study research by the Volpe Center, which was presented at the 2012 Transportation Research Board (TRB) Annual Meeting and will be published by TRB in 2012. The research will also be included in an upcoming white paper, with detailed case studies, for the FHWA Office of Planning.[2] The MPOs each represent a different U.S. megaregion and are engaged in partnerships with neighboring MPOs, State DOTs, transit agencies, local governments, the private sector, foreign transportation agencies or Federal border control agencies to advance inter-jurisdictional transportation planning in their megaregion.

The peer exchange also featured senior representatives from several of MAG's Arizona partners in megaregion transportation planning:

- **Arizona Department of Transportation (ADOT)**
- **Maricopa County**
- **City of Phoenix Public Transit Department**
- **Pima Association of Governments (PAG)**
- **Pinal County**
- **Valley Metro Rail**
- **Valley Metro Regional Public Transit Authority**

The peer exchange took place over two days, and included a welcome from the host and sponsors, an introduction and overview from the peer exchange facilitator, addresses from the special guest speakers, presentations from MAG and the five peer MPOs, and panel discussions and small group breakout sessions on selected topics (See Appendix A for the agenda).

[2] To be posted on the TPCB website in late 2012.

A major feature of the peer exchange was presentations from MAG and each of the five peer MPOs on their megaregions transportation planning activities. Each MPO representative addressed the following points:

- MPO background and megaregions activities
- Big picture – trends, challenges, needs
- Examples of successful megaregions projects/programs
- Challenges and opportunities

The peer exchange featured four panel discussions on specific topics relevant to megaregions transportation planning. Panel topics included:

- Partnerships and Governance
- The Role of Alternative Modes in MPO Planning for Megaregions
- Freight Planning in a Megaregions Context
- Implementation: Opportunities and Barriers

On day two of the peer exchange, participants split into five small groups to allow discussion on focused topics of interest. Topics for these “breakout sessions” included:

- Data, models and technical tools
- Political implementation/breaking down barriers
- Vision and scenario planning for megaregions
- Megaregions links to livability (transit links to intercity bus and High-Speed Rail, land use implications)
- Working with stakeholders and citizens (public participation, Tribal governments, rural areas)

4. Examples of MPO Planning for Megaregions

Below are highlights of the megaregion planning activities of the peer exchange MPOs.

Atlanta Regional Commission (ARC)

ARC, representing the Atlanta, Georgia metropolitan area, is located in the Piedmont Atlantic Megaregion (PAM). PAM stretches across six southeastern States, including all of Alabama, Georgia, Tennessee, North and South Carolina and northern Florida. The core area of PAM includes the large metropolitan areas of Atlanta, Birmingham, Charlotte, and Raleigh, as well as the areas in-between and proximate to them, and the larger megaregion encompasses 60 MPOs in total (Figure 1). The metropolitan areas in PAM are typically younger urban areas that have experienced significant population and development growth in recent decades. The key challenge for the megaregion is to accommodate a forecasted 100% increase in population that is projected over the next 40 years, while maintaining economic competitiveness.

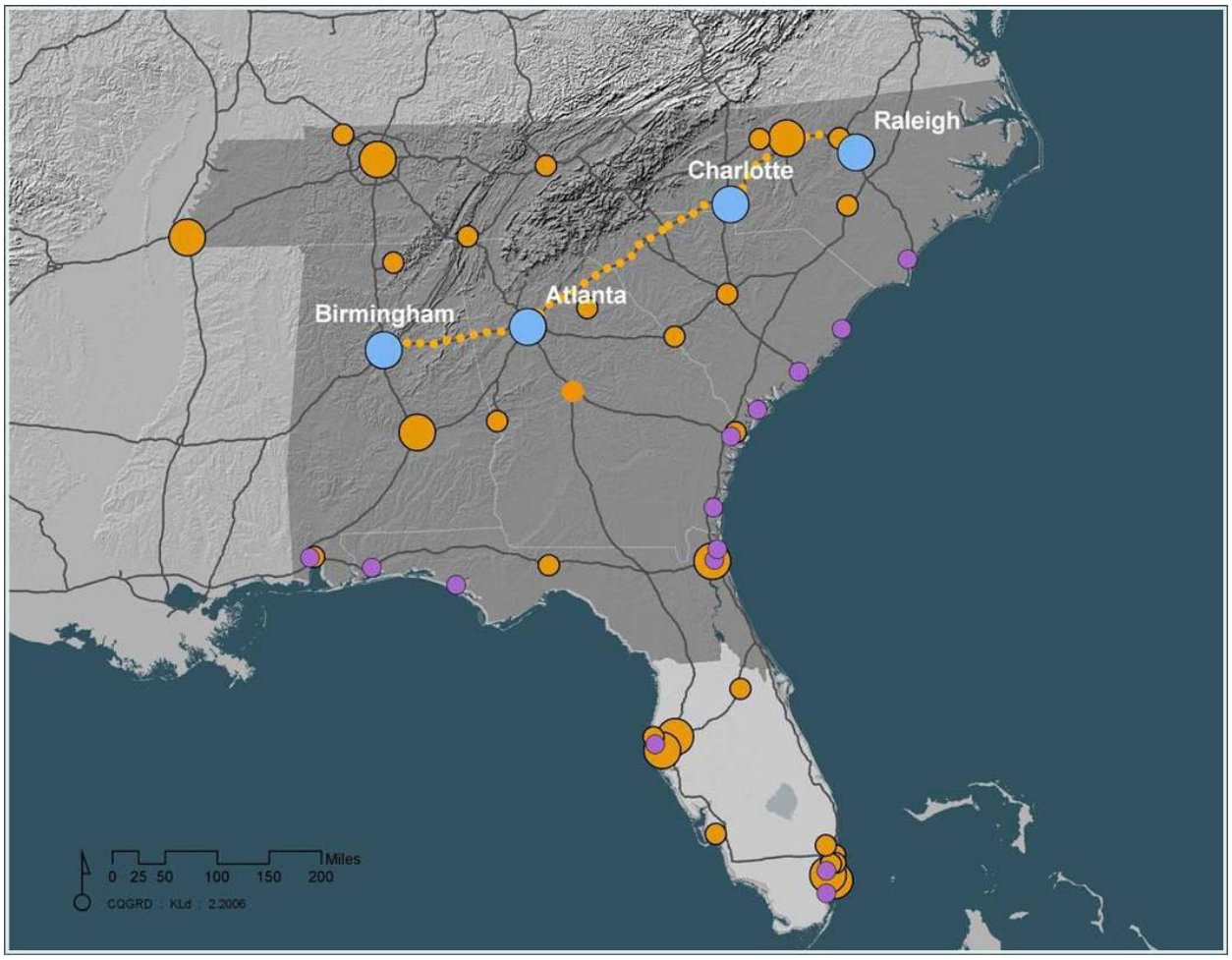

Figure 1: Map of metropolitan areas in the Piedmont Atlantic Megaregion (PAM)
SOURCE: Atlanta Regional Commission

Megaregion Projects

ARC has been instrumental in efforts to organize States, MPOs, local governments, educational institutions and business leaders in PAM to work together to address inter-regional issues that are important to the future growth and prosperity of the megaregion. Key projects that ARC participates in at a megaregion scale include:

- **Piedmont Alliance for Quality Growth** – A coalition of government, academic, and business leaders dedicated to building interregional alliances to improve the economic competitiveness of PAM in the global market. The three major topics addressed are transportation, water, and energy.

- **Fifty Forward Metropolitan Atlanta** – A long-term visioning process led by ARC to develop a 50-year vision for the Atlanta metropolitan area and the wider megaregion. Topics addressed include transportation, health, energy, land use and environment.

- **Apalachicola Chattahoochee Flint (ACF) Stakeholders Group** – A forum of stakeholders convened around water resources sustainability issues in the Apalachicola, Chattahoochee and Flint River basins.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- There is no current local political champion for megaregions planning in the Atlanta metropolitan area due to electoral changes.
- Expansion of the Panama Canal is igniting competition between Atlantic ports in PAM and weakening the cooperative atmosphere.
- On-going interstate litigation over water rights creates tension between partners.
- Growth in population has vastly outpaced infrastructure capacity.
- Economic recession has limited funding and staff resources for megaregions efforts.

