



I-95 CORRIDOR COALITION SCOPE OF WORK

Project Title: STRATEGIC VISION STUDY

Objectives:

- To forecast long term (30-year) demand related to the long distance movement of passengers and freight in the Coalition region related to highway, rail, and marine transportation
- To develop a strategic vision and concepts to meet the future corridor-scale transportation needs
- To analyze the implementation issues and related costs and benefits associated with scenarios of capacity and operational improvements, representing modest and high levels of future investment
- To analyze a range of policy issues associated with the management and investment strategies, with particular focus on the issues of financing and institutional alternatives

Project Description:

One of the five strategic areas identified at the Strategic Planning Workshop held on September 28 and 29 was Strategic Vision and Policy Issues. A recommendation made in regard to this area was to develop a long range vision for the Corridor. This project is proposed to follow up on that recommendation and develop a strategic vision for the I-95 Corridor Coalition region.

The project's long-term, strategic focus and attention to policy issues differentiate it from a number of other recent studies that might be characterized as system planning or operations oriented. This strategic vision project is intended to describe what the Corridor's multimodal transportation patterns and performance outcomes may look like in 2040 utilizing a scenario approach. It will also identify the key policy, technological, investment strategy, and institutional factors that will likely influence the future of the corridor and its multimodal transportation system.

The project time horizon is 2040 (roughly 30 years) -- consistent with future vision horizon and activities of AASHTO, with possibly some qualitative discussion of a 50 year horizon.. The focus of the project is to address needs from the perspective of the long distance movement of passengers and freight, particularly as it relates inter-metropolitan travel and trips that cross state boundaries – both passenger and freight. The recent I-95 Corridor Coalition-- Corridors of the Future-- application to U.S. DOT discussed emerging megaregions in the U.S. and stated that transportation networks in the Coalition region must serve transportation needs at four scales within and between these megaregions:

- **Within metropolitan areas** in the Coalition's mega-regions – where the focus is on managing congestion and improving metropolitan transit and commuter rail services;

- **Within mega-regions** – where the focus is on intercity highways serving automobile, bus, and truck traffic, and on intercity air and rail services for passengers;
- **Between mega-regions** in the Coalition region – where the focus is on serving industries and distribution centers dependent on the region’s Interstate highway system and the north-south freight rail network, and serving longer-distance business and recreation travel by rail and air; and
- **Between mega-regions in the corridor and other national and global trade blocs** – where the focus is on providing reliable connections not only north-south but to east-west and diagonal NAFTA and other trade routes via all modes, as well as to all forms of ports of entry: seaports, airports, border entry points, and inland ports.

All of these transportation service functions will be considered in the project but the focus will be on the latter three, i.e. the megaregion and above. Transportation within metropolitan areas will be generalized across areas and focused primarily on connections to metropolitan systems and bottlenecks to travel at the higher regional level.

The scope of the work effort is clearly multimodal. The study will give very strong consideration to the impacts and interactions with all competing and complementary modes including rail, aviation, and maritime and innovative approaches such as high speed ground transportation and short sea shipping and their ability to help relieve highway demand especially for the inter-megaregion and extra-corridor trips. Intermodal connections among these modes will also be an important part of the study. Urban transportation solely within metropolitan areas will be included to a lesser extent primarily focusing on intermodal connections and bottlenecks affecting the interregional movements. Because the Interstate system is the backbone of the region’s intermodal system, the study will inevitably have a significant focus on the future of the Interstate and its ability to handle forecast volumes.

The project will be guided by a Project Committee comprised of senior policy or planning personnel from member agencies, as well as individuals chosen to represent users and providers of transportation services in the region, including representatives of tourism, trucking, rail and shippers, and, environmental and safety interests. The Committee will be active in defining the project scope of work, in making various assumptions, in defining scenarios and in reviewing and critiquing analyses and reports.

Descriptions of major work tasks are provided below: corridor policies and vision, demand forecasting, definition and analysis of alternative supply scenarios, analysis of policy issues and next steps, and reporting.

