

# Action Strategy Paper: Inter-Regional Transportation Planning

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center

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# Acronyms

ARRA	American Recovery and Reinvestment Act	NICTD	Northern Indiana Commuter Transportation District
ARC	Atlanta Regional Commission	NIRPC	Northwest Indiana Regional Planning Commission
CMAP	Chicago Metropolitan Agency for Planning	NJTPA	North Jersey Transportation Planning Authority
CQGRD	Center for Quality Growth and Regional Development	NYMTC	New York Metropolitan Transportation Council
DIA	Denver International Airport	NYU	New York University
DOT	Department of Transportation	PAM	Piedmont Atlantic Megaregion
DRCOG	Denver Regional Council of Governments	PEAC	Planning at the Edge Advisory Committee
DVRPC	Delaware Valley Regional Planning Commission	RAC	Regional Aviation Committee
DSATS	DeKalb-Sycamore Area Transportation Study	RATS	Rockford Area Transportation Study
FAA	Federal Aviation Administration	RPA	Regional Plan Association
FAF2	Freight Analysis Framework 2	SAC	Study Advisory Committee
FHWA	Federal Highway Administration	SATS	Small Aircraft Transportation System
FRA	Federal Railroad Administration	SCAG	Southern California Association of Governments
GB/VMPO	Greater Bridgeport/Valley MPO	SOW	Scope of Work
GDP	Gross domestic product	SWRMPO	South Western Region Metropolitan Planning Organization
HSR	High Speed Rail	SWRPC	Southeastern Wisconsin Regional Planning Commission
HVCEO	Housatonic Valley Council of Elected Officials	TIP	Transportation Improvement Program
KCRPC	Kankakee County Regional Planning Commission	TMA	Transportation Management Area
MOU	Memorandum of Understanding	TOT	Truck-Only Toll
MPO	Metropolitan Planning Organization	UPWP	United Planning Work Program
MRR	Midwest Regional Rail Initiative	U.S. DOT	U.S. Department of Transportation
MTC	Metropolitan Transportation Commission	VMT	Vehicle miles traveled
MWCOG	Metropolitan Washington Council of Governments	WILMAPCO	Wilmington Area Planning Council
NCTCOG	North Central Texas Council of Governments		

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## Executive Summary

The Chicago region is the hub of transportation in the Midwest and is one of the major transportation centers of the world. Due to the size and scope of the rail and highway transportation network focused on the Chicago region and O'Hare Airport's importance as a major airport for international travel, CMAP has the opportunity to be at the forefront of inter-regional transportation planning in the nation.

Becoming involved in a high-level inter-regional transportation planning process with other metropolitan planning organizations (MPOs) and entities can be a precursor to planning for specific inter-regional transportation projects in the future. Major inter-regional transportation projects include planning for high-speed rail corridors or networks, freight mobility and access to ports, and new airport construction or operation of a multi-airport system. Regular communication as part of an inter-regional transportation planning process with neighboring MPOs can build understanding, trust, and confidence among MPOs, which lays the foundation for work on these types of projects in the future. Along these lines, this paper includes a discussion of ways MPOs can work with their partners to address the demand for rising inter-regional travel.

This paper uses a case study approach to identify ways that MPOs are involved in inter-regional transportation planning. MPOs interviewed and researched for this strategy paper include the New York Metropolitan Transportation Council (NYMTC), the Atlanta Regional Commission (ARC), the Delaware Valley Regional Planning Commission (DVRPC) working closely with the Wilmington Area Planning Council (WILMAPCO), and the Denver Regional Council of Governments (DRCOG). Many other MPOs are involved in inter-regional transportation planning activities but were not directly evaluated as part of this paper.

Though no MPOs exist in the Netherlands, this paper also examines the coordination of transportation in the Randstad. The Randstad has a similar population to that of the Chicago metropolitan area and also plays a dominant role as the freight and logistics hub for a large region. As a global peer for the Chicago metropolitan area, the Randstad provides useful insights for CMAP on successful inter-regional planning for major transportation projects.

MPOs can play a variety of roles in inter-regional transportation planning at a high-level. These roles include communicator/coordinator, partnership-builder, leader, and visionary. CMAP has the opportunity to choose any or a combination of these roles in its inter-regional transportation planning. The MPOs reviewed and the Randstad illustrate the range of roles potentially useful to CMAP in effective planning for inter-regional transportation:

- Communicator/coordinator among MPOs and other entities, including the sharing of data and forecasts – DVRPC/WILMAPCO, NYMTC, DRCOG, the Randstad;
- Partnership-builder (beyond partnering with neighboring MPOs) – ARC, NYMTC, and the Randstad;
- Leader in organizing meetings and events – ARC and DVRPC/WILMAPCO; and
- Visionary in developing initiatives for the future of the larger region – DRCOG, ARC, DVRPC/WILMAPCO, and the Randstad.

Each of these MPOs and the Randstad took innovative approaches to their work at the inter-regional level. Any of these approaches can be taken exclusively or in combination by CMAP. Specifically, these innovative approaches include:

- NYMTC's multi-state MOU and partnership with New York University;
- ARC's partnerships with Georgia Tech University and RPA to initiate a inter-regional planning effort;
- DVRPC/WILMAPCO's lead role in inter-regional planning and coordination activities, including proactive inter-regional demographic and transportation forecasting;
- DRCOG's SOW for an inter-regional plan (and the funding obstacles they have encountered); and
- The Randstad's area-oriented approaches, public private partnerships, and the creation of the Traffic Management Company.

## **Section 1: Introduction**

### **1.1 Purpose and Scope**

The focus of this action strategy paper is on inter-regional transportation, defined broadly as the transportation of passengers and/or freight through multiple states or MPO areas. Typically, this means travel that is beyond normal daily commuting distance. CMAP has identified travel between Chicago and neighboring Midwestern states as being of particular importance due to the economic and infrastructure links between these areas, while also noting the importance of maintaining Chicago's global connectivity through aviation links to major world economic centers. These two concepts are linked since managing and enhancing travel options to nearby regions can reserve airport capacity for global travel, thereby providing for the continued growth of global markets.

This strategy paper is intended to provide insight on how CMAP can be involved in inter-regional transportation planning, particularly within the Great Lakes/Midwest region. As a strategy paper, the emphasis is less on specific transportation projects and more on the “big picture” – how inter-regional transportation planning is conducted with an emphasis on the *role of MPOs* in these processes. The paper draws on case studies to identify how peer MPOs have been and can be involved in inter-regional transportation planning projects and processes. However, because this is an emerging area, where involvement of even the largest MPOs is relatively limited at the project-specific level, this paper focuses primarily on the institutional structures and analytical processes that enable MPOs to participate in inter-regional planning successfully. The overall goal is to assist CMAP in identifying successful models for structures and processes that will help the region balance efficiency, environmental, and equity objectives through the implementation of inter-regional transportation improvements.

### **1.2 Structure**

Section 2 of this paper presents information on existing conditions that influence how CMAP and its potential partners approach inter-regional travel, including transportation facilities, major ongoing projects, and institutional frameworks in the Chicago region. Section 3 discusses a number of broader trends in the economy, transportation, and national policy that have implications for inter-regional planning. This section also introduces findings from academic research on megaregions. In Section 4, findings are presented from case studies on five MPOs and the Randstad region of the Netherlands, with Section 5 tying these findings together through a review of the emerging themes and opportunities for CMAP. The paper concludes with an overall summary of findings and opportunities for future work in Section 6.

### **1.3 Context: The Significance of Inter-Regional Travel**

During the 19<sup>th</sup> century, investment in canals, roads, and railways dramatically improved the speed and ease of travel, ultimately transforming the United States from a collection of disparate regions into a single national market. Subsequent innovations such as air travel and intermodal

freight logistics have reinforced the interconnectedness of regions, both within the U.S. and internationally, and have brought about fundamental changes in the way Americans live and work. It is now commonplace, for example, for Los Angeles supermarkets to sell produce that was harvested in New Zealand only days earlier, or for a business executive to return home for dinner in the New York suburbs after attending an all-day meeting in Charlotte. The availability of safe, reliable, and relatively inexpensive transportation undergirds many industries – even those that deal primarily in the virtual worlds of information technology – and is indispensable to key sectors of the economy such as travel and tourism.

For the Chicago region, whose early growth has been largely attributed to its role as a hub for waterborne and rail freight, inter-regional transportation continues to be especially important. Chicago remains the *de facto* national hub for freight rail and has become one of the world's most important aviation hubs. While proximity to these facilities is of obvious benefit to those Chicago-area businesses that are involved in shipping and freight, the entire region benefits from the national and global connectivity that they afford. As one example, O'Hare Airport, due to the high volume of its connecting traffic, is able to offer non-stop flights to many more destinations than could be supported by the Chicago market alone. This high level of accessibility is often a major factor in firms' decisions about office locations and is one of the reasons that Chicago remains the economic hub of the Midwest.

CMAP, as the MPO for the Chicago region, has an interest in pursuing planning efforts for inter-regional transportation to preserve and enhance these benefits while also addressing challenges related to environmental and social concerns, financial constraints, and institutional issues. Information from this strategy paper will assist CMAP in anticipating issues connected to successful inter-regional transportation improvements and implementing the transportation improvements in the *GO TO 2040* plan.



## Section 2: Existing Conditions

As a starting point for discussions of inter-regional transportation, it is useful to understand the Chicago region's existing services and facilities as well as currently planned projects. The following information provides a brief overview of the region's existing conditions.

### 2.1 *Transportation Facilities*

A high-level overview of the Chicago region's highway, rail, and airport infrastructure is shown in the map below (Figure 1). Further detail can be found in Appendix A.

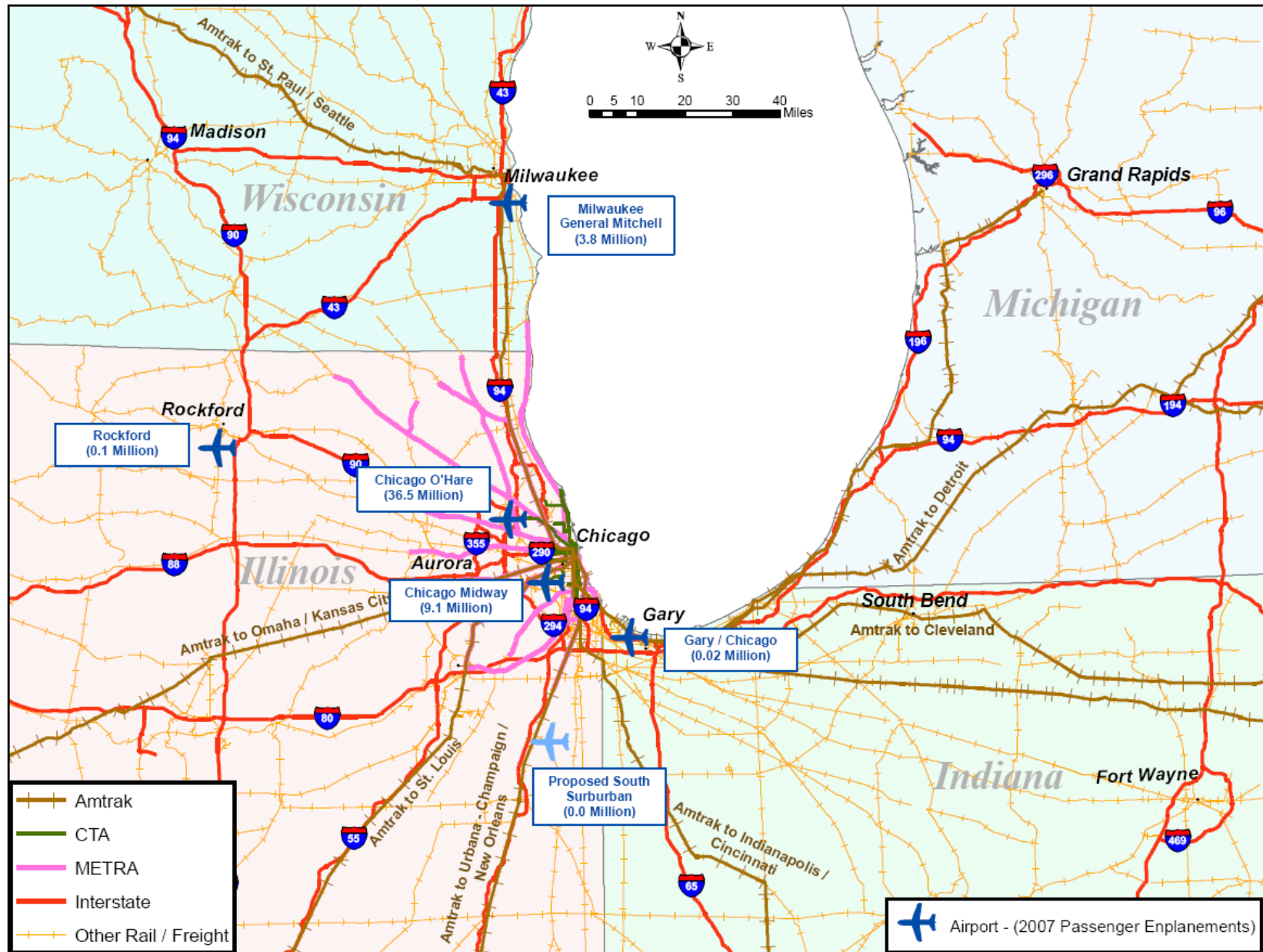
### 2.2 *Major Projects and Planning Efforts*

As an MPO, CMAP has been engaged in a number of planning efforts, such as the 2030 Regional Transportation Plan for Northeastern Illinois, that have implications for inter-regional transportation. Among the relevant projects in the 2030 plan are:

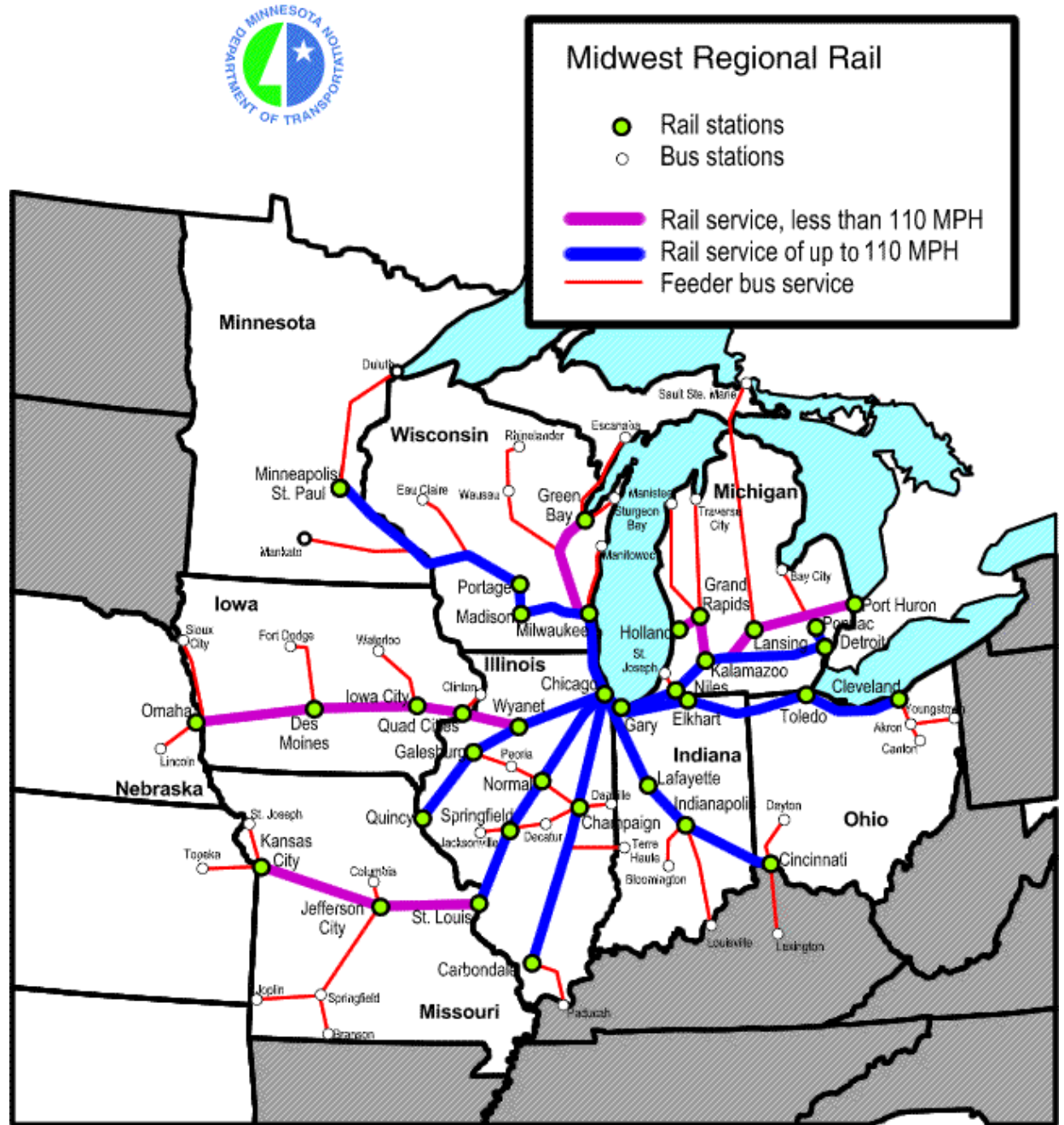
- The CREATE plan for freight rail improvements. As noted in the CMAP strategy paper on Goods Movement, the CREATE program is a joint effort of the city, state, Metra, Amtrak, the American Association of Railroads, and U.S. DOT, that is designed to make a significant investment (\$1.5 billion) to reduce freight delays and impacts on local communities. Many of CREATE's projects include the upgrade or elimination of highway-rail grade crossings, wayside improvements, and capacity expansions.
- West Loop Transportation Center: a new terminal that would allow connections between inter-city rail, commuter rail, and bus services. This project also includes expanded capacity at Union Station to allow through-routing of trains.
- Express Airport Train Service: a new downtown train station that would allow for air passenger check-in and baggage check, plus new limited-stop service to O'Hare and Midway on the Chicago Transit Authority Blue and Orange lines.
- Capacity expansion on I-90 (Jane Addams Memorial Tollway), I-88 (Ronald Reagan Memorial Tollway), I-294/94 (Tri-State Tollway), I-80, and I-55, all of which are important freight corridors connecting the Chicago area to other regions. The projects envision the use of open-road tolling, with value pricing to shift demand (particularly trucks) to off-peak periods. In some instances, the conversion to value pricing has begun.
- Expansion of I-57, which would be part of the ground transportation link to the proposed South Suburban airport.

Although CMAP's role in passenger air and rail service planning has been relatively limited, other organizations in the region have been able to develop multi-state coalitions to pursue major capital investments. Since 1996, for example, Illinois and eight other Midwestern states have pursued enhanced rail service through the Midwest Regional Rail Initiative (MRRI). MRRI's vision includes a hub-and-spoke network of high-speed trains, conventional rail, and connecting bus services that would link most cities in the Midwest, as far afield as Minneapolis, Omaha, and Cleveland, with a central hub at Chicago's Union Station (Figure 2).

**Figure 1. Overview of Existing Inter-Regional Transportation Facilities**  
Source: U.S. DOT Volpe Center, 2009



**Figure 2. MRRI's Midwest Regional Rail Plan**  
Source: Minnesota Department of Transportation



MRRI's proposed approach entails a multi-year, \$7.7 billion investment in rail infrastructure and vehicles to achieve increases in train service and significant reductions in travel times, thus making rail more competitive with air and highway travel even at somewhat higher rail fare levels. MRRI's forecasts show a system that covers its operating expenses with fare revenues

after a transition period.<sup>1</sup> Table 1 presents a summary of MRRI’s proposed service levels for key Midwest corridors.

**Table 1: MRRI’s Proposed Service Levels for Key Midwest Corridors**

City Pair	Current Service Level (Trains/Day)	MRRI Proposed Service Level (Trains/Day)	Current Travel Time (Hours: Minutes)	MRRI Forecast Travel Time (Hours: Minutes)
Chicago –Detroit	3	9	5:36	3:46
Chicago – St. Louis	4	8	5:20	3:49
St. Louis – Kansas City	2	6	5:40	4:14
Chicago – St. Paul	1	6	8:05	5:31
Chicago – Milwaukee	8	17	1:29	1:04

In 2008, as part of the Federal Railroad Administration’s (FRA) [Capital Assistance to States – Intercity Passenger Rail Service Program](#), MRRI and several of its member states received federal funding, matched by state and private funds, to undertake planning work and infrastructure upgrades that will improve rail service in the region and help pave the way for high-speed service. Specifically, the following projects were approved:

- Signal improvement and grade crossing upgrades on a 120-miles stretch of track on the rail corridor between Chicago and St. Louis. These improvements will reduce signal-related delays and ultimately allow increased train speeds. (\$3.7 million; federal share \$1.85 million; matching funds from State of Illinois and Union Pacific)
- For the MRRI, further analysis of routes, equipment, and operational plans. This moves the project along in the National Environmental Policy Act process and brings the initiative closer to implementation. (\$594,000; federal share \$297,000; matching funds from participating states and Amtrak)
- Construction of passing track and preliminary engineering on the St. Louis to Kansas City corridor. The passing tracks will increase the bi-directional capacity of the line and improve on-time performance. (\$8.3 million; federal share \$3.3 million; matching funds from State of Missouri)
- Installation of continuously welded rail along the Hiawatha route in Wisconsin, which will improve travel times on the Chicago-Milwaukee corridor. (\$10.0 million; federal share \$5.0 million; matching funds from Canadian Pacific Railway)

### **2.3 Institutions**

Several agencies within the greater Chicago region play important roles in assuring that the region’s transportation system is as efficient and effective as possible in moving goods and people. Attaining this goal is complicated by many challenges, including aging infrastructure and a diversity of agencies and jurisdictions. As the principal transportation planning agency for the greater Chicago region, CMAP must plan and administer funds for transportation projects that will improve the current system in terms of mobility and ideally the broader natural and

<sup>1</sup> Midwest Regional Rail System, Executive Report, September 2004.  
<http://www.dot.state.wi.us/projects/state/docs/railmidwest.pdf>

human environment as well. CMAP coordinates with its neighboring MPOs to ensure that transportation project investments do not stop at the boundaries of its jurisdiction, but are instead carried forward and integrated into neighboring regions. CMAP's neighboring MPOs include the Northwest Indiana Regional Planning Commission (NIRPC), the Southeastern Wisconsin Regional Planning Commission (SWRPC), Kankakee County Regional Planning Commission (KCRPC), DeKalb-Sycamore Area Transportation Study (DSATS), and Rockford Area Transportation Study (RATS).