Delaware Valley Regional Planning Commission (DVRPC)

DVRPC is the MPO for the Philadelphia, Pennsylvania and Trenton, New Jersey metropolitan areas and is located in the United States' most densely-populated megaregion, the Northeast Megaregion. Several of the most populous metropolitan areas in the U.S. are located in this megaregion, aligned along Interstate 95 (I-95) from Boston, Massachusetts to Washington, D.C. In recent decades, urban sprawl has been a challenge for many of the metropolitan areas in the Northeast Megaregion. While most of the older, large metropolitan areas in the megaregion have experienced moderate population growth, the rate of expansion and conversion of formerly rural lands to urban uses has accelerated many times faster than population growth, causing many urban areas to blend together and overlap.

The larger metropolitan areas in the Northeast Megaregion share many similar qualities. Most have large universities, a high share of high-tech jobs, and extensive multi-modal transportation infrastructure networks, primarily built during the first half of the 20th Century, which have not been adequately expanded or maintained over time.

Megaregion Projects

The DVRPC planning area contains 352 municipalities in nine counties, across two states, and was formed in 1965 by an interstate compact between Pennsylvania and New Jersey. Thus DVRPC has always had a cross-jurisdictional perspective and has increasingly reached out to neighboring MPOs to coordinate transportation planning in the megaregion. Some examples of megaregion projects DVRPC has been involved in include:

- **Planning at the Edge** – A collaborative effort between nine MPOs in the Northeast Megaregion (Figure 2), stretching from New York City to Baltimore to identify and address cross-boundary transportation planning issues. The group has addressed diverse topics including regional transit, climate change considerations, and developing a shared long-range transportation vision for the Northeast Megaregion.

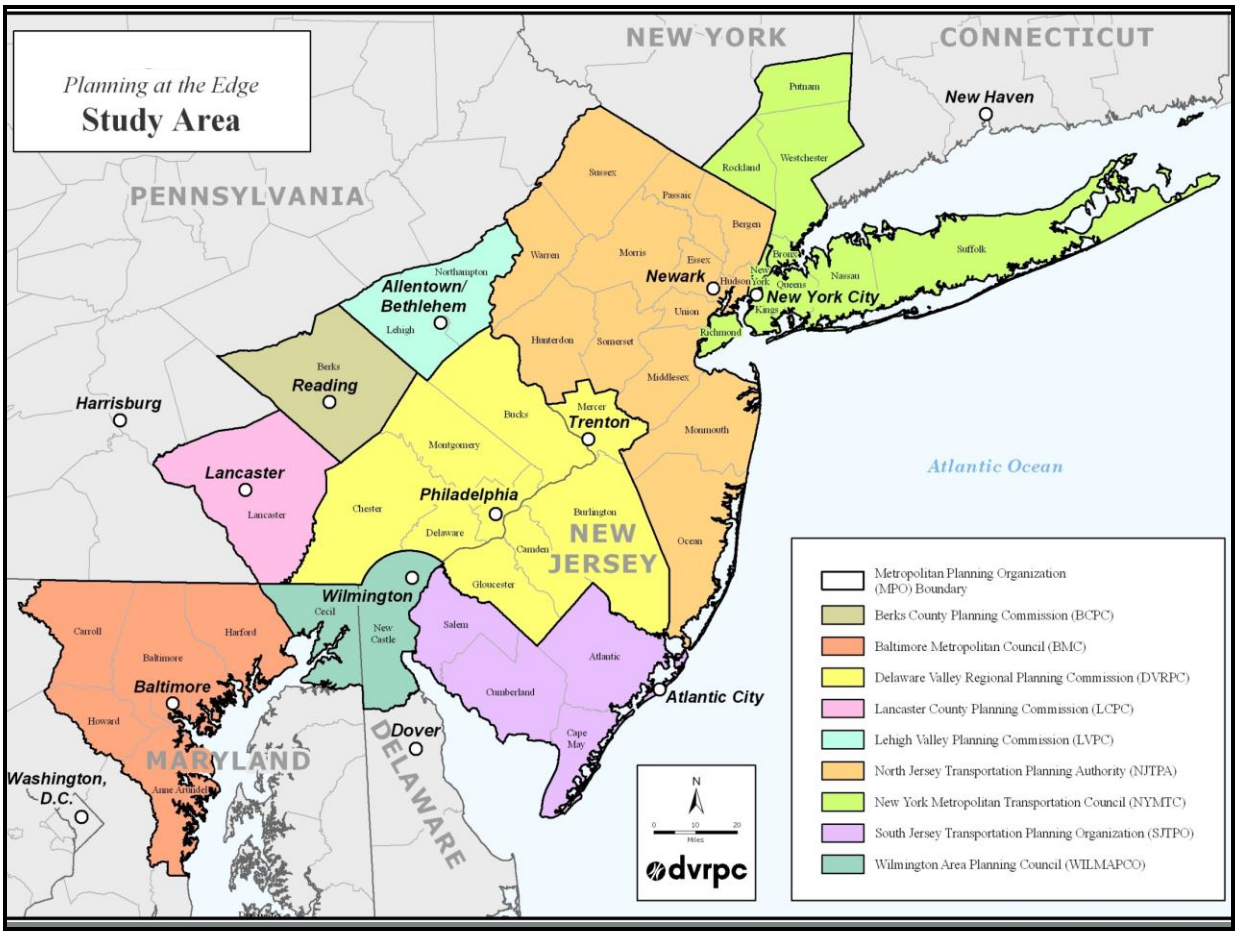

Figure 2: Map of DVRPC's *Planning at the Edge* study area
SOURCE: Delaware Valley Regional Planning Commission

- **I-95 Corridor Coalition** -- DVRPC participates in this large alliance of transportation agencies, toll authorities and their partners, focused on improving long-distance transportation in the I-95 Corridor. The coalition originally focused on the Northeastern portion of I-95, and concentrated on transportation management and operations issues. In more recent years, the coalition has expanded to include the entire length of I-95 and has begun to address multi-modal transportation and policy issues as well.

- **Air Quality Partnership** – Environmental Protection Agency (EPA) air quality conformity regulations require DVRPC to coordinate with neighboring MPOs because most of the megaregion is in air quality nonattainment or maintenance areas. These areas often cross political or MPO planning boundaries. MPOs in the megaregion have collaborated well on air quality conformity. Many of the MPOs administer public-private Air Quality Partnerships and education campaigns, collaborate on air quality forecasting and share promotional and advertising materials.

- **Delaware Valley Goods Movement Task Force** – The Task Force embodies a 20-year effort to enhance understanding of freight flows in the megaregion. This task force involves shipping firms, railroads, ports, and transportation agencies which come together to exchange knowledge and ideas.

- **Central Jersey Transportation Forum** -- This collaboration between DVRPC and the North Jersey Transportation Planning Authority began with a joint corridor study, but has continued for over 15 years, addressing numerous issues of joint concern including coordination of land-use planning with transportation, and transit service coordination.

- **Megaregion Aviation Planning** -- Early DVRPC megaregion-scale projects grew out of a mandate from the Federal Aviation Administration (FAA) to examine a commute shed that extended beyond its planning boundaries. DVRPC formed a regional aviation committee with neighboring MPOs to develop an aviation master plan.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- DVRPC defines different boundaries for each partnership, choosing the appropriate scale for the issues being addressed.
- Many of DVRPC's early megaregion planning projects focused on specific corridors or projects. However, the focus has shifted somewhat to larger policy issues.
- Limited staff resources are a major challenge for megaregion planning initiatives, particularly for smaller MPOs. A strategy to encourage sustained participation could be to hold more meetings online via webinar.
- The lack of a Federal mandate or dedicated funding sources makes megaregion-scale planning hard to justify during tough economic times. Additional Federal direction and support is needed.

Greater Buffalo-Niagara Regional Transportation Council (GBNRTC)

GBNRTC is the MPO for the Buffalo-Niagara region in New York State and is part of the bi-national Greater Golden Horseshoe megaregion, which includes Rochester and Syracuse, New York, and Toronto and Hamilton, Ontario, Canada (Figure 3). Despite being separated by an international border, the communities in the Greater Golden Horseshoe have strong economic connections, a shared history, and similar industries.