The work scope does not anticipate generation of significant new statistical information. Rather, it assumes that projections about demand, including demographics, the economy, freight movement, and other pertinent data are available as a result of variety of projects sponsored by other special purpose and modal studies including those by individual states, AASHTO, NCHRP and US DOT modal agencies. Global Insight, a member of the team, has provided the basic economic and freight forecasts for many of these studies and we will build off that work. Alternative forecasts will be assessed for their implications but alternative demand scenarios will not be developed. The work scope includes analysis of up to three supply/management

scenarios. These are to be defined as alternative ways of addressing the changing economic geography of the Corridor and the related demand forecasts and uncertainties defined in the first task. Improvements will focus on those elements controlled or substantially influenced by DOTs – but will consider implications of other modal policies and actions including issues related to changing demand patterns. To the extent possible, the scenarios will be performance driven. Consideration will be given to capital (additional capacity) improvements as well as to operations and management strategies that make the most effective use of capacity. The analysis will be largely conceptual and qualitative rather than data intensive and network analysis driven and will focus, in relative terms, on first-order costs, benefits and deployment difficulty.

The study takes as a point of departure that current programs, financial, and institutional arrangements are not capable of supporting the type and level of improvements needed to maintain or improve freight and passenger travel levels of service in the 30 year time frame. The work scope, therefore includes examination of various policy issues, not necessarily associated with specific supply scenarios. A major issue to be explored is the question of future financing of improvements, including consideration of expanded public revenues, infrastructure banks, tolling, pricing for financing, pricing for congestion management, and private financing. Institutional considerations, including federal role and support, and multi-state implementation mechanisms, and public-private partnerships will also be examined. This component of the work scope will take advantage of similar work being performed by a variety of organizations, including the I-95 Corridor Coalition's Finance Forum.

The scope assumes continuing development and refinement of a Corridor vision for transportation during the life of the project. The I-95 Corridor Coalition role will also be discussed and developed in later tasks but will not be a limiting factor in developing a comprehensive corridor vision. A corridor vision will help in articulating desired outcomes and performance objectives that will then guide scenario development and testing and policy issue analysis.

The work product will be a two-volume report. The first volume, an Executive Summary, will be aimed at top-level management in member organizations and will summarize the corridor vision, demand forecasts, the analysis of the alternative supply/management scenarios, and present a synopsis of the policy issue examination.

The second volume, the Technical Report, will be aimed at senior policy and planning staff in member organizations. It will contain the detailed demand information that was collected and synthesized, the details of the alternatives analysis, and a full discussion of the policy issues.

The following tasks will be performed:

Task 1: Corridor Policies and Visions

Under this task, the team will compile policy development and visioning efforts being done by AASHTO, Regional Plan Association, the National Transportation Policy Commissions, and the individual states. Relevant policy and vision efforts by other stakeholders will also be reviewed, but not comprehensively compiled. This will enable collaboration and consistency across the various visioning and policy development efforts that have relevance for the I-95 region. The State CEOs will be reviewing and adopting the AASHTO 2040 vision outcomes at the AASHTO Board meeting in association with the Annual AASHTO meeting in early October. The I-95

corridor was just selected as one of the six Corridors of the Future by U.S. DOT; this study is supportive of the objectives of that effort. In addition, various Governor's and/or state legislatures in the region have directed policy visioning, and corridor development initiatives that should help shape the I-95 coalition vision. For example, Florida's Century Commission for a Sustainable Florida has been charged by the Governor and Legislature to develop and report on a 25 and 50 year vision for Florida's future growth. The Governor of New Jersey has set aggressive Global Climate Change goals for the state which will certainly shape the state's transportation visioning for the future. Further, other corridor states are embracing climate change goals similar to California which is likely to help shape regional and national policy on this important emerging issue.

The team will draft an early vision for the I-95 corridor region in cooperation with the Project Committee. This will build on the Corridors of the Future application to U.S. DOT and the AASHTO efforts. This early vision draft will help shape the analytical efforts for the study. The vision will be refined as scenarios are analyzed and alternative performance outcomes become clearer. A long range vision for the corridor (as well as implications for the Coalition) will be one of the final products of the study.

Task 2: Demand Analysis

Under this task, data related to population, new patterns of urban development (mega-regions), employment, job location, other demographic information and economic performance, energy and environmental (e.g. Global Climate Change) trends will be assembled, examined, synthesized and used to construct forecasts of long distance (extra-metropolitan) passenger and freight travel for highway, rail and marine transportation systems throughout the Coalition region. Key future mobility issues associated with both growth and change will be addressed and identified at a reasonable order of magnitude. Team member Global Insight will provide the basic economic and freight forecasts for the project. It is recognized that key aspects of future modal travel patterns will be based on reasonable assumptions – based on best available data. Related uncertainties about forecasts will be identified and uncertainties regarding demographic, economic, energy, environmental land-use and future travel projections will be bracketed. All assumptions, analysis and the resulting forecasts will be clearly documented. To the extent feasible, the data collected, and analysis tools (e.g., spreadsheets) developed or used, will be archived in the Coalition's Integrated Corridor Analysis Tool (ICAT). ICAT will also be used as appropriate to display the results of the demand forecasts. These results will include the use of available performance measures. The result of this task will be documented in a working paper, the key findings from which will be included in the Technical Report. The following subtasks are anticipated:

