



TRANSPORT
2008
23(3): 279–286

EXCHANGE OF EXPERIENCE

GOVERNANCE AND INSTITUTIONS OF TRANSPORTATION INVESTMENTS IN U.S. MEGA-REGIONS

Henry L. Vega¹, Leo Penne²

¹ *George Mason University, Center for Transportation, Policy, Operations, and Logistics, 4400 University Drive MS 3C6, Fairfax, VA 22030 U.S.A. Corresponding author*

² *American Association of State Highway and Transportation Officials
E-mails: ¹ hvega@gmu.edu; ² lpenne@aashto.org*

Received 4 March 2008; accepted 12 June 2008

Abstract. From a planning perspective, a mega-region can be defined as an extended network of metropolitan centers and their surrounding areas, crossing county and state lines, linked by integrated labor markets, land use systems and transportation and communication infrastructure. From a governance perspective, delimiting the jurisdictional borders of a mega-region is rather challenging due to the overlap of hierarchy of governance systems. It has been suggested that the effective management of existing transportation infrastructure and the planning and financing of new investments in these areas will need to operate under a regional framework of governance. What such regional framework might look like is still subject to debate. Despite years in the planning, currently no mega-regional transportation initiative has been implemented in the U.S. This article uses descriptive and interpretative analysis to further the debate in two areas. It first reviews definitional issues in the existing literature as they apply to mega-regions and transportation. Second, it undertakes a comprehensive survey of regional initiatives, such as the Corridors of the Future Program, to highlight the complexity of multi-state transportation projects. Lessons from this survey can be useful when developing future transport policy, as policymakers increase their efforts to adopt regional governance initiatives to finance transportation investments worldwide.

Keywords: mega-regions, United States, corridors, transport policy, transport management, governance, institutions.

1. Introduction

Defining a mega-region is a complex task. The complexity arises from the overlap of metropolitan, mega-regional and corridor-scale development patterns and flows in addition to the overlap of geographical and political boundaries. Nevertheless, the mega-region concept is not new as it is mainly rooted in Jean Gottman's idea of megalopolis advanced in 1961. It was used then to describe the nearly unbroken pattern of urbanization that had emerged in the northeastern U.S. More recently, the notion of mega-regional corridors has been popularized. These concepts often imply a vision of a "new geography" taking in place and raise governance and institutional issues. While the case for regionalism in transportation planning and investment seems to be clear (Glaeser 2007), it is less clear what form they should take from a governance perspective.

In the U.S., efforts to encourage federal and local authorities to adopt regional approaches to transportation have been pushed by several industry and constituent groups, primarily in response to the need of finding innovative ways to finance transportation infrastructure. The concept of Corridors has been pushed forward, for instance, by the I-95 Corridor Coalition and the CAN-AMEX Corridor Coalition, among other groups. The federal government has responded by launching a program to encourage states to join efforts and work together. As a response, the Corridors of the Future Program (Corridors Program), a component of the U.S. Department of Transportation (USDOT) has been put in place to accelerate the development of multi-state transportation projects for one or more transportation modes. Moreover, the Corridors Program is seeking to achieve this without putting an additional strain on the Highway

Trust Fund by encouraging states to partner with the private sector in the development, financing and management of the corridors.

Because of the added attention that the regional approaches to finance infrastructure are experienced, this article, using descriptive and interpretative analysis, furthers the debate in two ways. It first reviews definitional issues in the existing literature as they apply to mega-regions and transportation. Second, it surveys successful regional initiatives, such as the Corridors Program in detail, to highlight the characteristics of the institutions created to deal with the complexity of multi-state transportation projects. Different regional schemes, either in the planning or implementation stages, are presented. Lessons from this survey can be useful when developing future policy, as policymakers increase their efforts to adopt regional governance initiatives to finance transportation investments worldwide.

2. Mega-regions

In 2006, the Regional Planning Association (RPA) and the Lincoln Institute of Land Policy presented the results of a study that described ten emerging mega-regions in the U.S. (RPA 2006). Figure 1 illustrates the location of the mega-regions identified by Florida (2007).