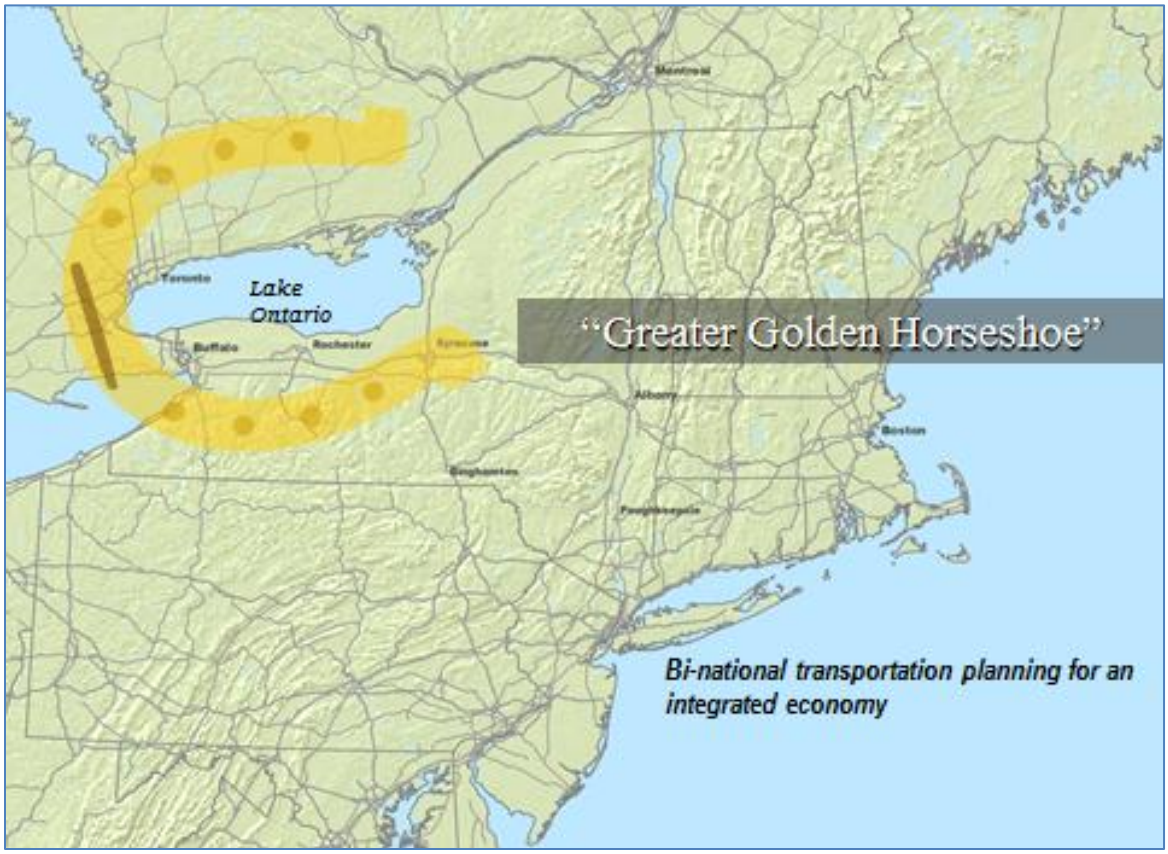

Figure 3: Map of the Greater Golden Horseshoe Megaregion
SOURCE: GBNRTC

The international crossings in the Niagara Frontier are critical economic links for the megaregion, the U.S., and Canada. Manufacturing, tourism, grape production and winemaking, education, and sports are all major economic drivers on both sides of the border, with many industries relying on cross-border supply chains and significant customer bases in both the U.S. and Canada. Cross-border communication and collaboration is essential to supporting the bi-national economy of the Greater Golden Horseshoe, and GBNRTC regularly engages with partners on both sides of the border to meet the needs of the people and business in the megaregion.

Megaregion Projects

Some examples of the megaregion-scale planning partnerships in the Greater Golden Horseshoe include:

- **BiNational Transportation Coordinating Group** – In 2001, the New York State Department of Transportation (NYSDOT) and Ontario Ministry of Transportation convened a summit to begin binational transportation planning collaboration. This led to the creation of a binational working group to oversee the development of a BiNational Transportation Strategy. This formal strategy addresses existing and future border crossing conditions, connectivity to population, economic and recreational centers, mode choice availability, and network redundancy and capacity.

- **Cooperative Corridor Planning** – GBNRTC works with neighboring MPOs in New York State and authorities in Ontario to study and improve major transportation corridors leading into and out of the Buffalo-Niagara region on both sides of the international border.

- **Niagara International Transportation Technology Coalition** – A highway operations coalition dedicated to improving highway efficiency and safety. Member agencies include NYSDOT, the Ontario Ministry of Transportation, local governments, transit providers, and bridge and toll authorities that work together to coordinate Intelligent Transportation Systems (ITS) and traffic incident management services.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- Transportation performance measures need to be re-oriented to better address the megaregion scale.
- FHWA's Corridors and Borders funding program has been an essential funding mechanism for GBNRTC's megaregion transportation planning activities.
- Formalizing the BiNational Transportation Strategy was a big part of the initiative's success and led to long-lasting collaboration on transportation and other megaregion issues (e.g., environmental and land-use planning).
- Next steps for the Greater Golden Horseshoe megaregion include developing a system for better coordinated border management, and to develop a cooperative mechanism for funding and implementing projects of megaregion importance.

Maricopa Association of Governments (MAG)

MAG, representing the Phoenix, Arizona metropolitan area, is located in the Sun Corridor megaregion. The Sun Corridor stretches southeast from Phoenix through Pinal County and Tucson to the Mexico border, and northwest towards California and Nevada (Figure 4). Between 2000 and 2010 the population of the Sun Corridor nearly doubled, and it is projected to double again by 2050. As population in the Sun Corridor has increased and economic patterns have changed, the cities and rural areas in the Sun Corridor have grown together and become more

interconnected. MAG's megaregions planning activities seek to build more collaborative relationships within the Sun Corridor to advance economic competitiveness and improve quality of life.

Figure 4: Arizona's Sun Corridor Megaregion
SOURCE: Maricopa Association of Governments

Megaregion Projects

The MPOs and regional Councils of Governments (COGs) that represent the Sun Corridor, most notably MAG, PAG and the Central Arizona Association of Governments (CAAG), have formed collaborative relationships with ADOT to address inter-regional challenges and opportunities. These partnerships often focus on improving transportation to support economic development and improved quality of life. Key projects include:

- **The Joint Planning Advisory Council (JPAC)** – An informal partnership between MAG, PAG and CAAG that helps coordinate megaregions planning initiatives in the Sun Corridor.

- **Building a Quality Arizona (BQAZ)** – A Statewide effort to project long-term travel demand and infrastructure needs, with a focus on inter-regional travel. BQAZ promotes the use of a common modeling platform, originally developed by MAG, to standardize data formats and improve the ability of MPOs, COGs and ADOT to collaborate on megaregion-scale transportation issues. BQAZ has helped prioritize Statewide transportation planning and investments and identified the need to develop alternative transportation options in the Sun Corridor.

- **Freight Framework Study** – A megaregion-scale freight study focused on identifying and capitalizing on opportunities to improve the economic competitiveness of the Sun Corridor through improved freight flows. This cooperative effort involves MAG, PAG, CAAG, ADOT, and Nogales, Mexico, the primary border crossing between Mexico and the Sun Corridor. The study identified opportunities for the Sun Corridor to develop an inland port for freight traffic, given its location at the intersection of major east-west and north-south highway and rail corridors.

- **Passenger Rail Corridor Study** – ADOT is cooperating with MAG, PAG, CAAG and local governments between Tucson and Phoenix to study options for establishing an intercity passenger rail corridor between Phoenix and Tucson. The effort began as a Federal Railroad Administration (FRA) concept to link two nodes. However, as partnerships were established, the project grew to address the needs of areas in-between, and over time has transitioned into a regional discussion on transit service to provide links to stops on the proposed rail line.