Other agencies work closely with CMAP, and CMAP must in turn have cooperative relationships with each of these agencies, to ensure that their transportation projects are integrated into the regional transportation framework and their benefits are fully realized.

- State of Illinois – the state's Department of Transportation owns and maintains most of the region's highways
- Illinois Tollway – owns and runs most of the region's tolled highways
- City of Chicago – owns and runs both O'Hare and Midway airports
- Counties and municipalities – own and maintain the region's local roads
- Regional Transportation Agency and public transit agencies – own and maintain rolling stock (buses, subways, etc.) and many of the track and station facilities on and to which they travel
- Class I railroads – BNSF Railway, CSX Transportation, Burlington Northern and Santa Fe Railway, Norfolk Southern Railway, Union Pacific Railroad, Canadian National, and Canadian Pacific Railway own and maintain rolling stock and the track on which it travels
- Federal agencies (including the Federal Highway Administration [FHWA], Federal Transit Administration, FRA, and the Federal Aviation Administration [FAA]) – work with CMAP and the agencies above by providing guidance and funding assistance in their planning and implementation work

Other entities with transportation responsibilities, but that are less involved with CMAP on a regular basis, include:

- Private common carriers (Amtrak, airlines, bus/coach companies, freight companies, etc.), which also own and maintain vehicles and facilities
- Private sector investment firms involved in public-private partnerships for infrastructure development
- Neighboring states and localities, with whom some coordination takes place on cross-border transportation issues.

## Section 3: Major Emerging Issues and Changes in the National Transportation Context

Inter-regional transportation projects are often so large and complex that planning must begin years, if not decades, in advance. As such, it is useful to understand some of the major underlying trends that influence travel patterns in the United States, along with their likely evolution in the years to come. Many of these trends relate to shifts in the supply and demand for inter-regional travel, along with changes in travel mode choice and industry structure, all of which present complexities for long-term forecasting and modeling.

### 3.1 Demand for Travel

Over the past few decades, the demand for travel – both local and inter-regional – has grown steadily. Air and highway travel in particular have outpaced the rate of population growth (Table 2), and highway light duty vehicle miles traveled (VMT) have even outpaced gross domestic product (GDP) (Figure 3).

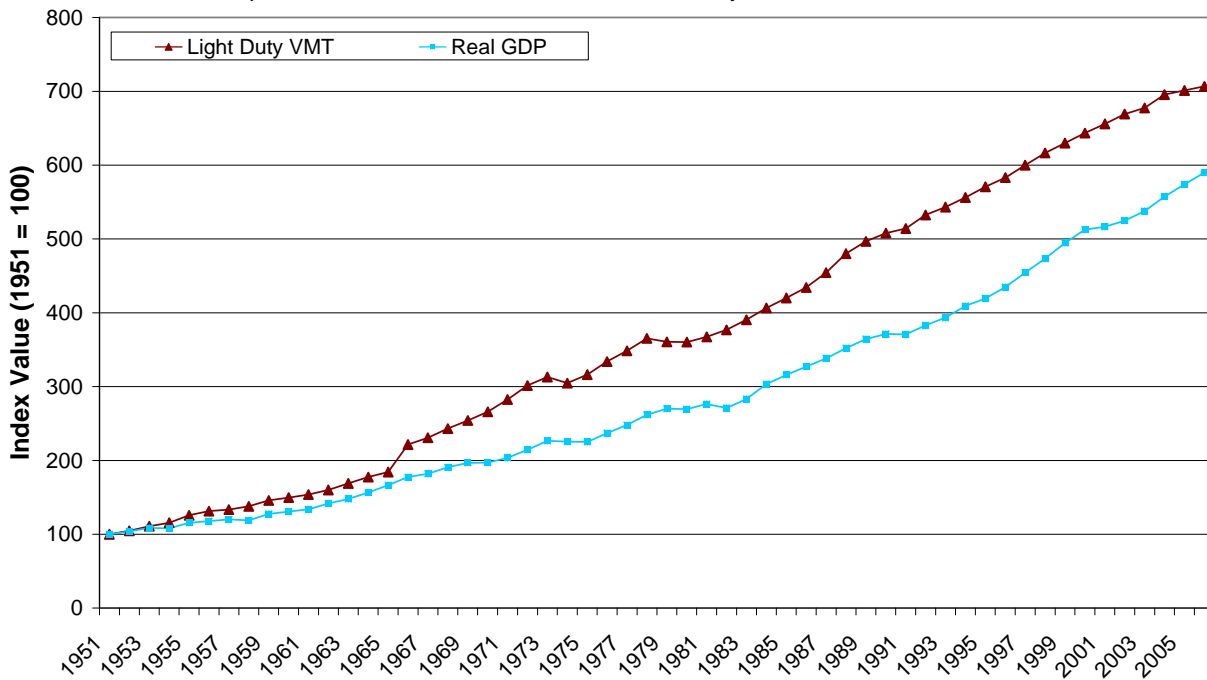
**Table 2: Compound Annual Growth Rates, 1960-2000**

Source: Bureau of Transportation Statistics; US Census

Air passenger-miles	7.2%
Highway passenger-miles	3.1%
U.S. population	1.1%

**Figure 3. Growth in Highway Travel vs. Real GDP Growth in the U.S., 1951-2006**

Source: Bureau of Transportation Statistics; Bureau of Economic Analysis





Transportation providers, particularly in the public sector, have struggled to keep pace with this growth and to plan for and build new facilities. While growth in travel demand is likely to continue due to population growth, some experts suggest that this trend may be leveling off due to a confluence of demographic and economic factors, including an aging population and the ability of information technology and telecommunications to substitute for travel. Levels of driver licensure, vehicle ownership, and female labor-force participation also appear to have leveled off after many years of continued growth.

### **3.2 Fuel Prices**

More recently, volatility in world petroleum markets has created enormous swings in the price of gasoline, diesel, and jet fuel, in some cases causing significant changes in travel patterns. During the most recent period of high gasoline prices (peaking at over \$4 per gallon at retail in the summer of 2008), total VMT on U.S. highways actually declined, reversing the long-term pattern. Overall, VMT was down about 3.6% compared to 2007, and the decline in VMT has continued into early 2009 despite subsequent moderation in fuel prices.<sup>2</sup>

In response to higher fuel prices, most airlines instituted a combination of fare increases and service cutbacks, often dropping unprofitable or marginal routes. In 2008, total airline passengers were down about 3.7 percent compared to 2007, with the decline coming primarily on the domestic side. Meanwhile, airfares reached an all-time high, as measured by the Air Travel Price Index, which tracks changes over time in fares on identical routes.<sup>3</sup>

By contrast, ridership on Amtrak (see Figure 4) has increased significantly over the past few years, hitting a record 28.7 million passengers for the fiscal year ending September 30, 2008. This was an 11 percent increase over the 2007 level, which was itself a record.<sup>4</sup> In 2008, Amtrak's share of the combined air-rail market reached 63 percent for the Washington-New York route and 49 percent for the Boston-New York route.<sup>5</sup>

Much of Amtrak's recent ridership increases have been attributed to Americans' shifting to rail as gas prices and airfares increased. It is unclear whether these ridership gains will continue as gas prices moderate. Other factors cited in the press for Amtrak's ridership gains include worsening congestion on the highways and in the skies, airport security checkpoint delays and inconvenience, and expanded Amtrak services, including increased frequencies on some Chicago-based routes. In 2008, ridership was up 15 percent on the Amtrak line linking Chicago with downstate Illinois and St. Louis, and up 25 percent on the Chicago-Milwaukee service.<sup>6</sup>

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<sup>2</sup> Federal Highway Administration, "Traffic Volume Trends," December 2008 and January 2009.  
<http://www.fhwa.dot.gov/ohim/tvtw/09jantvt/09jantvt.pdf>

<sup>3</sup> Bureau of Transportation Statistics, Press Release  
[http://www.bts.gov/press\\_releases/2009/bts012\\_09/html/bts012\\_09.html](http://www.bts.gov/press_releases/2009/bts012_09/html/bts012_09.html) (capacity)  
[http://www.bts.gov/press\\_releases/2009/bts005\\_09/html/bts005\\_09.html](http://www.bts.gov/press_releases/2009/bts005_09/html/bts005_09.html) (fares)

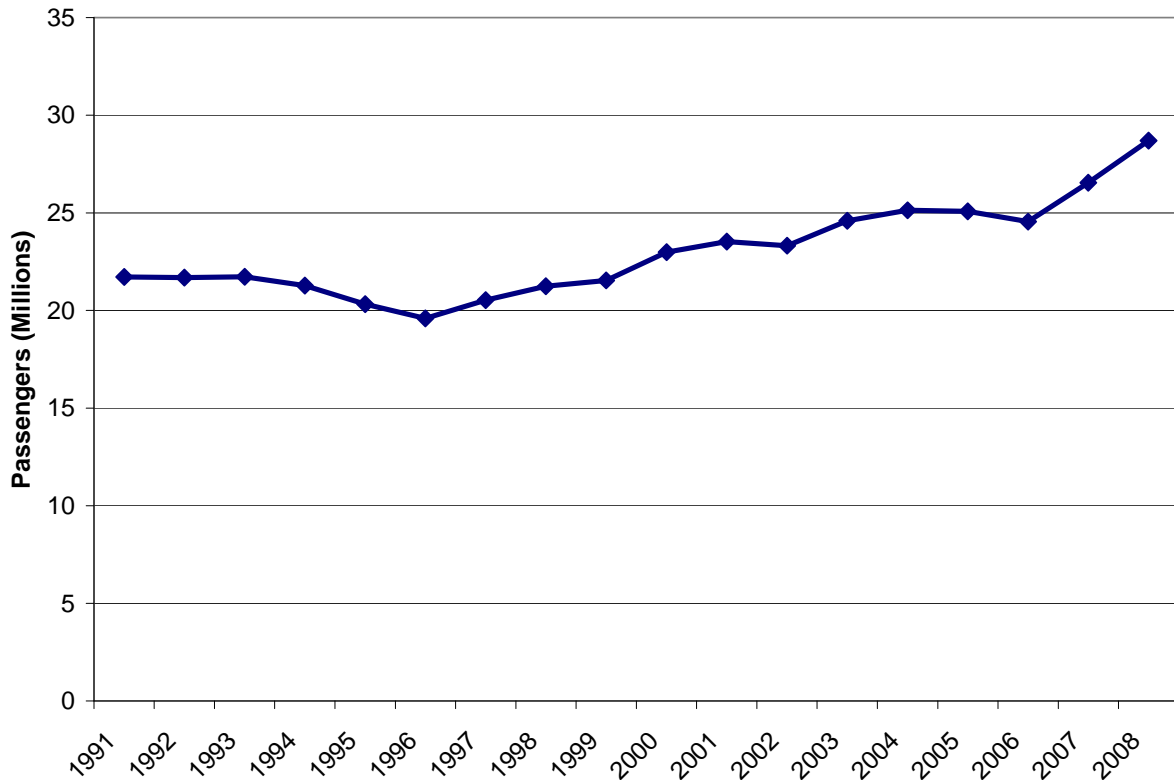
<sup>4</sup> Amtrak news release of Oct. 31, 2008: "Amtrak ridership posts another record,"  
[http://www.amtrak.com/servlet/ContentServer?pagename=Amtrak/am2Copy/News\\_Release\\_Page&c=am2Copy&cid=1178294243432&ssid=180](http://www.amtrak.com/servlet/ContentServer?pagename=Amtrak/am2Copy/News_Release_Page&c=am2Copy&cid=1178294243432&ssid=180) ]

<sup>5</sup> Adams, M. USA Today, "\$8 billion could help revive travel by train." [http://www.usatoday.com/travel/news/2009-03-16-high-speed-rail-travel\\_N.htm](http://www.usatoday.com/travel/news/2009-03-16-high-speed-rail-travel_N.htm), March 17, 2009.

<sup>6</sup> Reuters, <http://www.reuters.com/article/inDepthNews/idUSSIB27628520080612?sp=true>

**Figure 4. Trends in Amtrak Ridership, 1991-2008**

Source: Bureau of Transportation Statistics and Amtrak<sup>7</sup>



If these trends continue, long-term planning for inter-regional transportation may need to incorporate new modeling assumptions about the balance between air, highway, and rail travel, and the appropriate level of infrastructure investment in each mode. The significant fluctuations in travel demand and mode choice that have been observed just in the past few years also argue for a flexible program of investment that can respond to changes in the macro economy.

### **3.3 Trends in Aviation**

Aside from recent issues related to fuel prices and industry consolidation, aviation has also been noticeably affected by longer-term trends in service and operations. The hub-and-spoke model that emerged after airline deregulation has proven to be very successful in providing passengers with frequent, economical service to many destinations by consolidating trips onto flights to and from hub airports. As an example, even though the Bangor, ME – Omaha, NE, market has very few travelers on any given day, someone traveling between those cities can choose from several competing airlines offering departure times throughout the day and dozens of flight combinations, though each requires at least one change of plane. However, because hub airports tend to suffer from congestion, and because passengers generally prefer to avoid connections,

Chicago Tribune, <http://archives.chicagotribune.com/2008/oct/14/local/chi-amtrak-14-oct14>

<sup>7</sup>[http://www.bts.gov/publications/key\\_transportation\\_indicators/november\\_2008/html/rail\\_amtrak\\_ridership.html](http://www.bts.gov/publications/key_transportation_indicators/november_2008/html/rail_amtrak_ridership.html)



there has been a resurgence of point-to-point services, particularly among low-cost carriers such as Southwest and JetBlue. As regional jet technology has evolved over the past ten years and cost pressures increased, there has also been a fairly widespread industry trend in favor of using these smaller jets (rather than turboprop aircraft) to provide service on shorter routes, in some cases providing additional point-to-point service.

Another development in aviation is the significant growth in fractional jet ownership programs and flexible air charter services. Increasing numbers of Americans have found that these services allow them to avoid congested airports and security delays, and allow direct point-to-point travel on their own schedules. The number of fractional owners rose from 730 in 1997 to over 5,000 in 2007.<sup>8</sup> Improvements in aircraft technology may bring these sorts of services within economic reach of an even greater share of the traveling public over the coming decades, although it is unclear whether this will emerge as anything more than a niche service.

These trends suggest that significant changes in the way Americans travel by air are probable, and that long-term planning for inter-regional transportation again needs to be flexible enough to adapt to and accommodate future developments. In particular, planners need to consider a spectrum of possibilities ranging from a renewed emphasis on the hub-and-spoke model, on the one hand, to a much more dispersed aviation market that relies more heavily on small aircraft and secondary airports, on the other. Improved ground transportation access to airports will be an important aspect of this planning, though the nature of the improvements would vary according to the flow of air passengers.

### **3.4 Forecasts of Air Travel**

According to the Federal Aviation Administration, commercial passenger air travel, as measured in total enplanements on mainline and regional carriers, is expected to grow at an annual rate of 2.2 percent during the period from 2009 to 2025.<sup>9</sup> This reflects an expected *decrease* in 2009 of 7.8 percent for domestic travel and 2.5 percent for international travel, but with growth returning in the years 2010-2025. Forecasts for the two main Chicago-area airports, O'Hare and Midway, exhibit a similar pattern (Figure 5).

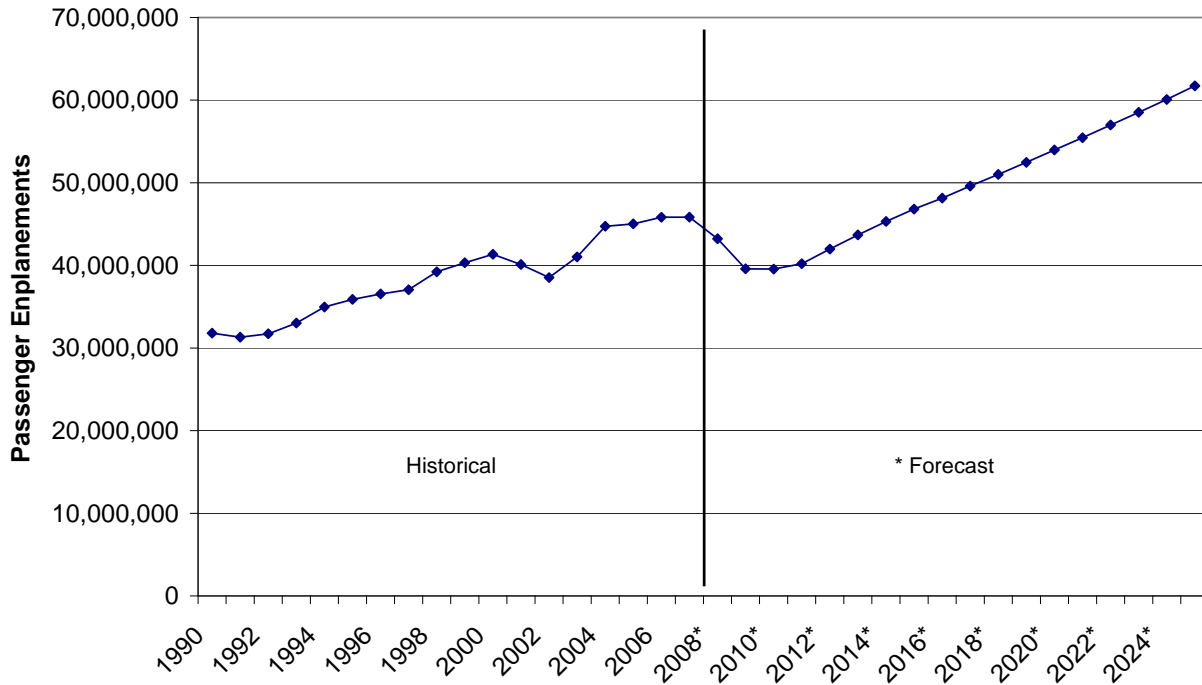
Air freight is also expected to decline in 2009 but continue its long-term growth through 2025. FAA is currently forecasting a 7.6 decrease in total air cargo revenue ton-miles for 2009 and then a growth rate of 5.1 percent for the years 2010-2025.

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<sup>8</sup> *USA Today*: [http://www.usatoday.com/travel/flights/2007-07-06-fractional-jets-forbes\\_N.htm](http://www.usatoday.com/travel/flights/2007-07-06-fractional-jets-forbes_N.htm)

<sup>9</sup> Federal Aviation Administration, "FAA Forecast Fact Sheet: Fiscal Years 2009-25," March 31, 2009. [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=10457](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=10457)

**Figure 5. Historical and Forecast Airport Traffic for Chicago O'Hare and Midway Airports**  
Source: FAA, Terminal Area Forecast, December 2008. <http://aspm.faa.gov/main/taf.asp>



### 3.5 National Policy Issues

The federal government continues to play a large role in providing funding for highway, rail, and air transportation and in establishing national priorities. As such, changes in federal policy can have implications for inter-regional transportation planning. Some of the major policy debates are discussed briefly here.

#### **Infrastructure Financing**

One key area of debate is the way in which surface transportation is financed, and the impacts that different funding approaches could have on traveler behavior, available funding, and the planning role of the MPO. The federal gas tax has remained at 18.4 cents per gallon since 1993, meaning that its real value has been eroded by inflation. With VMT leveling off and even decreasing (see above) and with vehicles becoming more fuel-efficient over time, fuel tax revenues may become inadequate to fund the level of roadway and transit investment needed to maintain Americans' mobility. The Bush administration (2001-2009) made it a priority to focus on alternatives to the gas tax, such as road user charging based on miles driven and "congestion pricing" of highway lanes, both of which generate revenue while also improving the efficiency of the system. The [Surface Transportation Policy and Revenue Study Commission](#), although endorsing further study of these options, ultimately recommended retaining the motor fuel tax due to factors such as its ease of administration and collection and its relative public acceptance. To meet future transportation funding needs, the Commission recommended increasing the tax

by 25 to 40 cents per gallon and indexing it to inflation thereafter.<sup>10</sup> The Commission also recommended, among other things, streamlining the number of federal funding programs and investing in high-speed passenger rail.

The Obama administration (2009- ) has made transportation infrastructure investment one of the focal points of its economic recovery plan, with a particular emphasis on intercity passenger rail. The impending next authorization of surface transportation funding and likely climate change legislation will undoubtedly have significant implications for transportation nationwide. For example, because the transportation sector comprises a large share of greenhouse gas emissions, any significant policy moves toward reducing emissions will likely have impacts both for overall travel demand and for the development of less energy-intensive modes of travel.

### ***High-Speed Rail***

In one form or another, planning for high-speed rail has been part of the national transportation policy framework since at least 1991, when the Intermodal Surface Transportation Efficiency Act provided for grade crossing improvements along designated high-speed corridors, including several Chicago-based Midwestern corridors. The current administration has put renewed emphasis on high-speed rail planning and investment, both as part of current fiscal stimulus efforts and as part of transportation policy over the longer term.

Several recent pieces of legislation, all enacted within the past two years, have also created additional streams of funding for rail improvements beyond those in the normal surface transportation reauthorization process. These include the Rail Safety Improvement Act of 2008, the Passenger Rail Investment and Improvement Act of 2008, and the American Recovery and Reinvestment Act (ARRA) of 2009. Of these, ARRA is the most significant as it provides \$8 billion for high-speed and inter-city passenger rail and allows up to a 100 percent federal allocation of costs. The ARRA also instructs the U.S. Department of Transportation (U.S. DOT) to develop a strategic plan for these funds and to develop guidance to be used in distributing the funds.

In an address on April 16, 2009, President Obama and Vice-President Biden released the DOT's strategic plan for high-speed rail. The President noted that "high-speed rail is long-overdue, and this plan lets American travelers know that they are not doomed to a future of long lines at the airports or jammed cars on the highways."<sup>11</sup> The plan envisions funding three main categories of rail improvements:

- *Projects:* Federal grants for individual rail projects that are "ready to go" in the sense of having completed the necessary engineering studies and environmental documentation.
- *Corridor programs:* Cooperative agreements between U.S. DOT and state/local partners to develop new services or enhance existing services on a passenger rail corridor.
- *Planning:* Cooperative agreements to develop corridor plans and state rail plans.