This view of urban development has been the basis for analysis, advocacy and scholarly research by others; including the I-95 Corridor Coalition, the Georgia Institute of Technology Center for Quality Growth and Regional Development (CQGRD), the University of Pennsylvania School of Design, the Harvard Institute of Economic Research and the Creative Class Group. In this section, the main concepts developed by these groups are revised and summarized.

2.1. Definitions

From a planning perspective, a mega-region can be defined as an extended network of metropolitan centers (major cities and mega-cities) and their surrounding areas crossing county and state lines and linked by integrated

labor markets, transportation and communication infrastructure and land use systems. Its presence is spatially verified, as well as in terms of economic output, and not by political boundaries. Depending on each case, the primary linkages of the mega-regions can be with other regions or the global economy. Shaping the mega-regions are the intensity of social, economic, physical and geographic features as well as environmental linkages creating relationships and a shared sense of identity.

A recent interest in mega-regions has focused on the mega-regions' significant degree of economic integration; i.e. contiguous development forming natural economic zones (Ohmae 1993; Ross 2006). These mega-regions are being identified through the usage of satellite imaging technology of the world at night. They constitute a parallel macro-structure, the integrated sets of cities and their surrounding suburban hinterlands, across which labor and capital can be reallocated at very low cost (Florida *et al.* 2007). Under this premise, a mega-region to qualify as such needs to have at least a \$100 billion Light-based Regional Product (LRP). One hundred billion LRPs can be compared to \$100 billion of GDP.

The mega-regions defined by the RPA in 2006 have not only certain commonalities but also significant differences. For example, mega-regions can differ substantially in their incomes. Table 1 shows socio-economic differences across some of the mega-regions identified by Glaeser (2007).

Florida *et al.* (2007) have identified 40 mega-regions with economic output of more than \$100 billion around the world. They have estimated that these regions produce about 66% of world output. The U.S. is home to 12 of the world's mega-regions; i.e. the 10 mega-regions identified by RPA (2006) plus Denver and Phoenix. Figure 2 shows these regions.

2.2. Mega-regions and transportation

Mega-regions, it has been claimed, are the new competitive units in the global economy. Just as metropolitan regions grew from cities to become the geographical units of the 20th century's global economy, mega-regions could



Fig. 1. Mega-Regions in the United States (RPA 2006)

Table 1. Mega-regions characteristics in 2000 (Glaeser 2007)

Region	Income (US\$)	Average Housing Value (US\$)	Commute Time (Minutes)
Northeast	70 158	176 431	26.5
Northern California	70 122	176 431	26.5
Southern California	61 777	133 824	27.0
Cascadia	60 076	134 489	24.4
Midwest	59 230	100 781	23.2
Texas Triangle	56 955	73 967	25.7
Piedmont	58 881	93 783	25.0
Arizona Sun Cor.	56 845	100 130	24.7
Southern Florida	55 563	93 366	25.2
Gulf Coast	45 506	65 725	23.3

rapidly be taking their place (RPA 2006). As urban planners and academic scholars have further pointed out, at the same moment that technology enables the geographic spread of economic activity, economic activity continues to cluster and concentrate around this new mega-regional unit. The links between mega-regions and transportation seem to derive precisely from those interactions between agglomeration economies and transactions costs.

Agglomeration economies have long been linked to the clustering of economic activities, transportation and efficient public goods utilization (Marshall 1890). Urbanization, industrialization and location are the most common categories of agglomeration economies. On the opposite extreme, the diseconomies of agglomeration associated with large cities becoming ‘too large,’ diminish the positive effects of agglomeration because of crowding and congestion. As a result, agglomeration economies can be either positively or negatively related to the concentration of economic activities. Transactions costs related to moving people and goods have been observed to influence in flipping the balance.

From a transport policy perspective, in general, transaction costs are relevant as they can decrease if improvements to the existing stocks of transportation infrastructure are made and if a new infrastructure is supplied, leading to efficiency gains. These gains, often derived from specialization and mobility of production inputs, make it possible to overcome the negative effects of crowding and congestion. In the mega-regional debate, Florida *et al.* (2007) seem to touch on the importance of mobility when they state that a characteristic of a mega-region is that one can travel across it ‘carrying only money’ (‘without getting hungry’).