- **Intermountain MPOs** – MAG participates in a forum for Transportation Management Agencies (TMAs) located in the Intermountain West region. This group includes 12 MPOs from seven western States (Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, and Washington) that meet to share ideas and coordinate efforts.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- Megaregion planning is about forming better relationships between regions. The JPAC and megaregion-scale planning efforts have improved the ability of stakeholders to work together for a common good.
- Many of the political and revenue incentives for local governments reward competitive behavior within the megaregion (e.g., competition for large employers). These incentives need to be changed to reward collaboration and working together to achieve mutual goals.
- The recent economic recession forced local, regional and State governments in the Sun Corridor to focus more on working together to find creative solutions in a more limited funding environment. The focus is beginning to shift from competition within the megaregion to realizing a megaregion that is more competitive with other megaregions globally.

Pikes Peak Area Council of Governments (PPACG)

PPACG is the MPO for the Colorado Springs metropolitan area and part of the emerging Front Range Megaregion, which extends north-south from Cheyenne, Wyoming, through Fort Collins, Denver and Colorado Springs, Colorado, and onward south to Albuquerque, New Mexico. As the population of these metropolitan areas grows, development is spreading along the megaregion's primary transportation corridor, Interstate 25 (I-25), narrowing the distance between metropolitan areas, threatening the loss of open space, and resulting in more frequent inter-regional travel (Figure 5).

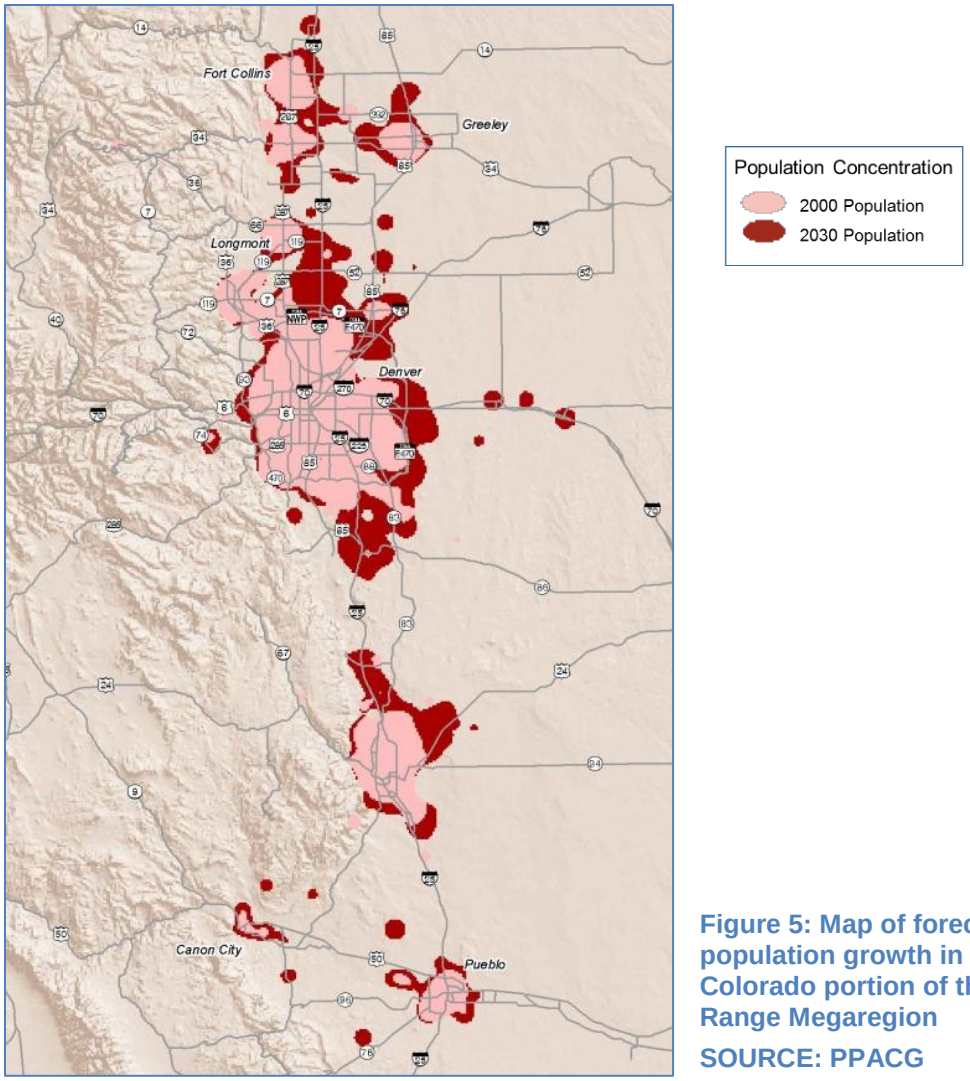

Figure 5: Map of forecasted population growth in the Colorado portion of the Front Range Megaregion

SOURCE: PPACG

Geography is important in the Front Range Megaregion, where metropolitan areas are aligned along I-25, which parallels the Continental Divide: the transition from the Great Plains to the Rocky Mountains. This natural barrier helps define the megaregion by concentrating development, but it also limits options for expanding transportation capacity. As population and economic activity increases, I-25 is becoming increasingly congested.

Megaregion Projects

- **Military Impact Planning** – The Front Range Megaregion is home to numerous U.S. military bases and installations, typically located outside the planning boundaries of MPOs (Figure 6). Some of these facilities have large expansions planned, most notably Fort Carson, south of Colorado Springs. PPACG is collaborating with the Pueblo Area Council of Governments (PACOG), local municipalities and school districts, and business and community leaders to prepare for the service delivery impacts of these planned military base expansions. PPACG also meets regularly with base commanders to discuss the needs of the military community and has received funding from the Department of Defense to assist military bases in planning transportation and many other services for their communities.

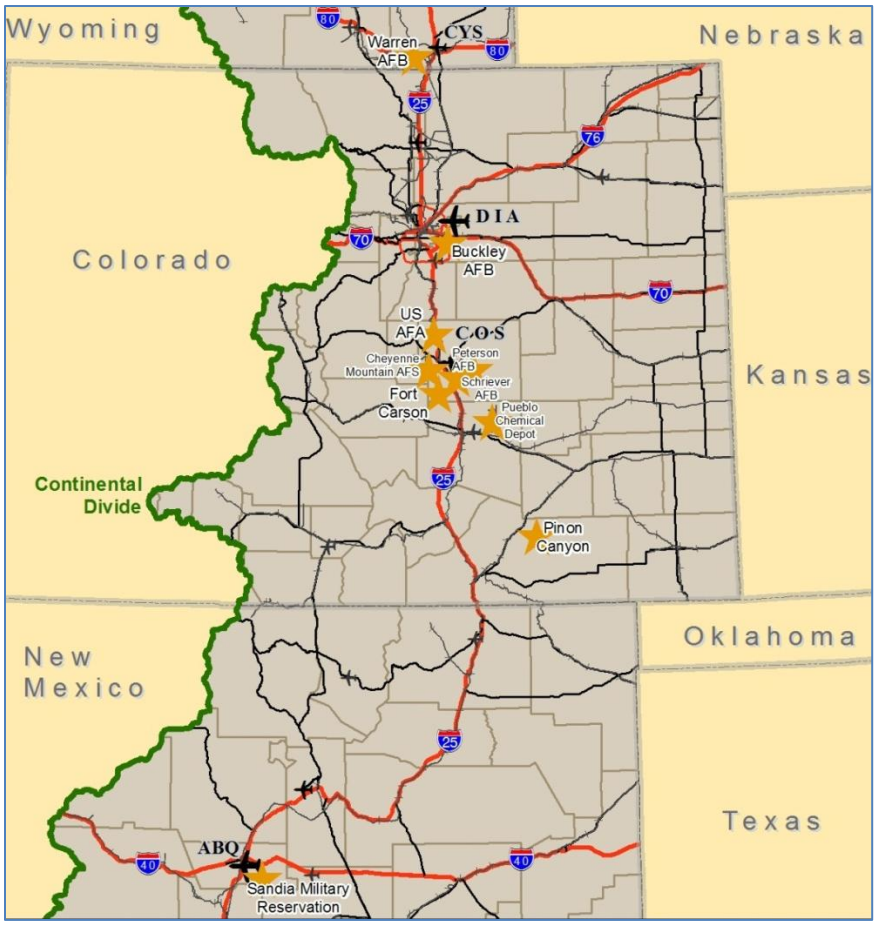

Figure 6: Map of U.S. Military installations and airports in the Front Range Megaregion
SOURCE: PPACG

- **Front Range Express (FREX)** – As an affordable alternative to developing new passenger rail service, PPACG partnered with neighboring MPOs, the Colorado Department of Transportation (CDOT), transit providers, and local governments to develop an intercity commuter bus service between the town of Monument, Colorado Springs, and Denver. This new service provides alternatives to private vehicle transportation while helping alleviate congestion.