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<sup>10</sup> Report of the National Surface Transportation Policy and Revenue Study Commission: Transportation for Tomorrow. December 2007.

<sup>11</sup> "President Obama, Vice President Biden, Secretary LaHood Call for U.S. High Speed Passenger Trains," <http://www.fra.dot.gov/us/press-releases/226>

As of this writing, the FRA is developing interim guidance on how these three funding tracks will be administered and the criteria by which funding proposals will be vetted. ARRA requires this guidance to be in place by June 17, 2009. U.S. DOT's strategic plan provides general outlines of the form the guidance is likely to take, with an emphasis on corridor planning, stakeholder support, financial viability, and risk management.

### **Aviation**

National policies and planning efforts are particularly important in the aviation sector due the inherently inter-regional nature of air travel and the direct federal administration of air traffic control functions. Unlike high-speed rail, however, the air travel system is largely mature, and the FAA's strategic planning initiatives are mainly oriented toward using new technologies and operational approaches to reduce delays and ensure continued safety. The FAA's largest current initiative is the Next Generation Air Transportation System (NextGen), which envisions the replacement of the current radar-based approach with a more accurate satellite-based system, accompanied by improvements to communications, data transfers, and weather information. These upgrades will allow the air system to accommodate more operations with fewer delays. Other initiatives include Air Traffic Management and the Airspace Flow Program, which are intended to reduce air traffic delays during bad weather. Chicago is one of seven metro areas (along with San Francisco, Los Angeles, Las Vegas, Charlotte, New York, and Philadelphia) that have been targeted for operational improvements to reduce delays nationally. A related FAA objective is the reduction in the environmental impacts of air travel, with a specific focus on noise and fuel efficiency.<sup>12</sup>

### **3.6 Megaregions**

Megaregions (alternatively referred to as megalopolises) are an emerging concept for analyzing demographic and economic agglomerations in the United States and worldwide. Although precise definitions vary, megaregions are typically defined as groups of adjacent metropolitan areas that exhibit a high degree of economic integration and shared infrastructure. The megaregion concept is important for inter-regional transportation planning because megaregions (in contrast to the metropolitan area focus of most MPOs' formal responsibilities) represent the geographic scale that is relevant for some inter-regional transportation projects, such as the development of high-speed rail corridors. However, megaregion planning can also encompass a range of planning topics beyond transportation, such as water resources and economic development.

Two research efforts have examined megaregions in detail, [Professor Richard Florida from the University of Toronto](#), whose perspective is global, and the Regional Plan Association (RPA), which focuses on the United States as part of its [America 2050 initiative](#). CMAP participated in RPA's America 2050 Forum in Chicago, titled "[Rebuilding and Renewing America: Infrastructure Choices in the Great Lakes Megaregion](#)," in November 2008.

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<sup>12</sup> Federal Aviation Administration, [FAA Flight Plan 2009-2013](#).

The emerging megaregions of the United States (see Figure 6) are defined by layers of relationships that together define a common interest, principally:

- Environmental systems and topography,
- Infrastructure systems,
- Economic linkages,
- Settlement patterns and land use, and
- Shared culture and history

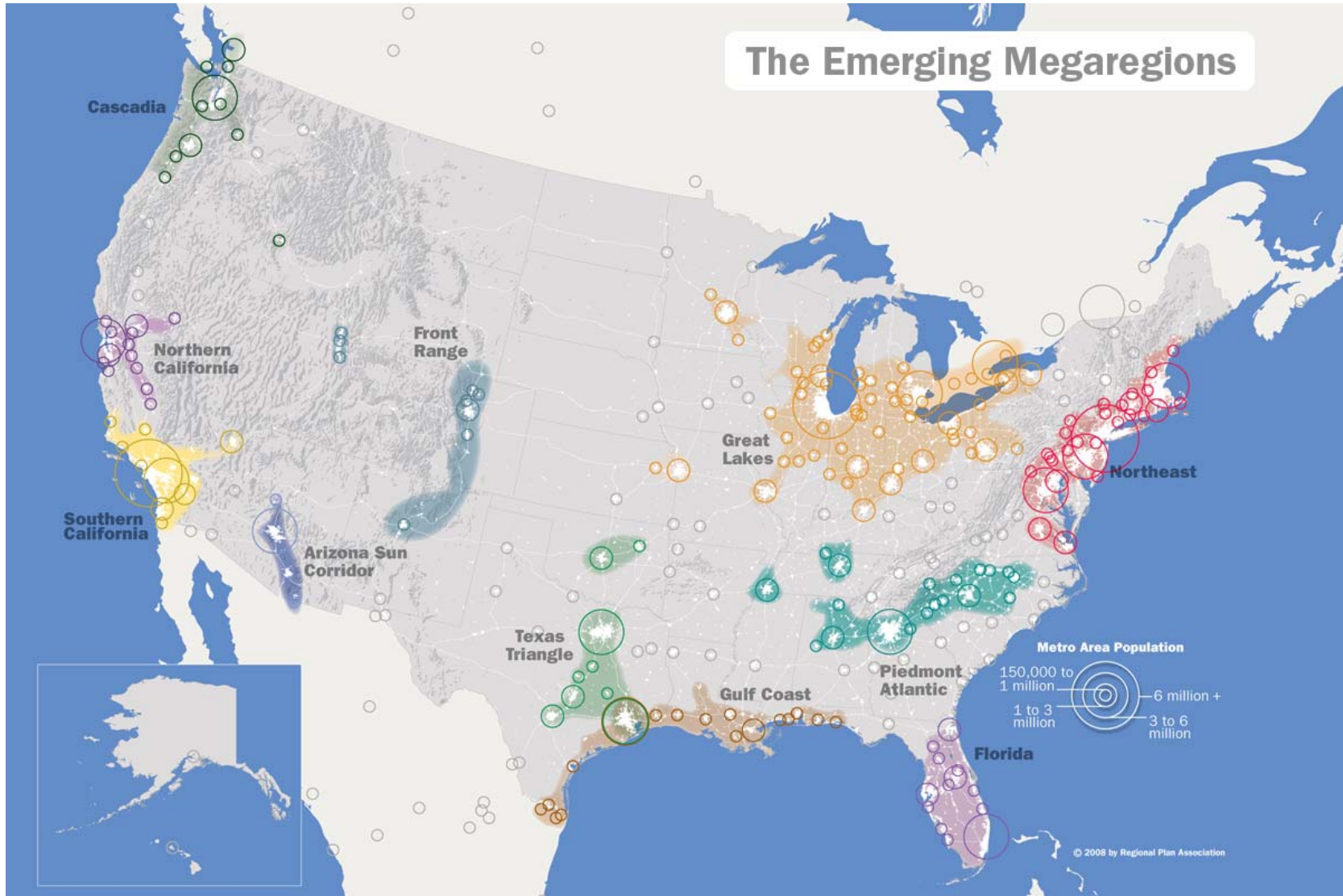
According to RPA, by mid-century, more than 70 percent of the nation's population growth and economic growth is expected to take place in these extended networks of metropolitan regions. Within these megaregions, the problems of growing highway congestion, overcrowded airports and seaports, loss of open space, and aging infrastructure systems will only be compounded by growing populations and rapidly expanding international trade. These constraints limit economic growth and degrade quality of life, essential parts of attracting and retaining both businesses and knowledge workers in a footloose global market.

Chicago is the undisputed hub of its megaregion, alternately called the Chi-Pitts Megaregion or the Great Lakes Megaregion. Opportunities for CMAP to use the megaregion concept in its inter-regional transportation planning, particularly for high-speed rail and airport planning, are outlined later in this action strategy paper. As RPA president Rober Yaro notes, "High-speed rail has to be planned at this [megaregion] scale... That is the mode of choice for this new form of urban development. We're talking about new forms of cooperation, not new levels of government."<sup>13</sup>

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<sup>13</sup> <http://atlanta.bizjournals.com/atlanta/stories/2008/11/24/focus9.html>

**Figure 6. RPA's Emerging Megaregions**  
Source: RPA





## Section 4: Case Study Research

### 4.1 Overview

Inter-regional transportation planning in the United States is nascent and evolving. While several MPOs have been engaged in inter-regional transportation planning for several years, they are mostly involved in general planning and not specific projects. General, high-level inter-regional transportation planning includes sharing information, holding regular meetings, and coordinating transportation planning processes, such as long-range planning, TIP formation, transportation modeling, and air quality conformity.

The major drivers for this planning are the determination and acknowledgement that commuter sheds have grown outside of a single MPO region and that transportation issues such as congestion, reduced mobility, environmental impacts, and decreased level of service are now shared among adjacent MPOs. This awareness has caused MPOs in several major metropolitan areas to work with neighboring MPOs on these issues. In some major metropolitan areas, the RPA spurred this awareness through its America 2050 megaregional planning work, while it grew organically at the MPO level in others.

This section describes the inter-regional transportation planning processes involving five peer MPOs and highlights the roles that these MPOs play in these processes. Because inter-regional transportation planning is still emerging in the United States, this section includes an international case study of the planning for inter-regional transportation projects in the Randstad, a large and populous region in the Netherlands. Where relevant, this section highlights opportunities for CMAP to be at the forefront of inter-regional transportation planning regionally and nationally.

Becoming involved in a high-level inter-regional transportation planning process can be a precursor to planning for specific inter-regional transportation projects in the future. Major inter-regional transportation projects in which CMAP is interested include planning for high-speed rail corridors or networks, freight mobility, and enhancing airport capacity. Regular communication as part of an inter-regional transportation planning process with neighboring MPOs can build understanding, trust, and confidence among MPOs, which lays the foundation for work on these types of projects in the future.

#### ***Criteria for Selecting Peer MPOs***

MPOs interviewed and researched for this strategy paper include the New York Metropolitan Transportation Council (NYMTC), the Atlanta Regional Commission (ARC), the Delaware Valley Regional Planning Commission (DVRPC), Wilmington Area Planning Council (WILMAPCO), and the Denver Regional Council of Governments (DRCOG).

The regions initially examined for analysis as part of this paper were (with the MPOs in parentheses):

- New York City and Newark (NYMTC and North Jersey Transportation Planning Authority)
- Atlanta, GA (ARC)
- Denver, CO (DRCOG)
- Washington, DC, and Baltimore (Metropolitan Washington Council of Governments [MWCOG] and Baltimore Metropolitan Council)
- Los Angeles and San Francisco (Southern California Association of Governments [SCAG] and Metropolitan Transportation Commission [MTC])
- Dallas and Houston (North Central Texas Council of Governments [NCTCOG] and Houston Galveston Area Council)
- Miami, Fort Lauderdale, and West Palm Beach (Miami Urbanized Area MPO, Broward County MPO, and Palm Beach MPO)

The matrix used to guide the selection of these peers can be found in Appendix B. While not used to rank the universe of peers quantitatively, the completed matrix provided a general litmus test as to which metropolitan areas were logical selections as peers. The categories of the matrix focused on rail travel, freight, air travel, and air to rail connections.

In addition to general similarities to Chicago in regional size and rail travel, freight, and air travel, the above peers were selected for the following principal reasons. Many of these peers are paired with each other due to their connections along potential or existing rail corridors:

- New York City and Newark – part of Northeast Corridor; existing major multi-modal connections
- Atlanta, GA – has the largest airport in the country (based on passenger boardings) and is part of proposed Southeast High Speed Rail Corridor
- Denver, CO – relocation of Stapleton Airport to Denver International Airport
- Washington, DC, and Baltimore – southern end of Northeast Corridor and northern end of proposed Southeast High Speed Rail Corridor
- Los Angeles and San Francisco – recent approval of funding for the California High Speed Rail project
- Dallas and Houston – momentum behind the Texas High Speed Rail project; Dallas is part of proposed South Central High Speed Rail Corridor and Houston is part of proposed Gulf Coast High Speed Rail Corridor
- Miami, Fort Lauderdale, and West Palm Beach – existing rail linking regional airports; Miami is part of proposed Florida High Speed Rail Corridor

After contacting each of the MPOs above and the RPA, DVRPC and WILMAPCO, were added for consideration due to their multi-year inter-regional transportation planning initiative, [Planning at the Edge](#). Of the MPOs that responded, some were more involved in inter-regional transportation planning activities than others. The four MPOs selected for detailed case studies are those that were most responsive and that had the most information available on their inter-regional transportation planning work. For further study, SCAG, MWCOG, MTC, and NCTCOG should be examined since they appear to also be active in inter-regional transportation planning.



In addition to these domestic peers, one international peer is examined: the Randstad in the Netherlands. The focus of this case study is on the planned expansion of freight access to the Port of Rotterdam through mobility management and broad partnerships. The Randstad, with a population of about 7.5 million people, includes the country's four largest cities (Amsterdam, Rotterdam, The Hague, and Utrecht) and surrounding areas.

## **4.2 The New York Metropolitan Transportation Council**

### **Overview**

While NYMTC, like other MPOs, is not working on a specific inter-regional transportation project, it has been active in inter-regional transportation planning activities and processes. In the context of inter-regional transportation planning, NYMTC has taken an active role as a coordinator and partnership-builder. An innovative tool that NYMTC used to strengthen inter-regional transportation planning is the crafting and signing of a Tri-State Memorandum of Understanding (MOU) between NYMTC and three adjacent MPOs in two other states (Connecticut and New Jersey). These roles and the MOU have created a solid foundation for NYMTC to engage in more project-specific inter-regional planning in the future. Major types of inter-regional projects of interest to NYMTC include high-speed rail and airport planning and coordination.

NYMTC has been involved in inter-regional planning for several years due in part to the size of the New York City region, which covers three states, and the density and proximity of metropolitan areas in the northeast megaregion, which stretches from Boston to Washington, DC. Additionally, NYMTC is one of ten MPOs that were created in 1982 when the Tri-State Regional Planning Commission ended. NYMTC is also a member of the [I-95 Corridor Coalition](#), a multi-state coalition of transportation agencies and organizations, which is working to further high-speed rail and seamless air to ground travel in the larger east coast region.

The northeast megaregion contains nearly 20 percent of the nation's population and an equal proportion of its economic output. An [RPA report](#) states that the future of the tri-state region is intertwined with that of the northeast megaregion. The report recommends governing alliances to address mobility, carbon emissions, sprawl, and environmental protection. As the most populous MPO in the megaregion, NYMTC has the opportunity to take a leading role on these and other inter-regional issues.

### **Tri-State Memorandum of Understanding**

Due to their history of inter-regional transportation planning, and due in part to guidance provided to them as part of their federal certification review, NYMTC created an MOU in 2008 with four adjacent MPOs from the tri-state area (Appendix C). These MPOs are:

- North Jersey Transportation Planning Authority (NJTPA) in New Jersey,
- South Western Region Metropolitan Planning Organization (SWRMPO) in Connecticut,
- Greater Bridgeport/Valley MPO (GB/VMPO) in Connecticut, and
- Housatonic Valley Council of Elected Officials (HVCEO) in Connecticut.

The MOU describes ways that the MPOs should coordinate their work on long-range planning initiatives, their transportation improvement programs (TIPs), modeling, air quality, and unified planning work programs (UPWPs). Two of the provisions in the MOU succinctly describe the MPOs' reasons for wanting to coordinate their work:

- “WHEREAS, the PARTIES acknowledge that portions of the three state New York-New Jersey-Connecticut metropolitan region are characterized by socio-economic and environmental interdependence, as evidenced through shared ecosystems, interconnected transportation systems and inter-related patterns of employment and population; and
- “WHEREAS, NYMTC and NJTPA are part of a federally-designated Transportation Management Area (TMA) that, when combined with SWRMPO, GB/VMPO, and HVCEO, constitutes one of the nation's largest commuter-sheds.”

The MOU requires that the MPOs hold an annual meeting of the Executive Directors and appropriate key managers to engage in discussions of mutual interest with a focus on the development of the respective UPWPs for the coming year. Representatives of the state departments of transportation and environmental protection/conservation and other resource agencies in the three states are also invited to participate. The MPOs have had periodic teleconferences in addition to the annual meeting. MPOs are to cooperate in achieving general consistency of plans through informal communication and document exchange. The MOU also calls for the MPOs to participate in the transportation planning process of the other MPOs through such activities as technical committee memberships and/or meeting participation, including the use of the MPOs' public participation processes and involvement in regional studies, as well as through informal and ongoing communications. NJTPA is on NYMTC's board, but NYMTC is not on NJTPA's board.

With regard to the UPWP, the MPOs agreed to make their UPWP products available to each other. The MPOs also agreed to exchange information, including draft copies of the UPWP, and maintain communication regarding how best to achieve coordination and consistency among the plans. MPOs will also discuss opportunities for collaborative activities that could be incorporated as tasks and/or products and thereby included in the each other's UPWPs for the upcoming year. This sharing of UPWP information creates transparency and can lead to greater coordination and collaboration on shared topics of concern.

Regarding modeling, the MPOs agreed to exchange modeling information at appropriate levels of geography, attempting to relate the data to the MPOs' existing Traffic Analysis Zone systems. The MPOs also agreed to share modeling details including socio-economic, census, and forecast and survey data and results; trip tables and travel demand model assumptions; and model validation data, state line traffic volumes, and traffic volumes at the external boundaries of the other MPOs' models. MPOs will also consult in the development of enhanced travel demand models and examine and utilize opportunities for joint development of new modeling applications for the region.

With regard to long-range transportation planning, the MPOs agreed to consult during the development of their long-range transportation plans regarding key elements of the plans including principles, scenarios, strategies, major project assumptions, and key issues. The MPOs also agreed to exchange information, including draft copies of the plans and proposed

amendments, and maintain communication with each other, including affording each other the opportunity to review and comment on projects proposed in the plan, especially on projects that border or have a significant impact upon other MPOs' boundaries.

Regarding their TIPs, the MPOs agreed to consult in the development of each others' TIPs. Similar to their coordination on the plan, the MPOs also agreed to exchange information and afford each other the opportunity to review and comment on projects proposed in the TIP.

Finally, with regard to air quality state implementation plan conformity, the MPOs agreed to exchange information on the design concept and the design scope of projects that should be included in the regional emissions analysis. The MPOs also agreed to consult on the assumptions used in the mobile emissions model in each state. Last, the MPOs agreed to exchange information, including draft copies of the conformity analysis and maintain communication among the MPOs.

### ***Airport Planning***

Similar to their work with ports in their region, NYMTC works with New York City airports, but they do not work with airports that are further outside of the New York City region, like Hartford and Philadelphia. According to Gerry Bogacz, NYMTC's Director of Planning, an inter-regional transportation planning coalition would help solve this need. Within the New York City region, NYMTC envisions a "super airport" where four regional airports operate as one: runways would be used collectively and a transit system would connect each airport to each other.

### ***High-Speed Rail Planning***

While the northeast is home to the Amtrak's Northeast Corridor, the nation's most profitable passenger rail service (Figure 7), there is room for improvement. Compared to European and Asian high-speed rails systems, the more modest of which easily travel at more than 185 MPH, the Northeast Corridor's Acela has maximum authorized speeds of only 150 MPH, which it rarely actually reaches, and then for only 33.9 miles along the 456-miles corridor.

[Flightstats.com](http://www.flightstats.com) provides the number of flights between the major hubs in the megaregion on an average weekday: roughly 86 flights each way between New York's three airports and Washington, D.C.; 76 flights between New York and Boston; and 42 flights between Boston and Washington.<sup>14</sup> Amtrak's intercity service plays an important role in this market: Amtrak's share of the combined air-rail market reached 63 percent for the Washington-New York route and 49 percent for the Boston-New York route in 2008; an increase of 14 and 11 percent since 2004, respectively.<sup>15</sup>

According to Mr. Bogacz of NYMTC, several MPOs have talked about developing high-speed rail first between New York City and Philadelphia, and then later from Portland, ME, to Washington, DC. However, these conversations have only been preliminary in nature, and the

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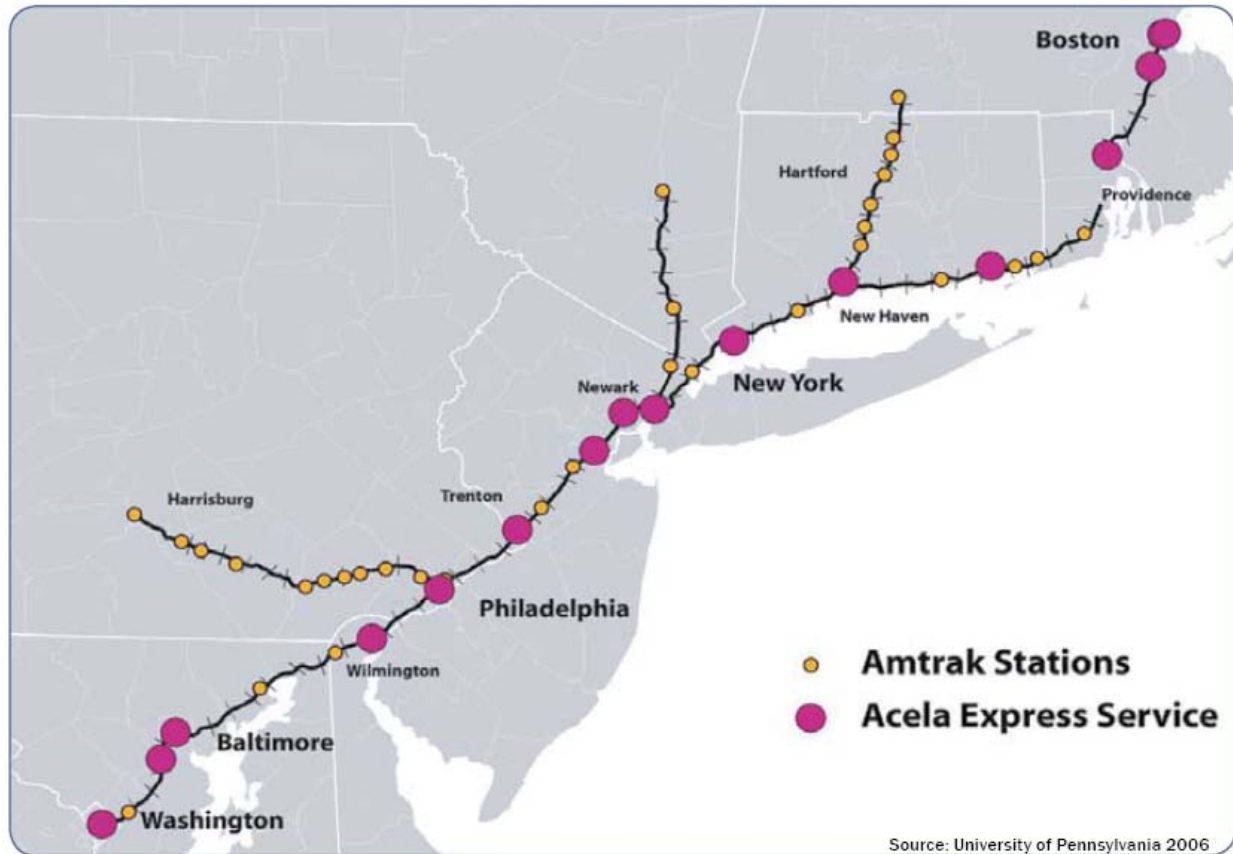
<sup>14</sup> <http://www.rpa.org/2007/11/spotlight-on-the-region-vol-6-6.html>

<sup>15</sup> Adams, M. *USA Today*, "\$8 billion could help revive travel by train."