More specifically, the interactions between mega-regional development and infrastructure can be particularly relevant for two reasons. First, as suggested by Haynes (2006), infrastructure’s role could indeed be that of ‘the glue’ that keeps large regions together. Second, advances in transport and communication technologies (hard infrastructure) combined with adaptable institutions (soft infrastructure) and highly mobile skilled human capital could enhance or deter the emergence and competitiveness of mega-regions not only at the national level but also on a worldwide basis.

2.3. Infrastructure challenges of the mega-region

Mega-regions are not independent economic entities. There is an overlap of a hierarchy of the systems where mega-regions seem to be the most appropriate frame for reference – both geographically and temporally – for the effective management of current transportation infrastructure as well as for planning and finance of new infrastructure investments. For example:

- New spatial/land-use structures seem to be emerging in relation with the type of travel connections that a mega-region’s industry mix requires including mega-regional and corridor day tripping and increased intermodal transfers of passengers and freight.

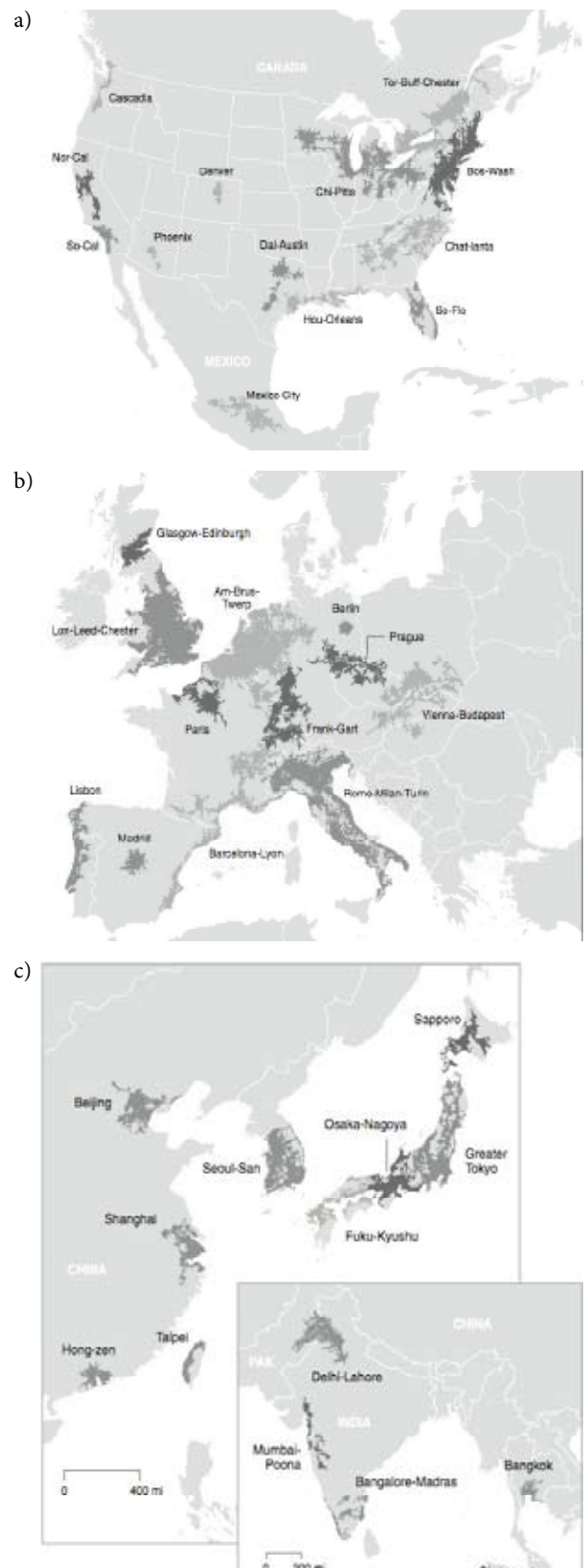


Fig. 2. Mega-regions around the world: a – North America; b – Europe; c – Asia

- A hierarchy of plans may be needed to address transportation and other infrastructure needs in these new structures at metropolitan, statewide and multi-state levels.
- For the multi-state regions with a preponderance of megacities, the importance of intercity networks may necessitate planning efforts that embrace multiple states.
- Increasingly, other parallel investments and interventions in other sectors to sustain and enhance growth will likely need to take place at a mega-regional scale as well requiring additional multi-agency coordination across state lines.