- **Intermountain MPOs** – PPACG participates in a forum for Transportation Management Agencies (TMAs) located in the Intermountain West region. This group includes 12 MPOs from seven western States (Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, and Washington) that meet to share ideas and coordinate efforts.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- Open space preservation is a priority for residents of the Front Range Megaregion. Open space planning requires cross-jurisdictional cooperation and a megaregion perspective to be effective. The Front Range megaregion lost over 450 square miles of open space to development between 1982 and 1997. This trend is likely to continue if transportation, land-use and open space preservation planning is not coordinated on a megaregion scale.
- Denver and the northern portion of the Front Range Megaregion share an air shed that is not in conformance with EPA ozone standards. The air quality problems stem primarily from the Denver area, but have pollution and funding implications for others in the air shed. This is an area where megaregion-scale collaboration is clearly necessary.
- Forming effective relationships with U.S. military installations is a megaregion-scale challenge for many MPOs. Military installation expansions pose significant transportation challenges for surrounding communities. Not all services can be provided on-base, resulting in significantly increased travel demand and demand for health and social services. However, the U.S. military has the potential to be a strong partner for MPOs in planning to provide the services needed.

San Diego Association of Governments (SANDAG)

SANDAG is the MPO for San Diego County, California, located in the Southern California Megaregion which also includes Los Angeles, Orange, San Bernardino, Riverside, and Imperial Counties (Figure 7). The Southern California Megaregion is one of the most economically productive areas in the world, with an annual gross domestic product (GDP) that exceeds $900 billion, accounting for over half of California's total annual GDP. Southern California is home to several major international airports, seaports, and border crossings, most notably the Los Angeles/Long Beach ocean port, the largest in the U.S., and the San Ysidro border crossing with Mexico, the busiest international point-of-entry in the world.

The Southern California megaregion is also the most severely traffic-congested area in the U.S., with an estimated $13.8 billion lost annually due to traffic congestion. Growth forecasts from the

California Departments of Finance and Transportation predict significant increases in population over the next 20 years, but also predict that automobile and truck travel demand will outpace population growth by as much as 190%, placing additional strain on an already overburdened transportation system.

Figure 7: Map of the Southern California Megaregion
SOURCE: SANDAG

Megaregion Projects

SANDAG participates in megaregion-scale planning partnerships both within the Southern California Megaregion, and on a Statewide basis. For goods movement planning, SANDAG and its partners consider the entire State of California to be one consolidated megaregion.

- **Self-Help Counties Coalition** – An organization of 19 California counties that have voter-approved local sales tax measures to support transportation. Transportation planners in these 19 counties meet regularly to coordinate policy agendas and megaregion-scale funding priorities.

- **Goods Movement Action Plan** – As part of a Statewide effort, SANDAG collaborated with neighboring MPOs and county transportation authorities in the Southern California Megaregion and with the California Department of Transportation (Caltrans) to develop a multi-county plan for freight transportation (Figure 8).

Figure 8: Map of major regions in the California Statewide Goods Movement Plan SOURCE: Caltrans

- **California High-Speed Rail** – MPOs, local transportation agencies, Caltrans, and others are collaborating with the California High-Speed Rail Authority to develop plans for an 800-mile network of high-speed trains linking the State's largest metropolitan areas.

- **BiNational Coordination** – Wait times at border crossings in the Southern California Megaregion are currently costing the megaregion over $7 billion annually in lost productivity and excess fuel consumption. SANDAG is collaborating with transportation authorities in Mexico to improve the flow of transportation through the megaregion's six points of entry. This collaboration led to plans to construct a new point-of-entry for both passenger and commercial vehicles in East Otay Mesa, to be financed with toll revenue.

- **Sustainable Communities Strategy** – California State Bill 375 required large MPOs in California to include a plan to meet greenhouse gas reduction targets set by the California Air Resources Board in their regional transportation plans. In preparing for these new requirements, MPOs across the State collaborated to ensure the use of consistent modeling techniques and the compatibility of emission reduction strategies. The collaborative relationships formed during this process have in many cases continued, and now also address other areas of joint concern.

Challenges and Insights

The following key insights were identified in presentations and discussions:

- It is important to have a forum for collaboration on a megaregion-scale. The Self-Help Counties Coalition helps hold megaregion-scale collaboration together in California.
- Partners should use existing institutions to collaborate rather than create new megaregion-scale institutions.
- The State requirement to include greenhouse gas reduction planning in regional transportation plans has helped encourage collaboration. However, these new requirements have drawn increased scrutiny and in some cases have resulted in law suits against the planning agencies.
- Megaregion transportation planning is often extra work that can only be addressed when time and funding allow. As a result, the most effective efforts focus on specific issues that are important to the core work of the partners.

5. Key Themes

The key themes that emerged from the peer exchange presentations, panel discussions and breakout sessions are highlighted in this section.

Enhancing Economic Competitiveness is a Key Goal

The core reason for considering a megaregions scale in transportation planning is the need to optimize the use of transportation resources to increase global economic competitiveness and improve quality of life.

Dr. Catherine Ross, of the Georgia Institute of Technology indicated that there is strong evidence from research funded by FHWA and others that the megaregion is the scale most relevant to global trade. Megaregions are emerging in both developed and developing countries and now account for two-thirds of global economic activity. Therefore, to remain economically competitive, it is becoming increasingly necessary to develop transportation networks that provide seamless multimodal transportation for both passengers and freight at the megaregion scale.

Megaregion transportation planning efforts are often focused on connecting major nodes, (i.e., large metropolitan areas) through high-speed rail, intercity bus or expanded interstate highways. However, involving local government, public transit providers, and private industry is also

essential to plan solutions to the “last mile problem” of providing seamless, reliable transitions between high-capacity modes such as intercity and freight rail, or air transportation, to local-serving modes. Planning for seamless transportation systems in a megaregion context requires an expansion of the traditional metropolitan- and State-scale transportation planning by MPOs and State DOTs to include more collaborative, megaregion-scale initiatives that better integrate multi-modal transportation systems for both passengers and freight.

The Honorable Scott Smith, Mayor of Mesa, Arizona stressed the importance of considering economic impacts in transportation planning. By shifting the focus to a megaregion scale, local governments in Arizona are beginning to focus on the transportation investments needed to make the Sun Corridor megaregion more competitive globally, as opposed to the traditional competition between local governments. This has been driven in part by the recent economic recession and by a changing economic reality, where U.S. workers are now competing in a global job market. Mayor Smith stressed the need for the U.S. to focus on transportation infrastructure investment as a national priority, but to prioritize this investment using measures of economic performance and growth.

To move beyond the initial broad support for megaregions planning that some MPOs and their partners have built, advocates must do a better job of communicating the economic benefits of planning at the megaregion scale. This should be done using robust quantitative data that can be easily understood (e.g., GDP).

Improved Transportation of Freight is a Key Concern for Megaregions

Freight planning is a natural fit for megaregion planning partnerships because freight networks are large, spatially dispersed, and because freight routinely crosses regional, State and international borders. Private freight and logistics decisions have large impacts on local and regional transportation systems and communities that cannot be adequately understood without examining the issues on a megaregion scale. Of particular concern is the growth in containerized multi-modal freight, which typically involves multiple transfers between modes and long-distance trips. To understand and respond to future needs of containerized freight shippers, inland areas must coordinate with port cities that are often spatially distant.