2.1 Analyze corridor demographic and economic geography- document the demographic and economic profile of the corridor and its economic subregions. Assess the region's key economic roles and position within a national and global economy. Review megacity concepts and implications of megacity development within the U.S. and the I-95 corridor region. Develop forecasts of demographic and economic drivers for future transportation demand in the region. Prepare base maps of demographic and economic activity in the region, economic interconnections among subregions, and interactions with other domestic and international economies.

2.2 Document existing travel patterns by mode- document existing travel demand and patterns using ICAT data, national sources such as FHWA FAF, BTS aviation data, American Travel Survey, and HPMS; state data; private sources, etc. To the extent possible, develop profiles or patterns of travel based on major functions by length, mode and purpose; for the most part, these will not be in the form of trip tables nor will they be assigned to networks.. It is preliminarily proposed that trip stratification include the geographic hierarchy of the study (metropolitan, intra-megaregion, inter-megaregion, extra-Corridor), or some variation, as a form of distance proxy. Trip purpose/commodity type and mode would form the two other elements of this typology. We will show connections within the region, to other regions of the country, and to other international trading blocks.

2.3 Prepare travel demand forecasts- based on underlying demographic and economic drivers, develop a likely range of travel demand to 2040. Develop the likely trend based demand by mode such as has already been done for freight through the AASHTO Freight Bottom Line and the FHWA FAF 2035 forecasts; develop at least one alternative forecast such as was done for the Interstate Futures project that considered factors such as saturation of car ownership, alternative modes, energy and climate change, etc. Highway and rail forecasts will be illustrated at the major corridor level based on sources such as FAF.

Task 3: Alternative Supply Scenario Analysis

Under this task, up to three alternative supply scenarios will be defined and analyzed. A base case/trend scenario (assuming no major capacity improvements) will be developed such as has already been done for the FHWA FAF project to 2035; FAF network maps display volume to capacity ratios for the region's existing major highway corridors. Two additional scenarios will suggest potential operational and capacity improvements in all modes relevant to longer distance passenger and freight travel in the corridor.

The scenarios will include general strategic considerations dealing with the “gaps” in the current modal service for longer distance travel – both passenger and freight. Preliminary concepts will be developed for both new services and existing mode improvements for key locations related to both performance and functional needs such as intermodal (port and terminal access), key freight corridors, major intercity-pair travel by all modes, general regional connectivity in rapidly growing areas. Particular attention will be given to highway and rail bottlenecks by type based on those identified in previous work conducted by the Coalition and other organizations, and to port access. Consideration will also be given to longer term preservation and replacement needs of the Interstate and other nationally and regionally significant infrastructure. However, the study will not develop details for location-specific problems

The scenarios will include a range of reasonable policies combining alternative investment levels in capacity by mode with alternative degrees of operational management --designed to make the most effective use of available capacity. To the extent possible, the scenarios will be performance and/or function driven and will report available performance measures. For example, for the recent NCHRP Future of the Interstate project, HPMS forecasts and further trend judgments were utilized to assess what additional system capacity and operations scenarios would be needed to maintain today's Interstate performance and that approach may be adopted as a framework for this effort.

Given the demand excess over likely highway and alternative modal capacity for freight and passenger travel (combining both regional and interregional travel) at least one scenario will assume aggressive management including application of pricing to maintain reliable service for corridor level trips. Scenarios will consider adoption of ITS technologies including Vehicle Infrastructure Integration (VII). Issues such as rest and service areas will be addressed as well as other policy issues and operational areas such as driver shortages, truck-only lanes (possibly with LCVs), better container/trailer/chassis inter-operability and technology deployment for enhanced intermodalism, etc. Demand management will be addressed both with regard to its effect on climate change and transportation operations and management. However, this will be limited to sketch analysis generalized across metropolitan areas. Scenarios will consider alternative modal shares and roles. Although much of the project, including the scenario analysis, will be qualitative, modest GIS based network displays will be considered, such as the FHWA FAF2 maps. This can help illustrate current and future patterns in the region and assist in bracketing mode diversion potential.