2.4. Governance and development considerations

It has been suggested that state and local policymakers face challenges and opportunities for cooperation in a mega-region. In the case of the United States, public capital financing still rests with voters on individual project referendums, set forth to the voters as capital plan budgets, dedicated tax increases or as bond issues. This type of financing has been estimated to account for 25–35% of state and local capital expenditures and for an even higher fraction of core infrastructure financing (Haynes 2006).

From a regional development perspective, however, in the areas such as economic development policy, the benefits of competition have been observed to outweigh the benefits of coordination, while regional control often is a recipe for disaster. Transportation is a special sector because positive externalities can be massive and regional coordination can be the optimal solution (Glaeser 2007). In particular, a regional approach to ground-based transportation can make sense in the regions with enough information and incentives to get things right faster than the federal government, with the added benefit that the region holds a greater ability to internalize cross-jurisdiction externalities. However, the prioritization of investments has been suggested must be done on a case-by-case basis. High-speed rail, for example, would make more sense in the Northeast rather than in the Arizona Sun Corridor. Some of the priorities constantly suggested by some state and local governments as most suitable for regional coordination are the following:

Passenger and Freight Rail

- High-speed rail lines available for places 200–500 km distant.
- High-speed rail systems for freight to accommodate the increasing demand for transporting time-sensitive goods and mail.

Administration and Long-term Planning

- Federal support, coordination assistance and incentives for the creation of partnerships between metropolitan areas, as mega-region planning organizations may be necessary to coordinate the efforts of metropolitan planning organizations (Lang and Dhavale 2005) and multiple states.
- Implement mega-regional performance measures and standardize (to the extent reasonable) planning goals.

Managing Existing Infrastructure

- Regionally intelligent transportation systems designed to reduce congestion and increase reliability, speed and capacity assuring the compatibility of standards.
- Transit oriented development and smart growth principles to focus an optimal development of the existing centers where transportation options exist or can be implemented.
- Infilling development near transportation hubs that help with revitalizing existing centers.
- Integration of transportation modes through the modernized networks of commuter and freight rail, highway systems and airports.

Public Private Partnerships (PPP)

- Framing new legal and financing decision-making frameworks to allow for a more efficient combination of governmental support with private sector involvement to finance mega-regional infrastructure.
- Promotion of strategic partnerships across regional and state boundaries.
- Exploration of innovative financing systems to raise new funds.
- Additional research funding addressing the benefits of major mega-regional infrastructure investments.
- Implementation of new or modified transportation revenue systems.
- Gaining political and public acceptance for regional charging mechanisms such as vehicle-km-traveled road pricing, because mega-regional investments must be supported by constituents across multiple jurisdictions.
- Creation of cross-jurisdiction PPPs to execute strategic investments in infrastructure.

3. Institutions in U.S. regions

Currently, several institutions exist or are being created to deal with the complexity of transportation projects of regional significance. Here they are split between corridor and other initiatives.

3.1. Corridor initiatives

The Southeastern High Speed Rail Corridor

Since 1992, the federal government and four southeastern states have been advancing a proposal to create a Southeastern High Speed Rail Corridor that would link major cities in the Piedmont Atlantic mega-region to Washington with rail speeds of up to 110 mph. This initiative is still under study. It began with links between Washington and Charlotte, but has expanded to include the cities in the Piedmont Atlantic mega-region.

The proposed 6 400-km Trans-Texas Corridor

Estimated to cost at least \$145 billion, this initiative will comprise a network of transportation corridors for multiple modes to move both freight and people.