Ensuring that the needs of freight shippers are met is critical to the economic future of U.S. megaregions in the global marketplace. The most important concern for the freight industry is access to seamless multi-modal freight transportation routes that allow for reliable scheduling. If U.S. megaregions are unable to supply seamless, reliable, multi-modal freight transportation, they will fall behind competitors abroad.

Freight issues are particularly acute for communities near international borders, where bottlenecks often develop. Commercial trucks have negative impacts on local roads and environmental conditions in border communities. However, some MPOs have successfully built collaborative relationships with partners in Canada and Mexico that allow for traffic congestion and environmental concerns to be addressed, while simultaneously improving freight traffic flows and generating economic development on both sides of the border.

The traditional role for MPOs in freight planning is to provide technical analysis and support to local communities. On a megaregions scale, there is an opportunity to expand this role to help develop and implement a Megaregion-scale freight vision that identifies the most effective locations for new infrastructure while avoiding duplication of services.

Establish New Governance without Creating New Government

Transportation planning at a megaregion scale requires new cross-jurisdictional governance, not a new level of formal government for planning and decisionmaking. The focus should be on improving results through better planning and collaboration, in multiple forms and at multiple scales. A formal layer of government is not needed and is potentially too rigid to be effective.

Megaregion planning relies on building better relationships between partners and establishing a system for working together (new governance). The structure of these relationships and the level of formality required vary by megaregion and the challenges the initiatives seek to address. Therefore, multiple models for successful partnership are needed.

Informal partnerships are valuable and may be most appropriate for the early stages of megaregion planning. These informal partnerships bring leadership and staff together and build the essential interpersonal relationships that make cooperation possible. The Sun Corridor's JPAC is an example of an informal megaregion partnership. However, over time as partnerships mature, more formal relationships may be required (e.g., a memorandum of understanding), particularly for coordinating larger projects and investments (e.g., high-speed rail, airport service changes). An incremental approach to building more formal relationships is likely to be the most successful model.

A particular challenge in megaregions planning governance is to establish structures and relationships for collaborative planning, both formal and informal, which can survive electoral changes. In some cases, megaregions planning partnerships falter when a strong political champion leaves office.

Partnerships Develop out of Necessity and Opportunity

Megaregions partnerships can form out of necessity or to take advantage of emerging opportunities. Many of the challenges currently facing MPOs and their partners span jurisdictional boundaries that cannot be efficiently addressed without a megaregion-scale perspective. For example, freight bottlenecks at international border crossings are a clear example where cooperation across political boundaries is required. Another example is the deterioration of infrastructure, particularly in older urban areas, the impacts of which are felt throughout the megaregion. Also, the need to standardize data and modeling techniques across MPO boundaries can often be impetus for partnership.

MPOs seeking to form megaregion partnerships should start small and focus on individual issues with broad support from transportation providers, issue-based non-profit organizations,

the private sector, and the general public. For the initial meetings, it is important to choose a neutral venue and involve all potential partners to avoid the appearance of the convening MPO dominating the process. These meetings should involve staff as well as leadership. Once the partnership is established and the initial challenge has been overcome, partnerships can sometimes be expanded, repurposed, or reactivated to address new challenges.

Megaregion Boundaries are Flexible

It is important to take a data-driven approach to defining megaregions. Megaregions form on their own, through economic and social linkages, not through a political process. Catherine Ross has published extensive research, using economic activity as the basis for identifying the emerging U.S. megaregions. However, precise boundaries of megaregions are not required for MPOs and partners to form useful and opportunistic partnerships. It is often the case that an MPO will use different partnerships and planning areas for different initiatives and could be involved in multiple initiatives at different scales simultaneously.

Important Role for MPOs, but they may not be the most Logical Long-Term Leaders

MPOs are accustomed to convening diverse stakeholders to solve regional transportation challenges. MPOs also have extensive experience with multi-modal planning, which is essential to provide the seamless transportation required to remain competitive at the megaregion scale. Therefore, MPOs are a natural fit for megaregions planning initiatives and often play a major role in originating them and leading the early, informal stages. However, MPOs may not be the best organizations to lead megaregions planning efforts over the longer-term. As megaregions partnerships expand, mature and become more formalized, partners at the State and Federal levels may be better-suited to coordinate the activities of the partnership and advocate for political support and resources when necessary. Nevertheless, MPOs should remain engaged and involved as key stakeholders and participants.

Megaregions Need a Champion

For megaregions transportation planning projects to be successful, it is crucial to enlist political and private sector support. Megaregion planning efforts need local and State-level champions to provide political leadership and advocate for funding.

Alternative Transportation Modes Play an Important Role

MPOs often coordinate transit and nonmotorized transportation services within their regions. The challenge from a megaregions perspective is to expand multi-modal planning practices to rural areas and small communities where fixed-route transit service and dedicated nonmotorized transportation infrastructure may not have previously been a planning priority. For example, in the Sun Corridor, a project to plan an intercity passenger rail connection between Phoenix and Tucson focused primarily on the terminuses. However, ADOT and its partners quickly found that to make the project work it was essential to also address the needs of the smaller and rural communities in between. Over time this effort has morphed into a megaregion-scale discussion on developing transit service to provide links to stops on the proposed rail line.

In contrast, the California high-speed rail initiative began with a focus on the smaller urban areas and rural communities along the center of the line, with plans to connect the State's largest metropolitan areas, at the ends of the planned line, scheduled far into the future. Most recently, the initiative has evolved into a more blended, cooperative approach, intended to provide near-term high-speed rail service to the smaller urban areas and rural communities located along the line, as well as improvements to existing commuter and intercity rail corridors in the large metropolitan areas at the ends, which are not scheduled to receive high-speed rail connections until later years.

Funding for transit is fragmented by operator or jurisdiction and may be diminishing even as interest and ridership grows. This is a major challenge for incorporating transit into megaregion planning and projects. One potential strategy to provide accessibility to and from rural, exurban, and urban areas not served by fixed-route transit is to expand funding and promotion of vanpools, ridesharing and specialized transportation services targeted to seniors.

Link Megaregion Planning to Land Use and Transit

Megaregion transportation planning is inherently linked to land use which is typically controlled at the local level. However, as more passengers and freight regularly travel between metropolitan areas and rural areas in megaregions, local land-use decisions increasingly have megaregion-scale consequences. Many MPOs are engaged in growth management planning at a metropolitan scale, and in some areas have begun to form partnerships with surrounding MPOs to develop a common vision for sustainable future land use. For example, DVRPC works with neighboring MPOs to direct future development to pre-identified growth areas and to coordinate growth management policies. However, these efforts are challenging due to the fragmented nature of land use control, where local governments often favor compact development in theory, but block compact development proposals in their jurisdiction in practice.

At the regional level, transit agencies and MPOs educate local governments about the types of land use patterns that are supportive of transit service and how land-use regulations can be modified to support transit-oriented development. Transit agencies often seek to involve local governments in the earliest stages of system expansion planning and work with local governments to ensure that land-use regulations are updated before system expansions occur. This regional model might usefully be expanded and adapted to the megaregion-scale to address land use concerns. However, MPOs are traditionally not involved in transit and land use coordination for rural areas. Thus, this is a natural area for megaregion partnerships between MPOs and State DOTs, with coordination with their local jurisdictions.

Megaregion Partnerships Can Address More than Transportation

MPOs are well suited to convene megaregion-scale interest groups, which address more than transportation planning. MPOs and their partners have found opportunities to adapt or expand a megaregion approach to other areas. For example, interest is high among researchers, public health professionals, and the general public, to integrate health concerns into transportation planning, particularly in the area of nonmotorized transportation. SANDAG has begun working

to better integrate public health with transportation planning through grant support from the Centers for Disease Control (CDC).

6. Potential Opportunities and Next Steps

The peer exchange participants identified several potential opportunities and next steps for advancing megaregions planning.