The scenarios and the results of the analysis will be documented in a working paper, the essence of which will eventually be included in the Technical Report. This document will be replete with illustrations, tables and other graphical means of clearly presenting the information. No recommendations will be made. To the extent feasible, the results of the analysis and analysis tools developed or used, will be archived in ICAT. ICAT will also be used to display the results of the demand forecasts. The following subtasks are anticipated:

Task 3.1 Assess existing constraints and bottlenecks in the region's multimodal transportation system- identify current problem areas (largely utilizing existing studies) including:

- major bottlenecks and service constraints by mode
- major freight distribution frictions/needs
- major intermodal integration problems, gaps
- system operation and management (SO&M) gaps
- unique intercity bottlenecks, gaps, and needs

Task 3.2 Develop future modal service options- develop service options and future potential of each mode. This can build on existing efforts such as Corridors of the Future concepts, MAROps freight rail, port inland distribution concepts, bottleneck relief efforts, I-81 highway and rail corridor analyses, high speed passenger rail studies, tolling and pricing proposals, emerging HOT lane networks, truck lane concepts, short sea shipping, etc.

Task 3.3 Develop and assess system scenarios- develop up to 3 scenarios to illustrate a range of service options, investment levels, and outcomes. Scenarios will start with a baseline trend projection. There will likely be two improvement scenarios developed that include both capacity and operations/management features – including pricing -- and illustrate different investment levels, relevant to the financial capacities in the future time frame. Scenarios will consider alternative modal shares and roles. The analysis of these scenarios will include a first order estimation of costs, and a qualitative and first order quantitative analysis of benefits and beneficiaries. Scenarios will build upon initial vision concepts for the region as developed in Task 1.

Task 3.4 Assess policy issues, including institutional arrangements, related to the options/scenarios- the modal service options and scenario analysis will likely lead to a number

of policy, program, and institutional issues for further consideration. The implications of SAFETEA-LU reauthorization will be considered but will not be a limiting factor in assessing alternative long range policy changes. A first order cut of issues will be identified in this subtask that will be input to Task 4 *Policy Conclusions and Next Steps*. The issues will include but not be limited to modal and intermodal challenges, financing, pricing, public-private role considerations, multistate institutional roles, climate change and energy implications for transportation, safety, and technology.

Task 4: Policy Conclusions and Next Steps

Under this task, a range of policy conclusions will be developed, working closely with the Project Committee. The intent will be to frame policy issues and decisions for I-95 Leadership and member organizations. No recommendations will be made or positions taken.

4.1 Potential policy issues/conclusions to be developed and brought forward for I-95 Coalition Leadership consideration are:

1. Implications of population, economic, energy, environmental, and metropolitan development trends for transportation demand and supply in the Coalition region.
2. Assessment of region's strengths and challenges in the emerging globally competitive environment.
3. Implications for long term corridor investment needs and strategies.
4. The role of technology in the region's future.
5. Presumptions about investments in substantially private modes (rail, aviation, marine shipping).
6. The role of various financing methods, including traditional public revenue sources, infrastructure banks, tolling, and private financing.
7. Acceptability of pricing as a congestion management tool
8. Implications for future Federal surface transportation program authorizations.
9. Institutional considerations, including multi-state compacts for mutually beneficial capital and operational investments, public-private partnership opportunities, etc.
10. Institutions (including multi-state) to operate and manage the future systems at the corridor scale
11. Articulation of long range corridor vision
12. Potential implications and roles for the I-95 Corridor Coalition given this corridor vision.

4.2 Develop next steps for the I-95 Coalition- suggest the key next steps for the I-95 Corridor Coalition and member states, in collaboration with other stakeholders, to advance the policy issues deemed most important to the future of the corridor.

Task 5: Reporting

Under this task, the two volume final report will be prepared. In addition to a well documented technical report, an executive summary is envisioned that would appeal to a broad audience of corridor leaders, other stakeholders, elected officials, etc. It will also include the preparation of presentation and outreach materials, including PowerPoint slides, brochures, etc.

Estimated Level of Effort:

Task	Labor Hours
1. Corridor Policies and Visions	176
2. Demand Analysis	292
3. Alternative Supply Scenario Analysis	606
4. Policy Conclusions and Next Steps	300
5. Reporting	438
Total	1,812