Projects of National and Regional Significance

Projects under this federal initiative are constrained to the directives of Sections 1101(a)(15), 1102, 1301; 1935; 1936; 1959; 1964 (Projects of National and Regional Significance), 1302 (National Corridor Infrastructure Improvement Program) and 1306 (Freight Intermodal Distribution Pilot Grant Program) of the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users. Projects are evaluated on their ability to:

- Generate national economic benefits,
- Reduce congestion,
- Improve transportation safety,
- Enhance the national transportation system,
- Garner support for non-federal finance,
- Provide dependable financing,
- Use new technologies,
- Help in maintaining or protecting the environment.

Although not within a mega-region, the Heartland Corridor Project, for example, includes multiple intermodal facility improvements to ease the movement of intermodal freight from Virginia to Ohio. Funds are to be used to raise tunnel clearances and modify other overhead obstructions to permit rail double-stack trains to move from the Hampton Roads region of Virginia to Columbus, Ohio, and on to a variety of other locations, including Chicago. The Federal Highway Administration and Norfolk Southern Rail, along with the states of Virginia, West Virginia and Ohio entered into a Memoranda of Agreement that will allow the release of \$95 million in federal funds for the project. Formal agreements are expected to be finalized by spring 2008.

Amtrak Cascades

Amtrak Cascades is a passenger rail operation funded by passengers, the states of Washington and Oregon, and Amtrak. State funding comes from the taxes collected from the sale of new and used motor vehicles, car rentals, and vehicle weight fees. Federal grants also help with financing this project, although no state or federal gas tax dollars can be spent on rail construction projects or Amtrak Cascades operations.

The Midwest Regional Rail Initiative (MWRRI)

Since 1996, the MWRRI has been working toward advancing a series of concepts related to improving the level and quality of passenger rail service in nine Midwest states. Planned investments total \$7.7 billion dollars (in 2002) phased over a 10-year implementation period. They are based on the establishment of an 80/20 federal/state funding program similar to those used for highways, transit and airports. The MWRRI is coordinated by a steering committee, comprised of state and Amtrak representatives. Strong working relationships are being pursued

between states, federal and local governments, Amtrak, freight and commuter railroads and railroad labor. It is up to the states to establish a formal organization charged with operations and system oversight in the future.

DOT's Corridors of the Future Program

According to the USDOT's request for applications, the Corridors Program seeks to accelerate the development of multi-state transportation corridors for one or more transportation modes, by selecting up to five major transportation corridors in need of investment for the purpose of reducing congestion. Moreover, it is intended not to put an additional strain on the Highway Trust Fund and encourages states to partner with the private sector in the development, financing and management of the corridors.

After a corridor is accepted for administration under the Corridors Program, the suggested next major action is to work with the coalition of states, municipalities, Indian tribal government(s) and federal agencies (collectively referred to as the 'Coalition') to draft a Corridors Program Development Agreement for the Corridor (CFPDA). The CFPDA is intended to solidify the commitments of all parties to the Corridor (federal, state, municipal and private) with respect to the financing, planning and design, environmental process, construction, operations, maintenance and other components of the Corridor. The CFPDA is also in charge of identifying the specific objectives of the Corridor and performance measures that would be used to evaluate the success of the Corridor in achieving these objectives.

The selection of the corridors occurred as a two-step application process. Phase 1 invited states or other public or private sector entities working with the states to submit corridors proposals in October 2006. USDOT received 38 corridor proposals for Phase 1 consideration. The majority of the proposals included projects on the corridors experiencing moderate to severe congestion projected to worsen. Almost all the proposals had an intelligent transportation systems component to better manage movement of freight and people (Ray 2007).

A USDOT review team composed of representatives from the surface transportation administrations with expertise in finance, environment and planning, infrastructure, and operations evaluated the proposals. Selection criteria included the development of corridors with national and regional importance in movement of freight and people, congestion reduction and leveraging public and private resources to deliver the project.

Fourteen project proposals located on eight major corridors were chosen at the end of Phase 1. Table 2 lists the proposals invited to participate in Phase 2 of the selection process.