[http://www.usatoday.com/travel/news/2009-03-16-high-speed-rail-travel\\_N.htm](http://www.usatoday.com/travel/news/2009-03-16-high-speed-rail-travel_N.htm), March 17, 2009.

idea is only conceptual at this point. There has, however, been some focus of attention on the Empire Corridor, which connects Buffalo to Albany and New York City. Though some infrastructure is in place, developing high-speed rail in the northeast can be more difficult than in other areas with more open land for new right-of-way.

**Figure 7. The Northeast Corridor**



In 2007, Petra Todorovich of RPA stated, “Now is the time for a discussion among the Northeast states of how they will accommodate growth by making strategic investments in transportation infrastructure, protecting natural resources, and safeguarding quality of life. As discussed at NYU's conference, Amtrak’s Northeast Corridor--the vital spine of the Northeast Megaregion--is a logical place to start. The timing has never been better.”<sup>16</sup>

### ***I-95 Corridor Coalition***

The [I-95 Corridor Coalition](#) provides a forum for decision and policy makers to address transportation management and operations issues of common interest along the Interstate 95 corridor, which runs from Florida to Maine. NYMTC is one of dozens of MPOs and other transportation agencies that are members of this coalition.

<sup>16</sup> <http://www.rpa.org/2007/11/spotlight-on-the-region-vol-6-6.html>

In December 2008, the Coalition released its [2040 Vision Plan](#) for the corridor. As one of the plan's principles to support a transportation vision for the I-95 region, the plan states "Make a commitment to enhanced intercity passenger rail in the I-95 corridor to provide improved regional passenger options, including improved service and higher speeds, and to help mitigate the severe congestion that has emerged in the region's ground and air traffic systems."<sup>17</sup> To create a seamless multi-modal transportation system, another of the plan's principles is to "Support a seamless integrated passenger network for I-95 corridor region travel; e.g., intercity rail connects with metro region transit networks and the region's major airports interconnect with transit and/or high-speed rail. Public transportation facilities/terminals (air, commuter rail, intercity rail and bus, urban transit, BRT) will be adapted to integrated multimodal terminals allowing seamless, one-ticket, minimal-transfer transportation."

Opportunities that the coalition identified to pursue high-speed passenger rail are to provide a multistate system perspective, formulate institutional strategies and arrangements to coordinate capital and operations planning, host forums to explore and resolve passenger rail issues, and advance a seamless intermodal passenger system.

### ***Northeast Megaregion Conference***

Working with RPA, NYMTC teamed with New York University's (NYU's) Rudin Center for Transportation Policy and Management to hold a major conference called "Thinking Bigger: New York and Transportation in the Northeast Megaregion" in November 2007. Over 300 attendees participated in this northeast megaregion conference. Webcasts of the event are available [online](#).

The goals of the conference were to foster a better understanding of the relationship between the Northeast Corridor and the broader megaregion, and to begin the discussion of how to address transportation at the megaregion level. The keynote speaker called for coalition-building among the states in the megaregion so that they can work together to address the megaregion's issues and needs.

In addition to NYMTC, RPA, and NYU, key participants and sponsors of the conference included:

- The Metropolitan Transportation Authority,
- The Port Authority of New York and New Jersey,
- The University Transportation Research Center, Region 2,
- The American Institute of Architects New York Chapter,
- The University of Delaware's Institute of Public Administration,
- New Jersey's Transportation Commissioner,
- The North Jersey Transportation Planning Authority,
- The Delaware Valley Regional Planning Commission, and
- The Greater Philadelphia Area Chamber of Commerce.

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<sup>17</sup> [http://www.i95coalition.net/i95/Portals/0/Public\\_Files/pm/reports/2040%20Vision%20for%20I-95%20Region\\_Full%20Report.pdf](http://www.i95coalition.net/i95/Portals/0/Public_Files/pm/reports/2040%20Vision%20for%20I-95%20Region_Full%20Report.pdf)

Two recounts of the conference summarize how inter-regional transportation planning must bridge jurisdictions through coordination and cooperation among states and regions. According to Cliff Sobel, Deputy Executive Director of NJTPA:

There was less recognition or discussion at the conference of the tensions within our mega-region that stand in the way of cooperation -- for instance, the competition among the east coast port facilities. But the point was well taken that action on numerous cross-jurisdictional issues could help address difficult problems at the local and regional level. For instance, strategic upgrades to the freight rail networks promise to remove trucks from our congested roads. Similarly, improving Amtrak -- possibly someday through high speed rail -- could help unburden our overcrowded airports.<sup>18</sup>

Executive Director Allison de Cerreño of NYU's Rudin Center stated:

I believe our challenge is to truly begin thinking about this Corridor as a system. I suggest that we begin thinking beyond intermodalism and multimodalism, to thinking of our transportation network as an entire organic system, applying a "megamodal" approach, in which decisions taken in one area are likely to have an impact in others; in which investments in one area (such as high speed rail), necessitate investments in others (like transit for complementary links); and in which we can begin to think about the most efficient use of our capacity for both passengers and freight across all modes, rather than continuing to try to have every mode share every travel need.<sup>19</sup>

### **Next Steps**

Through its coordination among the tri-state MPOs and partnership building with MPOs and NYU, NYMTC has laid the foundation for inter-regional transportation planning and is preparing for its next steps. According to Mr. Bogacz of NYMTC, the first step of a inter-regional transportation planning process should be to define the inter-regional transportation system in detail. In the northeast, the parts of this system are very interconnected and include I-95, the Northeast Corridor/Amtrak, airports, and ports.

The second step is to identify resources to apply to improving, expanding, and maintaining this system. To do this, the organizations and agencies involved in the inter-regional transportation planning process need to identify potential funding sources. A virtual inter-regional transportation planning entity could work, especially if funding is limited, and a national-level program could knit these entities together. Questions that remain to be answered in the inter-regional transportation planning process include:

- Going forward, who is going to be involved?
- Who is going to take the lead?
- Why and how would they take the lead?

NYMTC believes that resource constraints currently prevent more inter-regional planning from taking place. Also, the size of the northeast megaregion is so large that it is difficult to coordinate activities across the entire region. However, the Deputy Executive Director of NJTPA states, "Rather than creating new mechanisms for cooperation, it appears that the organizational structures are already in place: the MPOs in the tri-state region already have begun improving their cooperation and this could be expanded; the I-95 Corridor Coalition has

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<sup>18</sup> <http://www.nymtc.org/megaregionConfer.html>

<sup>19</sup> <http://www.nymtc.org/megaregionConfer.html>



proven an effective body for key mega-region transportation issues; and the Coalition of Northeast Governors is effective in representing our interests in Washington.”<sup>20</sup>

### ***Implications for CMAP***

NYMTC’s inter-regional activities point to several opportunities for CMAP to pursue in their work:

- *Develop an inter-regional MOU:* The Tri-State MOU is an innovative tool that NYMTC used to strengthen inter-regional transportation planning. CMAP could work with its neighboring MPOs to craft a similar agreement that describes ways that the MPOs should coordinate their work on long-range planning initiatives, TIPs, modeling, air quality, and UPWPs. This MOU could be a key first step towards project-specific inter-regional transportation planning.
- *Build partnerships with universities:* CMAP may want to consider working with a local university on building and strengthening an inter-regional transportation planning process. Universities offer additional connections (with academic professionals, etc.), tools, and resources, including low-cost student work, which can be helpful in an inter-regional transportation planning processes.
- *Define role in aviation planning and work to integrate rail and aviation planning:* CMAP could pursue an integrated planning effort with regard to aviation planning. NYMTC envisions a “super airport” in the New York City region, and a similar approach could be taken in the Chicago region. Transit between the airports and associated land use changes would need to be coordinated for such an approach to succeed.

Amtrak’s intercity service along the Northeast Corridor effectively relieves capacity pressure on airports throughout the northeast by providing passenger rail service that substitutes for many short-haul flights. CMAP could work to better integrate rail and aviation in the greater Chicago region to allow for and encourage rail trip substitution for flights, thereby freeing up airport capacity for longer distance flights and perhaps flights to other destinations as well.

- *Consider joining or helping to create a corridor coalition:* Should the opportunity arise, CMAP could join or help create a coalition similar to the I-95 Corridor Coalition. While initially focused on issues concerning the interstate itself, the I-95 Corridor Coalition is now working to further high-speed rail and seamless air to ground travel in the larger east coast region.

## **4.3 Atlanta Regional Commission**

### ***Overview***

The Atlanta Regional Commission (ARC) has been involved in inter-regional transportation planning for several years. ARC’s primary roles in inter-regional transportation planning have

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<sup>20</sup> <http://www.nymtc.org/megaregionConfer.html>

been building partnerships, being visionary, and taking a leadership role among other MPOs within the Piedmont Atlantic Megaregion (PAM).

In 2008, ARC created the two-year long Fifty Forward visioning initiative, which focuses on eight key issues affecting the region, one of them being the Atlanta region's role in the PAM. ARC also worked with RPA to hold a [PAM forum in March 2009](#). ARC has worked closely with Georgia Tech University on both of these activities.

While ARC is currently not directly involved in airport or high-speed rail project planning at the inter-regional level, it has begun working on conceptual inter-regional freight project planning as part of its [Regional Freight Mobility Plan](#). Several years ago, ARC worked on a study that examined establishing high-speed rail between Atlanta and Chattanooga. Georgia DOT is now working to determine the feasibility of this project. Within about the next year, ARC and Georgia DOT will start a study of the future of rail in the state – both freight and passenger (in the region and inter-city). ARC and Georgia DOT will likely engage MPOs and state DOTs outside of the region/state as part of this study.

As quoted in an [article](#) in the Atlanta Journal-Constitution, ARC director Chick Krautler said, “We are going to have to figure out how we can coordinate so we can remain globally competitive... Atlanta is going to be a big player in how to build linkages with Raleigh, Charlotte and Birmingham, as well as with Savannah and the coast. In the future, our planning is going to look outward. It's a huge challenge.”

### ***Atlanta Fifty Forward Forums***

ARC's Atlanta [Fifty Forward](#) is a two-year visioning initiative based on open-house style forums centered around topics that impact and will continue to impact the metropolitan Atlanta region for decades to come. The goal of Fifty Forward is to explore possible future scenarios for the metropolitan Atlanta region and develop an action plan to ensure the region's future livability, prosperity, and sustainability. The region covered by the initiative is the 10-county metropolitan Atlanta region, since that is the area over which ARC has influence. However, several of the forum topics extend beyond ARC's planning boundaries. Co-chairs of Fifty Forward are high-level local and state stakeholders who represent the public, private, and nonprofit sectors of the metropolitan Atlanta region.

Eight forums, each a one-day event, are taking place over the course of 2008 and 2009. Attendance at the forums has been between 150 and 200 people; the invitation list to the forums is about 700 people. The forums feature nationally recognized keynote speakers who are joined by a panel of local experts, followed by an open house-style discussion. Forum topics include:

- Sustainability – forum [complete](#)
- Demography and diversity – forum [complete](#)
- Megaregions, the economy, and globalization – forum [complete](#)
- Science, technology, and innovation – forum complete
- Land use and housing; transportation – forum planned
- Public health/health care – forum planned
- Education and work force development – forum planned



- Energy – forum planned

ARC worked with RPA and Georgia Tech University's [Center for Quality Growth and Regional Development](#) (CQGRD) on developing and holding the megaregion forum.<sup>21</sup> The keynote speaker for the megaregion forum was the head of European Relations for the [Metrex Network of European Metropolitan Regions](#), a consortium of about 40 metro areas that provides a forum for information sharing and joint action on issues of common interest. The forum was recorded and is available as streaming video [here](#). Planning officials from Charlotte, Chattanooga, and Mobile attended the forum, and the forum initiated a notable amount of press.

In advance of the megaregion forum, ARC created a short [information video](#) about PAM. ARC also wrote a [short report](#) describing PAM, which is in-line with the work of RPA and Dr. Florida of the University of Toronto. The CQGRD developed a [brief primer](#) on the importance of megaregions in the global economy and the specific characteristics of the PAM as well. ARC will draft a final “glossy” document that will summarize all of the forums at the end of the year.

### ***Piedmont Atlantic Megaregion Forum***

Building off the success of the Atlanta Fifty Forward megaregion forum, ARC has continued working with RPA and the CQGRD. In March 2009, ARC, CQGRD, RPA, and other organizations held an America 2050 Forum titled “The Case for a National Infrastructure Policy: The Piedmont Atlantic Megaregion in the Global Economy.” The organizers of [this forum](#) invited MPOs and other stakeholders from the six state area. A diverse group of speakers included the President and CEO of the Federal Home Loan Bank of Atlanta, the Executive Director of the American Association of State Highway and Transportation Officials, the Executive Director of the American Public Transportation Association, the President of American Waters, the Mayor of the City of Charlotte, and U.S. Representative Earl Blumenauer of Portland, OR.

These speakers and other participants discussed a national agenda for infrastructure investment that could shape the domestic policy of the Obama administration and Congress. Participants addressed how an infrastructure plan can help America address key challenges, such as competing in the global economy, achieving energy independence, combating climate change, and positioning the nation for economic recovery and long-term prosperity. The program for the forum is available [here](#). The forum concluded with a commitment from the Mayors of Atlanta, Charlotte, and Macon to host a smaller gathering of mayors from across the megaregion later in the year, probably in Charlotte.

### ***Aviation***

Aviation is not addressed at the MPO level in the Atlanta region. Hartsfield-Jackson Atlanta International Airport, the world's busiest airport, is owned by the City of Atlanta. Airport planning is conducted through the city's [Department of Aviation](#), specifically the Planning and

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<sup>21</sup> The head of the CQGRD is Catherine Ross, a national city and regional planning expert, who has become heavily involved with megaregion planning.

Development Division, which is divided into three main areas of responsibility: planning, engineering, and environmental and technical services. The planning group focuses on activities that define long-term goals for the airport while supporting implementation of short-term programs. These activities include master planning, land use and community planning, and forecasting.

### ***High-Speed Rail***

Separate from its inter-regional transportation planning work described above, ARC has been involved in some project-specific high-speed rail planning work, but most of this work is now conducted by the Georgia DOT.

In 2001, chambers of commerce from 13 cities in six states in the southeast formed an alliance to push the development of high-speed rail between the major cities. The Southeastern Economic Alliance was housed at the Metro Atlanta Chamber of Commerce and was the catalyst for cooperation among cities that often compete against each other when trying to attract companies.<sup>22</sup> This alliance promoted the concept of the [Southeast High Speed Rail Corridor](#).

Separate from this work, ARC conducted a study on Maglev service between Atlanta and Chattanooga in 2005. The impetus for this study was initially due to Chattanooga officials expressing their desire for access to Hartsfield-Jackson airport. Currently, Georgia DOT is working with Tennessee DOT on the environmental impact statement for this project and is evaluating the alternative alignments.

According to the project's [website](#), the route between Atlanta and Chattanooga is being studied because the state and interstate highway system between Atlanta and Chattanooga are currently operating at or near capacity and are unable to keep pace with transportation demand resulting from population growth in the region. Although capacity improvements to the state and interstate system along the corridor are either currently underway or planned for the near future, they are considered interim and will not address all of the future capacity or mobility needs.

### ***Freight***

ARC's [Regional Freight Mobility Plan](#), completed in February 2008, analyzes freight movements within the Atlanta region, but it does look outside of the region to a limited degree as well. The plan calls for several improvements to be made to the Atlanta region's roadway and rail infrastructure to enable freight to move through the region to Florida, the Carolinas, and the Midwest. The plan also calls for improvements to be made in cooperation with other MPOs and states to entire corridors to facilitate greater freight movement, such as the double-stacking of freight rail from Savannah, GA, to Memphis, TN.

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<sup>22</sup> [http://www.ajc.com/blogs/content/shared-blogs/ajc/businessinsider/entries/2008/07/06/same\\_old\\_urban\\_policies\\_wont\\_w.html](http://www.ajc.com/blogs/content/shared-blogs/ajc/businessinsider/entries/2008/07/06/same_old_urban_policies_wont_w.html)

### ***Next Steps***

ARC hopes that the Atlanta Fifty Forward megaregion forum and the larger America 2050 forum will lead to regular meetings of multi-state stakeholders where inter-regional issues and challenges can be discussed. ARC believes that high speed rail will likely be the test case for how this inter-regional planning process works, and ARC anticipates that this issue will be unifying since many stakeholders are supportive of high speed rail for the region. Water issues – seen as controversial – will likely be discussed later within an inter-regional context.

Also, in the next several years, ARC and Georgia DOT will start a study of the future of rail in the state – both freight and passenger (in the region and inter-city). ARC and Georgia DOT will likely engage MPOs and state DOTs outside of the region/state as part of this study. If conducted in the larger context of ARC's emerging inter-regional planning process, this study will be a prime example of how an inter-regional planning process can lead to specific inter-regional transportation studies and ultimately projects.

### ***Implications for CMAP***

ARC's inter-regional activities point to several opportunities for CMAP to pursue in their own work:

- *Create an inter-regional visioning initiative.* CMAP could undertake a visioning initiative similar to ARC's Fifty Forward, but instead of focusing on just the Chicago region, the initiative could focus on the greater Wisconsin-Illinois-Indiana region or beyond. The format of CMAP's initiative could be similar to Fifty Forward with a focus on a handful of key issues affecting the greater Chicago region, forums discussing these issues, and a summary action plan.
- *Hold additional megaregion forums:* Similar to how ARC has now held two megaregion forums (one as part of its Fifty Forward initiative and another with CQGRD and RPA), CMAP could hold another megaregion forum to follow-up on the November 2008 megaregion forum. This second forum would help ensure that topics of inter-regional importance continue to be discussed at the megaregion level and are not left dormant.
- *Partner with the state on projects of inter-regional significance:* Similar to how ARC and Georgia DOT will start a study of the future of rail in the state, CMAP could work with Illinois DOT on similar projects of inter-regional significance. These projects could include high-speed rail and/or freight mobility and could involve adjacent state DOTs and MPOs.
- *Initiate multi-region topic-specific planning efforts:* While ARC's Regional Freight Mobility Plan calls for improvements to be made to entire corridors in cooperation with other MPOs and states, it is not clear how involved other MPOs and states were in the crafting of this plan. If CMAP were to initiate a multi-region or multi-state planning effort to focus on a specific topic, adjacent MPOs and/or states should be involved from the beginning of the project.

## **4.4 The Delaware Valley Regional Planning Commission and the Wilmington Area Planning Council**

### ***Delaware Valley Regional Planning Commission***

Eight of DVRPC's nine member counties share boundaries with one or more of 15 diverse counties in four states that surround the bi-state DVRPC region. For some functional planning activities, such as air quality and airport systems planning, DVRPC is designated as the responsible agency for multi-county and multi-state planning areas that exceed its formal regional boundaries. However, in most instances, cross-boundary planning issue identification, assessment, and resolution occur on a case-by-case basis, depending on the parameters of a particular project or a specific coordination initiative. Box 1 shows how DVRPC performs multi-regional travel forecasting.

According to DVRPC, the identification of cross-boundary issues and strategies for resolving them should work in two ways. DVRPC should be aware of issues in adjacent areas that will have an effect on its region, and adjacent agencies should be aware of issues emanating from the DVRPC region that will affect them. DVRPC determined that communication mechanisms (both formal and informal) were needed to make agencies aware of the issues and to establish a coordination process to address them. These mechanisms would then enable each agency to be aware of pertinent issues and opportunities for collaboration or individual action to address them.

### ***Wilmington Area Planning Council***

According to its [inter-regional website](#), WILMAPCO believes that significant population growth and demographic shifts, such as employment changes and an aging population, will impact the efficiency of the region's transportation system. In the face of these forces, inter-regional planning and coordination becomes a high priority. It promises the resolution of highway congestion, longer commute times, and increasing vehicle miles traveled, while allowing for seamless cross-border planning.

### ***Planning at the Edge***

DVRPC and WILMAPCO simultaneously conceived of a multi-regional planning initiative several years ago. This initiative, now known as *Planning at the Edge*, began as a cooperative regional land use, growth, and transportation planning efforts among Delaware, Maryland, Pennsylvania, and New Jersey. The goal of Planning at the Edge is to coordinate with surrounding regions and MPOs, and encourage information sharing on planning issues. WILMAPCO, DVRPC, and other MPOs formed a committee, the Planning at the Edge Advisory Committee (PEAC), to meet regularly and guide work in the multi-region area. Some of the cross-cutting issues addressed through the PEAC are commuting patterns, roadway improvements, intelligent transportation systems, security, climate change, aviation congestion, and freight movement.

### **Box 1: DVRPC's Multi-Regional Travel Forecasting<sup>1</sup>**

DVRPC has been involved in several efforts regarding multi-regional travel forecasting. For some projects, DVRPC coordinates their travel demand model with an adjacent MPO's model and "hand off" trips between the models at their common boundary. For other studies, DVRPC prepares a custom, extended version of its travel model to include an entire study area that crosses MPO boundaries.

DVRPC has also worked with Pennsylvania DOT and New Jersey DOT on the development of state-wide travel forecasting models. In New Jersey, the effort involved piecing together travel models from three MPOs to create a statewide model. In Pennsylvania (since the entire state is not covered by MPO travel models) a new statewide model was built that used much of the data included in DVRPC's travel model. These statewide models are sometimes used to forecast travel in multi-regional study areas.

DVRPC also works with adjacent MPOs when collecting survey data that are used to develop model parameters (e.g. trip rates, trip length frequency distributions, etc.). For example, DVRPC conducted their latest Household Travel Survey in conjunction with the South Jersey Transportation Planning Organization and they conducted their cordon survey in conjunction with several adjacent MPOs and other agencies. DVRPC and its partnering MPOs share costs and data in each case.