Find Common Goals among Diverse Partners

Significant barriers remain to forming effective and long-lasting partnerships for megaregions planning. Communities within a region are historically oriented to compete with each other for scarce resources (e.g., funding, jobs). This model fit a previous economic landscape, where most economic activity occurred within a metropolitan area. With the shift to a global economy, a more cooperative, megaregions-based model is needed. Megaregions planning advocates must work to develop common goals for all communities in the megaregion and develop a framework that allows all types of communities to benefit. In particular, megaregions transportation planning initiatives must find ways to better engage and demonstrate benefits for rural and small metropolitan area partners that lie between the large metropolitan areas that often start and lead megaregions planning efforts.

MPOs engaged in megaregion transportation planning would benefit from Federal support for collaboration between large metropolitan areas and rural or small metropolitan partners. Peer exchange participants suggested that FHWA and FTA consider funding a pilot program to explore innovative mechanisms for collaboration in a megaregion context and also to research and document best practices in this area.

Develop Forums for Sharing Information and Best Practices

Participants indicated that the peer exchange was a valuable forum for exchanging ideas and practices for collaboration on a megaregion scale. The participants suggested that FHWA and FTA also support webinars, forums and workshops for a national audience, involving participants at all levels of government. The most effective approach may be to work within existing national conferences that potential partners regularly attend (e.g., TRB, the Association of Metropolitan Planning Organizations, or the American Association of State Highway and Transportation Officials).

Study Disaster Response, Climate Change Planning and European Examples

Disaster response and climate change planning share many parallel cross-jurisdictional issues that may be relevant for megaregion transportation planning. These large-scale planning efforts are underway in the U.S. and could provide relevant examples for megaregion-scale collaboration in transportation.

European countries must consider planning and investing in cross-border transportation as part of their standard business practices. Their relatively small size and the interconnectedness of

their economies require cooperative planning arrangements to achieve effective transportation. MPOs and their partners could benefit from research examining the megaregion transportation planning relationships and processes in Europe for potentially transferable models and best practice applications in the U.S.

Power in Numbers

Megaregion planning partnerships present an opportunity for cross-jurisdictional transportation planning partners to more effectively advocate for solutions to persistent transportation policy challenges. As partnerships become larger and more robust, MPOs and their partners could speak with a louder, more consistent voice on the need to address long-term challenges, such as declining gas tax revenues and deferred maintenance of transportation infrastructure. For the highest-priority, common issues, collaboration between megaregions could produce a powerful political force to advocate for change to improve transportation performance.

Consider a Pilot Project for a Megaregion Investment Plan

Peer exchange participants suggested that a pilot project to form a megaregion-scale programming document similar to an MPO's TIP, with projects relevant to megaregions, could be an important step toward realizing more effective, efficient megaregion transportation planning. MPOs and States need a planning mechanism to pool resources to make the investments that will have the biggest impact on the performance of the megaregion as a whole. Currently, partnerships must largely rely on individual States and MPOs to program projects within their boundaries, even if significant benefits accrue to communities outside their planning boundaries.

The concept of a megaregion investment plan might not entail a formal TIP process, as required in metropolitan areas, but could be a collaborative programming effort between partner MPOs and States to individually program funds to address megaregion-scale challenges. Projects programmed by individual partners that serve megaregion-scale goals could be flagged and included in a megaregion investment plan as a mechanism for analyzing and communicating progress toward megaregion-scale objectives. If successful, the concept could potentially be expanded to investments at larger, even national scales.

Develop a Framework for Megaregion Collaboration between Federal Modal Agencies

The Federal transportation modal agencies (e.g., FHWA, FTA, and FRA) should develop a framework for working together to address megaregion-scale issues from the perspective of Federal policies, programs and funding. This framework would reduce the complexity of megaregion transportation planning partnerships, and would demonstrate Federal interest and leadership on the issue.

Engage Federal Land Management Agencies and U.S. Military Installations

Many megaregions, particularly in the western States, contain large areas of Federally-owned land and numerous U.S. military installations. When transportation planning in these areas

expands to a megaregion-scale, it becomes clear that these Federal entities must be engaged. For example, the Sun Corridor megaregion's proposal to develop a new Interstate highway connecting Phoenix to Las Vegas, Reno, and points beyond would require significant involvement from Federal Land Management Agencies, which control the majority of the land between these metropolitan areas. PPACG also found that U.S. military base expansion plans will have significant transportation and social service impacts on metropolitan areas in the Front Range Megaregion. Planning to meet the demands of military installations often requires a megaregion perspective because these installations are often located beyond metropolitan planning boundaries.

Technical Tools, Data and Models for Freight Planning are needed to Advance

Many megaregion planning partnerships seek to achieve more seamless freight transportation systems in order to attract or retrain the economic activity associated with freight hubs. However, many MPOs have long struggled to fully integrate freight planning into their comprehensive metropolitan transportation planning activities. Major barriers include access to quality data, models and technical tools, and the geographic distance of private carriers. In particular, freight data is often proprietary information, closely guarded by private carriers.

Adequate freight models and tools exist, but could be put to better use or expanded. MPOs often lack staff with the technical expertise to lead freight planning initiatives. Improved access to crucial freight data, expanded tools and staff capacity building is needed, either through partnerships with carriers, or through Federal support.

Megaregion-scale Vision and Scenario Planning

Vision planning is a powerful way to engage people in regional planning that could be adapted to a megaregion scale. Using scenario planning as part of the vision process provides a data-driven window into possible futures that has the potential to heighten participants' sense of urgency and opportunity.

However, scenario-based vision planning requires formal arrangements and consistent data that typically do not exist in megaregion planning partnerships. Also, the scale of megaregions will make comprehensive public participation in scenario planning difficult. Nevertheless, scenario-based vision planning should be explored as a possible tool for performance-based collaboration between MPOs and partners in megaregions. This is an area where MPOs have increasing levels of experience and expertise.

7. Transportation Planning Capacity Building (TPCB) Program

The Transportation Planning Capacity Building (TPCB) Program is a joint venture of the FHWA and the FTA that delivers products and services to provide information, training, and technical assistance to the transportation professionals responsible for planning for the capital, operating, and maintenance needs of our nation's surface transportation system. The TPCB Program website (www.planning.dot.gov) serves as a one-stop clearinghouse for state-of-the-practice transportation planning information and resources. This includes more than 70 peer exchange reports covering a wide range of transportation planning topics.

The TPCB Peer Program advances the state of the practice in multi-modal transportation planning nationwide by organizing, facilitating, and documenting peer events to share noteworthy practices among state departments of transportation (DOTs), MPOs, transit agencies, and local and Tribal transportation planning agencies. During peer events, transportation planning staff interact with one another to share information, accomplishments, and lessons learned from the field and help one another overcome shared transportation planning challenges.

8. Appendix

A. Agenda

DAY 1

Time	Topic	Lead Presenters
10:00 a.m.	**Welcome** Leadership welcome from sponsors and host	*Fred Bowers, FHWA HQ* *Karla Petty, FHWA Division* *Paul Page, FTA Region IX* *Scott Omer, ADOT* *Dennis Smith, MAG*
10:15 a.m.	**Opening Address**	*Hon. Scott Smith, Mayor of Mesa, Arizona*
10:30 a.m.	**Introduction and Overview** • Introduction of participants • Review agenda and goals • Opening theme: Why are megaregions important for MPOs and transportation planners? • Why are MPOs important to megaregions? • A framework for evaluating the role of MPOs.	*Bill Lyons, Volpe*
10:50 a.m.	**Regional Context: Sun Corridor Partnerships** • Related big picture – trends, challenges, needs • Sun Corridor • JPAC presentation • Discussion	*Bob Hazlett, MAG* *Cherrie Campbell, PAG* *Scott Omer, ADOT* *CAAG* *Valley Metro* *Tucson RTA/Sun Tran*

11:30 a.m.	**Peer Presentations: GBNRTC & DVRPC**
	• Introduction to peer presentations and facilitation
	• GBNRTC & DVRPC (30 minutes each)
	  ○ MPO background, megaregions activities
	  ○ Big picture – trends, challenges, needs
	  ○ Examples of successful megaregions projects/programs
	  ○ Challenges and opportunities
	  ○ Discussion
		Introduction:
		Bill Lyons, Volpe
		