Funding for projects to finance their initial development comes from the Interstate Maintenance Discretionary funds (\$42 million), Transportation, Community and System Preservation funds (\$4.6 million), the Highways for Life funds (\$5 million) and the Public Lands Highways funds (\$10 million). Initial funding totals \$61.6 million according to USDOT.

For Phase 2, the project proponents were asked to develop their proposals more fully and obtain support from all the states affected by their projects. The proposals were asked to address the following areas:

- congestion reduction;
- mobility improvements (people and freight);
- economic benefits and support of commerce (by reducing congestion and providing reliable travel times).

Table 2. 14 Submissions and selected 8 corridors of the future

1. Interstate 95 (I-95) Φ
A. I-95—Submitted by the Florida, Georgia, South Carolina, North Carolina and Virginia DOTs*
B. I-95—Submitted by the Interstate 95 Corridor Coalition*
C. The Southeast Interstate 95 Corridor—Submitted by CSX Corporation
2. Interstate 80 (I-80)
A. I-80 Nevada—Submitted by the Regional Transportation Commission, Reno, Nevada on behalf of the I-80 Coalition
B. I-80 California—Submitted by the California DOT (Caltrans)
3. Interstate 15 (I-15) Φ
A. I-15 Corridor California— Submitted by Caltrans*
B. I-15 Nevada—Submitted by the Nevada DOT*
4. Northern Tier (Interstates 80, 90, and 94)
A. Detroit/Chicago National/International Corridor of Choice (I-94) (National Freight Node and Link)— Submitted by the Michigan DOT*
B. Illiana Expressway and Freight Corridor (National Freight Node)— Submitted by the Indiana and Illinois DOTs, Northwestern Indiana Regional Planning Commission, and Chicago Metropolitan Agency for Planning*
5. Interstate 5 (I-5) Φ
A. I-5 in the Portland, Oregon and Vancouver, Washington metropolitan area—Submitted by the Oregon and Washington State DOTs*
B. I-5 Corridor California—Submitted by the California DOT*
6. Interstate 70 (I-70) Φ
Dedicated Truck Lanes Corridor Missouri to Ohio— Submitted by the Indiana DOT in partnership with the Missouri, Illinois, and Ohio DOTs
7. Interstate 69 (I-69) Φ
Submitted by Arkansas State Highway and Transportation Department on behalf of the I-69 Corridor Coalition
8. Interstate 10 (I-10) Φ
Submitted by Wilbur Smith Associates

Φ Denotes being named “Corridor of the Future”

* Entities submitted a joint proposal for Phase 2

Source: Federal Register 72 FR 5787

- value to the user (increased safety, faster and more convenient access to intermodal facilities, environmental benefits, truck-only lanes, and increased travel speeds);
- innovations in project delivery and finance;
- private financial investment.

At the end of the yearlong competition, six interstate routes were selected to join the USDOT’s Corridors Program. According to the USDOT, the proposals were selected for their potential to use public and private resources to reduce traffic congestion within the corridors and across the country. The USDOT has estimated that the selected corridors carry 22.7% of the nation’s daily interstate travel. The concepts included building new roads and adding lanes to existing roads, building truck-only lanes and bypasses and integrating real-time traffic technology like lane management that can match available capacity on the roads to changing traffic demands. It is relevant to note the importance of the multi-state characteristics of the corridor. For Phase 2, the projects initially submitted by an individual entity in Phase 1 joined others and single proposals were submitted in the cases of I-15 and I-5.

On September 10, 2007, the USDOT announced that six multi-state routes will receive the following funding amounts to implement their corridor development plans: \$21.8 million for I-95 from Florida to the Canadian border; \$5 million for I-70 in Missouri, Illinois, Indiana, and Ohio; \$15 million for I-15 in Arizona, Utah, Nevada, and California; \$15 million for I-5 in California, Oregon, and Washington; \$8.6 million for I-10 from California to Florida; and \$800 000 for I-69 from Texas to Michigan. Fig. 3 illustrates the location of the routes.