#### *Role of Policy in Forecasting*

For DVRPC and other MPOs, policy decisions affect modeling multi-regional travel in a similar manner as they affect modeling intra-regional travel. Numerous policy decisions serve as necessary inputs to travel models. These decisions include future land use plans and programs, long-range population and employment forecasts, and future-year transportation networks.

Before DVRPC initiates a study, a steering committee or other group decides if it is appropriate to use the policies in the MPO-adopted long range plan or to develop an alternate set of policy assumptions (for example, if it should be assumed that a new rail line will spur more development in areas adjacent to its proposed stations).

DVRPC takes the forecasts that result from the modeling effort as given. For DVRPC, traffic forecasts are not necessarily the most important consideration during project evaluation and selection. Safety, costs, right-of-way impacts, and other environmental factors are usually just as, or more, important than the traffic forecasts.

<sup>1</sup> Email communication with Matthew Gates, Senior Transportation Engineer, DVRPC, May 2009.

In November 2007, the PEAC held a meeting on climate change and energy. According to the two-day [agenda](#), speakers included officials from the Post Carbon Institute, the New Jersey Board of Public Utilities, the U.S. Environmental Protection Agency, and the Natural Lands Trust. The 50 attendees were from Pennsylvania, New Jersey, and Delaware with a couple from Maryland as well. DVRPC opened the roundtable by emphasizing the importance of local actions in solving global issues such as climate change and global warming. Summaries and materials from the roundtable are available on DVRPC's [Planning at the Edge website](#).

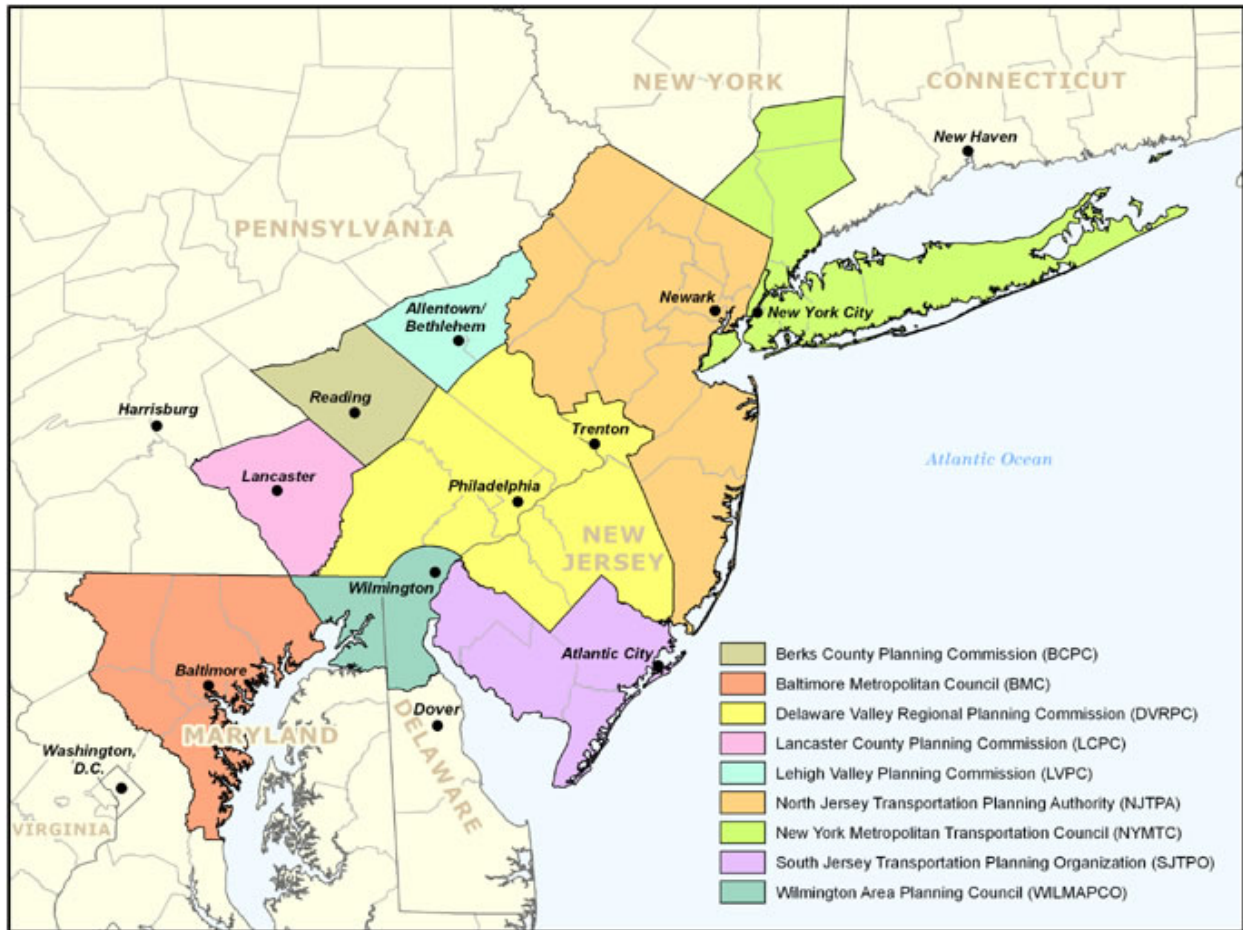
### *DVRPC Planning at the Edge Initiatives*

In its fiscal year 2003 Annual Planning Work Program, the DVRPC Board supported including a study to establish formal linkages and informal approaches between DVRPC and external planning agencies – both other MPOs and statewide planning agencies – that encourage inter-regional coordination and communication on intergovernmental issues, programs, projects, and facilities. The resulting study, “[Planning at the Edge: Communication, Coordination, Consultation to Address Common Issues Across Regional Boundaries](#),” involved three phases, which are described below.

- *Phase I - Information-Gathering, Issue Identification, and Agency Outreach:* This phase included preparation of agency profiles via staff interviews and information gathering, lists of cross-boundary issues, on-site outreach meetings, and the formation of a Study Advisory Committee (SAC). DVRPC formed the SAC to involve adjacent planning agencies in the study and to review and provide comments on study activities and the draft report. In addition to DVRPC and its member counties, the SAC is composed of representatives from the MPOs shown in Figure 8 and the state DOTs from Pennsylvania, New Jersey, Delaware, and Maryland; the Southeastern Pennsylvania Transportation Authority; the New Jersey Transit Corporation; Delaware Area Regional Transit; the Maryland Area Transportation Corporation; and Amtrak.
- *Phase II - Demographic and Transportation Information Analysis and Mapping:* In this phase, DVRPC analyzed demographic and transportation-related information (such as population and employment trends and forecasts, commuting flows and traffic volumes on major arterials, and pertinent public transit information) for the counties that surround the DVRPC region and compared this analysis with similar information for DVRPC’s boundary counties.
- *Phase III - Defining Proposed Institutional Coordination, Information-Sharing, and Priority-Setting Approaches:* In this phase, DVRPC developed proposed communications and coordination techniques and approaches to better address and respond to cross-boundary issues within the framework of existing planning statutes and authorities (Box 2). DVRPC also developed criteria for determining the priority of issues and projects for joint action. DVRPC included a summary of current DVRPC cross-boundary coordination activities, highlighting two case studies of inter-regional coordination: WILMAPCO’s Interstate Coordination Initiative and DVRPC/NJTPA’s Central New Jersey Transportation Forum.



**Figure 8. SAC Members and Planning at the Edge Study Area**  
Source: DVRPC



According to the Planning at the Edge study, the defined coordination and communication techniques and approaches are intended to:

- Enhance inter-regional and intergovernmental communication, coordination, and cooperation
- Identify issues, establish priorities, and achieve resolution
- Foster common policy positions and advocate legislative change
- Promote land use and transportation plan consistency
- Identify common projects and facilitate implementation
- Promote and share best practices and new technologies of mutual benefit

## **Box 2: DVRPC's Proposed Techniques**

### *Communication*<sup>1</sup>

- Share meeting minutes – distribute minutes from the DVRPC Board, various DVRPC Technical Committees, and Regional Citizens Committee.
- Post meeting notices and extend invitations to participate.
- Share newsletters and related informational materials.
- Maintain pertinent information through the internet and agency websites<sup>2</sup>.
- Maintain email contacts – provide meeting notices and other information to pertinent staff via group email notices.
- Provide speakers for presentations on pertinent topics – present pertinent studies, projects and plans at Board meetings, technical and citizen committees, county and local government, and private sector organization meetings.

### *Coordination*

- Committee membership – add external agency membership on study advisory committees, task forces, and project-related activities for projects, studies, and plans of mutual benefit or interest.
- Best practices and innovations – share information and demonstration of new technologies through the web site, at meetings, training sessions, and conferences.
- Periodic meetings – maintain the SAC. Meet with adjacent agencies two to three times a year to maintain regular contact, continue to identify issues and projects, determine action priorities, and define implementation strategies and solutions.

### *Cooperation*

- Co-sponsor conferences, training sessions, and meetings – select issues and topics of common interest.
- Create formal joint committees and task forces – address specific issues, problems, and projects.
- Develop mutual policy and legislative positions – advocate advancement on a joint basis with the respective legislative delegations and/or in coordination with national associations.
- Share data and other information, such as traffic counts.

### *Commitment* – Demonstrate shared commitment through such actions as:

- Memoranda of Understanding
- Shared policy positions
- Plan and project consistency statements
- Co-signed or individual letters of support
- Co-authored reports and studies
- Prepare an annual summary of key trends, issues, and data

<sup>1</sup> The DVRPC examples are illustrative

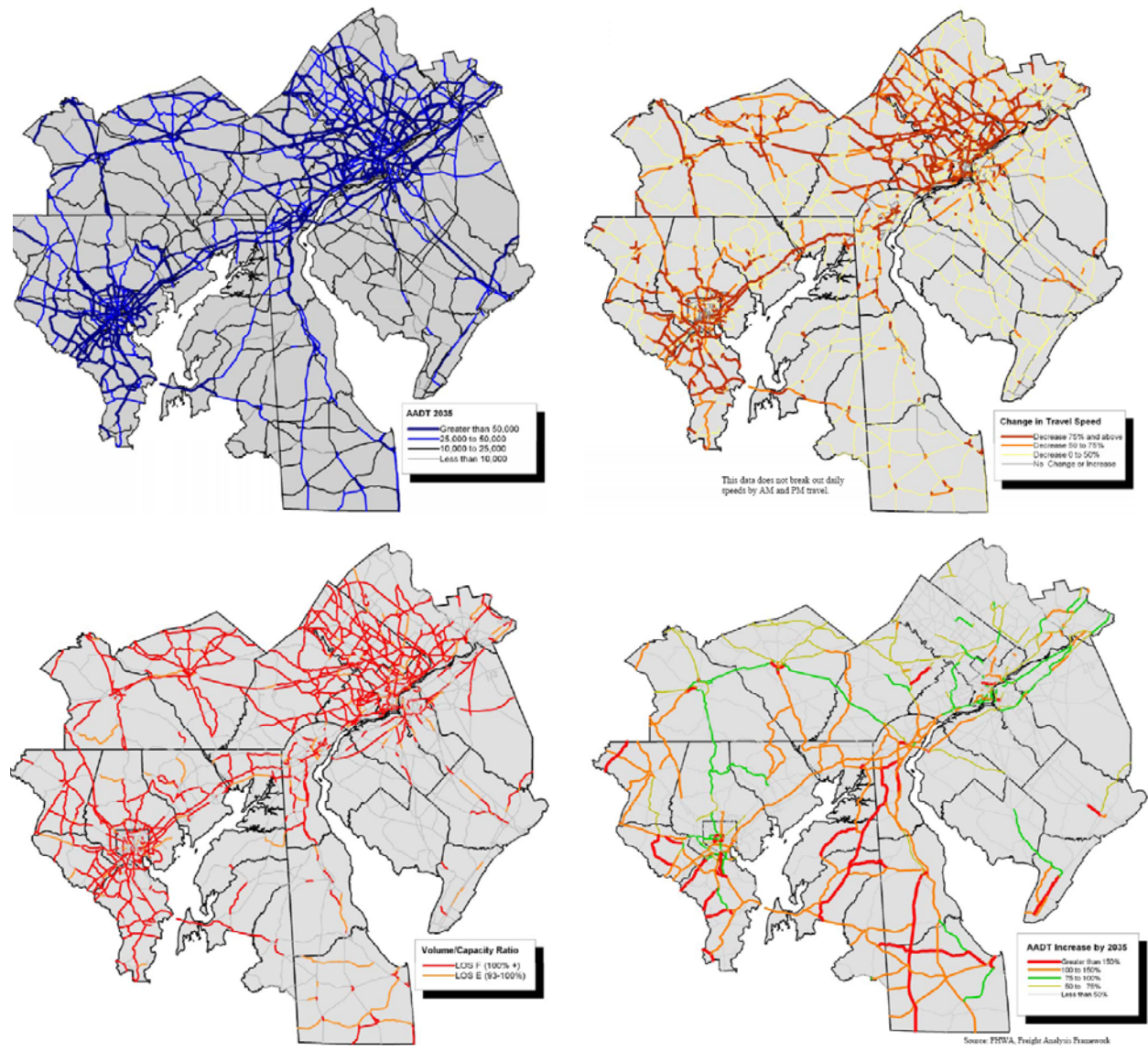
<sup>2</sup> This information includes the meeting calendar, Transportation Improvement Program, Census data, aerial photography, transportation data, land use information, forecasts, plan descriptions, study summaries, and extended regional database.





**Figures 11 to 14. Clockwise from Top: Estimated Annual Average Daily Traffic, 2035; Estimated Change in Average Travel Speeds by 2035; Estimated Volume to Capacity by County, 2035; Estimated Percentage Increase of Truck Volumes, 2002 to 2035**

Source: WILMAPCO



At the time WILMAPCO was creating the report, it was a challenge to get every dataset from each MPO (in some cases, the data did not exist).<sup>24</sup> Using the FAF<sup>2</sup> made the analysis more streamlined by using one dataset with the same outlook year. A compilation of MPO data was used, however, for current traffic volumes and current and projected demographic data.

The 2008 report also evaluates work commute time, transit services, and transportation equity. Finally, the report reviews programmed projects in adjacent agencies, which may impact the WILMAPCO region, and identifies seven corridors that would benefit from multi-state planning, coordination, and investment.

<sup>24</sup> Email communication with Tamika Graham, Transportation Planner, WILMAPCO, May, 2009.

### **Aviation Planning**

DVRPC is involved in aviation planning more than any other MPO evaluated in this paper. DVRPC's work on aviation topics includes airport capital improvement programs, aircraft traffic counts for selected non-towered airports, airspace analysis reports, and the economic impact of aviation. DVRPC oversees a [Regional Aviation Committee \(RAC\)](#), which provides technical and policy guidance concerning regional airport systems planning to the FAA, the states, and DVRPC. Membership is open to all aviation related professionals, local governments, consultants, and interested citizens. The RAC meets quarterly.

In 2001, DVRPC released the [2025 Regional Airport System Plan for the Delaware Valley Region](#). This report describes the 2025 Regional Airport System for the 12 county, four state Delaware Valley Region. The plan includes three commercial airports, 12 reliever/business airports, nine general aviation airports, four existing heliports, and two proposed heliport sites. The cost of recommended improvements to all plan facilities by 2025 is estimated at \$2 billion, depending on output of the Philadelphia International Master Plan. Specific policy and programmatic recommendations are made to the states and the FAA to expedite necessary development.

### **Implications for CMAP**

DVRPC and WILMAPCO's inter-regional work point to three opportunities for CMAP to pursue in their own inter-regional transportation planning work:

- *Undertake an inter-regional planning initiative:* Similar to Planning at the Edge, CMAP could initiate an inter-regional planning initiative to share information and address cross-cutting issues that affect each MPO involved. This initiative should involve the crafting of inter-regional reports, similar to the reports that DVRPC and WILMAPCO developed as part of their involvement with Planning at the Edge. CMAP may want to partner with one of its neighboring MPOs (such as NIRPC or SWRPC) to plan for and kick-off this initiative since this will garner more buy-in from all stakeholders involved.
- *Coordinate and perform multi-regional travel forecasting:* Depending on the type and scope of the inter-regional project, CMAP can either coordinate its travel demand model with an adjacent MPO's model and "hand off" trips between the models at their common boundary; prepare a custom, extended version of its travel model to include an entire study area that crosses MPO boundaries; or use FAF<sup>2</sup>. Each of these forecasts have been used by DVRPC and WILMAPCO for various inter-regional projects. Like DVRPC, CMAP can work with the state to ensure consistency with any multi-regional travel forecasting efforts.
- *Define role in aviation planning:* Though there are different policies and guidance in place in the Chicago region than there are in the Philadelphia region, CMAP can explore DVRPC's significant role in aviation planning in the Philadelphia region and determine if CMAP would like and would be able to fill a similar role in the Chicago region. A greater involvement in aviation planning would allow for a greater opportunity to integrate rail and other modal planning with aviation planning.

## **4.5 Denver Regional Council of Governments**

The Front Range is one of the fast growing regions in the country. This region runs north-south along the Interstate 25 corridor from Albuquerque, NM, in the south to Cheyenne, WY, in the north. MPOs in Colorado and Wyoming along the Front Range initiated an inter-regional transportation planning effort in 2005. As the primary MPO involved in this effort, the Denver Regional Council of Governments (DRCOG) believes that cooperation between regions is required to address resource issues such as air quality, adequate water supplies, and the development of energy alternatives. Unfortunately, this effort stalled in 2008, due to a lack of available funding.

### ***The Front Range Planning Group***

In the fall of 2005, elected officials from the transportation planning organizations serving the Front Range area of Colorado met to discuss their common problems and opportunities. Box 3 summarizes the issues facing the region. As a result of that meeting, these organizations formed a Front Range Planning Group and proposed a planning effort, later termed the Front Range Transportation Plan, which involves communities from Cheyenne, WY, on the north to Pueblo, CO, on the south.

#### **Box 3: Challenges Facing the Front Range**

According to the Front Range Planning Group, the Front Range of Colorado is becoming a single region. Their economies, environment, and transportation systems clearly extend beyond individual metropolitan areas, underscoring an emerging relationship that transcends geographic and political boundaries. Yet each region continues to plan on its own with little consideration of how decisions might affect its neighbors to the north and south.

The fourteen counties in the Front Range of Colorado are expected to grow by 61 percent to 5.7 million people by 2030, which will amount to 79 percent of the state's total population. The region is also the economic engine of Colorado, with 84 percent of the state's jobs. Employment is projected to increase by nearly 55 percent to 3.4 million jobs by 2030. The region is also the most urban portion of the state with 28 of the state's 30 largest cities.

At the same time, the Front Range faces severe transportation problems. Congestion is spreading in more locations, with longer duration and severity. Congestion within and between the urbanized areas is expected to get worse. Employment forecasts assume the region can address its congestion problem along the I-25 corridor, yet demand on the transportation system is growing faster than population and roadway capacity.

Source: The Front Range Planning Group, <http://www.ppacg.org/ScopeRFQFinal%20Transp.pdf>

Participating organizations in this effort include:

- Cheyenne MPO
- North Front Range MPO
- Upper Front Range Regional Planning Commission
- Denver Regional Council of Governments



- Pikes Peak Area Council of Governments
- Pueblo Area Council of Governments
- Colorado Department of Transportation
- Colorado Department of Local Affairs
- Colorado Office of Economic Development

Similar to the coordination among MPOs involved in Planning at the Edge, these organizations compiled their data to create population and employment growth forecasts for the year 2030 and determined that:

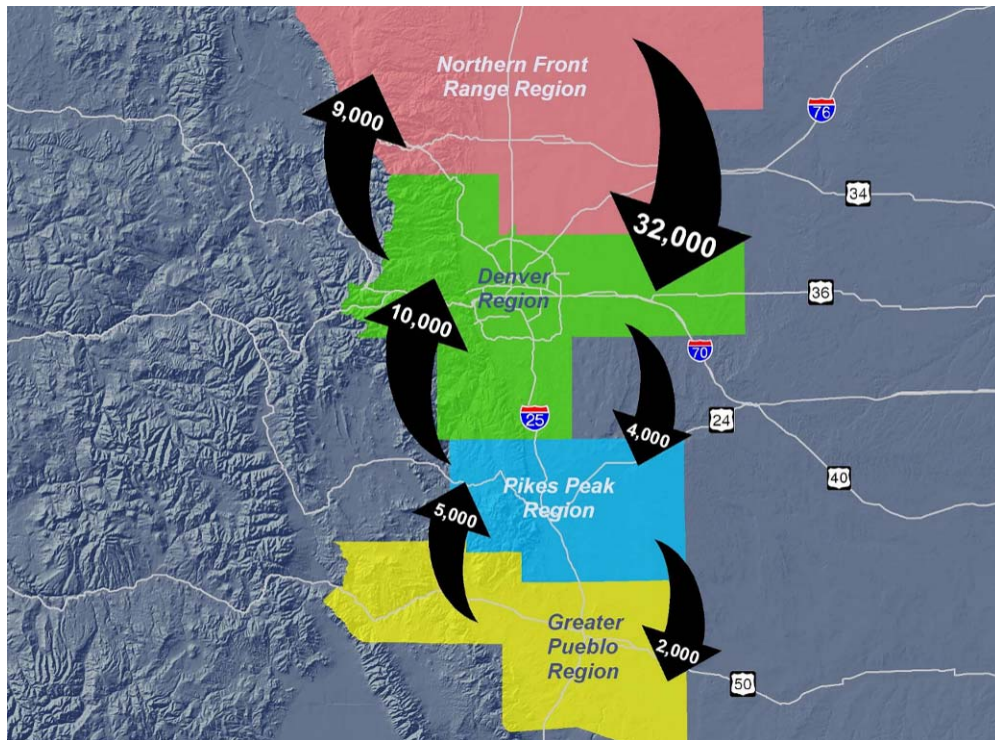
- Travel within and between regions is growing (Figure 15),
- Traffic congestion will increase (Figure 16), and
- The Front Range is becoming a single region.

After the fall 2005 meeting, the organizations agreed to share data and planning tools and start planning for the future together. In October 2006, the Front Range Planning Group issued a [request for qualifications](#) to develop a statement of work for creating a Front Range Transportation Plan.