		Presentations:
		Hal Morse, GBNRTC
		Michael Boyer, DVRPC

12:30 p.m.	***Lunch (in-house); Transitioning to Keynote Address***	
12:45 p.m.	**Introduction to Keynote Address**	*Hon. Hugh Hallman, Mayor of Tempe, Arizona*

Time	Topic	Lead Presenters
1:00 p.m.	**Keynote Address: Catherine Ross, Ph. D** Presentation • Defining megaregions • Importance of megaregions for transportation planners • Connections to global economic competitiveness • Where do we go from here? Q&A and facilitated peer panel and discussion with participants	Presentation: *Catherine Ross, Ph. D* Panel: *Michael Boyer, DVRPC* *Eric Anderson, MAG* *Jared Lombard, ARC* *Robert MacDonald, PPACG* *Hal Morse, GBNRTC* *Charles "Muggs" Stoll, SANDAG* Facilitator: *Bill Lyons, Volpe*
2:15 p.m.	**Peer Presentations: ARC & SANDAG** • MPO background, megaregions activities • Big picture – trends, challenges, needs • Examples of successful megaregions projects/programs • Challenges and opportunities • Discussion	Introductions: *Bill Lyons, Volpe* Presentations: *Jared Lombard, ARC* *Charles "Muggs" Stoll, SANDAG*
3:15 p.m.	***15 Minute Break***	
3:30 p.m.	**Panel Discussion 1** **Partnerships and Governance** • Why and how do megaregions partnerships form? • How to determine leadership, responsibilities, and formality of participation? • Roles of motivation, incentives, implementation, and informal/formal structure. • How to enlist support from States (DOTs), MPO Boards, cities, private sector, and other stakeholders? • What is the role of formal agreements or definitions of responsibilities? • Barriers, challenges and opportunities.	Panel**:** *Eric Anderson, MAG* *Michael Boyer, DVRPC* *Jared Lombard, ARC* *Robert MacDonald, PPACG* *Hal Morse, GBNRTC* *Charles "Muggs" Stoll, SANDAG* Facilitator: *Bill Lyons, Volpe*
4:15 p.m.	**Wrap up: Themes for Day 2**	*Bill Lyons, Volpe*
4:30 p.m.	**Day One End**	

DAY 2

Time	Topic	Lead Presenters
8:45 a.m.	**Welcome, introductions, review themes from Day 1 and Focus for Day 2**	*Bill Lyons, Volpe*
9:00 a.m.	**Peer Presentation: PPACG** • MPO background, megaregions activities • Big picture – trends, challenges, needs • Examples of successful megaregions projects/programs • Challenges and opportunities • Discussion	Introduction: *Bill Lyons, Volpe* Presentation: *Robert MacDonald, PPACG*
9:30 a.m.	***15 Minute Break***	
9:45 a.m.	**Panel Discussion 2** **The Role of Alternative Modes in MPO Planning for Megaregions:** • Connections between planning multimodal systems in metro areas and in megaregions. • How can MPOs consider alternative modes (transit, nonmotorized, intercity bus/rail, demand management, etc.) when planning for megaregions? • Opportunities to coordinate planning for access to high speed rail/intercity bus/station area developments, and airport access with megaregions planning? • Relevance of alternative modes for megaregions economic development or access to jobs? • Land use connections: planning for livable or sustainable communities, managing sprawl, etc. • Opportunities to involve real estate developers and local zoning authorities. • Rural considerations: connectivity to transit and intercity service; preservation and development. • Future opportunities to link planning for alternative modes to planning for megaregions.	Panel**:** *Robert MacDonald, PPACG* *Charles "Muggs" Stoll, SANDAG* *Michael Boyer, DVRPC* *Stuart Boggs, RPTA* *Mike Kies, ADOT* *John Liosatos, PAG/Tucson RTA* *Facilitator: Bill Lyons*

Time	Topic	Lead Presenters
10:30 a.m.	**Break-out Sessions** Potential Topics: • Data, models and technical tools • Political implementation/breaking down barriers • Vision and scenario planning for megaregions • Megaregions links to livability (transit links to intercity bus/HSR, land use implications) • Working with stakeholders and citizens (public participation, Tribal governments, rural areas) Report out and discussion	*All participants*
12:00 p.m.	***Lunch (continues during Panel 3)***	
12:30 p.m.	**Panel Discussion 3** **Freight:** • Why is a megaregions focus needed? • Cross-border freight planning. • Local impacts of megaregions freight. • Intermodal facilities in a megaregions context. • Land use implications of inter-regional freight. • Financing freight infrastructure improvements. • What are constraints and opportunities?	Panel**:** *Jared Lombard, ARC* *Hal Morse, GBNRTC* *Catherine Ross, Georgia Tech* *Tim Strow, MAG* *Mike Norman, ADOT* Facilitator: *Bob Hazlett, MAG*
1:15 p.m.	**Panel Discussion 4** **Implementation: Opportunities and Barriers** • What are barriers (institutional, political, financial, capacity, technical, governance) that challenge implementation? What isn't getting done? Why? • How can MPOs balance competing priorities? • What does it take to implement megaregions-scale partnerships, programs, and projects? • What does the future hold? • What are the greatest opportunities for MPOs to participate in planning for megaregions?	Panel**:** *Michael Boyer, DVRPC* *Bob Hazlett, MAG* *Jared Lombard, ARC* *Robert MacDonald, PPACG* *Hal Morse, GBNRTC* *Charles "Muggs" Stoll, SANDAG* Facilitator: *Bill Lyons, Volpe*

2:00 p.m.	**Wrap up, Synthesis, Discussion**
	• What is needed to improve the results of MPO participation in megaregion planning?
	  ○ Policies or programmatic structures?
	  ○ Knowledge, capacity, technical tools?
	  ○ Roles, responsibilities, and institutions?
	  ○ Financial resources?
	• What are related research needs?
	  ○ Opportunities to connect related MPO planning with research institutions, TRB, modal authorities, private sector or governmental agencies?
	  ○ Technical tools or capacity building?
	• Opportunities for federal support.
		Bill Lyons, Volpe

Time	Topic	Lead Presenters
2:30 p.m.	**Conclusion**	

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C. Agency Website and Resource Links

Transportation Planning Capacity Building (TPCB) Program
www.planning.dot.gov

Federal Highway Administration
http://www.fhwa.dot.gov/

Federal Highway Administration
Office of Planning, Megaregions Page
http://www.fhwa.dot.gov/planning/publications/megaregions_report/index.cfm

Federal Transit Administration
http://www.fta.dot.gov/

U.S. DOT Volpe National Transportation Systems Center
http://www.volpe.dot.gov/

Georgia Tech, Center for Quality Growth & Regional Development (CQGRD)
http://www.cqgrd.gatech.edu/

Maricopa Association of Governments (MAG)
http://www.azmag.gov

Atlanta Regional Commission (ARC)
http://atlantaregional.com

Delaware Valley Regional Planning Commission (DVRPC)
http://www.dvrpc.org/

Greater Buffalo-Niagara Regional Transportation Council (GBNRTC)
http://www.gbnrtc.org

Pikes Peak Area Council of Governments (PPACG)
http://www.ppacg.org

San Diego Association of Governments (SANDAG)
http://www.sandag.org

D. Acronyms

ADOT	Arizona Department of Transportation
ARC	Atlanta Regional Commission
CAAG	Central Arizona Association of Governments
Caltrans	California Department of Transportation
CDOT	Colorado Department of Transportation
COG	Council of Governments
CQGRD	Center for Quality Growth and Regional Development
DOT	Department of Transportation
DVRPC	Delaware Valley Regional Planning Commission
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GBNRTC	Greater Buffalo-Niagara Regional Transportation Council

GDP	Gross Domestic Product
JPAC	Joint Planning Advisory Council
MAG	Maricopa Association of Governments
MPO	Metropolitan Planning Organization
NYSDOT	New York State Department of Transportation
PAG	Pima County Association of Governments
PAM	Piedmont-Atlantic Megaregion
PPACG	Pikes Peak Area Council of Governments
SANDAG	San Diego Association of Governments
TIP	Transportation Improvement Program
TPCB	Transportation Planning Capacity Building
TRB	Transportation Research Board