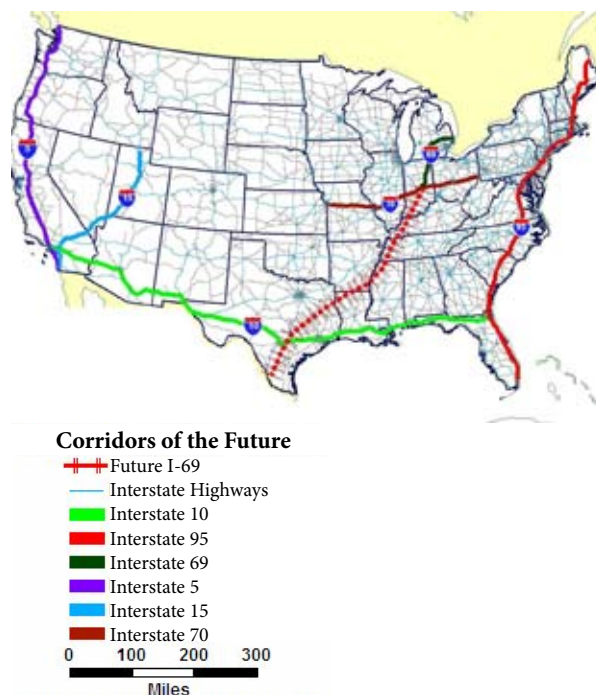


Fig. 3. Location of the interstate routes named as “Corridors of the Future” (Source: U.S. Department of Transportation)

The I-95 Coalition, for example, located in the northeast mega-region, is an alliance of transportation agencies, toll authorities and related organizations, including law enforcement, from Maine to Florida plus Vermont, with affiliate members in Canada. The Coalition includes all major cities along the Atlantic seaboard linked by the Interstate 95.

Similarly, the states of Washington and Oregon initiated a public process to develop a plan for the I-5 Corridor in 1999. In January 2001, the I-5 Transportation and Trade Partnership were initiated with the goal of developing a strategic plan that would determine the infrastructure investment needs and would manage and protect such investments. The planning started with the formation of a task force which was comprised of 26 members with an equal representation of elected and appointed officials from both Oregon and Washington.

The USDOT working together with the states expects to finalize formal agreements detailing the commitments of the federal, state and local governments involved by spring 2008. These agreements will outline the anticipated role of the private sector as well as how the partners will handle the financing, planning, design, construction and maintenance of the corridor.

3.2. Other regional transportation Initiatives

Several governance models have been creatively suggested and implemented in order to deal with multi-state regional coordination. They include *ad hoc* multi-state committees, committees established by multi-state agreement and Joint Powers Authorities established through legislative authority, among others. The following case studies summarize some of these schemes and their outlined financing mechanisms and institutions. They are drawn from existent transportation and non-transportation urban and rural regional initiatives.

The Delta Regional Authority (DRA)

The DRA was established by the U.S. Congress in 2000 to enhance economic development and improve the quality of life for residents. It encompasses 240 counties and parishes in Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee. It is led by a federal co-chairman appointed by the U.S. President and the governors of the eight states. Transportation is DRA's priority, along with rural health and information technology. One of its projects is the Delta Development Highway System, which consists of 6 185 km of roads throughout the region.

In the first five years, the DRA's federal grant program funded 334 projects while using \$48.5 million of authority funds. The \$48.5 million have leveraged \$213 million in other federal funds and \$493.4 million of private funds. The funds are distributed at the discretion of the Secretary of Transportation. The State departments of transportation and metropolitan planning organizations are the eligible recipients of funds under this program. The federal share is 80%.

The Appalachian Development Highway System (ADHS)

Funding for the ADHS has been authorized from the Highway Trust Fund since the fiscal year 1999. However, the Appalachian Regional Commission (ARC) has continued to exercise programmatic control over the funds. The governors of the thirteen Appalachian states continue to determine where and how the money is used on ARC highways in their states. The funds authorized for the ADHS are apportioned to the Appalachian states annually based on each state's proportional share of the cost to complete the ADHS, as specified in the latest cost-to-complete estimate.