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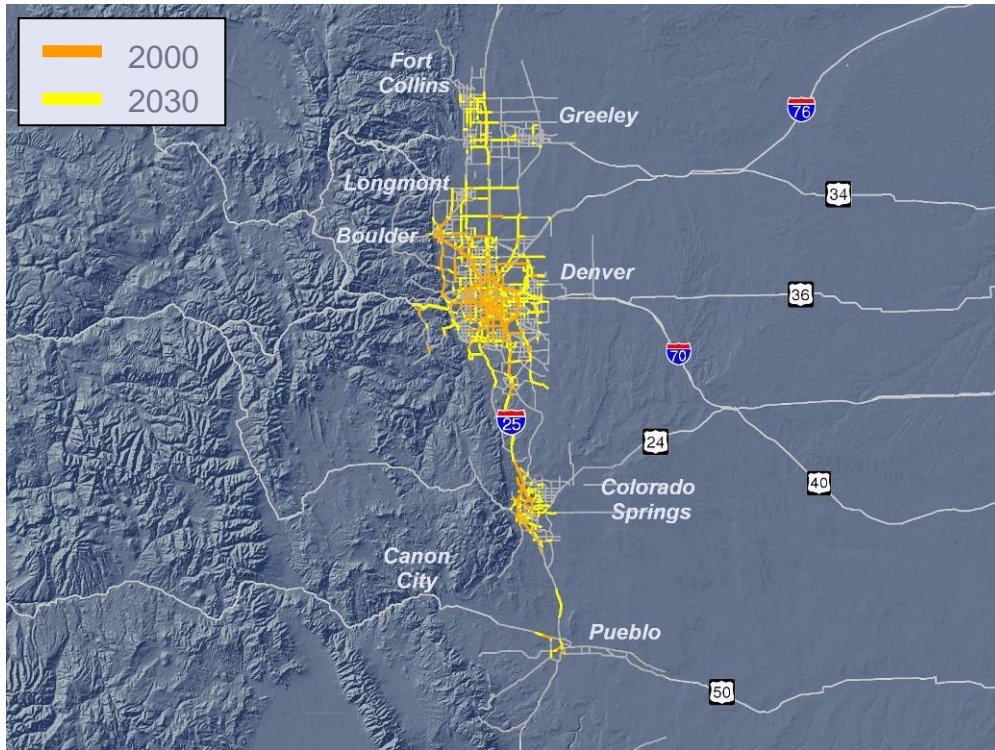
**Figure 15. Daily Inter-Regional Commuting Patterns**

Source: DRCOG



**Figure 16. Current and Projected Traffic Congestion**

Source: DRCOG



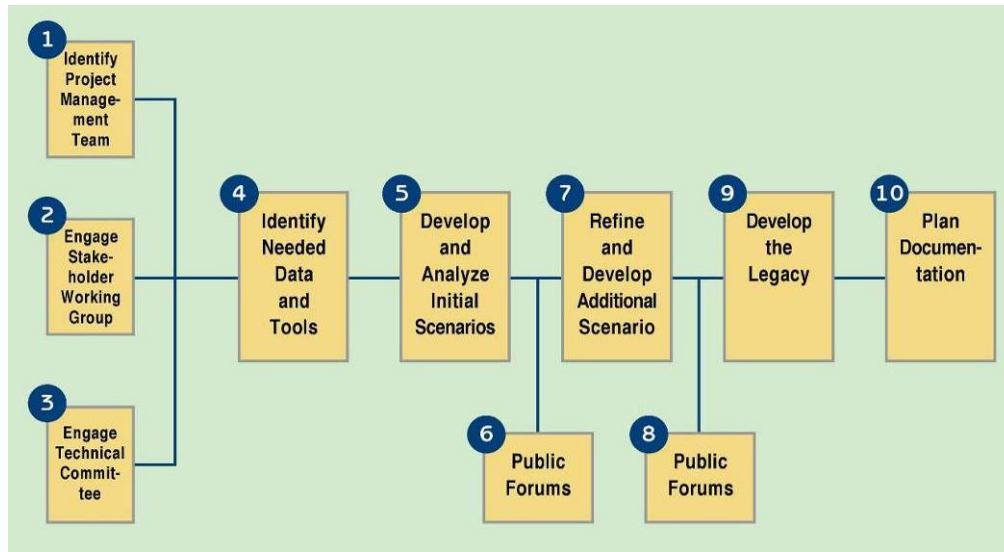
The winning consultant team held an initial workshop in May 2007. This workshop focused on identifying key planning issues and desired outcomes. Workshop participants considered three alternative scopes, and ultimately selected the last to move forward:

- “Sketching the House” - A High Level Front Range Vision
- “Laying the Foundation” - Education, Outreach and Capacity Building
- “Framing the Structure” - Compare and Reconcile Plans

In December 2007, the consultant team and the Front Range Transportation Group issued a final scope of work (Appendix D). The SOW describes ten tasks that must be accomplished as part of the Front Range transportation planning process (Figure 17). These tasks are sequenced over time and are estimated to take 12 to 18 months to complete once approvals and funding are in place.

**Figure 17. Sequence of the Front Range Transportation Plan Ten Tasks**

Source: Front Range Planning Group



The SOW estimated the budget for developing the Front Range Transportation Plan at \$1,000,000. As of May 2009, the Front Range Transportation Group still needed to secure funding for the project. The Colorado DOT applied for a federal grant, but it was not approved. The effort's next step is to secure appropriations funding from federal delegations. Efforts are underway to secure funding to develop the plan with federal Transportation, Community and System Preservation dollars.

### **Next Steps**

While this planning effort will build on the regional transportation plans prepared by the regional groups and local governments, it will focus on the elements that tie the regions together in the Front Range and connect the Front Range to the rest of the state and nation. Once funded, the group hopes to address multi-regional projects, including large-scale improvements such as truck-only lanes and high-speed rail transit. To be competitive with other megaregions, the group would like to examine other major public investments as well, such as constructing a new airport. Financing for these kinds of projects would be explored as part of the project.

### **Implications for CMAP**

DRCOG's inter-regional work points to a key opportunity for CMAP to:

- *Lead an effort to develop an inter-regional transportation plan:* Similar to DRCOG's role in the Front Range Planning Group, CMAP could lead an effort to develop an inter-regional transportation plan. Based on DRCOG's experience, CMAP should ensure that there is a likely source of funding for the completion of this work. An inter-regional transportation plan can help CMAP and other involved agencies frame the discussion around projects of inter-regional importance, such as high-speed rail, freight mobility, and airport growth and planning.



## 4.6 The Randstad Region and Access to the Port of Rotterdam

As a global peer for the Chicago metropolitan area, the Randstad in the Netherlands provides useful insights for CMAP on successful inter-regional planning for major transportation projects. The Randstad combines the four largest cities in the country (Amsterdam, Rotterdam, The Hague, and Utrecht) into one complex and closely linked urban area.

### Overview

The Randstad is the fourth largest urban-regional economy in Europe, with a GDP close to that of the Milan region, trailing only the Paris and London regions. Although the Randstad covers only 20 percent of the Dutch land area, at 7.2 million residents, it has over 46 percent of the national population, and is the densest metropolitan area in Europe. The Randstad has a similar population to that of the Chicago metropolitan area and also plays a dominant role as the freight and logistics hub for a large region.

[The Port of Rotterdam](#) (Figure 18), along with Schiphol airport (which is discussed later as a good example of a rail station integrated within an airport), is the economic engine for the Netherlands. The Port is the largest in Europe, with more than double the tonnage of Antwerp, the second largest port in Europe. Over the period of 2006 to 2030, the Port forecasts that container through-put will more than triple. The key economic strategy for the future of the region and the country is to support this growth, which is already facing some of the most congested road travel in Europe, with one in five trips rated as unreliable because of delays.

A key transportation challenge facing the Netherlands, with major implications for the economic viability of the larger region, is accommodating the forecasted growth in containers and providing the necessary access to move this freight in and out of the Port. The current modal split for all cargo in and of the Port is shown in Table 3. To accommodate the expected tripling of containers by 2030, national, provincial, and local authorities are focusing on an ambitious set of major inter-regional initiatives.

**Table 3: Modal Split for Randstad Cargo**

Source: [V. Schoenmakers, Port of Rotterdam](#)

Mode	Share
Barge	48%
Rail	5%
Road	21%
Pipeline	26%

**Figure 18. Rotterdam – Mainport Europe**  
Source: [V. Schoenmakers, Port of Rotterdam](#)



### ***Inter-Regional Initiatives***

#### ***Rail Capacity***

With current rail freight representing only five percent of Port traffic, Port authorities are planning for a tripling of both of freight tonnage and containers transported by rail by 2020. With the country using many of its existing rail facilities for passenger travel, rail investment to accommodate freight growth has become a high priority. The Port’s primary focus is on expanded corridors to serve Germany, France, Italy, and Spain from the Port (Figure 19).

The Port’s top priority is to complete [Betuweroute](#), a dedicated rail freight connection from the Port to the German border, expected to increase service from 80 trains per week to 1,000 by the end of 2012. Investments include new and heavier rolling stock and the modernization of tracks, with one-quarter of the 160-kilometer line within the Port.

**Figure 19. Rail Connections from Rotterdam**

Source: [V. Schoenmakers, Port of Rotterdam](#)



### *Area-oriented Approaches*

The Netherlands is conducting a national test of “area-oriented” approaches to traffic management and supportive land use in seven major business centers, including the [De Maas office campus](#). Adjacent to the Port, De Maas’ large numbers of employees must compete for space on the same roadways that are expected to accommodate an increasing volume of container shipments by truck to and from the Port.

As with CMAP’s *GO TO 2040* Plan, Dutch planners seek to accomplish numerous goals with singular decisions. After a focused effort to reduce automobile traffic in De Maas, motor vehicle movements were reduced from 57 percent to 47 percent for a reduction of 1.3 million kilometers annually, resulting in the mode splits shown in Table 4.

**Table 4: De Maas Mode Split**

Mode	Mode Split
Personal car	18
Car pool	21
Special express bus	17
Public transit	37 (31% by train)
Bicycle or walk	7

Some of the strategies used to accomplish this mode split, which relieves Rotterdam’s congested roadways, include:

- Dedicated transport coordinators to organize dedicated express buses and to develop personal travel plans.
- Encouraging the use of bicycles both for trips completed within the urban area, but also to link to transit by providing funds for folding bikes to use at the each end of rail trips, availability of city or shared bikes, and secure bike sheds with showers.
- Free parking for car pools, but limits on parking from one space per four employees to 10 per 100 employees.

### *Public Private Partnerships*

The Main Port Corridor South provides an interesting example of an international as well as inter-regional planning process to improve road travel on the major corridor linking the Rotterdam and Antwerp Ports. The expected result of this planning process is an expansion of the corridor to allow free-flow of freight and private traffic, and private financing for development, maintenance, and operations of the infrastructure in an environmentally acceptable manner. The project features broad cooperation between:

- National governments;
- Regional authorities (two provinces, four regional authorities, and two water authorities);
- Private sector (contractors, banks, logistic companies); and
- Consumers.

The project emphasizes a process that involves all parties in decision-making and de-emphasizes the role of government. Rather than relying on a public sector institution with clear responsibilities for decisions, the project is managed by a project consultant or mediator, with active participation from both public and private sector stakeholders. The assumption is that this method allows for the creation of a more dynamic, trusting approach to project development that will increase the likelihood that recommended decisions will be supported by all and will ultimately lead to complete projects. According to the project consultant who functions as project manager,<sup>25</sup> the basic assumption in Dutch decision-making culture is that “public support is more effective than political power.”

This process received formal authority from the Dutch government and proceeded with the core principle of the importance of involving all parties and relying on mediation to reach consensus. The process proceeded methodically through definition of a shared vision, problem analysis, joint research involving stakeholders, generation of solutions, complete sharing of information, and transparent communication. As the project managers described it, “stakeholders must become shareholders,” investing time, expertise, and ultimately, resources.

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<sup>25</sup> Presentations by project consultants Peter Blok and Huub van Zwam, Informal Workshop, American Dutch Embassy, January 15, 2009.



[The Traffic Management Company for an Accessible Harbor](#)

The Traffic Management Company is an ambitious and multi-faceted initiative to relieve major congestion on the A15 motorway into the Port of Rotterdam. The project was initiated under an agreement in 2008 by the Dutch Ministry of Transport, the Port, and the City of Rotterdam, and is managed by an executive director assigned from the Ministry.<sup>26</sup>

The Traffic Management Company relies on a flexible and collaborative process to plan and implement a broad range of strategies that are outside the political or geographical responsibilities of individual existing authorities at national, provincial, and city levels. The project was undertaken with the understanding that there be no institutional changes, either creation of a new regional authority or broadening of formal responsibilities. Similar to the Main Port Corridor South, the planning and decision-making involves a broadly based Advisory Board that includes the private companies operating at the Port, neighboring cities, the Chamber of Commerce, and the national organizations of shippers and road transportation companies.

The goal of the project is to keep the Port accessible by meeting the forecasts of significantly accelerating freight flows and the demand for greater capacity and efficiency from all modes. Even with widening the A15, the motorway's capacity will fall far short of meeting projected demand and will increasingly be the main bottleneck to the flow of freight essential to maintenance of the Port's role in the Dutch and European economies of the future.

To deal with the projected traffic demand, the Traffic Management Company is undertaking two major initiatives:

- Traffic Management by using real-time information and controls such as accident clearing to improve the efficiency of the A15 and alternative roads.
- Mobility Management to reduce the volume of traffic during peak hours through mode shifts to public transit and nonmotorized travel, and incentives to travel off-peak, including encouragement of freight movements at night. The dense urban centers, extensive system of dedicated bicycle tracks, and availability of public transit allows the combination of bicycle and walking access to transit to carry a significant amount of travel demand, and to play an increasingly important role in the future as part of congestion relief on the A15 major inter-regional corridor.

The Traffic Management Company may offer some valuable insights for CMAP as it completes *GO TO 2040*, particularly if the selected scenario entails expansion of public transit and nonmotorized travel and increased density. In the case of Rotterdam and the Randstad region, mobility management will play a major role in reducing traffic by 20 percent, freeing peak capacity for vital freight transportation by trucks on the major A15 inter-regional corridor, specifically on the segment that is potentially the major bottleneck for dependable freight flows to the Port.

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<sup>26</sup> Presentation by Traffic Enterprise Executive Director Laurens Schrijnen, Informal Workshop, American Dutch Embassy, January 15, 2009.

## **Analysis**

Although there are no organizations in the Netherlands that play similar roles to those of MPOs in the United States, the Randstad's inter-regional transportation planning and project development processes provide useful insights for CMAP, including:

- *Results-oriented planning* with a focus on developing and implementing practical approaches to identifying large scale inter-regional transportation problems and solutions. In many ways, the planning processes developed for the specific project described above approximate those undertaken by successful MPOs: combining transportation and land use, considering multimodal alternatives, providing the forum for elected officials and the public to reach decisions, involving the public, and balancing mobility needs with environmental and economic development goals. In fact, Dutch planners are very interested in the role played by MPOs, particularly on the role of vision plans to guide decisions.
- *Process over institutions*: Participants in planning for the inter-regional projects discussed in this case study acknowledge that institutional roles and responsibilities are limited to modes and jurisdictions. A focus on process may be particularly useful when the scale of a project is beyond the boundaries of institutional responsibilities, or the types of solutions considered do not fit easily within those responsibilities.
- *Flexibility and consensus*: Without regional or inter-regional institutions, public and private sector stakeholders participating in the planning process are forced to be flexible, resourceful, and to collaborate. This context encourages a focus on large scale problems and consensus building to reach the commitments necessary to accomplish major projects.

The Dutch tradition of consensus building is sometimes described as “the polder model,” based on the national history of cooperating to maintain the dikes essential to protect the below-sea-level tracts of land. For the survival of everyone, factions had to work together, surface disagreements, and compromise. This tradition carried over into economic policy and management-labor relations, but has also been criticized for taking a very long time.

- *Multimodal solutions*: Transportation in the Randstad region focuses on finding carefully balanced multimodal solutions to solve major inter-regional scale problems. With a planning process that is not limited by formally prescribed institutional authority, it is easier for planners in the Randstad to consider inter-regional projects that cut across jurisdictional boundaries, are multimodal, and combine land use with transportation strategies. The integration of a rail station in Schiphol airport, discussed below, provides another good example of the outcome of this approach.
- *Mobility management*: In a space-constrained area, inter-regional transportation problems cannot rely on new capacity. As a result, the Netherlands has a long-tradition of turning to mobility management to fine tune and balance transportation through the combined use of information technology, pricing and demand management, public transit, and nonmotorized travel.

### ***Implications for CMAP***

The Randstad examples show that a collaborative and consensus-driven process, with delegated responsibilities to decision-making groups of stakeholders, can be an essential device in identifying, supporting, and ultimately implementing major inter-regional projects, such as the Traffic Management Company and the Main Port Corridor South project. In the Netherlands, these projects were undertaken without participation of regional planning organizations such as MPOs.

CMAP could have an advantage in similar problem-solution planning, with its formal responsibilities for multimodal planning and integration of land use and transportation planning, in leading or participating in similar types of processes to plan for inter-regional projects. An MPO such as CMAP may be well-positioned to participate in or even lead the type of inter-regional planning described in the above examples. CMAP's on-going planning process, beginning with a vision plan, could provide some elements of the process that Dutch planners must first develop when they initiate planning for a new major project.



## Section 5: Synthesis and Discussion

The case studies described in Section 4 reveal several potential inter-regional transportation planning roles that CMAP can pursue in the context of high-level inter-regional transportation planning initiatives with neighboring MPOs at the strategic and technical levels. Creating a high-level inter-regional transportation planning process with MPO and non-MPO partners can establish the relationships and create the foundation for working on project-specific inter-regional planning initiatives at a later date. Creating this foundation to segue into project-specific work is timely: the American Recovery and Reinvestment Act (ARRA) of 2009 and other legislation have directed billions of dollars to inter-regional transportation projects, such as high-speed rail. Though states may be taking the lead on high-speed rail, MPOs will ultimately have a key role in ensuring that inter-regional projects are well-integrated into the transportation systems and land uses in their region and beyond.

Actions CMAP can take to build and strengthen inter-regional transportation planning include:

- Undertaking an inter-regional transportation planning initiative
- Joining or helping to create an inter-regional corridor coalition
- Holding additional megaregion forums
- Developing an inter-regional MOU
- Building partnerships with universities
- Coordinating and performing multi-regional travel forecasting
- Defining CMAP's role in aviation planning
- Working to integrate rail and aviation planning
- Partnering with the State of Illinois on projects of inter-regional significance
- Focusing on a collaborative and consensus-driven process
- Delegating responsibilities to decision-making groups of stakeholders

To inform CMAP's decision of which of these actions to take, Section 5.2 identifies and discusses some of the roles CMAP could pursue. These roles should be considered in relation to specific high-payoff inter-regional transportation topics such as air capacity expansion, high-speed rail or balancing through traffic and local traffic. In Section 5.3, each of these topics is examined as an opportunity in which CMAP can help address rising demand for inter-regional travel.

### 5.1 Policy Issues

It was expected that key policy issues identified by CMAP – such as inter-regional travel forecasting, airport and high-speed rail planning, freight mobility, and balancing through traffic and local traffic – would guide much of the case study interviews with peer MPOs. However, during the course of the interviews it became clear that, in general, the MPOs are not engaged in these areas on a project-specific or operational level. Instead, the current state of the practice is largely one of nascent connections between MPOs and some limited multi-jurisdictional planning efforts; aviation and rail investments have largely been the domain of state DOTs, airport authorities, and other bodies. As a result, this research focused on these connections and planning effort, and the policies, processes, and institutional arrangements that enable them.

## **5.2 Potential Inter-Regional Roles**

MPOs can play a variety of roles in inter-regional transportation planning at a high-level. These roles include communicator/coordinator, partnership-builder, leader, and visionary. CMAP has the opportunity to choose any or a combination of these roles in its inter-regional transportation planning. The MPOs reviewed and the Randstad illustrate the range of roles potentially useful to CMAP in effective planning for inter-regional transportation:

- Communicator/coordinator among MPOs and other entities, including the sharing of data and forecasts – DVRPC/WILMAPCO, NYMTC, DRCOG, the Randstad;
- Partnership-builder (beyond partnering with neighboring MPOs) – ARC, NYMTC, and the Randstad;
- Leader in organizing meetings and events – ARC and DVRPC/WILMAPCO; and
- Visionary in developing initiatives for the future of the larger region – DRCOG, ARC, DVRPC/WILMAPCO, and the Randstad.

Each of these MPOs and the Randstad took innovative approaches to their work at the inter-regional level. Any of these approaches can be taken exclusively or in combination by CMAP. Specifically, these innovative approaches include:

- NYMTC's multi-state MOU and partnership with New York University;
- ARC's partnerships with Georgia Tech University and RPA to initiate an inter-regional planning effort;
- DVRPC/WILMAPCO's lead role in inter-regional planning and coordination activities, including proactive inter-regional demographic and transportation forecasting;
- DRCOG's SOW for an inter-regional plan (and the funding obstacles they have encountered); and
- The Randstad's area-oriented approaches, public private partnerships, and the creation of the Traffic Management Company.

## **5.3 Approaches to Rising Demand in Inter-Regional Travel**

As noted above, inter-regional travel volumes, particularly by air, have grown substantially over the past few decades, with the FAA forecasting continued long-term growth in passenger and cargo traffic, despite the current cyclical downturn. There are several main policy approaches to accommodating this growth and associated congestion issues, each of which has its own mix of political, financial, and operational issues. While the MPOs evaluated as part of this paper have not been directly involved in these types of approaches, these approaches could be pursued as part of a MPO-led inter-regional transportation planning process in the future. Accordingly, this section briefly summarizes the strategies that have been employed to address increasing inter-regional travel and identifies lessons learned from other regions' experiences, particularly with regard to planning and the role of MPOs.

### ***Demand Management and Operational Efficiencies***

To manage demand, several countries have developed tax policies that discourage air travel. For example, the United Kingdom recently raised its "air passenger duty" (ticket tax) to as much as

£80 (\$120) per departure as part of an approach to dealing with transportation-related climate change. Although implemented for environmental reasons, these sorts of taxes suppress demand for travel and therefore help to ease traffic at major airports.

Effective air capacity can also be expanded through the use of improved air traffic control software and procedures, and/or the use of innovative tools such as variable landing fees to shift traffic to off-peak periods and encourage the use of larger aircraft. One takeoff and landing requires roughly the same air traffic control resources and gate space, regardless of the size of the aircraft, whereas larger planes move many more people. Combinations of these approaches have been used successfully at airports around the world. The FAA is currently planning on a “next generation” (NextGen) air-traffic control system for the United States that will increase capacity by moving toward a more integrated, satellite-based system.<sup>27</sup> However, NextGen is not expected to be in place for another decade. Likewise, the U.S. DOT recently dropped its plans for a pilot program of market-based landing fees (slot auctions).

### ***Expansion of the Main Hub Airport***

In the U.S., investment in expanded airport capacity, in the form of runways, taxiways, terminals, and gates, has been much more commonly employed than demand management. In regions where one airport dominates the commercial air market, as is often the case when the airport serves as a hub for a major airline, this physical expansion typically focuses on the hub airport because of the economies of scale inherent in the hub-and-spoke concept. Hartsfield-Jackson Atlanta airport, for example, has had repeated rounds of expansion since the mid-1970s to accommodate the continued growth in traffic and the presence of major hub operations for Delta and AirTran. A \$6 billion project has been in progress since 2000 that includes a new runway, new international terminal, and a consolidated rental car center.<sup>28</sup> The City of Atlanta, as the airport’s owner-operator, has led this planning, with ARC playing a limited role.

Long-established hub airports are often located in built-up areas, making land acquisition politically unpopular and costly, and subject to delays due to litigation. These airports also tend to predate modern aircraft and flight rules, so their runways may require lengthening and separation. Terminal buildings and landside access also require upgrades to handle increased passenger loads.

### ***Relocation of Main Hub Airport***

Because of the challenges involved in expanding existing hubs, an alternative approach is to relocate the airport entirely to a site where expansion can more readily take place. Denver is the most well-known example of this approach. Starting in the 1980s, plans were developed to move the city’s airport from Stapleton Airport to a new airport on a site 25 miles from downtown, where more land was available for runway and terminal construction and where noise impacts to residential areas would be mitigated. The new airport, Denver International (DIA), replaced Stapleton in 1995; Stapleton was subsequently closed and turned into a mixed-use

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<sup>27</sup> FAA, *NextGen Implementation Plan*, 2009. [http://www.faa.gov/about/initiatives/nextgen/media/NGIP\\_0130.pdf](http://www.faa.gov/about/initiatives/nextgen/media/NGIP_0130.pdf)

<sup>28</sup> City of Atlanta, Department of Aviation, “Capital Improvement Program Overview,” 2009. [http://www.atlanta-airport.com/forms/airport/frmAirportInformationconstruction\\_overview.aspx](http://www.atlanta-airport.com/forms/airport/frmAirportInformationconstruction_overview.aspx)

neighborhood. Taking advantage of its location, DIA is the largest airport in the U.S. by land area and has some of the country's longest runways. The design of the airport buildings and layout of the runways readily accommodates future expansion. The City and County of Denver led this relocation effort with limited input from DRCOG.

### ***Splitting Traffic Across Multiple Regional Airports***

One of the atypical aspects of the Denver example is that the new airport completely supplanted rather than supplemented the old airport. In many metropolitan areas, multiple major airports exist that have been built over time, with each handling a share of commercial air traffic. In addition to Chicago, examples include the areas around Los Angeles (LAX, Long Beach, Burbank, Orange County, and Ontario airports); Washington, D.C. (Reagan National, Dulles, and Baltimore-Washington Thurgood Marshall); New York (LaGuardia, Kennedy, and Newark Liberty); and Dallas (Dallas-Ft. Worth and Love Field). In these cases, due to a number of factors including airline hubbing practices; local, state, and federal restrictions on operations; and FAA slot controls, it is common for the airports to serve slightly different markets. Typically, one airport will serve as a hub for one or more major carriers and provide a broader range of connecting and international service, while the other airport focuses on short hauls and "origin-destination" traffic. For example, Reagan National and LaGuardia Airports have no transatlantic service (and limited cross-country service), but attract business travelers with their frequent east coast flights and relative proximity to their central cities.

The advantage to this approach is that, while still ensuring a high level of air service for the region, the number of aircraft operations at any given airport can be reduced. This ability cuts down on ground-based delays (though generally not air-traffic delays) and limits the need for major landside improvements and terminal expansions. The downside is that some of the economies of scale from connecting flights are lost because flights are split across multiple airports. In cases where a ground connection cannot be avoided, this often involves significant inconvenience and expense for the traveler. To mitigate these issues, some MPOs – NYMTC's "super airport" concept is an example – have begun thinking about developing reliable, high-speed ground connections between airports, allowing them to function as a more coherent multi-airport system.

A related strategy is to channel air traffic growth into airports in the outlying parts of the metropolitan area, to avoid overburdening the main hubs. Examples include the use of Stewart-Newburgh and Islip-MacArthur airports in the New York area and Manchester (NH) and T.F. Green (Providence, RI) airports as alternatives in the Boston area. This approach can work well in areas with widespread suburban development, because the "outlying" airport can actually be closer to many residents than the main airport. Although some regions have attempted to pursue this approach as an explicit strategy, in most cases it has simply evolved over time due to the incentives for airport authorities to attract service and the business model of some low-cost carriers, who prefer to use less-congested airports.

### ***Air and Rail Integration – Amsterdam’s Schiphol Airport***

In addition to airport expansion, transportation planners in the Netherlands have pursued a program of infrastructure investment to create a truly seamless air-to-rail connection at Schiphol. The goal is to improve airport access, foster multimodal connections, and allow short-haul air trips to be replaced by rail. As a result of these investments, the rail station is now integrated into the airport and can be accessed directly from the main concourse via escalator. This seamless connection makes it much more accessible to travelers (especially those with luggage) than the connections by shuttle bus or airport tram that are found at many other airports.<sup>29</sup>

Although most trains at Schiphol are commuter rail services running to Amsterdam’s main terminal, the most noteworthy aspect of this air-rail connection is that it not only connects the airport with the downtown area but also makes available a wide range of inter-city rail services, connecting Schiphol with the rest of the Randstad and, with transfers, to much of the rest of the country and the broader Belgium-Netherlands-Luxembourg region. Direct service on international high-speed rail lines is also available to Brussels and Paris (on the Thalys) and to Berlin (Deutsche Bahn).

These connections allow air and rail services to work as a coordinated system, with rail effectively substituting for air on some shorter trips for which its travel times and cost become competitive with air. For example, someone traveling from Paris to Dubai via Amsterdam could take a high-speed train from Paris directly to Schiphol and then fly onward, rather than taking two flights as in a traditional hub-and-spoke aviation model. In some cases, the rail component of the trip may even be through-ticketed by the airline as a form of “code sharing” with the rail operator. Air and rail integration increases the effective passenger capacity of the airport by allowing scarce takeoff and landing slots to be used by larger aircraft, rather than the smaller turboprops and regional jets that are typically used for short connecting flights into hub airports. The coordination between air and rail also reinforces the economies of scale for the hub airport by bringing a greater population within a given travel time of the airport, and by increasing the number of nonstop destinations served. For these reasons, CMAP, the City of Chicago, the MRRI, and other relevant stakeholders may want to examine the possibility of integrating inter-city rail service into or directly adjacent (i.e., a short walk) to O’Hare and/or Midway Airports.

For passengers, the benefits include not only more convenient access to the airport, but also a greater choice of airlines and services, since the rail connections allow more flexibility in making connections. For example, a resident of Antwerp, Belgium, is geographically much closer to the Brussels airports, but could readily use the rail connection to Schiphol if more affordable airfares or more convenient flight times are available there.

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<sup>29</sup> Though a much smaller airport, the U.S. has one airport that also has a direct air to rail connection: Bob Hope Airport in Burbank, CA, is served by Metrolink’s Ventura County Line and Amtrak’s Pacific Surfliner. Ten Pacific Surfliner trains that serve the station daily and 29 Metrolink trains serve the station each weekday. The Ventura County Line provides access to downtown Los Angeles (approximately 30 minutes away) and Ventura County. The Pacific Surfliner provides access to San Luis Obispo, Santa Barbara, downtown Los Angeles, Anaheim, and San Diego. Though the station is a short walking distance from the terminals, a free airport shuttle transports passengers to and from the terminal area during the airport’s operating hours.

## **High Speed Rail**

Rail investment strategies in this country have been less focused on air-rail networks and more broadly aimed at diversion from highway and air travel to the rail mode, due to factors including its ability to relieve congestion, its lower emissions per passenger-mile, and its links to economic development. In particular, expansion of high-speed rail (defined loosely as rail service that is fast enough to be time-competitive with air for at least some inter-regional trips) has recently come to the forefront as a component of national transportation strategy. The focus on multi-city corridors stems from previous work, including a major study produced by FRA in 1997, [High-Speed Ground Transportation for America](#), that evaluated the potential cost-effectiveness of enhanced rail service in eight major corridors, including a Chicago Hub Network. The report examined operational characteristics, investment costs, ridership, and revenues for three main scenarios:

- “Accelerail,” which uses existing track and right-of-way. Higher speeds are achieved through the use of electrification, targeted track improvements, and/or the use of modern rail vehicles with better acceleration properties and the ability to tilt around curves.
- New High Speed Rail (HSR), built in the style of the European and Japanese high-speed systems, using (almost) entirely new track and right-of-way.
- Magnetic Levitation (maglev) transportation, in which magnetic fields are used to propel a vehicle across a specialized guideway. This scenario, which also requires an entirely new right-of-way and infrastructure, would be the most expensive but also represents the greatest potential for high-speed travel.

With respect to the Chicago Hub Network, which represents a component of the larger Midwestern network envisioned by MRRI, the report concluded that the New HSR and Maglev scenarios did not have favorable benefit-cost profiles for investment, due in part to the very large upfront costs. However, the report found that several forms of Accelerail investment would have favorable profiles. Based on the modeling in the report, a typical scenario would feature top speeds of 110 mph, average train speeds of 80 mph, a total Detroit-to-Milwaukee travel time of just over 4.5 hours, and 13 trains per day in each direction. As a whole, the network service was estimated to attract 6.6 million riders per year, diverting 16 percent of air traffic and 4 percent of intercity automobile traffic in these markets, with associated benefits for non-users in the form of reduced aviation delays and emissions reductions. Projected revenues would exceed projected operations and maintenance costs, meaning that, once the initial investments were made, the service could be operated as a for-profit venture. The report assumed a national business model that included public sector funding of the initial capital investment, then for-profit private operation of the services in each corridor. Other models that have been discussed include disassembling Amtrak and replacing it with corridor service, either through a subsidized public entity or through private operators.

As the example of MRRI illustrates, most of the high-speed rail planning that has been conducted has been as a partnership between the U.S. DOT and state DOTs, with little direct participation from MPOs. This approach will likely change as the focus moves from long-term, national planning at the strategic level to implementation decisions and the development of supporting strategies, such as land use and economic development.

#### **Box 4: Through Traffic and Local Traffic**

The distinction between local traffic and “through traffic” (typically defined as the movement of passengers or goods with neither an ultimate origin nor destination in the geographic area of interest) can be important in some transportation planning contexts. In addition to their differences in origin-destination patterns, local travelers and through travelers generally have a different mix of trip purposes, routes, and mode choices.

As a practical matter, most MPOs do not make strong distinctions between local and through traffic in their modeling and planning efforts. Their travel demand models are largely based on origin-destination travel internal to their boundaries, with forecasts of roadway volumes scaled up by an adjustment factor to account for the presence of through traffic. When the concept of “through traffic” is addressed in transportation plans, it is more commonly at the micro level of keeping traffic on main arteries rather than on neighborhood streets, or ensuring that truck traffic follows established routes. Among the case study MPOs contacted as part of this research, only DVRPC reported having a process by which data and forecasts are shared with neighboring MPOs to more accurately incorporate inter-regional travel in their models.

Although an explicit focus on balancing the needs of through traffic and local traffic does not appear common among peer MPOs, the issue of through traffic is often indirectly addressed in freight planning, since truck traffic is disproportionately inter-regional. As described in U.S. DOT/Volpe Center’s Goods Movement Action Strategy Paper (completed for CMAP in October 2008), several MPOs have undertaken innovative practices to create freight corridors, provide financing to freight capacity enhancements, align land-use planning with freight transportation, and mitigate the negative externalities of freight movements.

One additional strategy that has been the subject of some research and discussion, but not yet implemented in the United States, is the concept of Truck-Only Toll (TOT) lanes. As their name suggests, TOTs are intended to segregate highway traffic by offering trucks a low-congestion alternative roadway, in exchange for the payment of a toll. Urban TOTs have been proposed to improve access around ports and to improve the reliability of freight travel times through congested urban corridors. Long-distance TOTs are envisioned as new highway networks, built to withstand heavier weight-per-axle loads, which serve key trucking corridors.<sup>1</sup>

Another policy area where through traffic is addressed indirectly is in urban congestion pricing, whereby variable tolls are imposed to reduce traffic congestion in a particular zone, as is done in London and Stockholm. A proposal in New York City (since defeated in the state legislature) would have charged \$8 for cars and \$21 for trucks to enter Manhattan. Although the intent was to discourage vehicle trips into the urban core, part of the political compromise in the shaping of this plan involved how to deal with Manhattan’s through traffic, such as cars and trucks passing through midtown on their way between Long Island and New Jersey. The proposed plan allowed for an exemption from the charge on some of the island’s peripheral roadways such as FDR Drive and the West Side Highway, thus creating an incentive for through traffic to avoid the most congested parts of the city.

Planning for TOTs and congestion charging appears to be largely the product of city governments and state DOTs, rather than MPOs, although some MPOs such as the Puget Sound Regional Council have been involved in plans for a regional network of roadways with dynamic pricing elements.

<sup>1</sup> Cambridge Systematics, Inc., with CH2M Hill. *White Paper 7, Truck Only Toll Lanes*, prepared for Oregon Department of Transportation, February 2009.



## **Appendix A. Existing Conditions – Transportation Facilities**

### **A.1 Highway**

Chicago has a highly developed road and highway network. Major highways connecting Chicago to other regions include the coast-to-coast Interstates 80 and 90, Interstate 94 (Milwaukee, Detroit, and Ontario), Interstates 55 and 57 (downstate Illinois, St. Louis, and Memphis), and Interstate 88 (Quad Cities). A number of other major interstates, tollways, and state-numbered routes crisscross the region. These are used primarily for travel within the metropolitan area but also connect to long-distance routes. Interstate 65 connects Gary, Indiana, on the eastern edge of the broader metro area with Indianapolis to the south.

Greyhound, Megabus, and other private bus carriers serve Chicago as part of their regional and nationwide networks. Regional services under the Coach USA umbrella connect a number of Midwestern communities ranging from northern Indiana to Madison, WI, with O'Hare and Midway airports.

### **A.2 Rail**

Chicago is one of the hubs of Amtrak's cross-country services. Trains arrive and depart from Union Station, in the downtown area just west of the Loop. Long-distance trains run west to Seattle, Emeryville (Oakland), and Los Angeles; east to Washington, New York, and Boston; and south to Dallas and New Orleans. In most cases, service on these routes is limited to one or two departures per day. More frequent regional services connect Chicago with cities in the Midwest, including the following routes:

- Hiawatha route: Seven daily round-trips between Chicago and Milwaukee, including a stop at the Milwaukee airport (see below).
- Lincoln Service: The Illinois Department of Transportation sponsors additional frequency on trains serving downstate Illinois, with 4 round-trips per day between Chicago and St. Louis, via the Illinois cities of Joliet, Bloomington-Normal, and Springfield.
- Wolverine and Blue Water trains link Chicago with Battle Creek, Flint, Ann Arbor, and Detroit, with three to four round trips per day.

Although used primarily for local travel, as distinct from inter-regional, Metra should also be noted as one of the country's largest commuter railroad operations. Metra's services reach far into the suburbs and include a line to Kenosha, WI. Likewise, services of the Northern Indiana Commuter Transportation District (South Shore Rail) extend as far east as South Bend, IN, which is in the Eastern time zone and has its own metropolitan area extending into southern Michigan.

From its origins in bringing Midwestern commodities to East Coast markets, Chicago continues to serve as the nation's hub for freight rail. Roughly one-quarter of the country's rail freight

passes through the Chicago-area system, which includes track from numerous railroads, including six of the seven largest in North America. Freight rail traffic in the region was projected to grow by 89 percent during the period from 2002 to 2035.<sup>30</sup> This threatens to exacerbate the delays that often prevail due to congested tracks and railyards.

### A.3 Air

The greater Chicago region is home to five airports and a possible sixth that is in its initial planning phases. Table A.1 compares these six airports, their distance from downtown Chicago, and the number of annual passenger boardings (enplanements).

**Table A.1: Comparison of Greater Chicago Airports**

Airport	Location <sup>31</sup>	Passenger Enplanements (2007) <sup>32</sup>
Chicago O'Hare	18 miles northwest	36,521,585
Chicago Midway	11 miles southwest	9,132,836
Milwaukee – Gen. Mitchell	85 miles north	3,751,345
Rockford	90 miles northwest	110,835
Gary/Chicago	27 miles southeast	16,223
South Suburban	45 miles south	0

As a major hub for United Airlines and American Airlines, Chicago's O'Hare International Airport is the world's second-busiest airport and offers a wide range of domestic and international connections. Chicago Midway International Airport is a major hub for Southwest Airlines. Compared to O'Hare, Midway is focused more on domestic flights and benefits from its relative proximity to the downtown area.

General Mitchell International Airport in Milwaukee is the hub for Midwest Airlines and focus city for Air Tran. Scheduled service is largely domestic, with a few flights to Canada, Mexico, and the Caribbean. The airport makes an active effort to draw passengers from the Chicago area, particularly the northern suburbs, by touting the convenience of this relatively small airport and the availability of low-cost airlines. An informal study in July 2008 showed that 9 percent of cars parked at the airport had Illinois license plates.<sup>33</sup>

Chicago Rockford International Airport, near the northern Illinois city of Rockford, is served by Allegiant Air with service to a four leisure destinations. There are also a number of public air charter operations. The airport markets itself to travelers from the Rockford area as well as those in the northern and western Chicago suburbs, southern Wisconsin, and even eastern Iowa.

<sup>30</sup> CREATE Program Overview, August 2008, [http://www.createprogram.org/PDF/CREATE%20Overview\\_August2008.pdf](http://www.createprogram.org/PDF/CREATE%20Overview_August2008.pdf). Schaper, David. "Plan to Unsnarl Chicago Rail Hits Snags in Suburbs," National Public Radio, 7-28-08.

<sup>31</sup> Approximate road mileage from the Chicago Loop

<sup>32</sup> Based on Air Carrier Activity Information System, Federal Aviation Administration,

<sup>33</sup> Airport press release, <http://www.mitchellairport.com/news.html>. "Walker Announces 17th Straight Month of Passenger Growth at Mitchell International Airport," 10-3-08.

Gary/Chicago International Airport, about 30 miles from downtown Chicago, has positioned itself as an alternative to the two main Chicago airports and has been home to several discount carriers over the years. At present there is no scheduled commercial service.

A site in Will County owned by the State of Illinois has been discussed as the location for a potential “south suburban” or “third airport” for Chicago. Planning studies by the Illinois Department of Transportation produced forecasts of scheduled commercial air traffic in the range of 471,000 to 968,000 passengers per year at the 5-year mark after the airport’s eventual opening<sup>34</sup>.

#### **A.4 Intermodal Connections**

When passengers and freight can move readily from one mode or facility to another, the transportation system as a whole becomes more efficient. Although this is a relatively simple idea, for many years the various modes of transportation (road, rail, water, and air) were often conceived of as separate systems, and the locations of transportation facilities were chosen with insufficient regard for the potential for interconnection. However, intermodal connections have received renewed attention from planners and policymakers, particularly since the passage of the Intermodal Surface Transportation Efficiency Act of 1991.

Within the Chicago area, both O’Hare and Midway airports are connected to the city via the Chicago Transit Authority rapid-transit rail system via the Blue and Orange “el” lines, respectively. O’Hare is also accessible via Metra using the O’Hare Transfer station and a shuttle bus. A number of regional bus services also connect the Chicago airports, particularly O’Hare, with a wide catchment area across Illinois, Wisconsin, and Indiana.

Amtrak trains link downtown Chicago with the Milwaukee airport; a shuttle bus covers the short distance from the rail station to the airport terminals. Gary/Chicago airport is located about 1.5 miles from a South Shore Northern Indiana Commuter Transportation District (NICTD) station. There have been plans to create a multi-modal interchange at the airport. NICTD trains continue to the South Bend airport, creating another intermodal connection.

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<sup>34</sup> IDOTFact Sheet: [http://masterplan.southsuburbanairport.com/mp\\_forecasts.asp](http://masterplan.southsuburbanairport.com/mp_forecasts.asp).