The ARC's has a 'unique' structure designed to ensure an active federal-state partnership. It is comprised of 14 Commission members: the governors of the 13 Appalachian states and a federal co-chair. Each year, the 13 governors elect one of their members to serve as states' co-chair of the Commission. Each governor appoints an alternate who oversees the state's ARC program. The ARC also hires a states' Washington, DC representative. Grassroots participation is provided through local development districts, multi-county agencies with boards made up of elected officials, business people and other local leaders. The ARC is staffed by about 50 people based in Washington, DC. Administrative costs are shared equally by the federal and state governments.

Proposed Regional Infrastructure Improvement Zone (RIIZ) – Ohio-Kentucky-Indiana

In 1964, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) was formed by a council of local governments, business organizations and community groups committed to developing collaborative strategies to improve the quality of life and the economic vitality of the region. Today, the members of the OKI include about 103 representatives of governmental, social and civic groups from 198 communities in the eight county and three-state regions. Over \$30 million in funding were approved in 2006. OKI has final authority over all federal dollars spent on transportation in the region.

OKI has proposed the new sources of funding 'to bridge the gap between the available funds and the funds needed to build road facilities'. The RIIZ concept promotes private-sector (corporations or individuals) involvement in road building and other infrastructure through favorable tax treatment of funds and streamlined approval processes. The scheme would be similar to that of Economic Development Districts based on Urban Boundary designations, previously approved by the local Metropolitan Planning Organizations involved. Donations made by businesses and individuals would be tax deductible.

4. Conclusions

1. This article has surveyed multiple definitional issues as well as existing and emerging institutional arrangements to deal with regional and mega-regional planning and development of investments

in transportation infrastructure in the U.S. These arrangements propose alternative forms of multi-state or mega-region institutions as the basis upon which to make strategic transportation investments and none of them is panacea.

2. From a policy perspective, the planning and execution of investments under the regional frameworks of governance can be beneficial. Regional coordination, however, raises several issues including:
 - How mega-regions are delimited and how their importance is measured
 - What are their infrastructure needs?
 - How to best coordinate the regional frameworks of governance, planning, financing and administration of the projects without alienating some constituents and their elected representatives
3. As policymakers increase their efforts to adapt institutions to allow for regional governance and finance of transportation investments worldwide, lessons can be learned from this survey for developing policy in the future. It appears that under optimal circumstances federal, state, county and city agencies, metropolitan planning organizations and the private sector will join efforts and partner to develop and execute the projects of regional significance.

Acknowledgments

The authors are thankful to the American Association of State Highway and Transportation Officials (AASHTO) for sponsoring this study. The findings, interpretations, and conclusions expressed herein are entirely those of the authors. They do not necessarily reflect the views of the AASHTO or the state governments.

References

- Florida, R.; Gulden, T.; Mellander, C. [online]. 2007. *The rise of the mega-region: Working Paper* [cited 1 November 2007]. Available from Internet: <http://creativeclass.com/article_library/>.
- Glaeser, E. 2007. *Do Regional Economies Need Regional Coordination?* Harvard Institute of Economic Research. Discussion Paper No. 2131.
- Gottmann, J. 1961. *Megalopolis: the urbanized northeastern seaboard of the united states*. New York Twentieth Century Fund. 810 p.
- Haynes, K. E. 2006. *Infrastructure: the glue of megacities / Kingsley E. Haynes; with contributions by Peter Nijkamp et al.* Den Haag: Kenniscentrum Grote Steden. 138 p.
- Marshall, A. 1890. *Principles of economics: an introductory volume*. [c1920]. New York: Macmillan. 871 p.
- Ohmae, K. 1993. The rise of the region state, *Foreign Affairs* 72(2): 78–87.
- Ray, J. D. 2007. Targeted investment, *Public Roads* July/August: 11–15.
- Ross, C. L. 2006. The emerging southeast megaregion, in *Proceedings of the Think Global, Act Regional Symposium, Atlanta: January 30*.
- RPA. 2006. Regional Planning Association. America 2050 towards a National Strategy for Prosperity, Equity and Sustainability, in *Proceedings of The Second Annual Policy Roundtable on Mega-Regional Development, Tarrytown, NY: February 22–24*.