## Appendix B. Criteria Considered when Selecting Peer MPOs

Metropolitan Area	Amtrak Lines	Freight		Airport Code	Airport	Passenger Boardings 2007*	Hub to # of Airlines	Rail to Airport Connection?				MPO
		Destination Freight Tonnage (in 000)	Origin Freight Tonnage (in 000)					Amtrak	Comm. Rail	Subway	Light Rail	
Atlanta	2	356,566	296,785	ATL	Hartsfield - Jackson Atlanta International	43,236,665	2			Yes		Atlanta Regional Commission
Anchorage	0			ANC	Ted Stevens Anchorage International	2,617,964	1					Anchorage Metropolitan Area Transportation Solutions
Boston	3	148,189	121,706	BOS	General Edward Lawrence Logan International	13,783,297	2			Bus		Boston Region MPO
Providence	2			PVD	Theodore Francis Green	2,499,677	0					Rhode Island Statewide Planning Program
Manchester	0			MHT	Manchester	1,920,911	0					Southern New Hampshire Planning Commission
Charlotte	2	142,653	104,760	CLT	Charlotte/Douglas International	16,584,780	1					Mecklenburg-Union MPO
Chicago	6	1,017,093	887,117	ORD	Chicago O'Hare International	36,521,585	3			Yes		Chicago Metropolitan Agency for Planning
Chicago				MDW	Chicago Midway International	9,132,836	1			Yes		Chicago Metropolitan Agency for Planning
Cincinnati	2	120,467	91,769	CVG	Cincinnati/Northern Kentucky International	7,728,069	1					Ohio, Kentucky, Indiana Regional COG
Cleveland	3	162,706	130,128	CLE	Cleveland-Hopkins International	5,571,219	1			Yes		Northeast Ohio Area-wide Coordinating Agency
Dallas/Ft. Worth	3			DFW	Dallas/Fort Worth International	28,482,417	2		Bus			North Central Texas COG
Dallas		249,996	230,032	DAL	Dallas Love Field	3,988,199	1					North Central Texas COG
Denver	2	134,783	115,053	DIA	Denver International	24,117,623	2					Denver Regional COG
Detroit	2	361,393	218,522	DTW	Detroit Metropolitan Wayne County	17,495,135	2					Southeast Michigan COG
Houston	2	782,515	622,436	HOU	William P Hobby	4,239,375	1					Houston Galveston Area Council
Houston				IAH	George Bush Intercontinental	20,767,144	1					Houston Galveston Area Council
Kansas City	3	187,710	172,909	MCI	Kansas City International	5,833,064	1					Mid-America Regional Council
Las Vegas	0	60,879	53,150	LAS	McCarran International	22,537,950	1					Regional Transportation Commission of Southern Nevada
Los Angeles	4	704,945	626,235	LAX	Los Angeles International	30,113,985	2				Bus	Southern California Association of Governments
Santa Ana				SNA	John Wayne Airport-Orange County	4,948,846	0					Southern California Association of Governments
Ontario				ONT	Ontario International	3,473,272	0					Southern California Association of Governments
Burbank				BUR	Bob Hope	2,950,652	0	Yes	Yes			Southern California Association of Governments
Memphis	2	101,434	90,758	MEM	Memphis International	5,546,321	1					Memphis MPO
Miami	1	165,801	138,393	MIA	Miami International	16,194,162	2		Bus			Miami Urbanized Area MPO
Fort Lauderdale	2			FLL	Fort Lauderdale/Hollywood International	11,079,250	1		Bus			Broward County MPO
West Palm Beach	2			PBI	Palm Beach International	3,475,345	0		Bus			Palm Beach MPO
Milwaukee	2	96,979	89,733	MKE	General Mitchell International	3,751,345	1					Southeastern Wisconsin Regional Planning Commission
Minneapolis	2	297,070	258,540	MSP	Minneapolis-St Paul International	16,962,563	1				Yes	Metropolitan Council
New York City	3	394,049	348,274	JFK	John F Kennedy International	23,401,351	2		Rail	Rail		New York Metropolitan Transportation Council
New York City				LGA	La Guardia	12,529,890	0			Bus		New York Metropolitan Transportation Council
Newark				EWR	Newark Liberty International	18,163,652	1	Rail	Rail			North Jersey Transportation Planning Authority
Orlando	3	74,706	50,097	MCO	Orlando International	17,614,679	1					METROPLAN
Philadelphia	3	253,081	230,327	PHL	Philadelphia International	15,656,653	1			Yes		Delaware Valley Regional Planning Commission
Phoenix	2	130,793	115,257	PHX	Phoenix Sky Harbor International	20,796,173	2				Yes**	Maricopa Association of Governments
Portland	2	152,205	129,695	PDX	Portland International	7,281,057	1				Yes	Metro
Raleigh	3	82,990	60,631	RDU	Raleigh-Durham International	4,979,553	1					Capital Area MPO
Salt Lake City	2			SLC	Salt Lake City International	10,560,906	1					Wasatch Front Regional Council
San Francisco	2			SFO	San Francisco International	17,280,328	2		Bu/Ra	Yes		Metropolitan Transportation Commission
Oakland				OAK	Metropolitan Oakland International	7,144,127	0			Bus		Metropolitan Transportation Commission
San Jose		332,439	256,228	SJC	Norman Y. Mineta San Jose International	5,255,257	0		Bus		Bus	Metropolitan Transportation Commission
San Juan	0			SJU	Luis Munoz Marin International	5,149,177	2					Puerto Rico DOT Public Works
St. Louis	3	280,421	244,550	STL	Lambert-St Louis International	7,130,801	1			Yes		East-West Gateway Coordinating Council
Seattle	2	186,494	126,630	SEA	Seattle-Tacoma International	15,419,116	1					Puget Sound Regional Council
Washington, DC	4			IAD	Washington Dulles International	11,789,441	1			Bus		Metropolitan Washington Council of Governments
Baltimore	2	152,522	149,018	BWI	Baltimore/Washington International	10,487,789	2	Bus	Bus	Yes		Baltimore Metropolitan Council
Washington, DC		202,744	165,315	DCA	Ronald Reagan Washington National	9,038,174	0			Yes		Metropolitan Washington Council of Governments

\*Source: [http://www.faa.gov/airports\\_airtraffic/airports/planning\\_capacity/passenger\\_allcargo\\_stats/passenger/](http://www.faa.gov/airports_airtraffic/airports/planning_capacity/passenger_allcargo_stats/passenger/)

Yes = Direct connection to rail  
 Bus = Bus connection to rail  
 Rail = Airtrain connection to rail  
 Bu/Ra = Bus and rail connection  
 \*\* = Planned to open soon

## **Appendix C. MOU for Coordination of Transportation Planning Activities in the Three State New York – New Jersey – Connecticut Metropolitan Region**

**New York Metropolitan Transportation Council  
North Jersey Transportation Planning Authority  
South Western Region Metropolitan Planning Organization  
Greater Bridgeport / Valley Metropolitan Planning Organization  
Housatonic Valley Council of Elected Officials**

### **MEMORANDUM OF UNDERSTANDING (MOU) FOR COORDINATION OF TRANSPORTATION PLANNING ACTIVITIES IN THE THREE STATE NEW YORK-NEW JERSEY-CONNECTICUT METROPOLITAN REGION**

This Memorandum of Understanding (MOU) is made and entered into by and among the New York Metropolitan Transportation Council (NYMTC), the North Jersey Transportation Planning Authority (NJTPA), South Western Region Metropolitan Planning Organization (SWRMPO), the Greater Bridgeport / Valley MPO (GB/VMPO), and the Housatonic Valley Council of Elected Officials (HVCEO), collectively referred to hereinafter as "the PARTIES".

**WHEREAS**, the PARTIES acknowledge that portions of the three state New York-New Jersey-Connecticut metropolitan region are characterized by socio-economic and environmental interdependence, as evidenced through shared ecosystems, interconnected transportation systems and inter-related patterns of employment and population; and,

**WHEREAS**, NYMTC and NJTPA are part of a federally-designated Transportation Management Area (TMA) that, when combined with SWRMPO, GBNMPO, and HVCEO, constitute one of the nation's largest commuter-sheds; and,

**WHEREAS**, 23 U.S.C. 134 and Section 8 of the Federal Transit Act require that Metropolitan Planning Organizations (MPOs) be designated for metropolitan regions and that they maintain a continuing, cooperative and comprehensive transportation planning process that results in plans

and programs that consider all transportation modes and supports metropolitan community development and social goals; and,

**WHEREAS**, a key role for MPOs is to serve as forums for cooperative transportation planning and decision-making in metropolitan areas; and,

**WHEREAS**, 23 CFR 450.314(d) states that, where more than one MPO has authority within a metropolitan planning area or a nonattainment or maintenance area, there shall be an agreement between the state department(s) of transportation and the MPOs describing how their planning processes will be coordinated to assure the development of an overall transportation plan for the metropolitan planning area, and that in nonattainment or maintenance areas, the agreement shall include State and local air quality agencies; and,

**WHEREAS**, the FHWA/FTA Transportation Planning Certification Review for NYMTC (January 2007) and NJTPA (January 2006) had required that an agreement be fashioned which identifies how the above referenced five MPOs located in the New York, New Jersey and Connecticut commuter-shed would coordinate the development of transportation planning documents and would coordinate to meet the attainment of National Ambient Air Quality Standards (NAAQS); and,

**WHEREAS**, it was subsequently determined that, because of census boundary changes, participation in this agreement by the non-TMA MPOs (SWRMPO, GB/VMPO, and HVCEO) was not mandatory, but would be advisable as consistent with good planning principles; and,

**WHEREAS**, SWRMPO, GB/VMPO, and HVCEO are voluntary participants in this MOU; and,

**WHEREAS**, this MOU constitutes the aforementioned agreement in order to address the requirements of 23 CFR 450.314(d) for the PARTIES and the recommendations of the federal certification reviews of NYMTC and NJTPA; and,

**WHEREAS**, the PARTIES agree to follow this MOU in order to ensure coordination in the development of the mandated products of the metropolitan transportation planning process including the process for meeting attainment of NAAQS; and,

**WHEREAS**, this MOU is intended to ensure that the products of each respective MPO transportation planning process takes into account the impacts of the plans and programs developed by the other MPOs; helps avoid duplication of effort; reflects consistency of approaches where possible; and ensures the consideration of the interests of all five MPOs;

**NOW, THEREFORE, BE IT RESOLVED** that the PARTIES hereto agree to perform in good faith the activities of voluntary coordination, cooperation and consultation amongst themselves, as follows:

### **General**

1. Hold an annual meeting of the Executive Directors and appropriate key managers of the five MPOs which are PARTIES to this agreement, as well as interested policy board member agency representatives, including but not limited to, the public transit operating agencies and the Port Authority of New York and New Jersey, to discuss and review the areas of coordination, cooperation and consultation as outlined in this MOU.

Representatives of the State Departments of Transportation and Environmental Protection/Conservation and other resource agencies in the three states will also be invited and encouraged to participate. The purpose of the annual meeting will be to engage in discussions of mutual interest with a focus on the development of the respective Unified Planning Work Programs (UPWPs) for the coming year. The annual meeting will also serve as a mechanism for assessing this MOU and for discussing further expectations and approaches, as appropriate.

2. Cooperate in efforts toward achieving, wherever possible, general consistency of plans through informal communication and document exchange.
3. Participate, to the extent practicable, in the transportation planning process of the other PARTIES through such activities, as are deemed appropriate, as technical committee memberships and/or meeting participation, including the use of the PARTIES' public participation processes and involvement in regional studies, as well as through informal and ongoing communications regarding same.



### **Unified Planning Work Program (UPWP)**

1. As individual MPOs, make available UPWP products as appropriate to the other PARTIES.
2. Exchange information, including DRAFT copies of the UPWP, and maintain communication among the PARTIES regarding how best to achieve coordination and consistency among the Plans.
3. Discuss opportunities for collaborative activities that could be incorporated as tasks and/or products and thereby included in the Work Programs of the PARTIES, as appropriate, for the upcoming year.
4. Consider that the five MPOs will not necessarily be at the same stage of UPWP development at the same time, and that coordination will be tempered by the schedule of each MPO's planning process.

### **Modeling**

1. Exchange modeling information at appropriate levels of geography, attempting where possible to relate the data to the MPOs' existing, respective Traffic Analysis Zone systems.
2. Share modeling as appropriate, including socio-economic, census, forecast and survey data and results; trip tables and travel demand model assumptions; and model validation data, state line traffic volumes and traffic volumes at the external boundaries of the other agencies' models.
3. Consult in the development of enhanced travel demand models.
4. Examine and utilize opportunities for joint development of TMA new modeling applications for the region as appropriate.

### **Transportation Plan**

1. During the development of the Long-Range Transportation Plan, consult as appropriate all parties regarding key elements of the plan such as principles, scenarios, strategies, major project assumptions and key issues.
2. Exchange information, including DRAFT copies of the Long Range Plans and proposed amendments, and maintain communication among the PARTIES, including affording each other the opportunity to review and comment on projects proposed in the Long

Range Plan, especially on projects that border, or have a significant impact upon, other PARTIES' MOU jurisdictions.

3. Consider that the five MPOs will not necessarily be at the same stage of plan development at the same time, and that coordination will be tempered by the schedule of each MPO's planning process.

### **Transportation Improvement Program**

1. Consult in the development of TIPs.
2. Exchange information, including DRAFT copies of the TIP and proposed amendments, and maintain communication among the PARTIES, including affording each other the opportunity to review and comment on draft projects proposed in the TIP, especially on projects that border, or have a significant impact upon, other PARTIES' MOU jurisdictions.
3. Consider that the five MPOs will not necessarily be at the same stage of TIP development at the same time, and that coordination will be tempered by the schedule of each MPO's planning process.

### **Air Quality State Implementation Plan Conformity**

1. Exchange information on the design concept and the design scope of projects that should be included in the regional emissions analysis.
2. Consult on the assumptions used in the mobile emissions model in each state.
3. Exchange information, including DRAFT copies of the Conformity Analysis, and maintain communication among the PARTIES.
4. Consider that the five MPOs will not necessarily be at the same stage of Conformity determination at the same time, and that coordination will be tempered by the schedule of each MPO's planning process.

**Adopted:**

**New York Metropolitan Transportation Council:**

Adopted Resolution # 249, January 17, 2008

**North Jersey Transportation Planning Authority**

Adopted Resolution # A-504, January 14, 2008

**South Western Region Metropolitan Planning Organization**

Adopted Resolution # 2008-003, January 28, 2008

**Greater Bridgeport / Valley Metropolitan Planning Organization**

Adopted Resolution # 2008-4, January 30, 2008

**Housatonic Valley Council of Elected Officials**

Adopted Resolution # Item 2E, January 18, 2008

## **Appendix D. Scope of Work: Front Range Transportation Plan**

(Attached as separate document)

A map of Colorado showing major transportation routes and regional boundaries. The map includes state routes (e.g., 85, 76, 25, 80, 34, 36, 40, 70, 270, 225, 470, 85, 285, 24, 94, 50, 96, 78) and interstates (e.g., 76, 270, 225, 70, 25, 80). Major cities and towns are labeled, including Laramie, Cheyenne, Rockport, The Forks, Ault, Eaton, Windsor, Lucerne, Greeley, Kersey, Evans, LaSalle, Godrich, Orchard, Wiggins, Grand Lake, Allenspark, Raymond, Longmont, Berthoud, Johnstown, Milliken, Gilcrest, Platteville, Fort Lupton, Prospect Valley, Wiggins, Tabernash, Nederland, Boulder, Golden, Denver, Adams, Arapahoe, Elbert, Douglas, Castle Rock, Kiowa, Matheron, Simla, Ramah, Peyton, Cailhan, Yoder, Rush, Colorado Springs, Fountain, El Paso, Victor, Manitou, Monument, Penrose, Pueblo, Avondale, Westcliffe, Silver Cliff, Beulah, and Boone. The map also shows county boundaries and names such as Laramie, Weld, Boulder, Denver, Adams, Arapahoe, Elbert, Douglas, Teller, Fronton, Custer, and Pueblo.

# Scope of Work

# Front Range

# Transportation Plan

**Cheyenne MPO**

**North Front Range MPO**

**Upper Front Range RPC**

**Denver Regional Council of Governments**

**Pikes Peak Area Council of Governments**

**Pueblo Area Council of Governments**

**Colorado Department of Transportation**

**December 2007**

### OBJECTIVES

Through collaboration, the regional and metropolitan planning agencies of the Front Range in Colorado and Wyoming desire to achieve the following objectives:

- ▶ Exchange information about their individual plans,
- ▶ Whenever possible, reach agreement on a set of common assumptions for use in their respective plans,
- ▶ Identify and acquire an expanded set of planning tools that will facilitate the development and evaluation of local and regional plans,
- ▶ Develop and evaluate scenarios for the Front Range, as a region,
- ▶ Engage and inform a wide audience about these scenarios and their outcomes, and
- ▶ Create a means for further discussion and education about land use and transportation planning issues in the Front Range.

While it is recognized that there are many factors that are likely to be raised for consideration during this planning process, it should be emphasized that the primary focus of this effort is transportation. These other considerations, therefore, should be discussed and evaluated to the extent that the relationship between these factors and transportation can be better understood in the context of the transportation plan.

### TASKS

#### *Task 1. Identify Management Team*

Identify a lead agency and appoint a Project Manager. Identify and appoint a representative from appropriate regional and/or state agencies to the Project Management Team (PMT). Convene a chartering meeting of the PMT to agree on roles, rules, and procedures. Convene monthly meetings of the PMT for the duration of the project.

**Products:** Management Team membership list, Charter, meeting materials and summaries

#### *Task 2. Engage Stakeholders*

Recruit and convene a Stakeholder Working Group (SWG). This group will have 15-30 members, with representation across the Front Range. Identify individual members who represent a cross-section of interests, including elected officials, relevant business or industry representatives, civic leaders, and leading members of advocacy groups with interests in transportation, land use, economic development and the environment.





## Front Range Transportation Plan Scope of Work

Convene an initial orientation meeting to review the work plan for the project. Convene 3-6 additional meetings around milestones in the project, including the development and evaluation of performance measures, scenarios, public forums, and the completion of products of the project.

**Products:** Stakeholder Working Group membership list, meeting materials and summaries

### *Task 3. Engage Technical Staff*

Establish a Technical Committee (TC), consisting of regional and/or State agencies' staff. The responsibility of this committee will be the identification, development and application of technical data and tools. These will include travel data and models, land use data, spatial (GIS) data that characterize environmental opportunities and constraints, and other data needed for the development and use of the scenario evaluation tools identified in Task 4.

Convene meetings to reach agreement on a set of common assumptions for use in Front Range regional planning, including study area boundaries, future travel forecast years, and forecasting software to be used in agencies' regional plans. Establish a set of population and employment totals for the Front Range as a whole for the forecast period(s). Discuss and evaluate the potential for further sharing of spatial data on a common platform and from a common set of files. Participate in the work of evaluating and selecting an appropriate set of planning and evaluation tools (Task 4).

It is expected that the TC will meet 6-9 times during the project.

**Products:** Technical Committee membership list, meeting materials and summaries

### *Task 4. Identify Needed Data and Tools*

A major methodological focus in this scope of work will be the identification and introduction of a new analytic tool that supports local and/or regional evaluation of the impacts of transportation and land use plans and projects. The tool(s) should support the eventual development and evaluation of future, integrated transportation and land use plans for the entire Front Range, based on a set of transportation, environmental, social and economic performance measures determined by stakeholders and staff.

The PMT, with involvement from the TC and the SWG, will participate in a set of meetings to implement the following agenda:

- ▶ Identify the policy goals (e.g., transportation accessibility, employment opportunity, environmental sustainability, etc.) for which the agencies and their constituents want to develop plans and evaluate projects.
- ▶ Identify the geographic scale(s) (e.g., parcel/project level, neighborhood/community, region, etc.) for which they desire to conduct analyses.



## Front Range Transportation Plan Scope of Work

- ▶ Review and evaluate the software tools available to evaluate these types of plans and policies at the required geographic scales. Understand the data requirements associated with each tool.
- ▶ Recommend and acquire licenses for a set of software tools to assist local governments and/or regional agencies in developing and understanding the impacts of public and/or private actions that will affect their ability to achieve their policy goals.
- ▶ Identify a protocol (access, staffing, training and technical support) for using these tools.

**Products:** Licensed copies of selected software, and an Implementation Plan

### *Task 5. Develop Initial Scenarios*

Develop two Front Range scenarios, one based on travel and land use trends, and the other based on a compilation of regional and local plans. The “trends” scenario will weigh the role of the private sector relatively more than the public sector in affecting both land use and transportation outcomes at the local and regional levels. The “plans” scenario will focus on local and regional land use and transportation plans, as applicable, and will assume the successful implementation of policies and adopted investment plans. Determine a time frame within which the scenarios would be implemented.

Using the tools identified in Task 4, analyze the scenarios in terms of the set of performance measures agreed upon by the Technical Committee and Stakeholder Working Group. For the “plans” scenario, explicitly identify the issues, similarities, and points of conflict between and among the existing plans. For both scenarios, compare and illustrate their outcomes, in terms of the identified policy goals and performance measures.

Prepare digital and print versions of the results of this analysis, for use in Task 6.

**Products:** Summary report(s) with graphics, PowerPoint presentation(s)

### *Task 6. Engage and Inform Citizens*

Plan, detail and convene approximately six forums around the Front Range to present the two scenarios and their consequences. Develop a program of publicity through the appropriate use of regional media. Consultants and stakeholders will actively participate in the design and conduct of these workshops.

Summarize the feedback received at the forums. Conduct focus groups of attendees to identify lessons learned and questions that need to be answered.

Note: In responding to this task, consultants can propose other approaches to public engagement, including how to involve the public earlier, within the project budget.



## Front Range Transportation Plan



## Front Range Transportation Plan Scope of Work

**Products:** Six public forums, supporting materials, memorandum on forums and focus group results and findings

### *Task 7. Add to and Refine Scenarios*

Through the involvement of all committees, and with input from the forums, evaluate the need for revisions to the two scenarios developed to date and/or determine if corrections are required. Apply the scenario evaluation tool(s) to the scenario, if necessary.

Agree on the details of one additional scenario that includes potential adjustments to existing land use and transportation plans, in light of the (assumed) conflicts, inconsistencies and adverse consequences caused by their independent adoption. This scenario will be designed to educate the public and the committees, by highlighting local and regional public policies, transportation projects and citizen actions that will increase the likelihood of achieving the stated Front Range goals. Analyze and refine this third scenario, using the selected tool(s) to apply the agreed upon set of performance measures, to suggest how best to achieve the measures of success agreed upon previously.

**Products:** Report(s) with graphics, PowerPoint presentation(s)

### *Task 8. Present Refined Scenario*

Conduct a second set of forums, comparable to the first, at which the third scenario is presented. Obtain comments from workshop attendees in a manner identical to the first forums.

**Products:** Forums, supporting materials, memorandum on forum and focus group results and findings

### *Task 9. Develop the Legacy*

With the active involvement of stakeholders, develop a plan for a legacy from this project. This may include, among other actions, memoranda of agreement between regional agencies for data sharing and software maintenance, commitments to undertake specific studies or other projects, new or additional education, outreach or analysis. Evaluate the feasibility and desirability of creating a non-governmental organization, similar to those in other US regions, whose mission is to further Front Range regional planning and project development.

A key element of this legacy should be an Implementation Strategy which clearly addresses institutional arrangements, guiding principles for implementation and other tools or structures which should be put in place to facilitate implementation of the work achieved through the collaborative planning process.

**Product:** Written documentation of proposed actions and commitments, media kits, and presentations to media.

### *Task 10. Document the Results*

Develop a report on the above, which includes the findings of the stakeholder group, and a set of recommended actions.

**Products:** Web based archive of digital materials developed during the project, summary report (print and digital format)

### **SCHEDULE**

This work can be completed over 12-18 months.

### **BUDGET**

For purposes of discussion, the budget estimate is \$1,000,000.

